

THE POLITICS OF IMPLEMENTING E-GOVERNMENT FOR DEVELOPMENT: THE ECOLOGY OF GAMES SHAPING PROPERTY TAX ADMINISTRATION IN BANGALORE CITY, INDIA.



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*For my parents, and for my thesis supervisors.*

# The Politics of Implementing e-Government for Development: The Ecology of Games Shaping Property Tax Administration in Bangalore City, India.

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A D.Phil., an Oxford wit told me at Matriculation, is an endurance sport. One goes round and round a track for years: sometimes in full view of the world, oftentimes not. Sometimes you will be walking in sunshine, but many a-time you will find yourself running in the dark. One can start out the day feeling sluggish, work oneself into a complete sweat by lunch time, and wind up sipping a relaxing cup of tea by the time evening rolls around. Fans are fickle, and one should expect garlands and brickbats in equal measure. But never, he said, forget the people who stand around the track waiting to hand you an energy drink to keep you going. I have not forgotten, and this section is all about them.

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This work could not have happened without you.

# Abstract

## **The Politics of Implementing e-Government for Development: The Ecology of Games Shaping Property Tax Administration in Bangalore City, India.**

The recent global diffusion of information and communications technologies (ICTs) has raised expectations for technological change to support socio-economic progress and political reform in the developing as well as the developed world. Particularly prominent is the promise of ICT platforms and applications that enable innovations in electronic government (e-government), since their implementation and use in the public sector are often linked to organizational and administrative reforms.

Much has been written about e-government within a growing stream of literature on ICT for development, generating countervailing perspectives where optimistic, technocratic approaches are countered by far more sceptical standpoints on technological innovation. This body of work is not without its limitations: a large proportion has been anecdotal in its style and overly deterministic in its logic, with far less being empirical, and there is a tendency for models offered up by scholarly research to neglect the actual attitudes, choices and behaviour of the wide array of actors involved in the implementation and use of new technology in real organisations.

To address these shortcomings, this research sought to focus on an empirical case study surrounding the implementation and use of an electronic property tax collection system in Bangalore, India between 1998 and 2008. Early work reinforced the need to move beyond technologically deterministic explanations of the project, prompting the study to draw on the theoretical perspective of the 'Ecology of Games' which (being close to theories of New Institutionalism) recognises the importance of a multitude of diverse motives and individualistic behaviour as key factors influencing organisational reform and institutional change.

This thesis thus contributes not just to an understanding of the role of ICTs in administrative reform in development, but towards an emerging body of research that is critical of managerial rationalism for an organization as a whole, and sensitive to an ecology of actors and motivations within the organisation. The core research findings of the work question the received wisdom prevalent in current political and development discourse that all actors on such projects, operating within a given game arena or game ecology possess a global, rational perspective on the role of technology, both in government and within their particular domain specialism; suggesting that both scholars of e-government and top management would do well to recognise and seek to understand the complex web of varying actor interests and motivations inherent within ICT-for-development projects.

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# Chapter 1

## Introduction: Government Reform in the Digital Age

Over the course of the last two decades, globalisation and Information and Communication Technologies (ICTs) have been rapidly dismantling traditional barriers to trade, travel, and communication; fuelling great promise for progress towards greater global equity and prosperity. Attracted by the ‘hype and hope’ of such technologies, development actors across the world have adopted computer-based systems and related ICTs for use in government as a means of reforming the inefficiencies in public service provision. Whilst a number of these electronic government or ‘e-government’ projects have achieved significant results, evidence from the field indicates that despite reported success stories, the rate of project failure remains particularly high. Avgerou and Walsham (2000) conclude, for example, that “...[whilst] successful examples of computerisation can be found...frustrating stories of systems which failed...are more frequent”<sup>1</sup>. Although information about rates of success and failure in developing and transition countries are scarce, Heeks (2003) calculated in one study that, based on data obtained in 2002, 35% of e-government projects instituted in those countries could be classed as *total failures* (where either e-government was not implemented or the project

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<sup>1</sup> Chrisanthi Avgerou and Geoffrey Walsham, ‘Introduction: IT in Developing Countries’ in C. Avgerou and G. Walsham (eds.) *Information technology in Context: Studies from the Perspective of Developing Countries* (Ashgate: Aldershot, UK, 2000), p. 7.

was implemented and immediately abandoned) and 50% as *partial failures* (where major goals were not attained and/or there were undesirable outcomes)<sup>2</sup>.

Success and failure within the context of development projects are, of course, very loaded terms and can vary significantly depending on the context, time, and perspective. However, any evidence of large numbers of projects not being able to attain key goals or resulting in harmful outcomes is nonetheless alarming given that developing countries hold limited resources at their disposal and cannot afford – economically or politically – to invest in projects that give them little or no positive return. Much has been written about e-government within a growing stream of literature on ICT for development (ICT4D), generating countervailing perspectives where optimistic, technocratic approaches are countered by far more sceptical standpoints on technological innovation.

However, in trying to analyse both their potential and real value, there has been a tendency for scholars to see e-government applications as isolated technical artefacts, analysed solely as a collection of hardware and software. Far less work is based on empirical field research, and models put forward by scholars and practitioners alike often neglect the actual attitudes, choices, and behaviour of the wide array of actors involved in the implementation and use of new technology in real organisations; as well as the way in which an application shapes and is shaped by existing social, organisational, and environmental contexts.

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<sup>2</sup> Richard Heeks, 'Most eGovernment-for-Development Projects Fail: How Can the Risks be Reduced?', *iGovernment Working Paper Series*, Paper no. 14, 2003, p.2.

This thesis seeks to unravel the social dynamics shaping e-government projects used to reform public sector institutions. The value of such an approach is based on a review of existing development literature, which tends to be overly systems-rational in its approach. As a consequence, the literature does not recognise the degree to which project failure (viz. the general inability of the project design to meet stated goals and resolve both predicted and emerging problems) is symptomatic of a broader, much more complex set of interrelated inequalities, unresolved problems, and lopsided power relations; both within the adopting organisation and in the surrounding environmental context. To address the shortcomings of current work, this research focused on an empirical case study surrounding the implementation and use of an electronic property tax collection system in Bangalore, India. The study drew on the theoretical perspective of the ‘Ecology of Games’ which, being close to theories of New Institutionalism, recognises the importance of a multitude of diverse motives and individualistic behaviour as key factors influencing organisational reform and institutional change.

## 1.1. Background: The Rise of e-Government Initiatives for Development

Public sector reform, in its broadest sense, may be generally defined *as change within public sector organizations that seeks to improve their performance*<sup>3</sup>. Corruption and inefficiency are only two of a long list of problems related to issues of governance, seen to flourish particularly under manual or paper-based systems where citizens have to visit government departments in person, hand over application forms, and pay fees to

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<sup>3</sup> Richard Heeks ‘Information Age Reform of the Public Sector: The Potential and Problems of IT for India’, *Information Systems for Public Sector Management Working Paper Series*, Paper no. 6, IDPM, 1998, p. 2.

designated officials in order to obtain a service, that have prompted public sector agencies in the developing world to seek for ways to improve their functioning<sup>4</sup>. The first step to reforms related to the public sector is often *decentralisation*, for a long time seen as a popular remedy for the excessive concentration of decision-making and authority within the central government in many developing countries; a term thought to connote – amongst other things – participation of local people, the relevance of locally generated data, autonomy of decision-making, accountability, and democracy<sup>5</sup>.

Theoretically, the normative appeal of arguments for decentralisation has resided in the belief that the quality of political participation – and thus public life itself – will be significantly transformed when people are not only allowed to gather together to collectively debate and deliberate on issues of common concern, but are also provided with decision-making powers to give effect to their shared concerns<sup>6</sup>. Another argument for decentralisation questions centralised patterns of decision-making because they are insensitive to the local problems and conditions that require attention. Conceptually, decentralisation is seen to comprise of a combination of three factors: the *delegation* of power from a higher to a lower authority, the *devolution* of discretionary powers from a higher to lower authority, and a *deconcentration* of activities from national to local level

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<sup>4</sup> Shefali Virkar, 'Designing and Implementing e-Government Projects: Actors, Influences, and Fields of Play', in Saqib Saeed and Christopher G. Reddick (eds.), *Human-Centered Design for Electronic Government* (Hershey, P.A.: IGI Global, 2014 *forthcoming*), p. 10.

<sup>5</sup> cf. Shirin Madon and Subhash Bhatnagar, 'Institutionalising Decentralised Information Systems for Local Level Planning: Comparing Approaches Across Two States in India', *Journal of Global Information Technology Management*, Volume 3 No. 4, 2000; M. Turner and D. Hulme, *Governance, Administration and Development: Making the State Work*, London: Macmillan, 1997.

<sup>6</sup> Niraja Gopal Jaya 'Introduction' in Niraja Gopal Jaya, Amit Prakash and Pradeep K. Sharma eds., *Local Governance in India: Decentralisation and Beyond*, (New Delhi: Oxford University Press, 2006), p. 2.

government agencies in both urban and rural centres of the developed and developing world<sup>7</sup>.

In addition to the decentralisation of political decision-making, improving public sector management capacity has been one of the most critical issues facing developing countries over the past few decades<sup>8</sup>. Developing world states and their institutions have come under tremendous pressure from national and international actors to respond to development challenges and maintain standards of good governance such as accountability and transparency, and most modern governments have consequently experienced a recent history of growth and change.

A comparison of definitions of good governance set out by major aid donors, for example, makes it clear that good governance strategies involve much more than the efficient management of resources; they are also strategies to strengthen the institutions of civil society, to improve public service delivery, make governments more open and accountable and even transform the political context of developing and transition countries<sup>9</sup>. Recent research by development theorists suggests that the traditional notion of public service in developing countries is undergoing a process of transformation<sup>10</sup>, with many new agencies being added, merged, or transferred, their responsibilities

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<sup>7</sup> Shirin Madon, S. Krishna and Edwin Michael, 'Health Information Systems, Decentralisation and Democratic Accountability', *Public Administration and Development*, Volume 30 Issue 4, 2010, p.251

<sup>8</sup> G. Shabbir Cheema, *Building Democratic Institutions* (Bloomfield: Kumarian Press, Inc., 2005) p. 141.

<sup>9</sup> Martin Minogue, 'Power to the People? Good Governance in the Reshaping of the State', in Uma Kothari and Martin Minogue eds., *Development Theory and Practice* (Basingstoke: Palgrave, 2002), p. 120.

<sup>10</sup> Jennifer Jalal 'Good Practices in Public Sector Reform: A Few Examples from Two Indian Cities', in Amrita Singh ed., *Administrative Reforms: Towards Sustainable Practices* (New Delhi: Sage, 2005), p. 96.

changed and the relations amongst agencies or between agencies and their clients modified either by law, executive fiat, legislative committee, or internal transformation<sup>11</sup>.

In this context, a number of projects have been implemented in different developing countries since the early 1990s, all dealing with the emerging concept of governance in international development discourse and involving a range of public and private sector organisations in urban governance at the local, national, and global levels. The chief aim of these projects has been to enhance the capabilities of municipalities to deliver civic services through the adoption and adaptation of ‘modern’ management techniques: specifically those of benchmarking and continuous improvement, privatisation, creating support networks between municipalities globally, and the automation of aspects of public service delivery. Projects tend to focus on three sets of critical issues that are traditionally faced by the public sector in developing countries<sup>12</sup>.

The first set of issues pertains to weaknesses in a country’s civil service, generally brought on by the overstaffing of government departments and agencies, the promotion of personnel with insufficient qualifications and experience owing to favouritism in recruitment and transfer processes, difficulties in taking action against those individuals performing below a certain standard given existing political pressures, and the overall low morale of government employees due to poor salaries and inadequate incentives. Many developing countries also face a shortage of skilled and well-trained managers and personnel. Civil service reform packages thus broadly focus on the reform of the major

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<sup>11</sup> James G. March and Johan P. Olsen, *Rediscovering Institutions: The Organisational Basis of Politics* (New York: The Free Press, 1989), p. 70.

<sup>12</sup> Adapted from Cheema, *Building Democratic Institutions*, pp. 142-146.

functions and responsibilities of government or, more narrowly, on the reform of those issues pertaining to remuneration, employee numbers, employee performance, recruitment, selection, placement, and promotion.

Another set of packages focuses on the shortage of high quality leadership in government organisations. Current theories of public sector management contend that senior public sector managers in the developing world are generally conservative, unwilling to take even moderate risks, and have a tendency to be rather narrow in their thinking – often as a consequence of socio-political constraints on their environments. Therefore, reforms seek to equip managers to be ‘good’ leaders, who are able to provide vision and direction to the organisation, build strategy to work towards operationalizing that vision, and inspire and energise staff to meet objectives and targets<sup>13</sup>.

The need to improve the quality of and access to public services is another critical issue in public sector management, and the final focus of municipal reform packages. Rapid urbanisation in the developed world and an increase in the number of cities has only served to further increase the complexity of governmental and intergovernmental relations, with studies done by the United Nations and its agencies showing that several urban governance challenges continue to affect the quality of services and service delivery despite progress made<sup>14</sup>. These include the challenges inherent in reconciling national planning processes and systems with those at the local level, in expanding the

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<sup>13</sup> World Bank, *Leadership Matters: Background Notes on Leadership*, The World Bank Institute, p. 5  
Available at:

[http://siteresources.worldbank.org/INTCDRC/Resources/BackgroundNotesonLeadership\\_all\\_v5.pdf](http://siteresources.worldbank.org/INTCDRC/Resources/BackgroundNotesonLeadership_all_v5.pdf)

<sup>14</sup> Cheema, *Building Democratic Institutions*, p. 144 – 145

powers of local government to review or newly levy local taxes thereby broadening their sources of revenue, and in matching the distribution of roles and responsibilities between central, provincial, and local government organisations based on their comparative advantage.

However, the use of modern models and methods of management to support ‘good governance’ and ‘best practice’ can be, according to scholars, complex and problematic as the focus of attention – local municipal organisations in the developing world – typically do not have the institutional structure or the financial and manpower resources to support them in the same way that their counterparts in the developed world do<sup>15</sup>. This is often coupled with that fact that local government organisations in the developing world have traditionally served as instruments of state control and regulation, whereas ongoing governance reforms (often as part of development packages from international organisations) demand that they decentralise their organisational setup and place greater emphasis on transparency and accountability in their functioning.

Such demands, however, often run counter to their historically defined structures and, whilst the process of introducing reform is complex, it nevertheless has to be engaged with as it is part of a broader modernisation agenda in the local governance world<sup>16</sup>. For example in South Asia, although there has been much rhetoric about participation and local autonomy – first through local administrators and later through

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<sup>15</sup> Shirin Madon, Sundeep Sahay and Jyotsna Sahay, ‘Implementing Property Tax Reforms in Bangalore: An Actor-Network Perspective’, *Information and Organisation*, vol. 14, 2004, p. 270.

<sup>16</sup> Madon, Sahay and Sahay, ‘Implementing Property Tax Reforms in Bangalore: An Actor-Network Perspective’, p. 271.

elected representatives – central governments have in practice jealously guarded their power and it is only recently that people have been allowed to have a stake in and manage their own development<sup>17</sup>. Practical experience suggests that there exists an implicit belief amongst practitioners and policymakers that decentralisation occurs almost solely via legislation. However, some scholars such as Madon and Bhatnagar (2000) argue that such a belief rests upon a naïve view of administrative reform, and that a deeper understanding of the nuances of the incremental process by which the devolution of power and responsibility of local level administrators occurs in practice is necessary<sup>18</sup>.

Within most developing countries – including India – given that the bulk of their populations live in rural areas, it is not surprising that rural governance structures have received significant attention from both policymakers as well as the academic community. The decentralisation of decision-making has been seen as particularly important for urban centres in the developing world only in the last couple of decades, as an influx of rural migrants to urban areas in search of work and the resulting rapid and chaotic growth of urban centres together with increasing population rates and declining standards of living and poverty amongst some sections of society<sup>19</sup> has prompted policymakers and those engaged in public sector reform to examine the ability of existing urban infrastructure to cope with such a population boom<sup>20</sup>.

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<sup>17</sup> Madon and Bhatnagar, 'Institutionalising Decentralised Information Systems for Local Level Planning', pp. 45-46.

<sup>18</sup> Madon and Bhatnagar, 'Institutionalising Decentralised Information Systems for Local Level Planning', p. 45

<sup>19</sup> Madon, Sahay and Sahay, 'Implementing Property Tax Reforms in Bangalore: An Actor-Network Perspective', p. 270.

<sup>20</sup> cf. R.N. Sharma and D. Kumar *Municipal Government in India: An Annotated Bibliography* (New Delhi: Indian Institute of Public Administration, 1981).

Globally, there has long been a recognition of a crisis in municipal service provision across the urban centres of many developing countries, and international agencies such as the World Bank and the United Nations have initiated various programmes to rejuvenate municipal services such that, as cities become increasingly urbanised, municipal governments develop the capability and resources to make cities liveable and enable governments to meet the basic civic needs of citizens<sup>21</sup>. During the 1950s and 1960s, experiments related to the delegation of functions to local administrators in several developing countries led to increased productivity in a number of sectors, but an overall failure to deal with basic developmental issues resulted in a greater emphasis on devolution and an increased emphasis on institutional development as a means of improving coordination between various local government bodies involved in the planning and implementation of programmes locally<sup>22</sup>.

Simultaneous with the shift towards a more inclusive process of participation in political decision-making and public sector reform has been an increased interest in the new digital Information and Communication Technologies (ICTs) and the ways in which they may be used to effectively complement and reform existing political processes. Developments in communication technology have historically resulted in changes to the way in which governments function, often challenging them to find new ways by which to communicate and interact with their citizens<sup>23</sup>. ICTs today are seen to possess the

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<sup>21</sup> Madon, Sahay and Sahay, 'Implementing Property Tax Reforms in Bangalore', pp. 270-271.

<sup>22</sup> Madon and Bhatnagar, 'Institutionalising Decentralised Information Systems for Local Level Planning', p.45.

<sup>23</sup> Shefali Virkar, 'What's in a Game? The Politics of Shaping Property Tax Administration in Bangalore, India', in Jonathan Bishop ed., *Gamification for Human Factors Integration: Social, Educational, and Psychological Issues* (Hershey, P.A.: IGI Global Inc., 2014), pp.31-32.

potential to change institutions as well as the mechanisms of service delivery; bringing about a fundamental shift in the way government operates and a transformation in the dynamic between government and its citizens<sup>24</sup>. The work of the public sector has traditionally been highly information-intensive: government has been, and still remains, the single largest collector, user, holder, and producer of information<sup>25</sup>; and data is considered to be a central resource ‘in pursuing democratic/political processes, in managing resources, executing functions, measuring performance, and in service delivery’<sup>26</sup>.

The use by government of ICTs, both to improve internal functioning and to interact with citizens, businesses, and other governments initially became popular in industrialised nations during the 1960s, with the introduction of large-scale computer systems to carry out administrative tasks traditionally performed by government bureaucracies, particularly in the processing of financial transactions<sup>27</sup>. The early 1980s saw, in the UK and Australia, the beginning of a movement known as New Public Management (NPM) that came to dominate the agenda for public sector reform in almost all advanced economies and which heralded the emergence of a new paradigm in the

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<sup>24</sup> Suresh Misra, ‘eGovernance: Responsive and Transparent Service Delivery Mechanism’, in Amrita Singh ed., *Administrative Reforms: Towards Sustainable Practices* (New Delhi: Sage, 2005), p. 286.

<sup>25</sup> Richard Heeks ‘The Approach of Senior Public Officials to Information Technology Related Reform: Lessons from India’, *Public Administration and Development*, vol. 20 issue 3, 2000, p. 197.

<sup>26</sup> Kester Isaac-Henry, ‘Development and Change in the Public Sector’, in Kester Isaac-Henry, Chris Painter and Chris Barnes eds., *Management in the Public Sector: Challenge and Change* (London: International Thomson Business Press, 1997), p. 132.

<sup>27</sup> Helen Margetts, ‘Transparency and Digital Government’ in Christopher Hood and David Heald eds., *Transparency: the Key to Better Governance?* (London: The British Academy, 2006), p. 197.

public sector through the application of private sector management models emphasising efficiency, accountability, and a results-driven orientation<sup>28</sup>.

In its early days, NPM was often represented as introducing modern business management methods into public administration, which was usually taken to include a greater use of technology. By the mid-1980s this component involved the use of Information Technology to completely displace previously paper-based operations, together with a shift to more PC-based systems instead of mainframes. But eventually, as all public sector organisations began to use technology (often without necessarily changing processes) the NPM movement began to focus essentially on organisational restructuring changes and a new word – *e-government* – started becoming popular to denote the use of the Internet and related technologies in the public sector<sup>29</sup>.

The New Public Management is, however, no longer new. A hybrid variant of the concept has also taken hold in India, particularly over the last 15 years<sup>30</sup>, a country previously resistant to experimentation with conventional public management styles and practices<sup>31</sup>. That said, there is little evidence to show that a corresponding, sincere exercise has been undertaken to examine the effects of these reformative measures, and in

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<sup>28</sup> Christopher Hood, 'A public management for all seasons?' *Public Administration*, vol. 69, no. 2, 1991, p. 3.

<sup>29</sup> Patrick Dunleavy, Helen Margetts, Simon Bastow and Jane Tinkler, *Digital Era Governance: IT Corporations, The State and E-Government* (Oxford: Oxford University Press, 2006), p. 96.

<sup>30</sup> Sauvik Chakraverti, Management Mantras: Make Way for New Public Administration, *Times of India*, July 14, 2004, Available at: <http://timesofindia.indiatimes.com/articleshow/msid-776848.prtpage-1.cms>.

<sup>31</sup> Patrick Dunleavy, Helen Margetts, Simon Bastow, and Jane Tinkler, 'New Public Management Is Dead—Long Live Digital-Era Governance', *Journal of Public Administration Research and Theory*, vol. 16, issue 3, 2006, p. 468.

particular the role of the new digital technologies therein, on the governance process<sup>32</sup>. It is this exact lacuna that the research presented in this thesis attempts to fill. In the past, service delivery mechanisms within government departments and agencies in India left much to be desired<sup>33</sup>.

The Indian Bureaucracy has historically been typified by, on the one hand, a pervasiveness of cramped office spaces, shabby interiors, hostile work environments, long queues, procrastinating officials, and procedural complexities<sup>34</sup>; and, on the other, by an entrenched discourteousness amongst government personnel, directed towards the public, as evidenced in their chronic absenteeism, their demands for instant career gratification, their affected inefficiency at work, and in the persistence of institutionalised corruption<sup>35</sup>. A growing awareness amongst citizens concerning their public sector entitlements, together with an increase in their positive experiences accruing from service provision in the burgeoning private sector, has resulted in the demand for better service delivery on the part of government ministries and departments becoming noticeably more pronounced<sup>36</sup>.

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<sup>32</sup> Anil Monga, 'E-government in India: Opportunities and Challenges', *Journal of Administration and Governance*, vol. 3 no.2, 2008, p.54.

<sup>33</sup> Sauvik Chakraverti, Management Mantras: Make Way for New Public Administration, *Times of India*, July 14, 2004, Available at: <http://timesofindia.indiatimes.com/articleshow/msid-776848.prtpage-1.cms>.

<sup>34</sup> Anil Monga, 'E-government in India: Opportunities and Challenges', *Journal of Administration and Governance*, vol. 3 no.2, 2008, p.54.

<sup>35</sup> Renee Kuriyan and Isha Ray, 'Outsourcing the State? Public-Private Partnerships and Information Technologies in India', *World Development*, vol. 37, no. 10, p. 1663.

<sup>36</sup> Sauvik Chakraverti, Management Mantras: Make Way for New Public Administration, *Times of India*, July 14, 2004, Available at: <http://timesofindia.indiatimes.com/articleshow/msid-776848.prtpage-1.cms>.

The rapid expansion of the software industry in India, particularly from between the mid-1990s to the late 2000s<sup>37</sup>, together with the lightening global proliferation of Information and Communication Technologies (ICTs) during the same period<sup>38</sup>, has played a prominent role in strengthening such a demand<sup>39</sup>. In response, the Government of India has kick-started the use of information technology in the Indian public sector by launching a number of state-sponsored initiatives and legislative measures<sup>40</sup>.

These include the approval of a federal National E-Governance Plan (or N.e.G.P.), first implemented between 2003-2007, in an attempt to lay the foundations for and to provide impetus to the long-term growth of e-governance within the country<sup>41</sup>; together with the introduction of legislation encompassing the adoption of the Information Technology (I.T.) Act, 2000, implemented in order to provide the legal framework necessary for the facilitation of electronic transactions; to establish the National Taskforce of Information Technology and Software Development, constituted first in May 1998; to create the Centre for e-Governance, with a stated dual mandate of disseminating knowledge related to e-governance and accounts of best practice in the area of e-governance for use by the Central and State administrations; to facilitate the development of e-office solutions and their eventual deployment across various

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<sup>37</sup> Murali Patibandla and Bent Petersen, Role of Transnational Corporations in the Evolution of a High-Tech Industry: The Case of India's Software Industry, *World Development*, vol. 30, no. 9, 2002, p.1561.

<sup>38</sup> Murali Patibandla and Bent Petersen, Role of Transnational Corporations in the Evolution of a High-Tech Industry: The Case of India's Software Industry - A Reply, *World Development*, vol. 32, no. 3, 2004, p.562.

<sup>39</sup> Subhash C. Bhatnagar and Nupur Singh, 'Assessing the Impact of E-government: A Study of Projects in India', *Information Technologies & International Development*, vol. 6, issue 2, 2010, pp.109-110.

<sup>40</sup> Anil Monga, 'E-government in India: Opportunities and Challenges', *Journal of Administration and Governance*, vol. 3 no.2, 2008, p.55.

<sup>41</sup> Government of India (2006) 'National e-Governance Plan (NeGP)', Available at: <http://india.gov.in/e-governance/national-e-governance-plan> (Accessed on 14th May 2010)

government ministries and departments; to advance the setting-up of a High Powered Committee (HPC), with the Cabinet Secretary as its Chairman to improve administrative efficiency through the deployment of information technology in Government; to confirm the designation and the appointment of a Joint Secretary-level officer as I.T. manager in every ministry and government department; and to institutionalise both the development and maintenance of official websites by almost all government ministries and departments and the digital provision of basic information on aspects of government and ministerial work, such as their objectives, policies and decisions, key contact persons, and the like<sup>42</sup>.

e-Government has today become an influential concept for scholars concerned with public administration reform and better overall governance. In developed countries, large-scale projects at the local level have typically concentrated on the creation of virtual or digital town halls through the automation and distribution of well-structured administrative services<sup>43</sup>. However, whilst online e-government service initiatives have become common in many countries, and in a variety of contexts<sup>44</sup>, such applications are characteristically built with a primary focus on administration-citizen interaction rather than on explicitly supporting plans for strategic organisational development. Further, although considerable attention has been focused on how e-government can help public bodies improve their services, there are relatively few studies which focus on the long

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<sup>42</sup> Government of India (2000) 'Information Technology Act 2000', Available at: <http://www.mit.gov.in/content/information-technology-act-2000> (Accessed on 14th May 2010)

<sup>43</sup> William H. Dutton, *Society on the Line: Information Politics in the Digital Age* (Oxford: Oxford University Press, 1999), pp 184 – 185.

<sup>44</sup> Helen Margetts, *Information Technology in Government: Britain and America* (London: Routledge Press, 1998).

term sustainability of e-government initiatives, particularly in the developing world<sup>45</sup>. In contrast, the project focused on in this study seeks to illustrate that the potential for improved government-citizen interaction through e-government and public sector reform can be realised not only through developing the ‘virtual front office’ but also through the impact of actor interactions on back-office organisation and culture.

Initially, the use of Information Technology applications in priority sectors was resorted to in many parts of the developing world to promote decentralisation<sup>46</sup>. For example, the planning, management, and productivity of agricultural and rural development, poverty alleviation, environment management, energy and transport, urban development, health and family planning, and education were amongst the local development programmes to which Information Technology was applied; with the central goal of most projects being to improve access to information, thereby producing more informed, better-reasoned decision-making. Studies on the impact of these early initiatives, however, have pointed to a variety of difficulties hindering their success – lack of funds, lack of detailed planning related to project management, inadequate human resource development and a variety of other socio-political factors<sup>47</sup> – and the rapid proliferation of such technologies has raised important questions and triggered debates as to who is able to participate and to what extent they may do so; as well as dealing with the types of participation such technologies make possible at different levels of

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<sup>45</sup> For example see Richard Heeks, 'Information Systems and Developing Countries: Failure, Success and Local Improvisations', *The Information Society*, vol. 18, pp. 101-112 ; Heeks, 'Most eGovernment-for-Development Projects Fail'.

<sup>46</sup> Madon and Bhatnagar, 'Institutional Decentralised Information Systems for Local Level Planning', p. 46.

<sup>47</sup> Madon and Bhatnagar, 'Institutional Decentralised Information Systems for Local Level Planning', p. 46.

government and their impact on different political processes, organisations, and institutions.

## 1.2. Research Questions

The main goal of this thesis is thus to approach the issues thrown up by the organisational and institutional transformations that occur in public administration from a multidisciplinary perspective and, through the use of a case study, attempt to bring a new perspective to bear on the following questions:

- i. Why do e-government initiatives succeed or fail, particularly in developing countries?
- ii. Would an understanding of the goals and objectives of actors within government institutions shed light on the dynamics of success or failure?

Whilst a single case study cannot provide an answer to these questions, it can suggest ways of addressing them that could be applicable to a wider variety of cases.

In existing literature to date, some research has already been conducted to assess the perceptions of strategic elites and non-strategic actors to general change processes within local government bodies<sup>48</sup>. However, almost all this work has been done from a

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<sup>48</sup> Cf. Shefali Virkar, 'Exploring Property Tax Administration Reform through the use of Information and Communication Technologies: A Study of e-Government in Karnataka, India' in Jacques Steyn & Stephanie Fahey eds., *ICTs and Sustainable Solutions for Global Development: Theory, Practice and the Digital Divide - Volume 2: ICTs for Development in Asia and the Pacific* (Hershey, P.A.: IGI Global, Inc., 2011), pp. 127-149; and Shefali Virkar, 'The Games People Play: The Politics of Software Platform Development and ICT Project Design for Public Sector Administration Reform' in Saqib Saeed, Imran S. Bajwa, and Zaigham Mahmood eds., *Human Factors in Software Development and Design* (Hershey, P.A.: IGI Global, 2014), pp. 67-91.

management studies perspective (without specific reference to those perspectives on e-government project outcome) and is based on the experiences of actors within developed countries organisations<sup>49</sup>. Little work has been done to assess the dynamics of e-government project design and implementation on the success or failure of those initiatives, particularly in the context of the developing world, and it is this gap which this thesis hopes to fill.

The theoretical framework adopted by this research will emphasise three issues: first, the concept of tax administration and governance, which is related to the set of institutions and rules that set the limits on, and the incentives that result in the constitution and working of interdependent networks of actors; second, the electronic government concept; and finally, the relationship between technology, organisation, and institutional change. To do this, it will seek to ground its case study in three major complementary strands of literature:

1. A conceptual discussion of the role and interactions of a multiplicity of actors with diverse motivations and strategies conceptualized as an ‘ecology of games’, within the umbrella of New Institutionalism, and their role in shaping political organisations and institutions, with special reference to the success or failure of e-government projects.

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<sup>49</sup> Andy Asquith, ‘Non-elite Employees’ Perceptions of Organizational Change in English Local Government’, *The International Journal of Public Sector Management*, vol. 11 issue 4, 1998, pp. 262 – 280.

2. The literature which deals with public administration reform and the role of Information and Communication Technologies in improving the functioning of public administration and reducing corruption in a developing country context.
3. A discussion of the importance of property tax for local government, particularly at the local level, and the definition and scope of property tax reform in India.

Conclusions will be reached through the concurrent use of three dimensions – theoretically on the basis of existing literature, descriptively on the basis of a case study, and analytically using the concept of the Ecology of Games.

### 1.3. Examining ICTs in the Context of Organisational and Institutional Change

Any examination of the relationship between ICTs, organisational reform and institutional change may commence with the words of Nye (2002): “Technology affects society and government, but the causal arrows work in both directions. Technological change creates new challenges and opportunities for social and political organizations, but the response to those challenges depends on history, culture, institutions, and paths already taken or forgone<sup>50</sup>.”

Traditionally, political institutions have been seen as preconditions for civilised society, with students of politics being interested in how they work and how their

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<sup>50</sup> Joseph S. Nye, ‘Information technology and democratic governance’ in Elaine Kamarck and Joseph S. Nye Jr. eds., *Governance.com: Democracy in the Information Age* (Washington, DC: Brookings Institution, 2002), p. 2.

organisation within a society impacts the lives of citizens<sup>51</sup>. Institutions may be defined as: "...the structure that humans impose on human interaction and therefore define the incentives that together with the other constraints (budget, technology, etc.) determine the choices that individuals make that shape the performance of societies and economies over time<sup>52</sup>". Therefore, institutional change, according to Prats (2000), refers to the intentional or voluntary insertion of innovation into a current system through a sufficiently assumed transformation of its rules and internal games<sup>53</sup>. Alterations of relative prices, such as information costs or technology changes, become the most important sources of institutional change.

Changes in relative prices, however, are motivated both by the transformation of actor perceptions regarding those changes as well as the alterations in behaviour that those perceptions give rise to; that is, by the construction of new mental models that result from the acquisition of learning and of skills that help interpret the new context. Institutional change generally occurs whenever an alteration in a relative cost is perceived by one or more group of actors as a win-win situation for that group or for all the participants involved. Such change thus depends chiefly on the actors' perceptions with respect to the gains (the payoffs) to be obtained. At the same time, it must be remembered

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<sup>51</sup> March and Olsen, *Rediscovering Institutions*, p. 159.

<sup>52</sup> Douglass C. North, 'Institutional Change: A Framework of Analysis', *Working Papers in Economics*, 1994, p. 1. Available at: <http://ideas.repec.org/p/wpa/wuwpeh/9412001.html#related>

<sup>53</sup> J. Prats, 'La dimensión institucional del desarrollo humano (The institutional dimension of human development)', *Colección de Documentos*, 21, 2000, quoted in Mila Gascó, 'New Technologies and Institutional Change in Public Administration', *Social Science Computer Review*, vol. 21 issue 6, 2003, p. 10.

that it is the existing institutions themselves that determine the nature and direction of the payoffs<sup>54</sup>.

If, like Thomas and Bennis (1972), one understands organisational change within institutions as the deliberate design and implementation of a structural innovation, a policy, a new goal, or an operational transformation; it may be accepted that ICT applications could result in organisational changes (such as the efficient and speedy delivery of public services, increased proximity of services to the citizen, or simplification of formalities and requirements) that impact public management values<sup>55</sup>. What is less clear, though, is how public sector ICT applications result in either formal or informal institutional alterations which are, to paraphrase North (1990), the reform of the rules of interactions within those structures or (more strictly speaking) of the constraints that humans impose on their political, economic, and social interactions<sup>56</sup>. This is largely due to the fact that the relationship between technology and institutional transformations has not yet been clearly defined.

In assuming that the manner in which ICT applications are being used depends on the type of institution they are adopted by, this researcher supports Fountain (2002) in upholding the claim that the potential benefits of implementing an e-government strategy will be and are strongly influenced by current institutions and incentive systems of government, as the direction and nature of these structural and infrastructural

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<sup>54</sup> North, 'Institutional Change: A Framework of Analysis', p. 1.

<sup>55</sup> John M. Thomas and Warren G. Bennis eds., *The Management of Change and Conflict: Selected Readings* (Harmondsworth: Penguin, 1972), p. 7 – 8.

<sup>56</sup> Douglass C. North, *Institutions, Institutional Change and Economic Performance* (Cambridge: Cambridge University Press, 1990), p. 3.

arrangements strongly influence and determine the evolution of the perceptions, choices, and behaviour of the actors involved in their day-to-day running<sup>57</sup>. ICTs in the public sector are thus designed, developed, adopted, and used according to the preferences and choices of government stakeholders and their interpersonal interactions which, in turn, have been shaped taking into consideration the formal and informal rules and constraints (or *institutions*) that circumscribe society together with the enforcement characteristics of both<sup>58</sup>. However, it does not automatically lead one to necessarily state that technology transformations alter the *status quo* of the public organisations. According to Gascó (2003), Information and Communication technologies will give way to institutional change if the new skills and learning that governmental actors acquire change their perception about the potential gains that result from the new situation. In turn, the degree to which those perceptions may be altered depends on how much the workplace of that actor is affected by the new structures that result from ICTs applications<sup>59</sup>.

The question is, then, what will motivate that change? Fountain and Osorio-Urzuza (2001) identified three groups of institutional variables that would collectively influence not only whether a project would be undertaken at all, but also whether a new technology would be adopted by all the actors concerned, thereby giving rise to alterations in their perceptions of the given technology<sup>60</sup>. The first group consists of Technological

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<sup>57</sup> Jane E. Fountain, 'A Theory of Federal Bureaucracy' in J. Nye and E. Kamarck, eds., *Governance.com: Democracy in the Information Age*, (Washington, DC: Brookings Institution, 2002), p. 10

<sup>58</sup> Jane E. Fountain, *Building the Virtual State: Information Technology and Institutional Change*, (Washington, DC: Brookings Institution, 2001), p. 3.

<sup>59</sup> Mila Gascó, 'New Technologies and Institutional Change in Public Administration', *Social Science Computer Review*, vol. 21 issue 6, 2003, p. 9

<sup>60</sup> Jane E. Fountain and C. A. Osorio-Urzuza, 'Public sector: Early stage of a deep transformation' in R. Litan & A. Rivlin eds., *The Economic Payoff from the Internet Revolution* (Washington, DC: Brookings

Variables, which include the ability of a user-population to access ICTs, the quality of the user population's Internet use, the availability of an internal technological infrastructure, and the provision of technical skills to the government workforce. Fountain and Osorio-Urza argued that "...the quality of an agency's Information and Communication technology infrastructure and overall skill level are critical inputs to make-or-buy decisions".

The second group is that of Managerial Variables, in which are included the efficiency and effectiveness of the supply chain, the characteristics of the agency's culture, and its capacity to adapt to and manage change. Again, the authors argue that "...an agency that is well managed is likely to have a higher probability of success implementing either internal or outsourced e-government solutions". The final group, Political Variables, consists of the perceptions public servants have regarding potential labour cuts, administrative turnover, changes in executive direction generated by the development of e-government, the desire of political actors to be associated with e-government projects, budgetary resources, and the direction or orientation to long-term results. Only when all these variables and their interrelationships take place will both organisational and institutional change occur. In sum, because Information Technology projects within the public sector result in new organisational forms that exploit new knowledge and give rise to work alterations, there is obviously a chance for institutional

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Institution and Internet Policy Institute, 2001), pp. 235 – 268, as quoted in Gascó, 'New Technologies and Institutional Change in Public Administration', pp. 11 – 12.

change to take place<sup>61</sup>. From this discussion, two areas of study present themselves as useful starting points for this thesis:

**Actor Perceptions:** Organisations and institutions both shape and are shaped by the use of technology, which is in turn influenced by changes in the perceptions of governmental actors towards that technology. Understanding actor preferences and opinions is thus key to determining the nature and direction of organisational reform and institutional change.

**Project Outcome:** The design and implementation of a project must be carried out within the constraints of the current organisational and institutional set-up. In other words, the outcome of a project depends on the interaction between organisational and institutional realities and the project design. In turn, project outcome has an impact on the existing organisational and institutional framework.

## 1.4. Understanding The Psychology Behind Computer System Design and Actor Behaviour

The design and implementation of complex computer systems, such as those that support e-government platforms, requires a better understanding in practitioner circles of the users of such networks and the settings in which they work. Part of the problem resides in the implicit treatment of ordinary people as unskilled, non-specialist users of technology and their networks comprising of elementary processes or *factors* that can be

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<sup>61</sup> Gascó, *New Technologies and Institutional Change in Public Administration*, p. 11.

studied in isolation in a field laboratory setting<sup>62</sup>. Although psychology has a long tradition of contributing to computer systems design and implementation, it has been a neglected discipline in scholarly circles and key issues such as those relating to the underlying values of the people involved in large-scale system design and their motivation in the work setting have been missed out in recent computer science-based scholarly analysis<sup>63</sup>. Conceptualising and understanding people as *actors* in situations, on the other hand, with a set of skills and shared practices based on work experiences with others, requires a reorientation in the way in which the relationship between key elements of computer system design, namely people, technology, work requirements, and organisational constraints in work settings, is negotiated<sup>64</sup>.

The use of the terms ‘human factors’ and ‘human actors’ gives us a clue as to how people in system design clusters are approached<sup>65</sup>. More particularly, the terms highlight the difference in how people and their contributions are perceived, the former connotating a passive, fragmented, depersonalised, somewhat automatic human contribution to the systems environment; the latter an active, controlling, involved one<sup>66</sup>.

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<sup>62</sup> Liam J. Bannon, ‘From Human Factors to Human Actors: The Role of Psychology and Human Computer Interaction Studies in System Design’ in Joan M. Greenbaum and Morten Kyng, eds., *Design At Work: Cooperative Design of Computer Systems* (New Jersey: Lawrence Erlbaum Associates, Inc. Publishers, 1991), p. 28

<sup>63</sup> Gavriel Salvendy, *Handbook of Human Factors and Ergonomics – Fourth Edition* (New Jersey: John Wiley and Sons, 2012), p. xv

<sup>64</sup> Kari Kuutti, ‘Activity Theory as a Potential Framework for Human Computer Interaction Research’ in Bonnie A. Nardi, ed., *Context and Consciousness: Activity Theory and Human Computer Interaction* (Boston M.A.: M.I.T. Press, 1996), p. 21

<sup>65</sup> Shefali Virkar, ‘Innovations in Information and Communication Technology Platforms for Public Administration: Consulting the British Public in the Digital Age’ in Saqib Saeed and Irene Samanta, eds., *Knowledge Management in Engineering Projects: Issues and Implications* (Waretown N.J.: Apple Academic Press, 2014, *forthcoming*), p. 10

<sup>66</sup> Pascale Carayon, Peter Hoonakker and Michael J. Smith, ‘Human Factors in Organizational Design and Management’ in Gavriel Salvendy, ed., *Handbook of Human Factors and Ergonomics – Fourth Edition* (New Jersey: John Wiley and Sons, 2012), pp. 537

More precisely, within the *human factor* approach, the human element is more often than not reduced to being another system component with certain characteristics that need to be factored into the design equation for the overall human-machine system<sup>67</sup>. In doing so, the approach de-emphasises certain important elements of work design: the goals, values, and beliefs that technologists and system-users hold about life and work<sup>68</sup>. By using the term *human actor*, emphasis is placed on users and developers as autonomous agents possessing the capacity to control, regulate, and coordinate their behaviour, rather than them being on par and analysed as mere information processing automatons<sup>69</sup>.

The study of actor interactions is key to the development and maintenance of complex e-government initiatives, as it is important to determine the impact that actor motivations and any associated behaviours have on the consultative process and subsequently on policy outcomes. The central issue that needs to be understood, therefore, whilst studying the development of ICT platforms and their implementation in public sector organisations through an analysis of actor interactions is thus: *Why do people do what they do?*

The key approach to understanding behaviour is to look at the rationality of individual *actors*, rather than at human *factors*, or at the computer system network as a

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<sup>67</sup> Sara J. Czaja and Sankaran N. Nair, 'Human Factors Engineering and Systems Design' in Gavriel Salvendy, ed. *Handbook of Human Factors and Ergonomics – Fourth Edition* (New Jersey: John Wiley and Sons, 2012), p. 41

<sup>68</sup> Julie A. Jacko, Ji-Soo Yi, François Sainfort, and Molly McClellan, 'Human Factors and Ergonomic Methods' in Gavriel Salvendy, ed., *Handbook of Human Factors and Ergonomics – Fourth Edition* (New Jersey: John Wiley and Sons, 2012), p. 295

<sup>69</sup> Robert W. Proctor and Kim-Phuong L. Vu, 'Selection and Control of Action' in Gavriel Salvendy, ed., *Handbook of Human Factors and Ergonomics – Fourth Edition*, (New Jersey: John Wiley and Sons, 2012), p. 100

whole. This is again largely because human actors are driven by a combination of organisational and institutional roles and duties and calculated self-interest, with political, social, and economic interactions being organised around the construction and interpretation of meaning as well as the making of choices. It thus can be extremely difficult to transplant new technologies and ways of working into organisations without a change in jargon and mind-set<sup>70</sup>.

Psychologists contend that human motivation must be understood as the product of the interaction between events and things in the social world and the interpretations of those things in people's psyches<sup>71</sup>. One approach to the study of the motivation behind political e-participation and e-service provision begins by defining and examining the *motives* that prompt actors to interact and participate in decision- and policy- making processes online, not with reference to *internal stimuli* only but also within the context of *external goals*, stemming from a number of different *needs* or *base requirements*<sup>72</sup>.

In approaching the study of behaviour and an understanding of interactions through the examination of both the composition of individual actors, and then the system as a whole, it is recognised that all behaviour is *motivated* in some way, and all individuals will engage in a particular modes of behaviour in order to achieve a desired end<sup>73</sup>. Political actors, in particular, have a complex set of goals including *power*, *income*,

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<sup>70</sup> March and Olsen, *Rediscovering Institutions*, p. 159.

<sup>71</sup> Claudia Strauss, 'Introduction' in Roy G. D'Andrade and Claudia Strauss eds., *Human Motives and Cultural Modes* (Cambridge: Cambridge University Press, 1992), p. 1.

<sup>72</sup> Roy G. D'Andrade, 'Schemas and Motivation', in Roy G. D'Andrade and Claudia Strauss eds., *Human Motives and Cultural Modes*, p. 25.

<sup>73</sup> John W. Atkinson and David Birch, *The Dynamics of Action*, Oxford: John Wiley, p. 10

*prestige, security, convenience, loyalty* (to an idea, an institution or the nation), *pride in work well done*, and *a desire to serve the public interest* (as the individual actor conceives it). This is largely because political actors, more so than other actors in society, are driven sometimes wholly by their roles and obligations within an organisational and institutional setup, and are used to acting out of pointed, calculated self-interest, with their responses and interactions being organised around political decision making together with the construction and interpretation of meaning within their given set of goals and ideals<sup>74</sup>.

Actors range from being purely self-interested ‘climbers’ or ‘conservers’, motivated entirely by goals which benefit themselves and their *status quo* rather than their organizations or the society at large, to having mixed motives as ‘zealots’, ‘advocates’, and ‘statesmen’ motivated by goals which combine self-interest and altruistic loyalty with larger values<sup>75</sup>. Added to this, individuals and private citizens tend to participate in politics for altruistic or conformist reasons, to boost their self-esteem, to self-enhance, and to achieve self-efficacy<sup>76</sup>.

For both citizens and government users of an e-government application, therefore, the motivation to use the system may be either *intrinsic* or *extrinsic*<sup>77</sup>. Intrinsic motives include the desire to feel competent and self-determining, to show altruism, or to seek to

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<sup>74</sup> Shefali Virkar ‘Innovations in Information and Communication Technology Platforms for Public Administration: Consulting the British Public in the Digital Age’ in Saqib Saeed and Irene Samanta, eds., *Knowledge Management in Engineering Projects: Issues and Implications*, p. 10

<sup>75</sup> Anthony Downs, *Inside Bureaucracy* (Boston, M.A. : Little Brown, 1964), pp. 4 – 5.

<sup>76</sup> Peter Cruickshank, Noella Edelman, and Colin F. Smith, ‘Signing an e-Petition as a Transition from Lurking to Participation’, *Electronic Government and Electronic Participation*, 2010, p. 280

<sup>77</sup> Shefali Virkar ‘Innovations in Information and Communication Technology Platforms for Public Administration: Consulting the British Public in the Digital Age’ in Saqib Saeed and Irene Samanta, eds., *Knowledge Management in Engineering Projects: Issues and Implications*, p. 10

increase the welfare of others. Extrinsic motives, on the other hand, are usually associated with some sort of external reward in the social, economic, or political sphere. Both these types of motivations manifest themselves in conditional co-operation, social pressure, thresholds, and in the bandwagon effect<sup>78</sup>. The main actors in the electronic governance process may therefore be placed into **one of two** groups:

**Internal actors:** comprise chiefly of those institutional actors responsible for and central to the maintenance, upkeep, and running of a project, including (a) officers of the assembly who are responsible for the operation of the system such as IT specialists and forum moderators, and (b) elected representatives (and their support staff) who respond to petitions individually and collectively.

**External actors:** comprise of two distinct categories including (a) participants or the person (or group) who initiates an online interaction after identifying an issue and follows its progress through from submission to final feedback and outcome and (b) citizens: those individuals who may or may not be entitled to participate but who will invariably impact the outcome of a policy process through their ability to shape public opinion.

Different motives and goals may underlie the same surface behaviour, with the social and psychological consequences of political participation being different for different users, in that some participate to gain information or support and others to communicate, resulting in a set of nested, interrelated interactions with the framework of

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<sup>78</sup> Helen Z. Margetts, Peter John, Tobias Escher, and Stéphane Reissfelder, 'Social Information and Political Participation on the Internet: An Experiment', *European Political Science Review*, volume 3 issue 3, 2012, p.325

a large *meta-game, playing field, or arena*<sup>79</sup>. Consequently, the motivations and goals for using the online resources will determine how they will they be used, by whom, and when. An in-depth analysis of the ICT for development literature by this researcher identified five actor groups involved in interactions relating to the implementation of e-government projects. The groups and their possible motivations are discussed below:

(i) **Politicians:** The first group identified comprises of elected representatives of various hues, including both those in incumbent government and in opposition. Politicians are guided and influenced chiefly by electoral imperatives and a need to maintain their public image, and are therefore concerned with directing both key economic policy issues as well as issues of public service delivery (including accountability, transparency, and efficiency) in accordance with party policy and publicly stated aims.

(ii) **Administrators / Civil Servants:** This group of actors is guided by their perceptions of existing institutional 'culture' and practices and their positive (or negative) attitudes towards internal bureaucratic reform. Attitudes which might affect the integration of ICTs into administrative policy include concerns about the down-sizing of administrative services to promote 'efficiency', a sense of being policed by elected government through the introduction of ICTs, as well as a possible perception of a 'loss of autonomy' stemming from an orientation towards public-private partnerships. The introduction of ICTs into the workplace also threatens those officials who benefit in some way from the continued *status quo*.

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<sup>79</sup> Shefali Virkar 'Innovations in Information and Communication Technology Platforms for Public Administration: Consulting the British Public in the Digital Age' in Saqib Saeed and Irene Samanta, eds., *Knowledge Management in Engineering Projects: Issues and Implications*, p. 10

**(iii) Organisations and Specialists Dealing with Technical Design of ICT Systems:**

The approach private Information Technology suppliers take towards implementing e-government might be considerably different to what the adopting government agency actually needs or wants from a system. On the one hand, commercial software organisations may look at the government-citizen relationship from a purely business angle, whilst on the other, an organisation driven by a strong ideology may lobby to incorporate that thinking into the process.

(iv) **Citizens:** This is another particularly interesting group of actors as one is never quite sure what their reaction to the implementation of e-government will be. Whilst in theory citizens should welcome the introduction of a system that simplifies administrative processes, in practice – after being used to a culture of tax evasion and the avoidance of certain dues as a result of loopholes in the old system – it is equally possible that some citizens might not be very happy if a more effective system was put into place. In fact, this desire to retain the *status quo* could actually result in citizens putting pressure on their elected representatives both in Parliament and the City Council to have a system removed.

(v) **International donors:** This group of actors was seen to play a key part in the implementation of e-government projects, either directly involved with the nitty-gritty during the setting up of a project, or indirectly in the wider development financing within the states concerned. The final actor group controls the purse strings and oftentimes

comes to the table with ‘higher’ ideals coloured by ideas prevalent in international politics (such as the desire to see a particular brand of ‘good governance’ in the developing world). A study of their imperatives would be interesting to see, particularly in juxtaposition with the attitudes and policies of national elected representatives.

## 1.5. Assessing Project Outcome: From Human Factors to Human Actors

To address the issue of outcome, it was thought important to locate the central case study within the wider context of tax administration reform and e-government research. This began with an examination of the benefits that e-government could bring to the adopting agency. By doing this, it was hoped that the intention behind some of the decisions made in establishing or managing the project would be highlighted, and that outcomes could be examined by contextualising the interplay of various decisions made during the project’s design and implementation. In other words, the goal was to describe the relationships between the motivation of actors, their actions, and intended outcomes in order to correlate the decisions made with the relative success or failure of a project.

Discussions of issues like those presented above show that there is therefore a need for both concepts to be determined and defined for the purposes of this research. Scholars contend that the two significant factors determining the success of any e-government project are the degree to which the designated project planners are able to design a system for the organisation that accurately reflects the needs of the administrative body, and the extent to which the organisational and institutional circumstances are able and public servants willing to facilitate the adoption and continued

use of such a system<sup>80</sup>. In other words, successful projects are those that are both *relevant* and *sustainable*. Further, they are those that are sustained because the needs and perceptions of the various actors involved (in this case the designers, public managers, civil servants, and citizen-users) are aligned such that everyone contributes positively towards a common goal. The flip side to this is failure: the inability of a system to achieve predefined goals, capitalise on previously unanticipated benefits, and bring about constructive interactions between actors.

This thesis seeks to unravel the social dynamics shaping e-government projects used to reform public sector institutions, especially in the developing world with a particular focus on India. The intrinsic value of such an approach is based on a review of existing political science and international development scholarly and practitioner literature concerned with the design, evolution, adoption, and appropriation of Information and Communication Technologies (ICTs) into everyday life, and which tends to be overly systems-rational in its scholarly approach and anecdotal style. As a consequence, these canons do not recognise the degree to which project failure (*viz.* the general inability of the project design to meet stated goals and resolve both predicted and emerging problems) is symptomatic of a broader, much more complex set of interrelated inequalities, unresolved obstacles, and lopsided power-relationships; both within the adopting organisation and in the surrounding environmental context.

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<sup>80</sup> See for example Barbra A. Allen et. al, *E-Governance and Government Online in Canada: Partnerships, People and Prospects*, (Centre of Governance, University of Ottawa, 2001); Simon Domberger and Patrick Fernandez, 'Public-Private Partnerships for Service Delivery', *Business Strategy Review*, vol. 10, issue 4, 1999, pp. 29-39.

The central case study, from which the principal hypothesis and research findings of this thesis are drawn, focused on a project aimed at digitising property tax records and administrative processes within the Revenue Department of the Greater Bangalore City Municipal Corporation (*Bruhat Bengaluru Mahanagara Palike* or *BBMP*) between 1998 and 2008. In recognising the need to turn property tax into a viable revenue instrument that delivers high tax yields without compromising on citizen acceptance and compliance, the Bangalore City Corporation has sought to improve its property tax administration system through the introduction and use of both a computerised database and digital mapping techniques, deployed to track compliance and to monitor and check evasion.

## 1.6. Structure of the Thesis

The study is developed in three stages. First, a conceptual framework anchored in the Ecology of Games, is presented for the formulation, implementation, and evaluation of e-government systems in developing countries. This framework draws on multidisciplinary theoretical literature and third-party empirical documentation. **Chapter 2** outlines the central aims and structure of the research project, as well an in-depth discussion of the theoretical framework used to analyse the results of the case study. **Chapters 3** and **4** build on this by providing the background for a comprehensive understanding of e-government and property tax, and their particular importance in a developing country context.

Second, the thesis examines in detail the conception and design of the Bruhat Bengaluru Mahanagara Palike (BBMP) property tax system: the structure and operations of the paper-based system, attempts to change its design, its implementation through the

introduction of digital technology and new policy measures, and its subsequent outcome through an examination of interview data and property tax revenue figures. The discussion and subsequent analysis is projected through the conceptual framework presented in earlier chapters to ensure a sharp focus on the underlying themes and investigative priorities.

**Chapters 5 and 6** trace the development and implementation of the BBMP project under study and the key aims and objectives of the core project team; presenting and analysing data obtained from personal interviews and secondary sources. This information is then juxtaposed with data gleaned from in-depth interviews with the actual users of the system: revenue officials in the field. The theoretical framework is taken forward in **Chapter 7**, where data from the two previous chapters is analysed and organised into games, fields of plays, the actors involved, their motivations, and moves. **Chapter 8** presents the impact of the system in figures, analysing property tax data trends for Bangalore as a whole and for 12 randomly selected wards across the city. The material presented in these chapters is at once descriptive and analytical, with accounts of reform activities being essentially chronological and seeking to highlight project implementers' key roles and motivations.

In the final stage, the penultimate chapter – **Chapter 9** – evaluates the results of the reform effort previously described within the context of the theoretical framework and offers guidelines for success. The study concludes with specific recommendations for reforming e-government systems for development being presented in **Chapter 10**,

particularly those concerned with revenue generation, based on the conceptual framework and a synthesis of lessons developed through the case study as discussed earlier in the thesis.

## Chapter 2

# Perspectives on Innovation in e-Government: Understanding Actors, Goals and Strategies

A review of research on e-government for development indicates that a large proportion of the literature in the area has not only been excessively deterministic in its logic but also anecdotal in its style, often lacking a systematic empirical approach<sup>1</sup>. Early work done on the case study chosen for this thesis reinforced the need for a study of e-government innovations to move beyond overly rational, technologically deterministic explanations of projects and their outcomes. It was found that the value of new technologies was not automatically recognised by all actors within the given governmental context, and that outcomes could not be easily extrapolated from the technical features of the innovation.

This insight led to an exploration of more behaviourally realistic models of the innovation process, such as perspectives on the New Institutionalism within the social and political sciences, which sought to grapple with the complexity of organizational contexts. This led to the adoption of a conceptual framework or theoretical perspective called the ‘Ecology of Games’ as a means of examining the reasons for the success or

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<sup>1</sup> For a recent discussion of the nature and direction of e-government research, see Richard Heeks and Savita Bailur, ‘Analysing e-government research: Perspectives, philosophies, theories, methods, and practice’, *Government Information Quarterly*, vol. 24, 2006, pp. 243 – 265.

failure of e-government within the Indian context. The following sections in this chapter discuss this choice of framework, and then move to the methods used to inform and execute the examination of the central case of this work.

## 2.1. Evaluating Case Study Outcome

In deciding to evaluate the outcome and impact of an e-government project, it falls to the researcher to first choose between adopting quantitative and qualitative methods of analysis. According to Wolstenholme (1999), no single method provides for a complete analysis of a situation, and there is a need always for further speculation beyond the insights reached by their use<sup>2</sup>. Thus, matching the methods to identify the underlying characteristics of a problem situation represents an issue that needs to be considered, especially in complex situations<sup>3</sup>.

e-Government projects may be characterised as hybrid systems, containing a mix of ‘hard’ technical elements and ‘soft’ social elements<sup>4</sup>. A range of methodologies to study the impact and effectiveness of e-government projects exist in the literature, which may be classified in terms of the degree of ‘hardness’ or ‘softness’ depending on the clarity and nature of the influential variables of the problem<sup>5</sup>. However, with most studies of e-government tending to focus on the measurement and performance of hard elements

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<sup>2</sup> E.F. Wolstenholme, ‘Qualitative vs Quantitative Modeling: The Evolving Balance’, *The Journal of the Operational Research Society*, vol. 50, no. 4, 1999, p. 423.

<sup>3</sup> M. P. Gupta and Debashish Jana, ‘E-government evaluation: A Framework and Case Study’, *Government Information Quarterly*, vol. 20, 2003, p. 376.

<sup>4</sup> M.P Gupta, Jaijit Bhattacharya and Ashok Agarwal, ‘Evaluating e-government’ in A. Agarwal ed., *e-Governance: Case Studies* (Hyderabad: Universities Press, 2007), p. 6.

<sup>5</sup> Jayoti Das, Cassandra DiRienzo, and John Burbridge, Jr., ‘Global e-Government and the Role of Trust: A Cross-Country Analysis, in Vishanth Weerakkody ed., *Applied Technology Integration in Governmental Organizations: New E-Government Research* (Hershey, P.A.: IGI Global, Inc., 2010), pp. 1-2.

such as financial and other easily quantifiable data, it is often forgotten that large parts of these projects are soft systems and that technical systems have to keep up with continuous changes in workplace culture and developments in the various interactions between government actors, citizens, and businesses. The significance of qualitative benefits derived from a system is often ignored when an evaluation is made from a purely economic point of view. Benefits such as employee productivity, improved decision making, and citizen or customer satisfaction are all difficult to quantify; but at the same time contribute significantly to better government performance. From a policy standpoint, a purely quantitative analysis may result in the rejection of many systems that offer high returns from intangible benefits.

Researchers have realised that although normative approaches are theoretically elegant, they nonetheless present formidable operational challenges in real life situations<sup>6</sup>. This is particularly true for the evaluation of e-government projects in developing countries, where projects are often in the first stages of implementation and where complete financial and other numerical data may not be available. In such cases, a combination of quantitative and qualitative elements would be suitable in addressing the problems of evaluating e-government projects. The literature reveals that the bulk of e-government evaluations in India, for example, have focused on assessing the quantitative performance measures of projects, whilst very little work has been done on examining the soft elements that can impact project success or failure<sup>7</sup>.

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<sup>6</sup> Gupta and Jana, 'E-government evaluation: A Framework and Case Study', p. 372.

<sup>7</sup> Shirin Madon, 'Evaluating the Developmental Impact of E-governance Initiatives: An Exploratory Framework' in Ashwani Saith, M. Vijayabaskar, and V. Gayathri (eds.) *ICTs and Indian Social Change: Diffusion, Poverty, Governance* (New Delhi: SAGE Publications, 2008), pp. 269-270 and pp. 272-273.

To fill this lacuna, this thesis will use Long's Ecology of Games and Heek's Design-Actuality Gap Model as analytical frameworks to assess the influences on project outcome. The strength of the Ecology of Games lies in its ability to identify and analyse the interrelationships between the different actors involved in the process of e-government system design and adoption. However, when taken alone, it provides no insight into the consequences of this behaviour and its impact on project outcome. Similarly, the Design-Actuality Gap model is able to analyse structural weaknesses in a project's design but doesn't on its own provide an adequate explanation of the decision-making processes that led to such structural deficiencies in the first place. When used in combination, therefore, these two frameworks allow the researcher to not only identify and analyse patterns of behaviour within the case under study, but also link decisions and actions to specific project outcomes. The following sections of this chapter describe and discuss each of these in greater detail.

## 2.2. Assessing Project Outcome: A Discussion of the Design-Actuality Gap Model

Like all political interactions, the behaviour of actors related to the design and uptake of e-government projects is circumscribed by the organisations and institutions within which they are played out, and by the range of actors taken from the individuals and groups directly and indirectly involved with the process of governance<sup>8</sup>. The outcome of an e-government project therefore does not depend on a single project entity

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<sup>8</sup> Cf. Jayoti Das, Cassandra DiRienzo, and John Burbridge, Jr., 'Global e-Government and the Role of Trust: A Cross-Country Analysis, in Vishanth Weerakkody ed., *Applied Technology Integration in Governmental Organizations: New E-Government Research* (Hershey, P.A.: IGI Global, Inc., 2010), p.14.

alone, and instead depends on the interaction between different actors in the process and the nature of the relationships between them. Gaps in project design and implementation can in reality be seen as expressions of differences arising from the interaction between different (often conflicting) actor moves and strategies, determined to a large extent by actor perceptions, and played out within the context of set circumstances.

In order to assess the extent to which the case study in question has succeeded or failed, this research project will first attempt to locate it within Heeks' seminal three-fold categorisation. By examining numerous case studies related to ICTs and e-government failure in developing countries, Heeks (2002) identified three dominant categories of reported outcome: *total failure*, *partial failure*, and *success*<sup>9</sup>. Though not theoretically exhaustive (they do not, for instance take into account the mutation of outcomes over time), these categories are nonetheless valuable and comprise the first step of a framework within which a project might be evaluated.

- The first possible outcome is *total failure*, where a project is either never implemented or in which a new system is implemented but is almost immediately abandoned.
- A second possible outcome is the *partial failure* of an initiative, in which major goals are unattained or where there are significant undesirable outcomes. There are different kinds of partial failure. In straightforward, easily identifiable cases,

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<sup>9</sup> Richard Heeks, 'Information Systems and Developing Countries: Failure, Success and Local Improvisations', *The Information Society*, vol. 18, 2002, pp. 101 – 102.

only a subset of initially-stated objectives stand achieved. Where cases are analysed longitudinally, another type of partial failure can emerge: the “sustainability failure” of an initiative that at first succeeds but is then abandoned after a year or so. The most difficult partial failures to identify are those that grapple with the issue of subjectivity, where an evaluation needs to recognise that some outcomes, whilst beneficial to some groups of actors, may be detrimental to others.

- Finally, one may see the *success* of an initiative, in which most actor groups attain their major goals and do not experience significant undesirable outcomes.

Heeks concluded that the major factor determining project outcome was the degree of mismatch between the current realities of a situation (‘where are we now’) and the models, conceptions, and assumptions built into a project’s design (the ‘where the e-government project wants to get us’). From this perspective, e-government success and failure depends largely on the size of this ‘design-actuality’ gap<sup>10</sup>: the larger gap, the greater the risk of e-government failure, the smaller the gap, the greater the chance of success. Heeks (2003) identified three so-called ‘archetypes of failure’, situations when a large design-actuality gap – and, hence, failure – is more likely to emerge. These may be

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<sup>10</sup> Richard Heeks, ‘Most eGovernment-for-Development Projects Fail: How Can the Risks be Reduced?’, iGovernment Working Paper Series – Paper No. 14, 2003, p. 3.

classified as Hard-Soft Gaps, Public-Private Gaps and Country Context Gaps, and are summarised below<sup>11</sup>:

### **2.2.1. Hard-Soft Gaps**

*Hard-soft gaps* refer to the difference between the actual, rational design of the technology (hard) and the actuality of the social context – people, culture, politics, etc. – within which the system operates (soft). These sorts of gaps are commonly cited in examples of e-government failure in developing countries, where ‘soft’ human issues that are not initially taken into account whilst designing a project result in undesirable effects after implementation<sup>12</sup>. Many scholars, such as Stanforth (2006), see technology as just one of a number of heterogeneous socio-technical elements that must be considered and managed during the design and implementation of a successful e-government project<sup>13</sup>, whilst different sets of case studies have revealed that numerous factors which allow individuals in developing countries to access ICTs (and which depend on resources, skill-levels, values, beliefs, and motivations, etc.) are often ignored<sup>14</sup>. It may thus be inferred that a lack of training, skills, and change management efforts would all affect rates of failure, as it is these factors that would bridge the gap between the technology itself and the context within which it exists.

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<sup>11</sup> Adapted from Heeks, ‘Most eGovernment-for-Development Projects Fail’, p. 5 and Danish Dada, ‘The Failure of E-Government in Developing Countries: A Literature Review’, *The Electronic Journal on Information Systems in Developing Countries*, vol. 26, no. 7, 2006, pp. 4 – 7.

<sup>12</sup> Dada, ‘The Failure of E-Government in Developing Countries’, p. 4.

<sup>13</sup> Carolyne Stanforth, ‘Analysing eGovernment in Developing Countries Using ActorNetwork Theory’, iGovernment Working Paper Series – Paper No. 17, 2006, p. 27.

<sup>14</sup> Cf. Shirin Madon, ‘Evaluating the Developmental Impact of E-Governance Initiatives: An Exploratory Framework’, *Electronic Journal of Information Systems in Developing Countries*, vol. 20 issue 5, 2004, pp. 1 – 13.

A major cause of project failure in developing countries is a general lack of skills and training, which are necessary for both government officials and citizens to effectively use a system<sup>15</sup>. This is a particularly significant problem in developing countries, where there is often a chronic lack of qualified staff and training schemes. According to Basu (2004): “ ...there are insufficient numbers of people in developing countries trained in appropriate technologies to do all the work. Training opportunities are also straining to meet needs<sup>16</sup>.” Widespread low rates of literacy make this situation very difficult and costly to change, exacerbating failure of projects in these countries.

Jaeger and Thompson (2003) assert that an e-government system would fail if the government did not take an active role in educating citizens about the value of e-government<sup>17</sup>, a fact all the more pertinent in developing countries where low levels of education and skills amongst end-users and a lack of familiarity with technology could result in systems not being used to their full potential. Thus it may be inferred that the rate of success or failure is likely to be influenced by the ability of a population to access useful information and services.

The issue of change management also impacts the hard-soft gap in developing countries, as e-government projects result in the realignment of working practices and

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<sup>15</sup> Gohar F. Khan, Junghoon Moon, Cheul Rhee, and Jae J. Rho, ‘E-government Skills Identification and Development: Toward a Staged-Based User-Centric Approach for Developing Countries’, *Asia Pacific Journal of Information Systems*, vol. 20, no. 1, 2010, p.2.

<sup>16</sup> Subhajit Basu, ‘E-Government and Developing Countries: An Overview’, *International Review of Law, Computers and Technology*, vol. 18, no.1, 2004, pp. 118 – 119.

<sup>17</sup> Paul T. Jaeger and Kim M. Thompson, ‘E-government around the world: Lessons, challenges and future directions’, *Government Information Quarterly*, vol. 20 issue 4, 2003, p. 390

government functions<sup>18</sup>. As this thesis will discuss later, the successful implementation of an e-government project requires that the public sector changes and re-engineers its internal processes to adapt to the new technology and work culture. In situations where corruption and rent-seeking is the norm, the realignment of information flows and power structures can be heavily resisted by actors with vested interests<sup>19</sup>. Project design often does not take into account the potential for resistance amongst government employees, and project designers are consequently not equipped with the tools necessary to counter it when they come across it.

Seminal examples of such differences in political, managerial, and technical variables might be located within existing literature concerned with the application of ICTs within the Indian context to illustrate this claim. For example, in their paper examining the planning, execution, and eventual impact of the Gyandoot Project on the rural population of Andhra Pradesh (India), Ceccini and Raina (2004) state that in order for e-government projects to succeed, it is imperative that the service and information needs of the end-user community are established, and that technology should be developed in collaboration with local staff. Doing this, they feel would create a sense of local ownership and, hence, significantly decrease any implicit hard-soft gap present<sup>20</sup>. They also advocate greater participation in project implementation, from local

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<sup>18</sup> Dada, 'The Failure of E-Government in Developing Countries', p. 5.

<sup>19</sup> Stephen B. Peterson, 'Saints, Demons, Wizards and Systems: why Information Technology reforms fail or underperform in public bureaucracies in Africa', *Public Administration and Development*, vol. 18 issue 1, 1998, p. 42.

<sup>20</sup> Simone Ceccini and Monica Raina, 'Electronic Government and the Rural Poor: The Case of Gyandoot', *Information Technologies and International Development*, vol. 2 issue 2, 2004, p. 71.

administrators and other political actors to the community at large through a sustained campaign of local awareness.

Hard-soft gaps thus may be seen as the outcome of interactions played out primarily at the level of the project itself, between individuals and agencies involved with the design and acceptance of the technology. For instance, decisions taken by senior officials relating to issues of change management and skill levels might be motivated by the desire of the top brass to curtail and keep in check the power of their junior employees and to maintain control over their territories. Similarly a clash between powerful rivals on a project planning committee could result in either half-baked compromise decisions or strong decisions that are not followed through, leading to chaos at the implementation stage that has repercussions on more junior staff.

### **2.2.2. Private-Public Gaps**

The next archetype put forward by Heeks (2003) is that of *private-public gaps*, otherwise considered to be *sectoral gaps*, which refers to the difference between organisations in the private and public sectors, and the mismatch that results when technology meant for private organisations is used in the public sector without being adapted to suit the role and aims of the adopting public organisation<sup>21</sup>. A common problem is again the lack of highly skilled professionals in the public sector, resulting primarily from uncompetitive rates of pay in that sector as compared to the private

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<sup>21</sup> Richard Heeks, 'Most eGovernment-for-Development Projects Fail: How Can the Risks be Reduced?', *i-Government Working Paper Series*, Paper No. 14, IDPM, 2003, p.4

sector<sup>22</sup>. The design of e-government projects is consequently outsourced to the private sector, resulting in a clash of values, objectives, culture, and large design-actuality gaps.

The gap between the public and private sector may also be discussed in terms of management styles, values, and cultures; and the impact that these differences have on system design<sup>23</sup>. For instance, private sector systems are designed to see recipients of services as customers, while to governments they are citizens. There are numerous problems associated with viewing citizens as customers, not in the least that customers by definition need markets to operate in and have the ability to choose between alternative products, both of which are necessarily difficult to find in the public sector since public service providers are usually monopolies. Further the private sector sees customers as a means of making a profit and thus prices its goods accordingly, and not always to the benefit of all. Government services, on the other hand, are public goods that every individual has a right to and thus the government needs to set prices to ensure equal access of services to everybody. In other cases, private sector organisations with activist leanings may attempt to impose their own value systems and goals on the design of a project, leading to a clash of priorities. Overall, in adopting private sector values, governments would often be required to make an enormous paradigm shift and tailor their way of working accordingly, something that developing country agencies often find difficult to adjust to.

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<sup>22</sup> Claudio Ciborra and Deigo D. Navarra, 'Good Governance, Development Theory and Aid Policy: Risks and Challenges of E-Government in Jordan', *Information Technology for Development*, vol. 11, issue 2, 2005, p. 154.

<sup>23</sup> Claudio Ciborra, 'Interpreting e-government and development: Efficiency, transparency or governance at a distance?', *Information Technology and People*, vol. 18, issue 3, 2005, p. 2.

Another private-public mismatch has to do with project design in relation to funding. e-Government projects in developing countries are usually driven by government departments who rely either on public funds or aid from donor agencies, money that usually comes in as a block budgetary allocation that has to be used by a particular date<sup>24</sup>. Projects are thus often planned as one-off investments – a very private sector mind-set. However, this may result in an all-or-nothing approach to systems development, rather than a set of incremental improvements, to the overall detriment of the project.

In conclusion, Public-Private or Sectoral gaps often arise out of games played at the level of the adopting government agency, generally between the agency and its private sector counterparts, although it is not uncommon to find interactions between public and private individuals on project committees having an impact on the outcome of a project as well.

### **2.2.3. Country Context Gaps**

The final archetype of failure defined by Heeks (2003) is the *country context gap*, or the gap that arises when a system designed for one country is transferred into the reality of another. This is particularly true for systems transferred between developed and developing countries, where designs for one may clash with the actualities within the other<sup>25</sup>. Country context gaps are closely related to hard-soft gaps as they arise from,

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<sup>24</sup> Richard Heeks, 'Most eGovernment-for-Development Projects Fail: How Can the Risks be Reduced?', *i-Government Working Paper Series*, Paper No. 14, IDPM, 2003, p.5

<sup>25</sup> Heeks, 'Most eGovernment-for-Development Projects Fail: How Can the Risks be Reduced?', *iGovernment Working Paper Series – Paper No. 14, 2003, p. 6*

amongst other things, differences in technological infrastructure, skill sets, education levels, and working cultures<sup>26</sup>.

As discussed in previous sections, benefits to be had from e-government in developed countries include cost reduction and time saved through the complete automation of work and the processing of all transactions online. They also require both service providers and end-users to have the skills to use the technology to its full potential<sup>27</sup>. However, developing countries often lack the basic infrastructure (physical and human) needed to support the wholesale computerisation of tasks and services, and hence those systems adopted in their entirety from the developed world without taking these factors into account have a high chance of failing.

Country-context gaps emerge chiefly, therefore, as a result of games played by national, provincial and international actors operating across borders. For instance, decisions to adopt or promote a certain management style or value system, buy or sell a particular technology from a particular organisation or country, or collaborate with particular government agencies in different parts of the world all stem from games of international trade, aid, and diplomacy.

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<sup>26</sup> Dada, 'The Failure of E-Government in Developing Countries', p. 6.

<sup>27</sup> Shefali Virkar, 'Information and Communication Technologies in Administrative Reform for Development: Exploring the Case of Property Tax Systems in Karnataka, India' in Jacques Steyn, Jean-Paul van Belle, and Eduardo Villanueva Mansilla (eds.) *ICTs for Global Development and Sustainability: Practice and Applications* (Hershey, P.A.: IGI Global, 2011), p.128

Two major criticisms have been levelled against Heeks' model in the literature<sup>28</sup>. The first is that it is much too simplistic: it is fairly obvious that the larger the gap between a proposed system and the realities on the ground as a consequence of differences in factors relating to resources, culture, preconceptions, and other rigidities; the more difficult it would be to implement a new system successfully. The second criticism is that the classification is prone to subjectivity in the expectations about the future and in perceptions of reality, especially since some issues can be arguably included into different categories.

In recognising these drawbacks, this thesis maintains that Heeks' model forms an integral part of any evaluation of e-government success or failure, as any initial evaluation made using the basic model may be nuanced and expanded upon (as has been done) by exploring in greater detail the factors resulting in the eventual outcome. Further, it is important to remember that placing different reasons for failure into the various categories is not as important as understanding the issues and the underlying factors themselves, thereby being able to anticipate and deal with such problems if they were to arise.

The model is particularly useful given the large investments made by developing country governments in e-government systems and the large opportunity costs associated with implementation, as it encourages project planners to take a focused, holistic view of problem solving; making them consider concurrently the technology at hand, the current circumstances, the impact of actors' motivations and actions, and possible vested

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<sup>28</sup> Dada, 'The Failure of E-Government in Developing Countries', pp. 8-9.

interests. It may be used both as a predictive tool anticipating potential failings and heading them off at the initial stages, as well as being used to diagnose problems during the execution of the project. The framework is thus a means of evaluating outcome and problem solving strategies at all stages during the development of a project, and not just to examine what went wrong in hindsight.

### 2.3. Analytical Framework: The Ecology of Games

From the turn of the last century to the present, there has been a progressive movement away from the view, both in scholarly and practitioner circles, that governance *or* the act of governing is the express outcome of a rational calculation to achieve specific goals by a unitary governmental actor and that, in this context, metaphors based on games have been extremely useful for developing new ways in which the policy process itself might be conceptualised and further considered<sup>29</sup>.

This thesis focuses on the prevalence, significance, and impact of Extensive-Form Games in political institutions. In doing so, the research presented in the work adopts a behavioural approach to the study of Game Theory, one which attempts to add a human dimension to the basic rational player that is otherwise assumed. Nash (1950), in considering games as a mathematical constructs, defines the concept as that ‘...of an  $n$ -person game in which each player has a finite set of pure strategies and in which a

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<sup>29</sup> Suzanne E. Estler, ‘Decision Making’ in Norman J. Boyan (ed.) *Handbook of Research on Educational Administration*, 1988, New York: Longman, pp. 310

definite set of payments to the  $n$  players corresponds to each  $n$ -tuple of pure strategies, one strategy being taken for each player. [sic.]...<sup>30</sup>.

First coined by Colin Camerer (2003), the term *Behavioural Game Theory* is effectively, today, a distinct discipline within that area of the social sciences concerned with how real people make decisions when confronted by, and whilst confronting, the various institutional mechanisms considered as assured across variants of prevailing game-theoretic models<sup>31</sup>, as discussed in forthcoming sections of this chapter. More particularly, Behavioural Game Theory attempts to understand just how psychological factors – such as *emotions*, *biases*, and *prejudices* – can help predict decision-making behaviour patterns across different social, political, and economic institutions<sup>32</sup>. Further, studies and research involving Behavioural Game Theory focus especially on how real people actually play or live out theoretical games, and seek to add dimension to existing mathematical functions to make modelled behaviour more human-like<sup>33</sup>.

The discipline as a whole, similar to the manner in which the subject matter contained within this thesis is treated, is interested predominantly in issues related to the framing of a decision, and to how the surrounding environment or arena of action can

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<sup>30</sup> John F. Nash, Jr., ‘Equilibrium Points in  $n$ -Person Games’, *Proceedings of the National Academy of Sciences of the United States of America*, vol. 36, no.1, 1950, p.48

<sup>31</sup> For a more advanced discussion of Behavioural Game Theory and its variants, see Colin F. Camerer, *Behavioral Game Theory: Experiments in Strategic Interaction*, (Princeton, N.J.: Princeton University Press, 2003), p.3

<sup>32</sup> Alessandro Innocenti and Patrizia Sbriglia, *Games, Rationality and Behaviour: Essays on Behavioural Game Theory and Experiments*, (New York, N.Y.: Palgrave Macmillan, 2008), p.7

<sup>33</sup> Kenneth C. Williams, *Introduction to Game Theory: A Behavioral Approach – International Edition*, (New York, N.Y.: Oxford University Press, 2013), p.14

ultimately bias the sphere of human interaction<sup>34</sup>. It is important to note that most behavioural game theorists are not attempting to discredit Game Theory in its purist form, especially through their insistence of the need to demonstrate the point of departure of real peoples' cognitive frameworks and behaviour from its base theoretical precepts; rather, it may be argued that behavioural game theorists are, instead, attempting to build a better theory of human decision-making that utilises pure Game Theory and its variants; both as a method of enquiry and as its foundational basis.

There occur in the extensive literature surrounding Game Theory – its variants and its metaphors - differences in the types of models that adapt contemporary conceptualisations of game-play to political analysis; contingent, especially, on the class and nature of game construct employed, or on the scope and direction of human interaction studied therein<sup>35</sup>. Derived chiefly from the game-theoretic concept of Nash equilibrium<sup>36</sup>, the predominant typographies of game-play might be advanced qualitatively<sup>37</sup>, through their depiction in a **game table** (also known as a *game matrix* or a *payoff table*)<sup>38</sup>; as follows *below*. Within this given matrix of strategic human behaviour, wherein each micro-arena is classified for the purposes of creating a viable basic

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<sup>34</sup> Kenneth C. Williams, *Introduction to Game Theory: A Behavioral Approach – International Edition*, p. 16

<sup>35</sup> For a more advanced analysis of Behavioural Game Theory; the structure of the discipline, and its role in the analysis of political institutions and public policy, see James D. Morrow, *Game Theory for Political Scientists*, (Princeton, N.J.: Princeton University Press, 1994), p.76; and Kenneth C. Williams, *Introduction to Game Theory: A Behavioral Approach – International Edition*, (New York, N.Y.: Oxford University Press, 2013), pp.14-16

<sup>36</sup> For an advanced mathematical explanation of basic theorems and constructs, see John F. Nash, Jr., 'Equilibrium Points in n-Person Games', *Proceedings of the National Academy of Sciences of the United States of America*, vol. 36, no.1, 1950, p.48-49.

<sup>37</sup> Adapted from Kenneth C. Williams, *Introduction to Game Theory: A Behavioral Approach – International Edition*, (New York, N.Y.: Oxford University Press, 2013), p.16

<sup>38</sup> Avinash Dixit and Susan Skeath, *Games of Strategy - Second Edition*, (New York, N.Y.: W.W. Norton & Company, Inc., 2004), p. 84.

taxonomy as a *game*, interactions may assume any permissible combination of available characteristics, or any feasible permutation thereof.

### **Normal-Form Games and Extensive-Form Games**

There exists, at first glance, a distinction between *Normal-Form Games* and *Extensive-Form Games*<sup>39</sup>. Expressed in symbolic notation, **Normal-Form Games** are essentially mathematical constructs presented in tabular form<sup>40</sup>, whereas **Extensive-Form Games** are illustrated typically by a game tree that depicts moves as progressing from one branch to another<sup>41</sup>. Framed in terms of qualitative analysis, this difference in formulation is indicative of, primarily, the variations prevailing between and within different decision-making environments<sup>42</sup>. Normal-form games, on the one hand, generally model situations in which decisions are made simultaneously, and wherein players are not necessarily aware of the strategies selected by other players whilst deciding on their own<sup>43</sup>. Extensive-form games, on the other, allow for more dynamic game-play comprising of (near-) full information, and, again, containing elements of simultaneous choice<sup>44</sup>.

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<sup>39</sup> See Herbert Gintis, *Game Theory Evolving: A Problem-Centered Introduction to Modeling Strategic Interaction – Second Edition*, (Princeton, N.J.: Princeton University Press, 2009),

<sup>40</sup> Herbert Gintis, *Game Theory Evolving: A Problem-Centered Introduction to Modeling Strategic Interaction – Second Edition*, (Princeton, N.J.: Princeton University Press, 2009), p. 38

<sup>41</sup> Herbert Gintis, *Game Theory Evolving: A Problem-Centered Introduction to Modeling Strategic Interaction – Second Edition*, p.41.

<sup>42</sup> See Avinash Dixit and Susan Skeath, *Games of Strategy - Second Edition*, p. 155 & pp. 639-640.

<sup>43</sup> Graham Romp, *Game Theory: Introduction and Applications*, (Oxford: Oxford University Press, 1997), pp.8-10

<sup>44</sup> Graham Romp, *Game Theory: Introduction and Applications*, pp. 10-12.

## **Co-operative (*Coalitional*) Games and Non- Co-operative (*Procedural*) Games**

A second basic game variant makes the distinction between strategic interactions that embody *co-operative* or *coalition-building behaviours*, on the one hand, and *non- co-operative* or *procedural-based human action*, on the other<sup>45</sup>. During **Co-operative** or **Coalitional Games**, players can communicate with each other and form binding coalitions and pacts, or agreements among members to co-ordinate any strategic action<sup>46</sup>. These interactions are based predominantly on predictions of how players will divide up rewards and aggregate pay-offs<sup>47</sup>. A **Non- Co-operative** or **Procedural Game**, on the contrary, specifies all the possible actions for each individual participant or decision-maker; generally referred to, again, as a *player*<sup>48</sup>. Thus, during non- co-operative games, players cannot form binding ties and agreements, as they may or may not be able to communicate with each other in full<sup>49</sup>. Dixit and Skeath (2004) have argued that non- co-operative games are more fundamental than co-operative games<sup>50</sup>; which, unlike their non- co-operative counterparts, assume binding agreements whose provisions are difficult to enforce in the real world<sup>51</sup>.

## **Competitive Games and Non-Competitive Games**

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<sup>45</sup> Peter C. Ordeshook, *Game Theory and Political Theory: An Introduction*, (Cambridge: Cambridge University Press, 1986), pp. 302-304; pp.97-98.

<sup>46</sup> Peter C. Ordeshook, *Game Theory and Political Theory: An Introduction*, pp. 302-304.

<sup>47</sup> Dixit and Skeath, *Games of Strategy - Second Edition*, pp. 612-613.

<sup>48</sup> Ordeshook, *Game Theory and Political Theory: An Introduction*, pp.97-98.

<sup>49</sup> Satya R. Chakravarty, Manipushpak Mitra, and Palash Sarkar, *A Course on Cooperative Game Theory*, (New Delhi: Cambridge University Press, 2015), p.2

<sup>50</sup> Dixit and Skeath, *Games of Strategy - Second Edition*, pp. 25-26.

<sup>51</sup> James D. Morrow, *Game Theory for Political Scientists*, (Princeton, N.J.: Princeton University Press, 1994), p.76

Strategic interactions may also be broadly classified into *competitive games* and into games that are not strictly competitive (or otherwise, known as *non-competitive games*)<sup>52</sup>. In a strictly **Competitive Game**, the rewards and payoffs to players sum either to zero, in what is commonly referred to as a *zero-sum game*<sup>53</sup>, or they do not, in what is known as a *constant-sum game*<sup>54</sup>. Overall, however, it is important to note that in *strictly competitive strategic interactions* there exists no opportunity for compromise or for joint gains<sup>55</sup>. Other social situations are strictly non-competitive, and often involve co-ordination and co-operation. **Non-Competitive Games** or strictly non-competitive strategic interactions are usually either *variable-sum games*<sup>56</sup> or *non-zero-sum games*<sup>57</sup>; interactions in which the rewards and payoffs to the players involved are not either constant nor do not sum to zero<sup>58</sup>.

### **Pure- (Dominant-) Strategy Games and Mixed- Strategy Games**

A distinction can also be drawn between **Pure- or Dominant- Strategy Games** and **Mixed- Strategy Games**<sup>59</sup>; wherein, whilst taking a decision, a player might opt for *either* one dominant strategy choice over another (or over several others)<sup>60</sup>, *or* for a multiple strategy equilibrium<sup>61</sup> in order to achieve a particular outcome or set of

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<sup>52</sup> Kenneth C. Williams, *Introduction to Game Theory: A Behavioral Approach – International Edition*, p.17

<sup>53</sup> Dixit and Skeath, *Games of Strategy - Second Edition*, p.216.

<sup>54</sup> Dixit and Skeath, *Games of Strategy - Second Edition*, p.21.

<sup>55</sup> Steven J. Brams, *Game Theory and Politics*, (Mineola, N.Y.: Dover Publications, Inc., 2004), p.4.

<sup>56</sup> Steven J. Brams, *Game Theory and Politics*, p. 26.

<sup>57</sup> Ordeshook, *Game Theory and Political Theory: An Introduction*, p. 203

<sup>58</sup> Ordeshook, *Game Theory and Political Theory: An Introduction*, *Ibid.*

<sup>59</sup> Kenneth C. Williams, *Introduction to Game Theory: A Behavioral Approach – International Edition*, p.16.

<sup>60</sup> Gintis, *Game Theory Evolving: A Problem-Centered Introduction to Modeling Strategic Interaction – Second Edition*, p.52.

<sup>61</sup> Brams, *Game Theory and Politics*, pp. 17-18.

outcomes, attain a specific goal or set of goals, or benefit from a singular reward or set of rewards. *Pure- Strategy* or *Dominant Games*, therefore, involve players selecting or being able to select only *one strategy-choice option* from a menu of available strategy-choice options<sup>62</sup>. In contrast, *Mixed- Strategy Games* involve players opting for a *probabilistic multi-pronged strategy*<sup>63</sup>, selecting an optimum combination of behaviours and moves from a variety of different given alternatives; in order to maximise the potential afforded to them as rational actors from existing situational efficiencies, utilities, and economies of scale<sup>64</sup>.

### **Single-Shot (Dynamic) Games and Repeated (One-Off) Games**

Another manner in which strategic political interactions might be conceptualised has been to think of them in terms of their regenerative frequency. In this regard, interactions might occur either *once*, solely or *frequently*, at predictable or undefined intervals. Within this given framework, the idea of a **Single-Shot** or **Dynamic Game** refers to those interactions between people wherein players only interact with each other, or play the game in question, *once*<sup>65</sup>. These games are usually *dynamic*-<sup>66</sup> and/or *simultaneous-move games*<sup>67</sup>; in which the players involved within a given situation take decisions based on imperfect or asymmetric information<sup>68</sup>. **Repeated Games** of strategic interaction, on the

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<sup>62</sup> Ordeshook, *Game Theory and Political Theory: An Introduction*, p. 117-118.

<sup>63</sup> Colin F. Camerer, *Behavioral Game Theory: Experiments in Strategic Interaction*, (Princeton, N.J.: Princeton University Press, 2003), p.118.

<sup>64</sup> Gintis, *Game Theory Evolving: A Problem-Centered Introduction to Modeling Strategic Interaction – Second Edition*, p.42

<sup>65</sup> Romp, *Game Theory: Introduction and Applications*, p.29.

<sup>66</sup> Dixit and Skeath, *Games of Strategy - Second Edition*, pp. 34-35.

<sup>67</sup> Dixit and Skeath, *Games of Strategy - Second Edition*, pp. 20-21.

<sup>68</sup> Dixit and Skeath, *Games of Strategy - Second Edition*, p.23.

other hand, involve a different conceptualisation of the time element<sup>69</sup>; with the game at hand being played *repeatedly* or *more than once*<sup>70</sup>. In this respect, *Repeated Games* may be of one of two types<sup>71</sup>: *Finite Repeated Games*<sup>72</sup>, in which an ending period is fixed; or *Infinite Repeated Games*<sup>73</sup>, in which no ending period is defined. *Stage Games* are another variant of Repeated Games<sup>74</sup>, wherein the term *stage* refers explicitly to a single period of time<sup>75</sup>.

### **Games of Complete (*Symmetric*) or Perfect Information and Games of Incomplete (*Asymmetric*) or Imperfect Information**

Strategic human interactions can also be further sub-divided and classified according to the information that players possess concerning the structure of the game that they are involved with, and its content<sup>76</sup>. Firstly, in **Games of Complete (Symmetric) or Perfect Information**, players can, and are expected to, possess full knowledge about all aspects of the given game environment<sup>77</sup>. Two informational constructs are used to model this knowledge<sup>78</sup>: *complete information* (otherwise, called *symmetric*)<sup>79</sup>, a situation in which

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<sup>69</sup> Ordeshook, *Game Theory and Political Theory: An Introduction*, p.441.

<sup>70</sup> Williams, *Introduction to Game Theory: A Behavioral Approach – International Edition*, p.18; see also, Jean-François Mertens, Sylvain Sorin, and Shmuel Zamir, *Repeated Games*, (New York, N.Y.: Cambridge University Press, 2015).

<sup>71</sup> For an advanced mathematical analysis, see Herbert Gintis, *Game Theory Evolving: A Problem-Centered Introduction to Modeling Strategic Interaction – Second Edition*, (Princeton, N.J.: Princeton University Press, 2009), p.201; see also, Jean-François Mertens, Sylvain Sorin, and Shmuel Zamir, *Repeated Games*, (New York, N.Y.: Cambridge University Press, 2015).

<sup>72</sup> Summarised; for an advanced explanation, see Graham Romp, *Game Theory: Introduction and Applications*, (Oxford: Oxford University Press, 1997), pp. 38-48

<sup>73</sup> Summarised; for an advanced explanation, see Graham Romp, *Game Theory: Introduction and Applications*, (Oxford: Oxford University Press, 1997), pp. 35-38.

<sup>74</sup> Romp, *Game Theory: Introduction and Applications*, pp. 35.

<sup>75</sup> Gintis, *Game Theory Evolving: A Problem-Centered Introduction to Modeling Strategic Interaction – Second Edition*, p.203.

<sup>76</sup> Williams, *Introduction to Game Theory: A Behavioral Approach – International Edition*, p.16.

<sup>77</sup> Williams, *Introduction to Game Theory: A Behavioral Approach – International Edition*, p.18.

<sup>78</sup> Dixit and Skeath, *Games of Strategy - Second Edition*, pp. 24-25.

<sup>79</sup> Williams, *Introduction to Game Theory: A Behavioral Approach – International Edition*, p.18.

players know of in full the strategies involved, and are aware of the payoffs accruing to other participants within the set game context; or *perfect information*<sup>80</sup>, a situation wherein a player knows and can therefore anticipate the moves of other players, and possesses a global comprehension of the given action and its history. In other words, everything about the given game structure – its strategies, key goals, rewards, payoffs, and moves – and its immediate environment is known by, and made known to, all players participating.

In contrast, in a situation of *imperfect and incomplete (or asymmetric) information*, players are not privy to knowledge concerned with all the relevant aspects of the given game of strategic interaction<sup>81</sup>. In this context, the same two informational constructs, discussed above, apply<sup>82</sup>. **Games of Imperfect Information** imply that a player does not know of all the moves or actions permissible within in a game<sup>83</sup>; whilst in **Games of Incomplete (Asymmetric) Information**, players lack exact knowledge of the strategies chosen by, and the exact payoffs accruing to, other players operating within the same game arena<sup>84</sup>.

In this context, a number of explicitly political games have been identified by scholars over the course of recent decades – most notably *Crozier and Friedberg* (1980), *Mintzberg* (1985), and *Firestone* (1989) – and metaphors to explain their consequences developed with varying degrees of success.

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<sup>80</sup> Williams, *Introduction to Game Theory: A Behavioral Approach – International Edition*, pp.18-19.

<sup>81</sup> Williams, *Introduction to Game Theory: A Behavioral Approach – International Edition*, p.19.

<sup>82</sup> Dixit and Skeath, *Games of Strategy - Second Edition*, p.172.

<sup>83</sup> Dixit and Skeath, *Games of Strategy - Second Edition*, pp.23.

<sup>84</sup> Dixit and Skeath, *Games of Strategy - Second Edition*, *Ibid.*

### 2.3.1. Political Games

Broadly conceptualised, *an extensive-form game* may be defined as an arena of *competition* and/or *cooperation*, structured around a set of pre-defined *rules* and *assumptions* about how to *act* in order to *achieve* a particular *set of objectives*, with either *complete* and/or *perfect* information<sup>85</sup>; in other words, **a sphere of human interaction** requiring **a set of players** (otherwise known as actors), **a set of sequences of nodes** (known as decision nodes or choice nodes), **a base assumption of perfect recall** (meaning that players cannot forget how they have moved or acted previously), and **a set of outcomes for each sequence of choices** (for which players possess a utility function already pre-defined)<sup>86</sup>. These pre-conditional rules provide researchers with a standard way to create, to identify, and to recognise **an extensive-form game**; as also to enable them to understand and to analyse more clearly how rewards, payoffs, and profits are assigned<sup>87</sup>. The primary focus here, however, is on the *feelings* and *emotions* that are present during the various stages of human interaction and game-play, and is about how diverse *thinking and learning cognitive frameworks* feed into both decision-making and the eventual advancement of public policy.

A look through the literature reveals that although many extensive-form political games have been described, within differing contexts ranging from electoral politics to

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<sup>85</sup> Adapted from William H. Dutton, 'The Ecology of Games Shaping Telecommunications Policy', *Communications Theory*, vol. 2, issue 4, 1992, p.306.

<sup>86</sup> Williams, *Introduction to Game Theory: A Behavioral Approach – International Edition*, p. 111.

<sup>87</sup> Gintis, *Game Theory Evolving: A Problem-Centered Introduction to Modeling Strategic Interaction – Second Edition*, p. 38.

administrative functioning, there exists no comprehensive description of the public organization as a system of these various interactions. Possibly the most comprehensive list of political games in the context of public policy making was put forward by Mintzberg (1985), who identified thirteen types of games played out within bureaucracies, each of which is described briefly below<sup>88</sup>:

- **Insurgency Game:** The insurgency game is usually played to resist authority, although it may be played to resist expertise or established ideology, or even to effect change in organization. Games may range ‘from protest to rebellion’, and are usually played by ‘lower participants’ – those who feel the greatest weight of formal authority.
- **Counter-Insurgency Game:** is the game usually played by those political actors with legitimate power who fight back by political and other legitimate means to counteract the insurgency game.
- **Sponsorship Games:** are played to build a power base, particularly by using superiors: an individual attaches himself to someone with more status, professing loyalty in return for power.
- **Alliance Building Game:** is played amongst peers - often line managers, sometimes experts - who negotiate implicit contracts of support for each other in order to advance themselves within the organization.

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<sup>88</sup> Adapted from Harry Mintzberg, ‘The Organisation as Political Arena’, *Journal of Management Studies*, vol. 22, issue 2, 1985, pp. 134 – 139.

- **Empire Building Game:** is a game played in bureaucracies, by line managers in particular, to build power bases; not in cooperation with peers but individually with subordinates.
- **Budgeting Game:** is similar to the last game, but less divisive, as it is played overtly with well-defined rules and the prize is generally resources; not positions or units *per se*, and never those belonging to rivals.
- **Expertise Game:** involves the non-sanctioned use of expertise to build a power base, either by flaunting it or by feigning it. On the one hand, true experts play by exploiting technical skills and knowledge; emphasizing their uniqueness, criticality, and irreplaceability, as also by seeking to keep these from being rationalized, and most notably by keeping knowledge to themselves. Non-experts play the game by attempting to have their work viewed as expert, ideally to have it declared professional so they alone can control it.
- **Lording Game:** This game is played to build a power base by ‘lording’ legitimate power over those without it or with less of it (i.e. using legitimate power in illegitimate ways). For instance, a manager can lord his formal authority over a subordinate or a civil servant may do the same over a citizen. Lording may be brought on by feelings of relative powerlessness.
- **Line vs. Staff Game:** is a game of sibling-type rivalry, played not just to enhance personal power but to defeat a rival, pitting managerial decision-makers with

formal authority against technical advisers and staff with specialized expertise (Dalton, 1959); with each side tending to exploit legitimate power in illegitimate ways.

- **Rival Camps Game:** typically occurs when alliance or empire building games result in two major power blocks, giving rise to a two-person, zero-sum game in place of an  $n$ -person one. This can be the most divisive game of all, and conflict can be between units, between rival personalities, or between two competing missions.
- **Strategic Candidates Game:** This game is played to effect change in an organization, where individuals or groups seek to promote their own strategic candidates through political means. The strategic candidates game often combines elements of other games – empire building (as the purpose of the game), alliance building (to win the game), rival camps, line vs. staff, expertise, and lording (evoked during a game), insurgency, and so on.
- **Whistle Blowing Game:** is a typically brief and simple game, played to effect organizational change in different ways: where privileged information is used by an insider, usually a lower participant, to ‘blow the whistle’ to an influential outsider on questionable or illegal behaviour.
- **Young Turks Game:** played for highest stakes of all, not to effect simple change or to resist legitimate power *per se*, but to throw the latter into question, perhaps

even to overthrow it and institute major change. The game involves a small group of ‘Young Turks’ or organisational upstarts who, close to but not at the centre of power, wish to reorient the basic strategy of an organization, displace the major body of its expertise, replace its ideology, or rid it of its leadership.

According to Mintzberg, some of these games such as *Sponsorship* or *Lording*, whilst themselves technically illegitimate, could nevertheless co-exist within strong legitimate systems of influence; indeed, they could not exist without them. Others, usually highly divisive games such as *Insurgency* or *Young Turks*, arise in the presence of legitimate power but are antagonistic to it and are designed to destroy, or at least weaken it. And still others, such as *Rival Camps*, often arise where legitimate power is weak, and attempt to substitute for it entirely.

Whilst extremely helpful in explaining certain types of behaviour and interactions within political organisations and institutions, the games put forward in Mintzberg’s seminal paper are seriously lacking in one respect: they consist only of games played out internally within the setting of a bureaucracy or similar public agency. The classification is further relatively one-dimensional in its general analysis of actor-organisation interactions, as it provides only an extremely one-sided perspective of the relationship between the key theoretical concepts of **uncertainty, power, cooperation, coordination, regulation, game play** and the **taming of power**.

In order to further the analysis of how games and actor interactions affect the impact of ICTs on administrative reform, and to correct the imbalances and shortcomings of other stated frameworks, this chapter proposes a more intuitive four-fold taxonomy of games, actors, and their environments, which will henceforth inform and strengthen the analysis of the case study analysed in this thesis. Games may be classified and analysed depending on the level of actor interactions or on the basis of the field of play, the key actors involved, the main objective(s) of the game under study, and the nature and/or spirit in which the game has been played. The four categories, which are derived from this author's research, are elaborated below:

**A) Arena or Field of Play:** Actor interactions may be classified according to the arena within which they are played out. In other words, this classification – which has its roots in initial work done by Vedel (1989) and Dutton (1992)<sup>89</sup> – focuses on the reach and influence of actors within a given context, and the impact of their actions (both direct and indirect) on project outcomes.

**a) Project-Specific Games:** are generally played by individuals and groups of actors directly involved with a given case under study. Such interactions usually occur during the planning and execution of a project and tend to have a direct impact on its outcome.

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<sup>89</sup> See Thierry Vedel, 'Télématique et configurations d'acteurs : une perspective européenne', *Réseaux*, vol. 7 no.37, 1989, p. 18, and William Dutton, 'The Ecology of Games Shaping Telecommunications Policy', *Communications Theory*, vol. 2, issue 4, 1992, p. 309.

- b) Organisation-Specific Games:** are played out within the department or organisation where the project is based, involving not only actors directly concerned with the case study but also others within the adopting institution whose moves come to bear influence on the project at hand.
- c) City or Regional Level Games:** include those interactions between actors whose power or reach extends to the level of the city or region within which the project is based, and who are playing power games for relatively high stakes. The goals, moves, and strategies chosen by actors at this level may or may not have a direct link to the case study, however they nonetheless come to bear either a direct or indirect influence on its eventual outcome.
- d) National Level Games:** involve players who have their eye on attaining some sort of national prestige or who are influenced by other actors or discourses operating at the national level. Here again, actors may or may not be directly attached to the project or organisation under study.
- e) International Level Games:** are played chiefly by actors or groups of actors possessing international clout and/or aspirations. Games played at this level usually do not have a direct bearing on the project under study, however, actors might indirectly influence outcomes by attempting to gain power or prestige in adhering to popular trends, binding project planners to third-party conditionalities, or merely by subscribing to certain schools of thought.

**B) Key Actors Involved:** Games may also be classified according to the key actors involved in each interaction studied. This axis thus aims to study interactions within the context of the key players – who they are and who they interact with.

- a) **Interactions Internal to the Project Planning/Core Group:** includes any games being played exclusively between constituent elements of the project planning committee or the core group responsible for the design and execution of the project under study.
- b) **Core Project Group vs. Other Members of the Implementing Department:** cover games played between members of the core project committee and other individuals and/or groups within the adopting department who are otherwise not directly involved in the project at hand.
- c) **Games within the Implementing Organisation:** are played out between groups and individual actors who are members of the implementing organisation. Such interactions may or may not be directly related to the ICT4D project, but their outcome would generally have an impact on its eventual success or failure.
- d) **Department/Organisation vs. External Players:** covers interactions between the implementing department or organisation acting in a unified, institutional capacity and other external players such as the media, citizens, and civil society organisations.

- e) **Games Played by External Actors:** include those which have little or no direct connection to the current project, but which nonetheless have a significant impact on its eventual outcome.

**C) Actor Goals:** A third way of classifying actor interactions is based on the goals that different actor groups seek to attain by engaging with other players. Actors within each game are bound to have multiple goals that motivate them to act in certain ways, and thus it is important when applying this classification to identify the primary motivating factor behind each move.

- a) **Games of Power and Prestige:** involve moves to enable actors to gain or shore up their individual power and prestige or those of their group.
- b) **Games to Maintain Status Quo:** are those interactions whereby players seek to maintain the *status quo*. These games are generally played when actors perceive a threat to their current position or status, and thus act to preserve their current standing in the hierarchy.
- c) **Games to Achieve Change:** are those interactions that attempt to change a current situation or process within a department or organisation, primarily through the attainment of project goals and objectives.
- d) **Games to Achieve Political and Policy Aims:** are those moves and strategies played by actors to achieve certain political or policy aims which may or may

not have a direct relationship or bearing on the project under study.

- e) **Games to Further Ideology and/or Discourse:** comprise chiefly of those games played by actors who are generally driven by a particular ideology or discourse and wish to use their political influence to impose their ideas on either the implementing organisation or on the project planners themselves.

**D) Nature of Game Play:** The final axis against which games may be classified analyses the nature of the political dynamic between the key actors within which the project was conceived and implemented. In other words, this axis differentiates between positive and negative actors and the impact of their actions on their sphere of influence.

- a) **Constructive Game Play:** includes altruistic and other positive moves, where competition is seen to be constructive, and controlled/restrained rivalry brings about positive results. Such games are therefore generally win-win situations, and include all those moves that have a positive impact on the adoption of new technologies within a particular context.
- b) **Destructive Game Play:** involves fierce rivalries and negative competition, resulting in zero-sum games where actors act purposefully to win at the cost of their so-called 'opponents', thereby creating a negative project environment and often resulting in a large wastage of time and resources.

Within each game, the following elements may be identified to help the researcher arrive at an in-depth analysis of the impact that various interactions have on the outcome of the project under study. They are:

1. **Key Arena or Field of Play:** the context, ecology, or system of action within which actors react and interact according to set rules, forms of behaviour, and assumptions.
2. **Game Rules:** the written or unwritten codes of conduct that circumscribe behaviour and which shape actor moves and choices during a game.
3. **Key Actors:** the individuals, groups, or other entities whose interactions shape the particular game being considered.
4. **Actor Goals and Motivations:** the aims that key actors seek to attain and maintain from interacting with other players, both broader long-term achievements as well as more short- to medium-term rewards.
5. **Key Strategies and Tactics:** the tactics, ruses, and ploys adopted by key actors during the course of a game to keep the balance of the engagement in their favour.
6. **Key Moves:** decisions and other plays made by key actors to arrive at key goals, usually if not always based on their strategy of choice.

7. **Arbiters and Referees:** those individual actors and groups responsible for the enforcement of rules, regulations, and forms, and who act as arbitrators in a given field of play.
8. **Prizes:** the awards, rewards, and incentives gained on the successful completion of a task, or in recognition of an exceptional achievement.

From this enhanced theoretical perspective, it follows that society develops along an *evolutionary dynamic*, which stresses the strength and interplay of individual actors, organised groups, and socio-political interests.

### **2.3.2. Game Metaphors**

The concept of games has been used as analogy to explain certain features of political behaviour. The best-known and most popular use of the games metaphor is that of Game Theory, the mathematical treatment of how rational individuals will act in conflict situations to achieve their preferred objectives – from the irrationality of life in schools to how coalitions formulate and pass bills in legislatures. The game metaphor as developed in the social sciences assumes that during their interactions, actors develop strategies for negotiating with others and for maximizing their needs<sup>90</sup>. Being in control is central, with actors acquiring the power to direct action and define situations to the extent that they can persuade others that their image of reality should be taken as the primary framework or model by which the world should be interpreted.

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<sup>90</sup> Gary A. Fine, 'Games and Truths: Learning to Construct Social Problems in High School Debate' *Sociological Quarterly*, vol.41, issue 1, 2000, p. 105.

Another less mathematical but no less vivid game analogy was drawn up by the political scientist, E. E. Schattschneider (1960), who compared politics to a fight consisting of two parts: (1) the few individuals who are actively engaged at the centre and (2) the audience that is irresistibly attracted to the scene, with the outcome of every conflict being determined by the extent to which the audience becomes involved in it<sup>91</sup>. A shortcoming of this analogy, however, is that it simplifies political action as being the outcome of a single contest, and fails to recognise that the rules circumscribing political activities are often more flexible than those constraining other conflicts.

The use of the concept of games and the associated metaphor is also found most recently in the work of Michel Crozier and Erhard Friedberg (1980), together with that of William Dutton (1992, 2011); scholars who conceptualize the behaviour of individual actors as being organized around patterns of set interactions or *games*, and around organizations as spheres of influence or as *collections* or *ecologies* of *games*<sup>92</sup>. Crozier and Friedberg (1980), therefore, see the behaviour of ‘collectivities’ as being “...the result of a series of games participated in by the various organizational actors”, which Dutton (1992) views being as compatible with what Long (1958) would refer to as the *outcome* of an ecology of games<sup>93</sup>.

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<sup>91</sup> Described in William Dutton, ‘The Ecology of Games Shaping Telecommunications Policy’, *Communications Theory*, vol. 2, issue 4, 1992, p. 309.

<sup>92</sup> Dutton, ‘The Ecology of Games Shaping Telecommunications Policy’, p. 310.

<sup>93</sup> Dutton, ‘The Ecology of Games Shaping Telecommunications Policy’, p. 310.

In consequence, the notion of an “ecology”, if defined and discussed henceforth as an *arena* or *sphere of symbiotic human action*, does not just determine the degree to which all players in any given territory, such as an organization or geographic place, are involved in the same game; instead, the idea (implying as it does an interrelated system of actors) also illuminates the fact that different players within that territory are likely to be involved in a variety of interactions. This concept will be discussed later in the chapter.

### **2.3.3. Ecology of Games: The Key Metaphor**

The use of Game Theory and most other game metaphors, although differing widely in their orientation, has had, according to scholars such as Vedel (1989), one major limitation for clarifying policy processes: they focus squarely on a single arena or field of action be it a school, a county, a legislature, etc<sup>94</sup>. Yet, by their very nature, policy making and project implementation cut across these separate arenas, in both their development and in their impact<sup>95</sup>. In e-government projects, for instance, systems built by both public and private enterprises for use by government employees and citizens across different political constituencies must be enforced by legislative acts created and interpreted by national branches of government. In addition, actors at different levels of the policy system encounter divergent problems posed by the system in question and their actions are influenced by varied motives.

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<sup>94</sup> Thierry Vedel, ‘Télématique et configurations d'acteurs : une perspective européenne’, *Réseaux*, vol. 7 no.37, p. 18

<sup>95</sup> Firestone, ‘Educational Policy as an Ecology of Games’, p. 18.

Rejected in favour of Behaviouralism and Rational Choice Theory – two approaches based on the assumption that individuals act autonomously as a result of either socio-psychological characteristics or due to rational calculations of their personal utility<sup>96</sup> - during the period immediately following World War II, Institutional approaches came into their own in the late 1980s under the guise of New Institutionalism as a result of a growing number of scholars attempting to describe and understand in concrete terms the political world around them<sup>97</sup>. Contrary to both Behavioural Theory and Rational Choice Theory, New Institutionalists considered observable behaviour to occur and be understood solely within the context of institutions, leading to the creation and development of two new branches of theory, namely Rational Choice Institutionalism and Behavioural Institutionalism<sup>98</sup>.

Rational Choice Theory in particular depends for its analytical power on unhindered, utility-maximising individuals; and it would, at first glance, appear to be futile indeed to relate it to the idea of institutions and their constraining influence on actor behaviour<sup>99</sup>. However, despite the individualistic basis underpinning the approach, a number of rational choice theorists have come to accept the first and foremost precept of the New Institutionalism, which is that most political life occurs within institutions, and that in order to provide a comprehensive explanation of politics, their theories must

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<sup>96</sup> Michael Hechter and Satoshi Kanazawa, 'Sociological Rational Choice Theory', *Annual Review of Sociology*, volume 23 issue 1, 1997, p.192

<sup>97</sup> Guy B. Peters, *Institutional in Political Science: The New Institutionalism*, (London: Continuum, 2000), p. 2

<sup>98</sup> Ellen M. Immergut, 'The Theoretical Core of New Institutionalism', *Politics Society*, volume 26 issue 5, 1998, p. 9

<sup>99</sup> Peters, *Institutional Theory in Political Science*, p. 12

address questions regarding their nature and role<sup>100</sup>. There has, in consequence, been a flowering of rational choice literature on political institutions since the late 1980s, including work on legislatures<sup>101</sup>, cabinets<sup>102</sup> and bureaucracies<sup>103</sup>, and some economic theorists have even gone as far as to apply the idea of rational choice to the institution of marriage<sup>104</sup>. Further, despite the possible contradictions put forward by March and Olsen (1989) in their work<sup>105</sup>, there are several approaches to institutions that depend on the underlying logic of rational choice approaches. Notable amongst these are Dunleavy's (1991) discussion of 'institutional public choice' and 'first principles public choice'<sup>106</sup>, Kenman's (1996) argument for the utility of 'institutional rational choice'<sup>107</sup> and Fritz Scharpf's (1997) treatise on 'actor-centred institutionalism'<sup>108</sup>.

The basic assumption is that not only may social phenomena be explained as the outcome of interactions amongst intentional actors – individual, collective, or corporate –

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<sup>100</sup> G. Tsebelis, *Nested Games: Rational Choice in Comparative Politics*, (Berkeley: University of California Press, 1990), p. 8

<sup>101</sup> See M. D. McCubbins and T. Sullivan, *Congress: Structure and Policy* (Cambridge: Cambridge University Press, 1987); Shepsle and Weingast, *Positive Theories of Congressional Institutions* (Ann Arbor, MI: University of Michigan Press, 1995); G. Tsebelis and J. Money, *Bicameralism* (Cambridge: Cambridge University Press, 1997) quoted in Peters, *Institutional Theory in Political Science*, p. 43

<sup>102</sup> See M. Laver and N. Schofield, *Multiparty Government: The Politics of Coalition in Europe* (Oxford: Oxford University Press, 1990), M. Laver and K. A. Shepsle, *Making and Breaking Governments: Cabinets and Legitimacy in Parliamentary Democracies* (Cambridge: Cambridge University Press, 1995) in Peters, *Institutional Theory in Political Science*, p. 43

<sup>103</sup> See R. N. Johnson and G.D. Libecap, *The Federal Civil Service System and the Problem of Bureaucracy* (Chicago: University of Chicago Press, 1994), Wood and Waterman, *Bureaucratic Dynamics: the Role of Bureaucracy in a Democracy* (Boulder, CO: Westview Press, 1994) in Peters, *Institutional Theory in Political Science*, p. 43

<sup>104</sup> Gary S. Becker, *A Treatise on the Family* (Boston: Harvard University Press, 1991), p. x

<sup>105</sup> James G. March and Johan P. Olsen, *Rediscovering Institutions: The Organisational Basis of Politics* (New York: Macmillan Press, 1989), p.10

<sup>106</sup> Patrick Dunleavy, *Democracy, Bureaucracy and Public Choice* (Englewood Cliffs, NJ: Prentice Hall, 1991) p. 1-2

<sup>107</sup> Hans Kenman, 'Konkordanzdemokratie und Korporatismus aus der Perspektive eines rationalen Institutionalismus', *Politische Vierteljahrschrift*, Volume 37, 1996, quoted in Peters, *Institutional Theory in Political Science*, p. 44

<sup>108</sup> Fritz W. Scharpf, *Games Real Actors Play: Actor-Centred Institutionalism in Policy Research*, (Oxford: Westview Press, 1997) p. 36

but that these interactions are structured and outcomes are shaped by the characteristics of the institutional settings within which they occur<sup>109</sup>. As the basic argument of rational choice approaches is that utility maximisation can and will remain the primary motivation of individuals, rational choice approaches to institutions all presume the same egoistic behavioural characteristics found in similar approaches to other aspects of political behaviour<sup>110</sup>. However, the institutional variants of the approach focus attention on the importance of *institutions* as mechanisms for channelling and constraining individual behaviour.

Proponents of rational choice institutionalism hold that, as actors depend on socially constructed rules to orient their actions in otherwise chaotic social situations, institutions may be considered to have a key influence on not only the actors themselves but on the nature and direction of their interactions<sup>111</sup>. Further, collective and corporate actors central to policy processes are institutionally constituted, as the institutions themselves may be said to “exist” only to the extent that the individuals acting within them are able to coordinate their choices within a common frame of reference that is constituted by institutional rules<sup>112</sup>. In addition, this approach identifies clear actors in each process, in direct contrast to other variations of institutional theories that deal with only sets of rules and norms<sup>113</sup>. Thus, for models that combine rational choice concepts with institutional analysis, individual actors are still expected to manoeuvre in order to

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<sup>109</sup> Scharpf, *Games Real Actors Play*, p. 19

<sup>110</sup> Peters, *Institutional Theory in Political Science*, p. 55

<sup>111</sup> Scharpf, *Games Real Actors Play* p. 21

<sup>112</sup> Scharpf, *Games Real Actors Play* p. 39

<sup>113</sup> Peters, *Institutional Theory in Political Science*, p. 49

maximise personal utilities, but their actions are inherently constrained by the rule sets of the one or more or institutions within which they are operating<sup>114</sup>.

Throughout this body of work, notes Peters (2000), institutions are conceptualised as collections of rules and incentives that establish the conditions for bounded rationality, thus establishing a ‘political space’ within which many interdependent political actors can function<sup>115</sup>. Institutions define not only the membership of composite actors and the resources (both material and legal) that they may draw upon – thus defining the scope of their legitimate activities and the powers of the individuals who act for them – but also the purposes that they are to serve or the values that they are to consider in arriving at their choices<sup>116</sup>. More particularly, institutions have explanatory value because sanctioned rules will reduce the range of potential behaviour by specifying required, prohibited, or permitted actions<sup>117</sup>.

Whilst both Rational Choice and Behaviouralist approaches considered the actions of individual actors to be unfettered by both formal and informal institutions, instead making their own choices with preferences being viewed as exogenous to the political process<sup>118</sup>, initial proponents of the New Institutionalism (most notably March and Olsen, who named the movement in 1984) pointed out the need to reassert some of

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<sup>114</sup> Peters, *Institutional Theory in Political Science*, p. 58

<sup>115</sup> Peters, *Institutional Theory in Political Science*, p.44

<sup>116</sup> Scharpf, *Games Real Actors Play*, pp. 69 -70

<sup>117</sup> Elinor Ostrom, Roy Gardner, and James Walker, *Rules, Games and Common-Pool Resources* (Michigan: University of Michigan Press, 1994), p.38

<sup>118</sup> Herbert A. Simon, ‘A Behavioural Model of Rational Choice’, *The Quarterly Journal of Economics*, volume 69 issue 1, 1955, p. 101

the features of the old perspective<sup>119</sup>. As well as altering the theoretical perspectives of the discipline, this change in paradigm was also a response to a growing demand for the use of rigorous research methods in the social sciences and an equally strong push for a more explicit constitution of empirical political theory: both ideas then being seemingly incompatible with an institutional focus. In particular, March and Olsen argued that behavioural and rational choice approaches were characterised by five basic weaknesses<sup>120</sup>:

**Contextualism:** the tendency to subordinate political phenomena to societal phenomena by seeing politics as an integral part of society, but being less inclined to differentiate the polity from the rest of society;

**Reductionism:** the propensity to see political phenomena as the aggregate consequences of individual behaviour, rather than linking political outcomes to organizational structures and rules of appropriate behaviour;

**Utilitarianism:** the inclination to see action as the product of calculated self-interest without acknowledging the response of political actors to obligations and duties;

**Functionalism:** or the assumption that history is an efficient process moving towards equilibrium, leading to the smooth and untroubled evolution of the political process;

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<sup>119</sup> Peter A. Hall and Rosemary C. R. Taylor, 'Political Science and the Three New Institutionalisms', *MPIFG Discussion Paper 96/9*, 1996, p. 18

<sup>120</sup> James G. March and Johan P. Olsen, 'The New Institutionalism: Organisational Factors in Political Life', *The American Political Science Review*, vol.78 no.3, 1984, p. 735

**Instrumentalism:** or the tendency to define decision-making and the allocation of resources as the central concerns of political life, paying less attention to the ways in which political life is organised around the development of meaning and identity through symbols, rituals, and ceremonies.

Building upon theories of Rational Choice, scholars such as Beinhocker (2006) and Gintis (2000) have proposed a vision of the economy and other socio-political institutions that falls within the purview of Complex Adaptive System theories<sup>121</sup> in response to what they perceive to be the combined aridity of classical game theory and general equilibrium theory – both of which have been generally considered as the two most popular ways to describe the creation of wealth by actors within a social ecology<sup>122</sup>. Viewing markets and other institutions as complex adaptive systems radically alters the analytical tools that may be deployed to model socio-economic and political behaviour within a given field of play<sup>123</sup>.

According to Gintis (2006)<sup>124</sup>, complex adaptive systems are almost a mirror inversion of neoclassical economic theories such as traditional game theories for, as Axel Leijonhufvud notes, neoclassical theories model “smart people in unbelievably simple situations” whilst real-world situations involve “simple people [coping] with incredibly

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<sup>121</sup> Cf. Eric D. Beinhocker, *The Origin of Wealth: Evolution, Complexity and the Radical Remaking of Economics*, (Boston, MA: Harvard Business School Press, 2006), and Herbert Gintis, *Game Theory Evolving*, (Princeton: Princeton University Press, 2000)

<sup>122</sup> Eric D. Beinhocker, *The Origin of Wealth: Evolution, Complexity and the Radical Remaking of Economics*, (Boston, MA: Harvard Business School Press, 2006), p. 23

<sup>123</sup> Herbert Gintis, ‘The Economy as a Complex Adaptive System - A Review of Eric D. Beinhocker, *The Origins of Wealth: Evolution, Complexity, and the Radical Remaking of Economics*, 2006, Available at: <http://www.umass.edu/preferen/Class%20Material/Readings%20in%20Market%20Dynamics/Complexity%20Economics.pdf> (Accessed on: 30<sup>th</sup> September 2011), p.1

<sup>124</sup> Gintis, ‘The Economy as a Complex Adaptive System’, p. 2

complex conditions”<sup>125</sup>. Beinhocker (2006) offers the following useful summary of the differences between conventional game theories rooted in neoclassical models and complexity economics<sup>126</sup>:

- a. **Dynamics:** The complex economy is open and dynamic and generally far from equilibrium, whereas neoclassical economic models are far more static and closed.
- b. **Agents:** In a complex economy, actors have limited information and face high costs of information processing. Under appropriate conditions, these agents may develop non-optimal but highly effective heuristics for operating in complex environments. By contrast, agents operating in neoclassical economies are assumed to possess perfect information and are able to optimize at minimum cost.
- c. **Networks:** Complex economic theory recognizes that actors participate in a number of sophisticated networks that allow them to compensate for having limited information and high information processing costs. This, as discussed earlier, is quite the contrary for actors operating under neoclassical conditions.

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<sup>125</sup> Quoted in Gintis, *The Economy as a Complex Adaptive System*, p.2

<sup>126</sup> Adapted from Beinhocker, *The Origin of Wealth* quoted in Gintis, ‘The Economy as a Complex Adaptive System’, p. 3-4, for a summary see Paul Davis, ‘Book Review: The Origins of Wealth: Evolution, Complexity, and the Radical Remaking of Economics’, *The FINSIA Journal of Applied Finance*, volume 1 issue 3, 2008, pp. 48 – 50

- d. Emergence:** Theories surrounding complex economies lend themselves to the modelling of macro-systems through an examination of individual agent-level behaviour. This is in contrast to neoclassical theories where the actions of individual actors may not be easily determined.
  
- e. Evolution:** The order and structuring of actor behaviour in complex economies is derived through evolutionary processes such as differentiation, selection, and amplification. Such concepts do not exist in classical game theory.

Further, in considering institutions as biological systems, complex adaptive system theories also put forward the idea of “imitation” to explain socio-political and cultural evolution<sup>127</sup>. Gintis (2000), for instance, demonstrates how individuals and groups with low pay-off strategies tend to switch from these to strategies used by more successful actors<sup>128</sup>. The idea of change through imitation has also found use in behavioural economics and the modelling of actor behaviour within institutions, as well as the process of technological diffusion<sup>129</sup>; thereby building on neoclassical approaches to game theory. However, overall there has been to date only a few contributions to the economic literature on behavioural change through imitation<sup>130</sup>, and far less in other social science disciplines such as Politics and Sociology.

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<sup>127</sup> Gintis, ‘The Economy as a Complex Adaptive System’, p. 4

<sup>128</sup> Herbert Gintis, *Game Theory Evolving: A Problem Centered Introduction to Modeling Strategic Interaction* (Princeton, NJ: Princeton University Press, 2000) p. 12

<sup>129</sup> Gintis, ‘The Economy as a Complex Adaptive System’, p.4

<sup>130</sup> Quoted in Gintis, ‘The Economy as a Complex Adaptive System’, p.4

Additionally, Beinhocker emphasises that behavioural economic research<sup>131</sup> shifts focus away from more conventional neoclassical ideas of actor behaviour onto the actions of individual actors who are not purely self-centred in their social interactions within a group, but rather are a combination of *conditional co-operators* (who prefer to sacrifice personal goals for the sake of the larger good) and *altruistic operators*<sup>132</sup> (who act to maintain the group's *status quo*)<sup>133</sup>. The chief 'embarrassment' of classical game theory, according to Gintis, is thus its inability to explain why an individual actor or group would ever play a 'one-shot' game<sup>134</sup>. What is needed, therefore, is a framework that goes beyond single games in order to focus on how games 'mesh or miss' each other to influence governance and policy decisions. One of the few efforts to look at this interaction and interdependence was Norton Long's (1958) discussion of "The Local Community as an Ecology of Games", whose key ideas will be dealt with in subsequent sections of this thesis.

The Ecology of Games framework, as first laid out by Long in the late 1950s offers a New Institutional perspective on organisational and institutional analysis. As with most theories of New Institutionalism, it recognises that political institutions are not simple echoes of social forces; and that routines, rules, and forms within organisations and institutions evolve through historically interdependent processes that do not reliably and quickly reach equilibrium<sup>135</sup>. Long developed the idea of the Ecology of Games as he

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<sup>131</sup> Summarised in Gintis, 'The Economy as a Complex Adaptive System', p. 8

<sup>132</sup> Changed from 'altruistic punishers' - Ernst Fehr and Simon Gächter, 'Altruistic Punishment in Humans', *Nature*, Volume 415, 2002, p. 137

<sup>133</sup> Beinhocker, *The Origin of Wealth*, p. 419

<sup>134</sup> Gintis, 'The Economy as a Complex Adaptive System', p. 17

<sup>135</sup> March and Olsen, *Rediscovering Institutions*, p. 159.

believed existing debates about who governed local communities had significant flaws. Contemporary theories on governance, he said, be they elite perspectives (whose idea was of a unified, rational, goal-driven system where a community was governed by the self-interested politics of highly networked economic elites) or pluralistic theories (which claimed that economic rationality and goal maximization took place at the individual level, and that a community was governed as a result of coalitions between several elite stakeholder groups), viewed governing as one isolated game in which all players sought to shape policy within the rules defined by the political and economic system<sup>136</sup>. In other words, the Ecology of Games metaphor became an effort to reconcile these two images and sought to provide a more holistic picture of governance based on the presence of multiple fields of play.

Long believed that, in assuming the end goal of all actors was much the same, contemporary perspectives on governance oversimplified the process of government. In his view, a community housed a whole series of games: for government, for education, business games, others for religion, news, and so forth. Each game was a structured competition with its own rules, its own winners and losers, and sometimes its own audience that kept score and responded to the state of play. Individuals competed in one or a few of the available games<sup>137</sup>. He argued that instead of primarily being concerned with governing the community, major players were more focused on attaining their own varied ends, and that to understand the behaviour of these players it was more useful to think of them as individual actors whose actions *resulted* in governance rather than as

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<sup>136</sup> Dutton, 'The Ecology of Games Shaping Telecommunications Policy', pp. 303 – 304.

<sup>137</sup> Firestone, 'Educational Policy as an Ecology of Games', p. 18.

actors who sought to *govern*. Rather than making decisions about the larger community, Long claimed that individuals most often make decisions as the occupant of a particular role within a specific game. The development of a community could thus be understood as the consequence of an unfolding history of events driven by the often unplanned and unanticipated interactions amongst individuals playing relatively independent games, with the overall system of action within which groups and interests operate being described as an *Ecology of Games*<sup>138</sup>.

The crucial insight in Long's theory was not the idea of games *per se* which, as has been discussed earlier, was already well developed; but his linking of that notion to the metaphor of ecology<sup>139</sup>. Ecology as a concept relates to the interrelationships of species in their environment, allowing for numerous relationships amongst entities, and has been used to understand the relationships amongst individuals and more complex social systems. Most obviously, co-existence within a common space results in competition for resources and power between different actors, and can result in unique modes of operation as means of achieving one's aims. This in turn may lead to either mutual non-involvement in the same space, or active co-operation between different actors and the development of symbiotic relationships. All this speaks of a singular interdependence between different actors within a given territory. Although there may be other relationships as well, what is significantly missing is a single, rational, coordinating presence.

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<sup>138</sup> Dutton, 'The Ecology of Games Shaping Telecommunications Policy', pp. 305 – 306.

<sup>139</sup> Firestone, 'Educational Policy as an Ecology of Games', p. 18.

Long contended that the structured group activities that coexist in a particular territorial system can be looked at as ‘games’<sup>140</sup>. Dutton (1992) defines games ‘as arenas of competition and cooperation structured by a set of rules and assumptions about how to act in order to achieve a particular set of objectives’<sup>141</sup> as they can, according to Long, provide the players with not only a set of goals that give them a sense of success or failure, but also determine roles and calculable strategies and tactics and supply them with an elite and general public that is – to varying degrees – able to judge an outcome<sup>142</sup>. An ‘ecology of games’ is thus a larger system of action composed of two or more separate but interdependent games different from, but closely related to, formal game theory<sup>143</sup>.

Games themselves are social constructions that vary over time and across social contexts<sup>144</sup>. Similar types of games might recur within similar social settings, but all games tend to be uniquely situated in place and time, and any typology of games that might emerge across a cumulative body of studies is likely to remain quite abstract. Despite this, Dutton (1992) has identified several key attributes that all games may share<sup>145</sup>. First, every game has a set of goals, purposes, and objectives; with some games having multiple aims. For example, a civil servant within an implementation game might seek to increase the efficiency of his department through the introduction of technology.

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<sup>140</sup> Norton E. Long, ‘The Local Community as an Ecology of Games’, *The American Journal of Sociology*, vol. 64, no. 3, 1958, p. 252.

<sup>141</sup> Dutton, ‘The Ecology of Games Shaping Telecommunications Policy’, p. 306.

<sup>142</sup> Long, ‘The Local Community as an Ecology of Games’, p. 251.

<sup>143</sup> Dutton, ‘The Ecology of Games Shaping Telecommunications Policy’, p. 306.

<sup>144</sup> Michel Crozier and Erhard Friedberg, *Actors and Systems* (Chicago: University of Chicago Press, 1980) p. 97.

<sup>145</sup> Dutton, ‘The Ecology of Games Shaping Telecommunications Policy’, p. 307.

Second, a game has a set of prizes, which may vary widely from profit to authority to recognition, and are distinct from the objectives of the players. For instance, the same civil servant seeking to increase the efficiency of his department might expect to get a promotion or a better public reputation. Third, games have rules that govern the strategies or moves open to players depending on the organisational or institutional settings within which they are played. Rules need not be public or fair (depending on whether public or private interests are involved), may change over time, and may or may not need consensus to be accepted. Finally, a game has a set of players, defined by the fact that they interact – compete or cooperate – with one another in pursuing the game’s objectives. A regulatory game incorporates bureaucrats, legislators, regulated firms, and industries; but also may include the public, courts, and other actors willing and able to become involved.

The notion of an ‘ecology’ of games underlines not only the degree to which not all players in any given territory are involved in the same game, but also the fact that different players within that territory are likely to be involved in a variety of games<sup>146</sup>. Games can thus be interrelated in several ways. Some actors (‘players’) might be simultaneously participating in different games, and some players might transfer from one game to another<sup>147</sup>. Plays (i.e. moves or actions) made in one game can affect the play of others. Also, the outcome of one game might affect the rules or play of another. However, although individuals may play a number of games, their major preoccupation

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<sup>146</sup> William H. Dutton and Kendall Guthrie, ‘An Ecology of Games: The Political Construction of Santa Monica’s Public Electronic Network’, *Informatization and the Public Sector*, vol. 1, no. 4, 1991, p. 283.

<sup>147</sup> Long, ‘The Local Community as an Ecology of Games’, p. 253.

for the most part is with one, central game<sup>148</sup>. A researcher might be able to anticipate a range of strategies open to individuals or organizations if we know what role they play in the game(s) most central to them. Conversely, when the actions of players appear irrational to an observer, it is likely that the observer does not know the games in which players are most centrally involved; the players' moves in one game might be constrained by their moves within other games.

For Long, territories (or fields of play) were defined quite literally by being local communities. Moved from the community context to the world of e-government design, adoption, and implementation, territories may be diverse – from the inner circle of the project design team, through to the adopting organisation, the nation, and finally the international policy arena – but the idea of each stage being a political community or a collection of actors whose actions have political implications is still very much applicable. The Ecology of Games metaphor thus provides us with a useful way to think about how the various players interact in making and carrying out administration and developing policy. This thesis elaborates that metaphor, presents a case study to demonstrate its concrete application to the implementation of an e-government system, illustrates some of the insights it offers, and finally applies the metaphor to the problem of organisational reform and institutional change.

## 2.4. Research Methodology

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<sup>148</sup> Long, 'The Local Community as an Ecology of Games', p. 253.

The ultimate aim of this research project was to contribute to the development of a conceptual framework that was relevant to policy discussions of e-government within an Indian, and hopefully a broader, developing world context. In order to augment theoretical discussions of administrative reform in a digitised world, this research used a case study to explore its central research issues. A case study can be defined as “an empirical enquiry that investigates a contemporary phenomenon within its real life context, when the boundaries between phenomenon and context are not clearly evident, and in which multiple sources of evidence are used”<sup>149</sup>. Within the case study, a mixed methods approach was selected in order to inform and strengthen the understanding of the relationships between the actors, inputs, and project outputs. The aim of such a study was to evolve ideas that could be generalised across similar situations, and would involve the following steps:

- In-depth review of existing theoretical perspectives and literature surrounding corruption and tax evasion, ICTs and public administration, and property tax reform;
- Qualitative analysis of official documents;
- Collection and analysis of quantitative data relevant to the case;
- Development of case studies through in-depth personal interviews;

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<sup>149</sup> R.K. Yin, *Case Study Research: Design and Methods*, Applied Social Research Methods Series Volume 5 (London: Sage, 2003), p. 21.

- Analysis and interpretation of available data;
- Preparation of conclusions and their validation;
- Proposal of recommendations for the future.

The use of mixed-method case study research is becoming increasingly popular in the social sciences, recognised as a particularly apt way of studying the nature and impact of actor actions and motivations on e-government project outcome, where the aim is not simply to judge whether the project at hand represents a success or failure, but to understand the qualities that have made it so<sup>150</sup>. In such a case, quantitative data alone is not a sufficient measure of impact<sup>151</sup>.

#### **2.4.1. Case Study Research: A Relevant Approach**

Case study research consists of a detailed investigation of phenomena within a given context, often with data being collected over a period of time, the aim of which is to provide an analysis of the surrounding environment and processes to throw light on the theoretical issues being investigated<sup>152</sup>. The phenomenon under examination is thus not isolated from its context, rather it is of interest precisely because the aim is to observe and understand actor behaviour and/or organisational processes and their interplay with

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<sup>150</sup> David Coursey & Donald F. Norris, 'Models of e-Government: Are They Correct? An Empirical Assessment', *Public Administration Review*, vol. 68, issue 3, 2008, p.523.

<sup>151</sup> Yin, *Case Study Research: Design and Methods*, p. 23.

<sup>152</sup> Kathleen M. Eisenhardt, 'Building Theories from Case Study Research', *The Academy of Management Review*, vol. 14, no. 4, 1989, p.535

the surrounding environment<sup>153</sup>. The use of a case study itself is therefore not as much a method as it is a *research strategy*, where the context is deliberately included as part of the overall design<sup>154</sup>. Today, case studies are widely used in organisational research across the social sciences, indicating growing confidence in the approach as a rigorous research strategy in its own right<sup>155</sup>.

As research done by adopting this strategy is typically done in the field, the presence of too many observations and uncontrollable ‘variables’ makes the application of standard experimental or survey approaches infeasible<sup>156</sup>. Further, information tends to be scattered and generally cannot be picked up using one single method<sup>157</sup>. Case studies thus typically combine a number of data collection methods such as participant observation, direct observation, interviews, focus groups, ethnography, document analysis, questionnaires etc., where evidence may be quantitative or qualitative depending on the research issues at hand. The approach is consequently flexible, allowing for new methods to be incorporated as new sources of data and new actors present themselves. The case study approach may thus be and has been used for various purposes – to provide a descriptive narrative, to generate new theory, or to test existing theory through the triangulation of data<sup>158</sup>.

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<sup>153</sup> Jean Hartley, ‘Case Study Research’, in Catherine Cassell and Gillian Symon, eds., *Essential Guide to Qualitative Methods in Organisational Research*, (London: Sage Publications, 2005), p. 323

<sup>154</sup> Jean Hartley, ‘Case Study Research’, p. 324

<sup>155</sup> Jean Hartley, ‘Case Study Research’, p. 323

<sup>156</sup> Jean Hartley, *Ibid.*

<sup>157</sup> Eisenhardt, ‘Building Theories from Case Study Research’, p. 535

<sup>158</sup> Jean Hartley, ‘Case Study Research’, p. 324

## 2.4.2. A Brief Note on Data Triangulation

Data triangulation defined by Denzin (1978) is "the combination of methodologies in the study of the same phenomenon<sup>159</sup>", and may be thought of as the use of multiple methods, data sources, and researchers to enhance the validity of research findings<sup>160</sup>. Triangulation is typically perceived to be a strategy for improving the validity of research or the evaluation of findings. According to Miles and Huberman (1984) "...triangulation is supposed to support a finding by showing that independent measures agree with it or, at least, don't contradict it.<sup>161</sup>" In particular, triangulation seeks enhanced validity or credibility through *convergence* and *corroboration*.

The use of data triangulation in the social sciences can be traced back to Campbell and Fiske (1959) who, in developing a research strategy that they called "multiple operationalism", argued that more than one method should be used in the validation process to ensure that any variance in results reflected that of the trait and not of the method itself<sup>162</sup>. Given this observation, *triangulation* is often largely considered as a vehicle for cross validation when two or more distinct methods are found to be congruent and yield comparable data. For instance, in the case of organisational researchers, this

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<sup>159</sup> N.K. Denzin. *The Research Act: A Theoretical Introduction to Sociological Methods*, (New York: McGraw-Hill, 1978), p.291

<sup>160</sup> Sandra Mathison, 'Why Triangulate?', *Educational Researcher*, vol. 17 no. 2, 1988, p. 13

<sup>161</sup> Matthew B. Miles and A.M. Huberman, *Qualitative Data Analysis* (Beverly Hills: Sage Publications, 1984), p. 235

<sup>162</sup> Donald T. Campbell, and Donald W. Fiske, 'Convergent and Discriminant Validation by the Multitrait-Multimethod Matrix', *Psychological Bulletin*, vol. 56 no.2, 1959, p.100.

would involve the use of multiple methods to examine the same dimension of a research problem<sup>163</sup>.

Data triangulation has consequently arisen as an important methodological issue in the data analysis literature, as in practice it provides a rich and complex picture of the social phenomenon being studied<sup>164</sup>. In his explanation of how to use the technique as a strategy, Denzin (1978) outlines four types of triangulation a) data triangulation including time, space, and person, b) investigator triangulation, c) theory triangulation, and d) methodological triangulation<sup>165</sup>.

The core premise of all four types of triangulation is that all methods of enquiry have inherent biases and limitations, so that the use of only one method to assess a given phenomenon will inevitably yield biased and limited results<sup>166</sup>. However, when two or more methods that have offsetting biases are used to assess a given phenomenon, and the results of these methods converge with or corroborate one another, then the validity or credibility of enquiry findings is enhanced.

As noted by Green and McClintock (1985), the classic triangulation argument requires that the two or more methods be 1) intentionally used to assess the same phenomenon, conceptualised the same way, 2) implemented simultaneously, and 3) are

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<sup>163</sup> Todd D. Jick, 'Mixing Qualitative and Quantitative Methods: Triangulation in Action', *Administrative Science Quarterly*, vol. 24 no. 4, 1979, p. 602

<sup>164</sup> Sandra Mathison, 'Why Triangulate?', p. 17

<sup>165</sup> Denzin, *The Research Act*, p. 249 - 307

<sup>166</sup> Jennifer C. Green, *Mixed Methods in Social Inquiry* (San Francisco: Jossey-Bass, 2007), p. 43

also implemented independently to preserve their counteracting biases<sup>167</sup>. Mark and Shotland (1987) further contend that challenges of triangulation have persisted in the mixed methods literature, as have misunderstandings of what this concept means<sup>168</sup>.

From the above discussion, it follows that the use of a case study for this thesis is particularly apt for two reasons. Firstly, the approach is particularly useful for answering research questions such as the ones put forward in Chapter 1 that require a detailed understanding of socio-political, economic, or organisational processes through the collection and analysis of rich data<sup>169</sup>. It thus lends itself to studies such as this one, which are informed by frameworks like the Ecology of Games or the Design-Actuality Gap model, where there is one or more group or individuals operating within a given organisational setup.

Secondly, as discussed above, case study research design is also more flexible than other frameworks such as laboratory-based or survey-based approaches, in that it is able to reconcile different research methods and harness the evidence gathered to generate novel theory from any creative insights that might ensue from the juxtaposition of data at various points in the analysis<sup>170</sup>. It is this flexibility which makes the approach particularly appropriate for use in this thesis: both the Ecology of Games and the Design-Actuality Gap model are relatively under-researched (or emerging) frameworks which

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<sup>167</sup> Jennifer Green and Charles McClintock, 'Triangulation in Evaluation: Design and Evaluation', *Evaluation Review*, volume 9 issue 5, 1985, p. 524

<sup>168</sup> M.M Mark and R. L. Shotland "Alternative Models for the Use of Multiple Methods." In M. M. Mark and R. L. Shotland (eds.), *Multiple Methods in Program Evaluation. New Directions for Program Evaluation*, no. 35. San Francisco: Jossey-Bass, 1987.

<sup>169</sup> Eisenhardt, *Ibid.*

<sup>170</sup> Eisenhardt, 'Building Theories from Case Study Research', p. 546

study actor behaviour in dynamic situations within organisations over time. Data and sources of evidence are consequently prone to change, and the use of a longitudinal case study incorporating various methods allows the researcher to not only understand the context being examined but also ably tackle any unforeseen variations or irregularities to draw out conclusions which may have wider applicability in the long-run.

### **2.4.3. Understanding the Choice of Case Study**

The selection of cases for a study is an important part of creating and building theory from case study research, as any choice would automatically define the population or target group from which the research sample is to be drawn<sup>171</sup>. Hartley (2005) notes that during this process, a number of crucial questions need to be taken into consideration<sup>172</sup>:

1. What kind of organisation is the researcher looking for?
2. Is the case intended to be typical of the phenomenon under examination? Or is it an extreme example?
3. Who comprises the population of the organisation under study?
4. How many cases are to be considered for the study?
5. Has the researcher the resources and interest in undertaking more than one case?

The central case under study in this thesis is that of the Revenue Department of the BBMP, and the impact that the computerisation of property records and tax collection had, not only on departmental processes and tax revenues, but also on government-citizen

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<sup>171</sup> Eisenhardt, 'Building Theories from Case Study Research', p. 537

<sup>172</sup> Jean Hartley, 'Case Study Research', p. 327

interactions through an analysis of tax payment compliance and tax evasion. Within the framework of this central case study, this thesis focused on the experiences of revenue officials in 6 revenue offices across Bangalore city and, in particular, on the tax experiences of 12 wards (two from each head office) falling under their jurisdiction.

To select the embedded case studies, wards across the city were first classified under three headings divided into six categories: Ward Age (Old and New), Principal Source of Property Tax Revenue (Residential and Commercial), and Relative Wealth of Ward Inhabitants (Rich and Poor). Once classified, twenty-four wards were selected at random, four from each category. After this initial random sampling, two wards per revenue office were carefully hand-picked for study according to the ease and availability of tax data and their response to the call for overall system e-readiness. The tax data for the final twelve wards, where computerisation was recently complete, and where it had been for some time, was then collected to analyse the impact of the electronic property tax system across the period 1998 – 2008.

The choice of case study aims to fill the gaps in the existing literature on ICTs and public administration, firstly by focusing on the factors arising from the political dynamics and organisational culture of local government, both globally and more specifically in the Indian context, and secondly analysing not only how these in turn influenced elite and non-elite political actor perspectives but also the way in which they aided the examination of the relationship between actor perspectives and organisational reform and institutional change. It was felt that the case study method would be best

suited to this exploratory study given the multiplicity of sources of evidence available, and that the reliability and validity of the conclusions drawn would benefit from a *convergence* or ‘triangulation’ of data collected from these sources.

#### **2.4.4. Research by Interview: A Note on Research Interview Type and Structure**

To date, the research interview, employed in various forms by every main methodological and theoretical approach within the realm of applied scholarship, remains the predominant method of data gathering in qualitative data-driven research. The chief difficulty in constructing a successful mixed-methods research design lies in the problem of effectively combining textual and numerical data; and it is this mixing of paradigms that remains a major challenge to social science research (see above)<sup>173</sup>. Morse (2012) holds that textual interview data cannot be merged into a quantitative dataset for analysis unless the text is first coded, then transformed into numerical data, and subsequently triangulated with other sources of information<sup>174</sup>.

If such a transformation is to occur, it may be conducted only when particular conditions within the qualitative dataset are met<sup>175</sup>. Similarly, the use of numerical data

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<sup>173</sup> Nigel King, ‘Using Interviews in Qualitative Research’, in Catherine Cassell and Gillian Symon, eds., *Essential Guide to Qualitative Methods in Organisational Research*, (London: SAGE Publications, 2004), p.11

<sup>174</sup> Janice M. Morse, ‘The Implications of Interview Type and Structure in Mixed Method Designs’, in Jaber F. Gubrium, James A. Holstein, Amir B. Marvasti, and Karyn D. McKinney, eds., *The SAGE Handbook of Interview Research: the Complexity of the Craft*, (Thousand Oaks, C.A.: SAGE Publications, 2012), p.194

<sup>175</sup> Imelda T. Coyne, ‘Sampling in Qualitative Research: Purposeful and Theoretical Sampling; Merging or Clear Boundaries?’, *Journal of Advanced Nursing*, vol. 26, issue 3, 1997, pp. 623-624

obtained from a qualitative dataset introduces problems of *meaning*<sup>176</sup>, *sampling*<sup>177</sup>, and of *boundaries*<sup>178</sup>. Numerical data may be considered relatively meaningless to scholarly interpretation or in practitioner-led application and analysis, vis-à-vis a textual dataset, unless again special conditions have been met, that are not usually possible nor desirable in a qualitatively-driven research design<sup>179</sup>.

Nevertheless, despite the recognition of the problems inherent in combining these two types of interview data, the general principles of methods design for selecting the type of interviews and analytic procedures required have, in either a qualitatively-driven mixed-method research design (see **Table 2.1**, referred to as QUAL-*quan*<sup>180</sup>) or in a quantitatively-driven mixed-method research design (see **Table 2.1**, referred to as QUAN-*qual*<sup>181</sup>), been altogether poorly addressed in extant literature (see **Table 2.1**)<sup>182</sup>. This section, hence, is predominantly concerned with describing the *structure* (or the *form*) of the major types of research interviews available to researchers within the social sciences seeking to obtain textual interview data, and with how that structure relates to the *types of analyses* that may be then applied in both either qualitatively-driven mixed-methods research and or in a quantitatively-driven mixed-methods research enquiry.

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<sup>176</sup> James A. Holstein and Jaber F. Gubrium, 'The Active Interview' in David Silverman, ed., *Qualitative Research: Theory, Method, and Practice – Second Edition*, (London: SAGE Publications, 2006), pp. 141-142

<sup>177</sup> Matthew B. Miles, A. Michael Huberman, and Johnny Saldaña, *Qualitative Data Analysis: A Methods Sourcebook* (Thousand Oaks, C.A.: SAGE Publications, 2014), pp.31-32

<sup>178</sup> Coyne, 'Sampling in Qualitative Research', pp.624-626

<sup>179</sup> Jane V. Appleton, 'Analysing Qualitative Interview Data: Addressing Issues of Validity and Reliability', *Journal of Advanced Nursing*, vol. 22, issue 5, 1995, p.994

<sup>180</sup> For an advanced discussion of the proposed nomenclature, see Janice M. Morse, 'Simultaneous and Sequential Qualitative Mixed-Method Designs', in Patricia L. Munhall, ed., *Nursing Research: A Qualitative Perspective – Fifth Edition*, (Sudbury, M.A.: Jones and Bartlett, 2011), pp. 553-570

<sup>181</sup> See Janice M. Morse, 'Simultaneous and Sequential Qualitative Mixed-Method Designs', *Ibid.*

<sup>182</sup> Janice M. Morse, 'The Implications of Interview Type and Structure in Mixed Method Designs', *Ibid.*

Characteristics	Type of Interviews				
	Unstructured (Narrative) Interviews	Guided Interviews	Focus Group Interviews	Semistructured Interviews	Quantitative Questionnaires (Closed-Ended)
Domain	Not known	Partially known	Partially known	Known	Known
Direction of inquiry	Inductive	Inductive	Usually inductive	Deductive or inductive	Deductive
Approach	Investigator learns about phenomena during the course of the inquiry. Investigator assumes listening mode	Investigator guides the order and direction of the interview but not the specific content	Interviewer develops questions designed to stimulate conversation among participants, thereby eliciting the necessary data	Investigator knows the questions that need to be asked but not all the possible responses	Investigator knows that questions and responses are necessary
Questions	Not planned in advance but developed during the course of the inquiry	Broad questions (6–10) developed to guide the course (but not the content) of the interview	Questions and prompts planned in advance	Question stems (and sometimes prompts) planned in advance	Questions and response choices planned in advance
Responses	“Long responses” conducted with minimal interruption. Interviews not equivalent	Interviewer guides participants’ “long responses”. Interviews only partly equivalent	Discussion among participants with facilitator prompts to elicit various perspectives. Group interviews only partly equivalent	Unscripted (free) responses to set open-ended questions. All respondents are asked the same questions	All respondents are asked the same questions in the same order. Participant selects responses
Sample	Sample changes according to the informational needs of the emerging analysis	Sample characteristics identified	Sample characteristics identified	Sample characteristics identified	Sample randomly selected from the selected population
Sample size	Depends on the scope and complexity of the phenomena	Depends on the scope and complexity of the phenomena	Number of groups and number of participants and purpose of study must be considered	If data are to be numerically transposed, at least 30 participants are required.	Large: size determined by number of questions
Analysis	Concurrent with collection	Concurrent with collection	Concurrent or at end of data collection	Analysis at end of data collection	Analysis at end of data collection
Point of interface for QUAL	QUAL- <i>qual</i> , results narrative point of interface	QUAL- <i>qual</i> , results narrative point of interface	QUAL- <i>qual</i> , results narrative point of interface	QUAL- <i>qual</i> , results narrative point of interface	QUAL- <i>quan</i> , results narrative point of interface
Point of interface for QUAN	QUAN- <i>qual</i> , results narrative point of interface	QUAN- <i>qual</i> , results narrative point of interface	QUAN- <i>qual</i> , results narrative point of interface	QUAN- <i>quan</i> , results; if textual data are transformed, analytic point of interface	QUAN- <i>quan</i> , results

Note: QUAL-*quan* = qualitatively driven mixed-method design; QUAN-*qual* = quantitatively driven mixed-method design.

**Table 2. 1: Characteristics and Use of Interview Types With Mixed-Method Design**  
(Source: Adapted from Morse, 2012)

## The Form of the Interview: Type and Structure

Qualitative research interviews vary in their methodological features; such as in *length, style of questioning*, and in *participant numbers*<sup>183</sup>. These differing characteristics require that each type of research interview actively generates empirical data in a singular form, for a particular method of enquiry and analysis<sup>184</sup>; although most interviews are carried out *face-to-face* (known as colloquially as *personal interviewing*)<sup>185</sup>, and others are *technology-mediated* or *-facilitated* and carried out either over the telephone, via the Internet in real-time, or through the use of asynchronous e-mail<sup>186</sup>. The characteristics of the major types of research interviews are summarized succinctly by Morse (2012), and demonstrated in **Table 2.1**; including, therein, details of the *research interview type according to the researcher's knowledge of the phenomenon*, the *inductive versus deductive approach observed*, the *source and manner of derivation of the questions set and responses elicited*, the *nature of the given sample and sample size*, and the *pacing of the analysis*<sup>187</sup>.

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<sup>183</sup> Nigel King, 'Using Interviews in Qualitative Research', p.12

<sup>184</sup> James A. Holstein and Jaber F. Gubrium, 'The Active Interview', pp. 140-141

<sup>185</sup> Elliot G. Mishler, *Research Interviewing: Context and Narrative*, (Cambridge, M.A.: Harvard University Press, 1986), p. 9

<sup>186</sup> Stephanie J. Morgan and Gillian Symon, 'Electronic Interviews in Organizational Research', in Catherine Cassell and Gillian Symon, eds., *Essential Guide to Qualitative Methods in Organisational Research*, (London: SAGE Publications, 2004), p.23

<sup>187</sup> Janice M. Morse, 'The Implications of Interview Type and Structure in Mixed Method Designs', *Ibid.*

## The Form of the Interview: Structured Interviews

Also referred to in formal research terminology as a *formal* or *standardized interview*<sup>188</sup>, the *structured interview* is exactly what it purports to be. Interview schedules or questionnaires are *highly structured* and *inflexible*<sup>189</sup>; interviews are based on structured, closed-ended questions, asked usually in a set or a standardized order, with the interviewer rarely deviating from the formalised interview schedule or probing beyond the *prima facie* answers received<sup>190</sup>. In other words, all subjects surveyed are asked the same questions, in the same order, and are required to respond from a *forced choice*, by selecting one option from an assigned set of choices<sup>191</sup>.

Structured interviews are *easy to replicate*, as a *fixed set of closed questions* that are *easy to quantify* are used<sup>192</sup>. This implies that a large sample population can be obtained and research data actively generated<sup>193</sup>, resulting in the available research findings being *representative* and possessing the ability to be *generalized* to a yet larger population statistic<sup>194</sup>. Structured interviews are fairly *quick to conduct*, which means that

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<sup>188</sup> Frederick G. Conrad and Michael F. Schober, 'New Frontiers in Standardized Survey Interviewing', in Sharlene Nagy Hesse-Biber, and Patricia Leavy, eds., *Handbook of Emergent Methods*, (London: Guilford Press, 2010), p.173

<sup>189</sup> Frederick G. Conrad and Michael F. Schober, 'New Frontiers in Standardized Survey Interviewing', *Ibid.*

<sup>190</sup> Svend Brinkmann, 'Unstructured and Semi-Structured Interviewing', in Patricia Levy, ed., *The Oxford Handbook of Qualitative Research*, (New York, N.Y.: Oxford University Press, 2014), p. 286

<sup>191</sup> Janice M. Morse, 'The Implications of Interview Type and Structure in Mixed Method Designs', *Ibid.*

<sup>192</sup> Svend Brinkmann, 'Unstructured and Semi-Structured Interviewing', *Ibid.*

<sup>193</sup> Susan C. Weller, 'Structured Interviewing and Questionnaire Construction', in H. Russell Bernard and Clarence C. Gravlee, eds., *Handbook of Methods in Cultural Anthropology – Second Edition*, (London: Rowman & Littlefield, Inc., 2015), p.353

<sup>194</sup> Frederick G. Conrad and Michael F. Schober, 'New Frontiers in Standardized Survey Interviewing', p.174

many interviews can take place within a *short period of time*, allowing further for a researcher to test easily for data *validity* and *reliability*<sup>195</sup>.

The answers obtained, however, from structured interviews characteristically tend to lack detail; as only closed questions that generate primarily quantitative data are asked, and data is analysed statistically only at periodic intervals following data generation and collection<sup>196</sup>. Within the express context of social science research, this singular limitation implies that responses missed out by respondents are considered as either *left as omitted* or as *omitted by the researcher*; implying that the narratives produced by these ‘conversations’ have been truncated as a direct consequence of forced-choice survey answers<sup>197</sup>.

### **The Form of the Interview: Unstructured Interviews**

Qualitative *unstructured interviews* refers to a type of interview that takes the form of a free-flowing conversation<sup>198</sup>, wherein which the researcher asks each of their subjects and respondents minimal questions—often just a “grand tour” question that presents the general topic to focus the participant<sup>199</sup>—and then primarily assumes a listening stance to elicit the participant's story or narrative in full<sup>200</sup>. Unstructured

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<sup>195</sup> Frederick G. Conrad and Michael F. Schober, ‘New Frontiers in Standardized Survey Interviewing’, p.186

<sup>196</sup> Janice M. Morse, ‘The Implications of Interview Type and Structure in Mixed Method Designs’, *Ibid.*

<sup>197</sup> James A. Holstein and Jaber F. Gubrium, ‘The Active Interview’, p. 141

<sup>198</sup> Gary P. Latham and Barbara J. Finnegan, ‘Perceived Practicality of Unstructured, Patterned, and Situational Interviews’, in Heinz Schuler, James L. Farr, and Mike Smith, eds., *Personnel Selection and Assessment: Individual and Organizational Perspectives*, (Hillsdale, N.J.: Lawrence Erlbaum Associates, Inc., 1993), p.42

<sup>199</sup> James P. Spradley, *The Ethnographic Interview*, (Holt, N.Y.: Rinehart and Winston, 1979), pp. 86-88.

<sup>200</sup> Janice M. Morse, ‘The Implications of Interview Type and Structure in Mixed Method Designs’, *Ibid.*

interviews are also referred to in the literature as *long*<sup>201</sup>, *nonstandard*<sup>202</sup>, *narrative*<sup>203</sup>, or *open-ended*<sup>204</sup> research interviews.

This form of research interview is sometimes called an *informal interview*<sup>205</sup>, is also known as a *discovery interview*<sup>206</sup>, and is more akin to a *guided conversation*<sup>207</sup>; in direct contrast to a strictly structured interview schedule or questionnaire<sup>208</sup>. Unstructured interviews are altogether more flexible, as questions can be adapted and changed depending on the respondents' answers<sup>209</sup>. In fact, an interview schedule might not be used at all<sup>210</sup>. A major subset of these interviews are *guided interviews* or *guided conversations*<sup>211</sup>, for which the researcher may prepare anything from between 6 to 10 questions, thereby providing a general order to guide and direct the course of the interview<sup>212</sup>.

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<sup>201</sup> Grant McCracken, *The Long Interview*, (Newbury Park, C.A.: SAGE Publications, 1988), p. 7

<sup>202</sup> Steinar Kvale, *InterViews: An Introduction to Qualitative Research Interviewing*, (London: SAGE Publications, 1996), p.3

<sup>203</sup> Steinar Kvale, *Doing Interviews*, (London: SAGE Publications, 2007), p.7

<sup>204</sup> Jeffrey C. Johnson and Susan C. Weller, 'Elicitation Techniques for Interviewing', in Jaber F. Gubrium and James A. Holstein, eds., *Handbook of Interview Research: Context and Method*, (London: SAGE Publications, 2002), p. 499

<sup>205</sup> Gayle R. Jennings, 'Interviewing: a Focus On Qualitative Techniques', in Brent W. Ritchie, Peter Burns, and Catherine Palmer, eds., *Tourism Research Methods: Integrating Theory with Practice*, (Wallingford: CABI Publishing, 2005), p. 99

<sup>206</sup> Katharyn A. May, 'Interview Techniques on Qualitative Research: Concerns and Challenges', in Janice M. Morse, ed., *Qualitative Nursing Research: A Contemporary Dialogue*, (Newbury Park, C.A.: SAGE Publications, 1991), p. 189

<sup>207</sup> Herbert J. Rubin and Irene S. Rubin, *Qualitative interviewing: the art of hearing data*. (London: SAGE Publications, 1995), p. 108

<sup>208</sup> Svend Brinkmann, *Ibid.*

<sup>209</sup> Katharyn A. May, 'Interview Techniques on Qualitative Research: Concerns and Challenges', p. 188

<sup>210</sup> Svend Brinkmann, *Ibid.*

<sup>211</sup> Herbert J. Rubin and Irene S. Rubin, *Qualitative interviewing: the art of hearing data.*, *Ibid.*

<sup>212</sup> Herbert J. Rubin and Irene S. Rubin, *Qualitative interviewing: the art of hearing data.*, p. 35

Those conversations that actively involve interview schedules generally contain open-ended questions that might be asked in any order<sup>213</sup>; the interview itself may deviate from the interview schedule, or the questions comprising it thereof be amended, added to, or missed out completely as the interview conversation progresses<sup>214</sup>. These interviews are considered optimally *emic*<sup>215</sup>, i.e. slanted towards the participant's perspective, which, together with the lack of interference or interjection from the researcher, increases the validity of the research data produced<sup>216</sup>. The particular form and nature of the research questions posed during a conversation also allows for the respondent to talk in some depth, choosing their own words<sup>217</sup>. The researcher's goal is to obtain the participant's perspective without 'leading' the conversation<sup>218</sup>; possibly the single-most significant threat to the validity of the unstructured interview and to any research data generated by it<sup>219</sup>.

Analysis of the unstructured interview may be conducted in one of two styles: as *synthesized interviews*<sup>220</sup>, wherein all participants are considered to have a similar story to report arising from similar circumstances within the purview of the interview topic and the research question, so that the content from all interviews is reasonably consistent and

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<sup>213</sup> Jeffrey C. Johnson and Susan C. Weller, 'Elicitation Techniques for Interviewing', *Ibid.*

<sup>214</sup> Svend Brinkmann, *Ibid.*

<sup>215</sup> Nancy C. Morey and Fred Luthans, 'An Emic Perspective and Ethnoscience Methods for Organizational Research', *Academy of Management Review*, vol.9, no.1, 1984, pp. 29-30; 32

<sup>216</sup> Nancy C. Morey and Fred Luthans, 'An Emic Perspective and Ethnoscience Methods for Organizational Research', pp. 29-30

<sup>217</sup> Juliet Corbin and Janice M. Morse, 'The Unstructured Interview: Issues of Reciprocity and Risks When Dealing With Sensitive Topics', *Qualitative Inquiry*, vol. 9, no. 3, 2003, pp. 338

<sup>218</sup> Sandy Q. Qu and John Dumay, 'The Qualitative Research Interview', *Qualitative Research in Accounting & Management*, vol. 8, no.3, 2011, pp. 245-246

<sup>219</sup> Juliet Corbin and Janice M. Morse, 'The Unstructured Interview: Issues of Reciprocity and Risks When Dealing With Sensitive Topics', pp. 347-348

<sup>220</sup> Janice M. Morse, 'The Implications of Interview Type and Structure in Mixed Method Designs', p.196

approximately follows a similar course; and *progressive comprehension*<sup>221</sup>, whereby which the researcher learns about a particular phenomenon as the interviews actively generate the data required for a cumulative inference and a progressive analysis<sup>222</sup>. Employing and training interviewers is, therefore, expensive, as interviewers require particular specialist skills; including the ability to establish rapport, and a knowledge of how to interrogate a subject with minimal interruption<sup>223</sup>.

### **The Form of the Interview: Focus Group Interviews**

Focus groups are a form of group interview that capitalises on communication between research participants in order to generate research data<sup>224</sup>. In contrast to (unfocused) *grouped-together* or *collective* interviews, comprising of a collection of one-on-one exchanges that are often used as a simple, quick, and convenient way to collect data from several people simultaneously<sup>225</sup>, focus groups explicitly use group discussion and interaction to actively generate research data during a single interactive session<sup>226</sup>. This means that, instead of a researcher asking each subject to respond to a question in

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<sup>221</sup> Janice M. Morse, 'The Implications of Interview Type and Structure in Mixed Method Designs', *Ibid.*

<sup>222</sup> Janice M. Morse, 'The Implications of Interview Type and Structure in Mixed Method Designs', *op. cit.*

<sup>223</sup> Juliet Corbin and Janice M. Morse, 'The Unstructured Interview: Issues of Reciprocity and Risks When Dealing With Sensitive Topics', p.351

<sup>224</sup> David W. Stewart and Prem N. Shamdasani, *Focus groups: Theory and Practice – Third Edition (Vol. 20)*, (Thousand Oaks, C.A.: SAGE Publications, 2015), p.9

<sup>225</sup> See Robert K. Merton, 'The Focussed Interview and Focus Groups: Continuities and Discontinuities', *The Public Opinion Quarterly*, vol. 51, no. 4, 1987, pp. 555; and Robyn Longhurst, 'Semi-structured Interviews and Focus Groups', in Nicholas Clifford, Shaun French, and Gill Valentine, eds., *Key Methods in Geography – Second Edition*, (London: SAGE Publications, 2010), pp.105-106

<sup>226</sup> Robert K. Merton, Marjorie Fiske, and Patricia L. Kendall, *The Focused Interview: A Manual of Problems and Procedures – Second Edition*, (New York, N.Y.: The Free Press, 1990), pp.135-136.

turn, participants are encouraged to talk to one another<sup>227</sup>; asking questions, exchanging anecdotes, and commenting on each other's experiences and points of view<sup>228</sup>.

The technique employed is that of a particularly significant form of humanistic interview<sup>229</sup>; especially apt for the exploration of *tacit, uncodified, and experiential human knowledge*<sup>230</sup>, for the in-depth examination of not only *what* people think but *how* they think and *why* they think that way<sup>231</sup>, and for the construction of *symbolic meaning* rather than of measurement<sup>232</sup>. Focus group interviews consist of a series of questions, usually numbering between ten and twenty, that are intended to facilitate discussion and elicit opinions from and amongst a small group of specially, pre-selected people<sup>233</sup>. Whilst the same questions are put to all focus groups within a single study, the primary intent of the investigator is to facilitate and to stimulate discussion around a particular topic, theme, or area of experience<sup>234</sup>.

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<sup>227</sup> Jenny Kitzinger, 'The Methodology of Focus Groups: the Importance of Interactions between Research Participants', *Sociology of Health & Illness*, vol. 16, issue 1, 1994, pp. 103-104

<sup>228</sup> Jenny Kitzinger, 'Qualitative Research: Introducing Focus Groups'. *British Medical Journal*, vol. 311, no.7000, 1995, p.299

<sup>229</sup> David W. Stewart and Prem N. Shamdasani, *Focus groups: Theory and Practice – Third Edition (Vol. 20)*, p. 13

<sup>230</sup> Alan Johnson, '“It's Good To Talk”: The Focus Group and the Sociological Imagination', *The Sociological Review*, vol. 44, issue 3, 1996, p. 521

<sup>231</sup> Andrew Parker and Jonathan Titter, 'Focus Group Method and Methodology: Current Practice and Recent Debate', *International Journal of Research & Method in Education*, vol. 29, issue 1, 2006, p.25

<sup>232</sup> David W. Stewart and Prem N. Shamdasani, *Focus groups: Theory and Practice – Third Edition (Vol. 20)*, *Ibid.*

<sup>233</sup> David W. Stewart and Prem N. Shamdasani, *Focus groups: Theory and Practice – Third Edition (Vol. 20)*, pp. 39-40

<sup>234</sup> Alan Johnson, '“It's Good To Talk”: The Focus Group and the Sociological Imagination', p. 523

In immediate contrast, therefore, to other group interview situations, wherein the researcher adopts an *investigative* and *controlling* role in proceedings<sup>235</sup>, a researcher in charge of conducting a focus group situation plays either the role of *facilitator*<sup>236</sup> or of *moderator*<sup>237</sup>; that is, the researcher acts as facilitator and/or moderator of a focussed group discussion *between participants*, and not *between* himself or herself *and* the chosen participant(s). Participants within a focus group, on the other hand, are not necessarily required to answer every question<sup>238</sup>, and the approach to analysis is severely curtailed and sometimes restricted<sup>239</sup>; interpretations of data cannot always, for instance, include exact counts of agreement or disagreement.

As each participant within the group study may not have had the opportunity to be asked every question, or to discuss in full every issue tabled, the research data generated from focus group interviews is altogether *much less precise* than if a quantitative survey had been conducted<sup>240</sup>, and *less in-depth* than if an unstructured or guided interview had been used<sup>241</sup>. That said, focus groups do conclusively provide valuable information and active knowledge concerning, and the rationale behind, a multitude of human behaviours, beliefs, and attitudes<sup>242</sup>.

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<sup>235</sup> See Andrew Parker and Jonathan Tritten, 'Focus Group Method and Methodology: Current Practice and Recent Debate', p.25; and Robyn Longhurst, 'Semi-structured Interviews and Focus Groups', pp.105-106

<sup>236</sup> Andrew Parker and Jonathan Tritten, 'Focus Group Method and Methodology: Current Practice and Recent Debate', p.26

<sup>237</sup> Alan Johnson, 'It's Good To Talk': The Focus Group and the Sociological Imagination', p. 521

<sup>238</sup> David W. Stewart and Prem N. Shandasani, *Focus groups: Theory and Practice – Third Edition (Vol. 20)*, pp.52-53

<sup>239</sup> Janice M. Morse, 'The Implications of Interview Type and Structure in Mixed Method Designs', p.197

<sup>240</sup> George Kamberelis and Greg Dimitriadis, *Focus Groups: From Structured Interviews to Collective Conversations*, (Abingdon: Routledge Press, 2013), pp. 59-60

<sup>241</sup> James A. Holstein and Jaber F. Gubrium, 'The Active Interview', pp.155-156

<sup>242</sup> Andrew Parker and Jonathan Tritten, 'Focus Group Method and Methodology: Current Practice and Recent Debate', pp.31-32

## The Form of the Interview: Semi-structured Interviews

The final category of research interview, sometimes referred to as *informal*, *conversational*, or *soft* qualitative interviews, is the *semi-structured* research interview<sup>243</sup>. A common methodological tool within the social sciences<sup>244</sup>, especially useful as a streamlined means of obtaining the rich, detailed data generated typically through field research without committing the investigator to prolonged involvement in the lives of their participant-subjects<sup>245</sup>, *semi-structured interviews* are, overall, more flexible than other standardised research methods and interviewing techniques<sup>246</sup>; such as either the *structured interview* or the *focus group survey*<sup>247</sup>.

Typically conducted face-to-face with one respondent at a time<sup>248</sup>, the semi-structured interview format employs a blend of closed- and open-ended questions that might be posed in conversation to either an individual or to a participant group<sup>249</sup>. The base interview consists of a question stem, to which the given participant may respond freely<sup>250</sup>. Further probing questions, planned or arising from a participant's previous response, might also be asked subsequently<sup>251</sup>.

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<sup>243</sup> Robyn Longhurst, 'Semi-structured Interviews and Focus Groups', p.103

<sup>244</sup> Janice M. Morse, 'The Implications of Interview Type and Structure in Mixed Method Designs', *Ibid.*

<sup>245</sup> Kathleen M. Blee and Verta Taylor, 'Semi-Structured Interviewing in Social Movement Research', in Bert Klandermans and Suzanne Staggenborg, eds., *Methods of Social Movement Research*, (Minneapolis, M.N.: The University of Minnesota Press, 2002), p.93

<sup>246</sup> William C. Adams, 'Conducting Semi-Structured Interviews', in Joseph S. Wholey, Harry P. Hatry, and Kathryn E. Newcomer, eds., *Handbook of Practical Program Evaluation – Third Edition*, (San Francisco, C.A.: Jossey-Bass, 2010), pp. 365-366

<sup>247</sup> Robyn Longhurst, 'Semi-structured Interviews and Focus Groups', *Ibid.*

<sup>248</sup> William C. Adams, 'Conducting Semi-Structured Interviews', p.366

<sup>249</sup> Kathleen M. Blee and Verta Taylor, 'Semi-Structured Interviewing in Social Movement Research', p.100

<sup>250</sup> Nigel King, 'Using Interviews in Qualitative Research', p.13

<sup>251</sup> William C. Adams, 'Conducting Semi-Structured Interviews', *Ibid.*

Semi-structured interviews are generally employed when the researcher in question knows enough concerning a research topic or a phenomenon to be capable of identifying the subject domain appropriately<sup>252</sup>, as also to appear familiar with the bounded limits of the research topic at hand<sup>253</sup>; in other words, to be capable of anticipating all of the answers available, permissible and pertinent to the central research question, together with any research issues and miscellaneous problems hitherto undiscovered<sup>254</sup>. Questions are asked of all participants in the same order<sup>255</sup>. As with more structured interviewing techniques, semi-structured interviews may also be conducted face-to-face, over the telephone, online via the Internet, or in written format<sup>256</sup>.

Semi-structured interviews are often selected as the predominant means of data collection as a direct consequence of two primary considerations<sup>257</sup>. First, semi-structured research interviews are well suited to the exploration of the perceptions and opinions of respondents concerning complex and sometimes sensitive issues, and to the in-depth probing by an investigator for more information and clarification of answers<sup>258</sup>. Second, the varied professional, educational, and personal histories embodied within a proposed

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<sup>252</sup> Kathleen M. Blee and Verta Taylor, 'Semi-Structured Interviewing in Social Movement Research', *Ibid.*

<sup>253</sup> Robyn Longhurst, 'Semi-structured Interviews and Focus Groups', pp.106-107

<sup>254</sup> William C. Adams, 'Conducting Semi-Structured Interviews', p.367

<sup>255</sup> Christiane Schmidt, 'The Analysis of Semi-Interviews', in Uwe Flick, Ernst von Kardorff, and Ines Steinke, eds., *A Companion to Qualitative Research*, (London: SAGE Publications, 2005), p.253

<sup>256</sup> Nigel King, 'Using Interviews in Qualitative Research', p.12

<sup>257</sup> K. Louise Barriball and Alison While, 'Collecting Data Using a Semi-Structured Interview: A Discussion Paper', *Journal of Advanced Nursing*, vol. 19, issue 2, 1994, p.330

<sup>258</sup> K. Louise Barriball and Alison While, 'Collecting Data Using a Semi-Structured Interview: A Discussion Paper', pp.331-332

sample group often preclude the use of a standardized and rigid interview schedule<sup>259</sup>.  
*One proposition begets the other.*

The semi-structured interview method proposed here is thus rich in heuristic potential, but is subject always to the intrusive effects of interviewer bias; both during the interview process, and in the analysis of interview transcripts<sup>260</sup>. This bias can affect significantly the credibility of theory building arrived at from qualitative data created during the research interview process<sup>261</sup>. Hence, for the semi-structured interview, the validity and the reliability of generated research data depends, not upon the repeated use of either wording or of a sequence of questions<sup>262</sup>, but instead on the conveyance of an equivalence of meaning during the interview process arrived at preferably through a triangulation of information<sup>263</sup>; one that would help to standardize the semi-structured interview and facilitate comparability<sup>264</sup>.

#### **2.4.5. Sources of Evidence and Issues of Data Collection**

The key activity critical to data collection for this thesis was the identification of a suitable case study to be analysed, an aim met through the selection of the project

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<sup>259</sup> K. Louise Barriball and Alison While, 'Collecting Data Using a Semi-Structured Interview: A Discussion Paper', pp.332-333

<sup>260</sup> Anne M. Lillis, 'A Framework for the Analysis of Interview Data from Multiple Field Research Sites', *Accounting and Finance*, vol. 39, issue 1, p. 84

<sup>261</sup> Jennifer C. Green, *Mixed Methods in Social Inquiry*, p. 43

<sup>262</sup> See K. Louise Barriball and Alison While, 'Collecting Data Using a Semi-Structured Interview: A Discussion Paper', p.330; and Kathleen M. Blee and Verta Taylor, 'Semi-Structured Interviewing in Social Movement Research', p.100

<sup>263</sup> N.K. Denzin. *The Research Act*, p.291

<sup>264</sup> See K. Louise Barriball and Alison While, 'Collecting Data Using a Semi-Structured Interview: A Discussion Paper', p.330; and Kathleen M. Blee and Verta Taylor, 'Semi-Structured Interviewing in Social Movement Research', p.100

discussed previously. The initial framework for the methods to be used in the gathering of data and for the analysis of this research was created in 2005, based on this researcher's experience documenting the project as an intern at the eGovernments Foundation in Bangalore (India) earlier that year. During this time, the researcher was able to engage with several people involved on the project, identify some of the key contradictions in project design and implementation, and come face to face with some of the major issues hindering the project's success. Those initial observations and interactions were pivotal to the formation and design of this research. Key research methods were further identified and refined through a series of research projects undertaken by this researcher in 2005 and 2006. Interviews and on-site observations, for example, were confirmed as key to the understanding of the outcome. The nature of the project demanded the collection and use of both quantitative and qualitative data as outlined below:

### **Quantitative Data**

Quantitative data was required to numerically demonstrate project success or failure, and to facilitate a comparison between the embedded case studies. This thesis made use of statistics indicating changes to property tax revenue from 1998 – 2008, as well as changes in the number of properties brought into the tax net during that time for both Bangalore City as a whole and for the twelve specially selected wards. Data was obtained from government sources: from officials based at the Bangalore City Corporation as well as from Revenue Offices responsible for specific wards. In addition, quantitative data dealing with spending on e-government in India and various

development indicators proved extremely useful in laying out the broader canvas against which this thesis is set. Drafts of key results gained from an analysis of the numerical data were sent to select interviewees in order to obtain their views and develop a more informed interpretation.

## **Qualitative Data**

Qualitative material, from both primary and secondary sources, was essential to examine the broader arguments relating to the use of ICTs as tools of administrative reform within the larger context of development in India. Primary data used in this thesis consisted chiefly of material gained through in-depth interviews and informal discussions with individuals involved with the design, implementation, and use of the system, collected between 2005 - 2010<sup>265</sup>; whilst secondary data – easily sourced from books, journals, working papers, newspaper articles, and e-journals – comprised of work that attempted to conceptualise Indian society and political culture (particularly the recent trend of decentralisation and the government’s policy towards ICTs), analyse recent studies conducted in the field by international organisations or other civic bodies, discuss the use of ICTs in public administration or institutional reform, or propose alternative policy solutions. A large percentage of such data used was academic in its origins; addressing issues from not only a political science perspective, but from other disciplines such as economics, psychology and sociology. Non-academic work included articles by IT professionals, policymakers working for international institutions, popular science

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<sup>265</sup> Key interviews whose subjects have been quoted verbatim have been listed in the bibliography.

columnists, activists, and members of organisations dedicated to creating and spreading awareness about technology.

## **2.4.6. Qualitative and Quantitative Methods Employed**

### **Qualitative Methods**

#### **A. Interviews: Who and Why**

In order to appropriately assess the outcome of the project, and the impact that actor motivations had on key decisions taken during the design and implementation process, interviews were carried out with a number of people who had direct responsibility for, or an impact upon, the given case. Whilst some might argue that diversity of the kind likely to be encountered in a study of local government such as this one is impossible to capture fully<sup>266</sup>, this research project nevertheless has endeavoured to bring together a broad cross-section of different experiences, each giving an insight into different stages of the case study's inception and implementation and adoption.

Semi-structured, individual-centred interview techniques were employed to help uncover consistencies (and inconsistencies) in viewpoints and provide an in-depth understanding of actor motivations and actions not easily achieved otherwise. A basic questionnaire (see *Appendix A*) was created to serve as a general guide for questions that were common to all interviews, but follow-up questions were put to interviewees based on issues that arose naturally in conversation. For this study, 40 interviews were

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<sup>266</sup> Jeffery Stanyer, *Understanding Local Government* (London: Fontana Press, 1979), pp. 2-3.

conducted over a 24-month period. The interviewees can be roughly divided into four groups based on their relationship to the case:

**1. Senior Civil Servants** involved with the planning and implementation of the project, including current and former BBMP Commissioners, Deputy Commissioners for Revenue, and Revenue Officers;

**2. Revenue and Tax Officials**, primarily Assistant Revenue Officers (AROs) responsible for the in-the-field collection and administration of property tax in the city;

**3. Software Developers** involved in the conception, design, and implementation of the project;

**4. Miscellaneous Actors** including elected government representatives, journalists and other media professionals, and external consultants.

Once identified, all potential interviewees were contacted by telephone at their place of work or via e-mail. If the interviewee was not easy to reach, a message would be left and a visit would be paid to their place of work. An interview would then be conducted at a mutually convenient time. All subjects asked agreed to express their views and experiences, although some required more persuasion than others and often repeat visits had to be made to the relevant revenue office in order to meet with different people. All the interviews were conducted face-to-face, usually at the respondent's place of work.

Twenty-seven subjects agreed to full-length interviews and to having their comments recorded. These included all six members of the project planning committee (Senior Civil Servants, Elected Representatives, and Software Developers), one senior government official involved with the development and implementation of the GIS component, and twenty senior revenue officers involved with the system's application in the field. Additional informal interviews conducted face-to-face or over the email were also used to close gaps in knowledge, to follow up new information, and to anchor the researcher's interpretation of events and participants' motives within the larger theoretical and analytical context.

In addition to the recorded interviews, this thesis uses information and quotes obtained informally from people related to the project who did not wish to be interviewed formally or to have their comments recorded in order to obtain a cross-hierarchical view of the impact of process re-engineering on the organisational culture of their workplace and of other practical issues on the ground. Out of the 13 people in this category, ten were junior revenue officials working under the AROs interviewed (Station Managers, Tax Inspectors, and Accountants), two were Revenue Officers supervising the overall administration of their Revenue Offices, and one was a local correspondent from a leading national daily.

Face-to-face interviews were recorded using a hand-held digital recording device that saved audio data in the form of MP3 files. Permission to record the interview was requested at the beginning, prior to switching the device on. Brief notes were also taken

during the interview to highlight key themes and issues. In cases where the subject was reluctant to be recorded, the device was not used and detailed note-taking was relied upon. In a few cases, a neutral translator was used to mediate between the researcher and the interviewee. The translator was not informed beforehand about the nature of the interview to keep them unbiased, their observations were only sought after an interview, and then only if the researcher picked up on a subject's change of tone when responding to certain questions. All interviews – digitally recorded and manually noted down – were transcribed in full by the author. The process of transcription helped familiarize the researcher with the content of each interview and helped expedite the data analysis. For the sake of clarity, stumbling and hesitations have been removed from the quotations used here, but they have been retained in the original transcriptions.

All quotations from respondents were anonymized prior to insertion into the work. Although a little bit of research would doubtless reveal the people behind the opinions, given the limited field of observation, it was important here to conceal as far as possible the identity of the interviewees given the political implications of their responses. Respondents are thus identified loosely by their job in the Revenue Department or their relationship to the project.

## **B. Document Analysis**

Interview transcripts were supplemented with internal and external documents to construct a detailed narrative history of the project, forming the basis for identifying events leading to the development of the system, as well as the games shaping the moves

of the players. The various agencies and revenue offices involved provided documentation regarding the project's design, implementation, and impact on tax collection within their particular sphere of influence. These often took the form of internal reports, memos, and annual statistics.

Publicly available documentation used included published annual reports, tax handbooks, working papers, and news articles. In some cases, documentation was available as a download from the project website. When available, such documentation was pivotal in understanding the stated goals of the project designers, the preferences of more junior revenue staff, and how both corresponded to the actual impact of the system on tax administration.

### **C. Participant Observation**

Visits were made to the revenue offices, offices of the software companies responsible for the design of the project, and to the site that hosted the Bangalore City Corporation's servers and GIS centre: office spaces, computer labs, and citizen service kiosks. Site visits were often deliberately timed to coincide with interviews, and as almost all interviews took place on the project site itself, it was easy to successfully request to have a tour of the premises.

On-site participant observation was thought important for revealing information about internal dynamics that interviews and documents alone could not illuminate. For instance, visits to workspaces and observations about the state of the facilities and

hardware provided were central in revealing the true value placed on the project at the level of individual revenue offices. Equally, site visits allowed the researcher to witness firsthand the social structure and power dynamics operating within different organisations, and place these observations within the context of interview data. It was thus important to use these site visits to get a sense of not only the technology itself, but also the environment within which the staff involved on the project worked.

## **Quantitative Analysis**

### **A. Statistical Analysis of Property Tax Data**

An important part of judging the nature and direction of the project's outcome over the ten-year period under study was the data pertaining to property tax revenue given to this researcher by the BBMP Revenue Department. From the basic figures of anticipated and actual tax collection obtained from official sources, statistical analysis was conducted to determine annual shortfalls in revenue, the percentage change in revenue anticipated and actually collected, and the annual changes to collection efficiency and citizen tax compliance (see *Appendix C*). These figures were calculated for both Bangalore city as a whole and for 12 wards selected according to strict criteria. They were then juxtaposed with interview data and information gleaned from documents to find out whether there was a connection between specific actions, decisions and project outcome.

## 2.5. Limitations of the Study

The empirical study has several limitations. Firstly, investigations into the adoption of e-government systems by government employees are relatively new to e-government researchers, particularly in the Indian or developing world context. The discussed findings and their implications are obtained from one single study that examined a particular technology, and targeted a specific user group in Bangalore, India. Therefore, although the findings throw light on some of the non-technical factors influencing the outcome of e-government projects in less developed countries, care needs to be taken whilst generalizing these findings and applying them to other technologies, groups, or governments.

Second, data obtained through self-reporting and interviews can be skewed by too much personal bias or by ulterior motives. Government employees used to the culture of rigid hierarchies such as those prevalent in the Indian bureaucracy can often be wary of expressing true opinions; either for fear of upsetting those in authority or because they feel that there is something to be gained out of saying what their superiors want to hear. Junior revenue employees and other persons who were reluctant to voice their opinions whilst being recorded were given the option of shorter, off-the-record interviews. All interviewees were guaranteed anonymity whilst being quoted.

It was recognised too that the presence of a ‘foreigner’ (including an Indian based abroad) could also potentially have an impact (positive or negative) on interviewee responses, especially when the person concerned was already seen to have been given

access to more senior figures in the Revenue Department hierarchy. To bolster confidence that this was indeed an independent research project and not sponsored in anyway by those at the top, care was taken during the design of interview questionnaires, in the method of selection used to choose subjects, the way in which contact was made, the way in which interviews were conducted, and the manner in which the interview data was ultimately handled. Attention was also paid to the factors which might minimise the effect of the ‘foreigner’ prejudice, keeping the focus of the subject on the interview itself and deflecting attention away from the interviewer.

Another element that could have had bearing on the interpretation of interview data was the use of a translator by this researcher for some interviews, particularly those with more junior employees who were more comfortable speaking regional languages. As there was a potential danger that key elements of interviews would be lost during the translation process and that an element of translator bias might creep into the final transcription, interviews were digitally recorded where possible and the translations made by the primary translator checked at random by an independent volunteer.

The final limitation of this work concerns the representativeness of the sample under study. Given the paucity of data in certain areas and the reluctance of some revenue officials to be formally interviewed, this study was conducted using a snapshot research approach – to provide as great an insight as possible into the mechanics of system design and adoption within the BBMP – and it is wholly acknowledged that additional research efforts might be needed to investigate more completely the validity of certain frameworks

and findings. In particular, a less in-depth survey of a larger sample or of longitudinal evidence gained through follow-up interviews at periodic intervals might enhance our understanding of the factors identified by this research as being important to the acceptance of a technology by government officials.

However despite these threats to validity, a variety of methods were used to ensure that the study had fully captured the key elements of the case, enabling a comprehensive view of the application of the Ecology of Games to be formed. Most importantly, repeated visits were made over time to a wide variety of actors until there was a sense of closure, and drafts of various chapters were shared with key informants and participants to obtain their perspective on the accuracy of the accounts reported here.

## 2.6. Conclusions

By using the Ecology of Games as a framework of analysis to examine its central case study, this thesis will show that the polity, especially in the context of ICT4D projects, is more than simply an arena for competition amongst rival interests; though it is such negative game play that generally results in unfavourable project outcomes.

Through its use of multiple sources of data, this thesis contends that purely self-interested behaviour leads to conflicts in actor interactions, which in turn produce design-actuality gaps that negatively impact a project. Admittedly, it is impossible to completely eliminate self-interested behaviour during the implementation of a project, or indeed

eliminate conflict completely. However, this thesis aims to demonstrate that if project planners can align the many interests at play within a situation by focusing attention on the many (if diverse) benefits accruing to actors from e-government, they will be able to convert purely self-interested players into those with mixed motives, thereby bringing about more positive and successful outcomes.

## Chapter 3

# Bangalore's e-Government Goal: Financing Urban Local Government through Property Tax

Many developing countries today are experiencing high levels of urbanisation, and their cities are facing increased demands for the provision of municipal services. Topmost amongst the issues faced by scholars of public policy and urban management practitioners is that of urban finance, and in particular the question of how cities in the near future will be able to fund and deliver adequate public services to their citizens. The rapid growth of large cities has placed great pressure on government budgets, particularly those at the state and local levels, especially in the light of fiscal decentralisation initiatives which have resulted in central governments giving state and local agencies more control over their own finances<sup>1</sup>.

This tendency has been further hastened by the increase in migration to urban areas, a phenomenon that has brought about an expansion of the formal sector of the economy and a growth in the overall taxable capacity of urban centres; a capacity that is not necessarily easily reached by the central government revenue system and which may only be tapped through the institution of (usually direct) taxes by state and local

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<sup>1</sup> Roy W. Bahl and Johannes F. Linn, *Urban Public Finance in Developing Countries* (New York: Oxford University Press, 1992), p. 12.

government agencies<sup>2</sup>. Local government bodies, in particular, have come to play an especially important role in local resource mobilisation and the subsequent economic development of cities, not in the least because they are completely or at least partially responsible for the provision of physical infrastructure such as the construction and maintenance of roads, potable water, sewerage and drainage, and other public utilities.

As a first step to analysing the finances of urban governments, there is a need to distinguish between local and external sources of revenue<sup>3</sup>. **Local revenue** is usually generated from locally collected taxes, user and benefit charges, and other locally raised revenues such as license fees, penalties, and stamp duties. **External revenue**, on the other hand, refers to funding that comes from transfers from higher-level government bodies in the form of grants or shared taxes, and from money borrowed from external sources. This distinction is important, as it not only demonstrates the different sources of income available to a local government body, but may also be used to describe and analyse the extent to which an urban government agency draws on resources generated by the urban economy.

Games to secure local agency funding from external sources of revenue are generally preferred by political elites to those that seek to harness local sources of revenue, as they are played largely within the political elite with little involvement from the public, thereby keeping actors on familiar territory and away from political controversy. That said, studies have shown that the levying of taxes is unavoidable, and

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<sup>2</sup> Bahl and Linn, *Urban Public Finance in Developing Countries*, p. 3.

<sup>3</sup> S. R. Maheshwari, *Local Government in India* (Agra: Lakshmi Narain Agarwal, 2008), p. 339

that local sources of revenue often account for more than half of the total raised revenues in the average developing country city<sup>4</sup>. In India, for example, urban government agencies on average currently derive close to 66% of their total revenue from taxes, with other sources of income being non-tax revenue (21%) and grants-in-aid (13%)<sup>5</sup>. In the search for sustainable sources of local revenue to finance service provision and urban planning, actors within urban government agencies need to master the art of engaging with the public in games of tax administration and collection. The first move in these sorts of interactions is generally to determine what should constitute the tax base for the revenue system. Of the three possible bases – property, sales, and income tax – available to urban local government bodies in both developed and developing world countries, property tax is the most widely used<sup>6</sup>, and a discussion of this tax and its application in India shall form the first part of our background to this study.

### 3.1. Property Tax: Definition and Scope

Property tax may be defined as a recurrent tax on real property (land and/or improvements) in urban areas<sup>7</sup>. Just like other taxes, it may be considered as ‘a compulsory transfer of money...from private individuals, institutions, or groups to the government...[as] one of the principal means by which a government finances its

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<sup>4</sup> Bahl and Linn, *Urban Public Finance in Developing Countries*, p. 33.

<sup>5</sup> Maheshwari, *Local Government in India*, p. 339.

<sup>6</sup> Dele Olowu, ‘Property Taxation and Democratic Decentralisation in Developing Countries’, Institute of Social Studies, Working Paper Series No. 401, 2004, p. 11.

<sup>7</sup> William Dillinger, ‘Urban Property Tax in Developing Countries’, World Bank Policy Research Working Paper Series, No. 41, 1988, p.1.

expenditure’<sup>8</sup>. Further, Rosengard (1998) defines Property Tax as ‘...[an] *ad valorem* (“according to the value” tax, as opposed to a unit tax), *in rem* (“against the object” tax as opposed to a personal or *in personam* tax) levied on the ownership, occupation, or development of land and/or buildings. Property taxes usually are assessed annually upon the capital value of a property, or upon proxies for capital value such as presumed or actual rental income. Taxes not confined to immovable property, such as net wealth taxes and general capital gains taxes, are not commonly classified as property taxes<sup>9</sup>.”

Thus, in developing countries, property tax at its most basic is a wealth tax on fixed assets levied to help finance local government provision of public services. It is only one of several forms of ‘real property’ related taxes, with others including taxes on property transactions, inheritance taxes, and taxes on rural real property. A major difference between property tax and other property-based taxes lies in the fact that while the latter forms of taxation are generally levied by central or provincial governments and constitute a small part of their revenues, the levying of the local property tax is normally assigned to urban local government agencies and constitutes a relatively large proportion of their resources<sup>10</sup>.

Most developing countries, India included, have some sort of property tax, which has traditionally been the primary generator of local government own-source discretionary revenue to fund public services and to develop and maintain physical and

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<sup>8</sup> Graham Bannock, R. E. Baxter, and Evan Davis, *The Penguin Dictionary of Economics 4 edn.* (London: Penguin Books, 1987), p. 398 cited in Jay K. Rosengard, *Property Tax in Developing Countries* (Boston: Kluwer Academic Publishers, 1998), p. 3.

<sup>9</sup> Rosengard, *Property Tax in Developing Countries*, p. 3.

<sup>10</sup> Dillinger, ‘Urban Property Tax in Developing Countries’, p. 2.

administrative infrastructure<sup>11</sup>. According to conventional wisdom, there are three basic forms of property taxation depending on the base taxed: property tax may be levied on the annual or rental value (hereafter referred to as ARV) of the property, the capital value (the Capital Value system or CVS) of the land and improvements, or on the site value of the land<sup>12</sup>. The ARV form may be seen as an attempt to tax yearly income from properties, whereas the CVS and site value forms are both partial wealth taxes.

As a means of financing the recurrent cost of municipal services, the merits of the property tax are controversial, particularly as in theory these could be financed through a variety of user charges, taxes, or by inter-governmental transfers. The tax does have some very obvious weaknesses<sup>13</sup>. Political vulnerability is a significant constraint on property tax as a source of revenue, as in practice the tax has a propensity to encounter a degree of political resistance that is altogether disproportionate to its absolute yield<sup>14</sup>. The large number of statutory taxpayers magnifies the political impact of even slight tax increases, whilst its high visibility amplifies awareness and intensifies the resentment of the tax burden. Further, the purported non-objective basis of assessment is commonly perceived to be arbitrary and unsubstantiated, with poor administration often leading to glaring horizontal inequities<sup>15</sup>. The tax also has the potential to exacerbate regional disparities in wealth, particularly in countries where rates and expenditures are determined locally.

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<sup>11</sup> Vito Tanzi, 'Quantitative Characteristics of the Tax Systems of Developing Countries', in David Newbery and Nicholas Stern eds., *The Theory of Taxation for Developing Countries* (New York: Oxford University Press, 1987), p. 206.

<sup>12</sup> Bahl and Linn, *Urban Public Finance in Developing Countries*, p. 83.

<sup>13</sup> Rosengard, *Property Tax in Developing Countries*, p. 9.

<sup>14</sup> National Institute of Urban Affairs (NIUA) *Reforming the Property Tax* (New Delhi: National Institute of Urban Affairs, 2004), p. 6

<sup>15</sup> Dillinger, 'Urban Property Tax in Developing Countries', p.5.

Drawbacks aside, however, the property tax ranks particularly well when compared to alternative sources of finance, particularly when judged on political viability, economic efficiency and equity criteria<sup>16</sup>. For instance, when compared to other taxes such as personal income taxes and retail or sales taxes, a form of property tax would have a larger coverage, be viable even in small cities and towns with low per capita income levels, and would not be in direct competition with taxes administered by higher levels of government which could result in reduced revenue for both the local government agency and the centre<sup>17</sup>.

Similarly user charges are less attractive for, although they rate better on efficiency grounds as they can serve as a pricing mechanism for efficiently rationing individual consumption of municipal services, the scope of their deployment is limited as municipal services are based on the notion that as “public goods” they are to be consumed collectively<sup>18</sup>. Most forms of intergovernmental transfers are also not as efficient in economic terms as property taxation is, for transfers typically entail extensive subsidies between the taxpayers of different jurisdictions which are hard to eliminate; culminating either in situations where taxpayers in some jurisdictions pay more in central taxes than their local government receives in transfers, or others where taxpayers pay less and their local government agency receives more<sup>19</sup>.

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<sup>16</sup> Adapted from Dillinger, ‘Urban Property Tax in Developing Countries’, pp. 14 -15.

<sup>17</sup> William Dillinger, *Urban Property Tax Reform: Guidelines and Recommendations* (Washington D.C: The World Bank, 1995), p. 3

<sup>18</sup> Dillinger, *Urban Property Tax Reform*, p. 2

<sup>19</sup> Richard M. Bird and Michael Smart, ‘Intergovernmental Fiscal Transfers: International Lessons for Developing Countries’, *World Development*, vol. 30 no.6, 2002, p. 901

In balance, the property tax is appealing to local governments in developing countries for a number of reasons<sup>20</sup>. First and possibly most importantly, it is a potential revenue generator, particularly given the high-income elasticity of property ownership in developing countries. It is a relatively stable source of income, easy to implement slight adjustments and incremental rate change, and is generally equitable and progressive for residential properties. It is hard to avoid legally due to the high visibility and relative immobility of property, with asset immobility also conferring a high degree of economic efficiency on the tax. It is clearly enforceable, particularly through the seizure and liquidation of property. The tax also has the potential to enhance the local government agency's responsiveness to local priorities, particularly when used to finance local goods.

### 3.2. Property Tax Administration and Tax Reform

Although the property tax is the most widely used source of municipal tax in the developing world, its current yield is often insubstantial as property tax systems are often riddled with a host of administrative problems, legal issues, and corrupt practices<sup>21</sup>. In particular, pressures for special exemptions, multiple tax rates, and the inability of developing country collection system designs to account for inflation have eroded property tax revenues in these countries faster over time than most other components of revenue systems<sup>22</sup>. Thus, even when the authority to levy property tax is granted to local governments or when higher levels of government are interested in property tax reform,

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<sup>20</sup> Rosengard, *Property Tax in Developing Countries*, p. 8.

<sup>21</sup> Dillinger, 'Urban Property Tax in Developing Countries', p. 1

<sup>22</sup> Rosengard, *Property Tax in Developing Countries*, p. xi.

progress is often slow owing to perverse economic incentives, inappropriate policy design, a lack of proper administrative systems, trained personnel, and a linkage between revenue and expenditure powers<sup>23</sup>.

Property tax is difficult to reform primarily because (as mentioned earlier) it is a highly visible and politically sensitive tax<sup>24</sup>. Unlike sales tax or excise duty, which are hidden in the selling price of goods and services in a manner whereby citizens are generally unaware of how much tax they are actually paying, it is easy to calculate one's property tax dues and citizens are generally completely aware of their tax liability for a given year. Further, unlike income tax where people are held liable according to their ability to pay, everyone who owns a property is required to pay property tax regardless of their income. The tax is also unpopular because its calculation is (often correctly) perceived to be subjective, with revenue staff exercising enormous discretion during the assessment process. Additionally, tax laws regarding assessment and collection are often opaque, and redress from inaccurate valuation is generally a tedious process. In India, while the last four decades have seen a number of committees make recommendations about improving the property tax system, there has been a general inertia within the political class to implement any of the suggested reforms, and attempts made by municipal bodies to reform their property tax systems have often fallen short of stated intentions due to lack of legislative support<sup>25</sup>.

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<sup>23</sup> Roy Kelly, 'Designing a Property Tax Reform Strategy in Sub-Saharan Africa: An Analytical Framework Applied to Kenya', *Public Budgeting and Finance*, vol.20, issue 4, 2000, p.38.

<sup>24</sup> NIUA, *Reforming the Property Tax*, p. 7.

<sup>25</sup> NIUA, *Reforming the Property Tax*, p. 6.

In confronting continued rapid urban growth local authorities must, at the very least, seek to maintain a constant level of property tax revenues in real terms in order to continue to provide a minimum level of public services to their citizens. Policy moves designed to improve the performance of urban property taxes have two targets for intervention: tax policy and tax administration. Key decisions used to meet revenue targets include the definition of the tax base, the setting of basic rate structures and other preferential tax rates, the use of exemptions, and periodic adjustments for inflation<sup>26</sup>.

In theory, policy actions offer the prospect of quick revenue increases; however, if made alone without changes to the tax administration, changes in property tax policy may exaggerate the inequities inherent in the incidence of the tax. For example, as noted in Dillinger (1988), a rise in the tax rate without a parallel increase in the number of properties assessed will place the burden of the increase on those taxpayers whose properties are already on the rolls, are accurately valued, and from whom taxes are already collected<sup>27</sup>. Further, the use of policy tools on their own to achieve non-revenue objectives is generally not considered to be good practice, as they are usually not effective and mistakes can be costly in terms of lost revenue<sup>28</sup>.

On the other hand, the performance and fairness of property taxation depends to a large extent on how well the tax is administered – including the maintenance of the municipality's tax rolls, ensuring streamlined valuations, and efficient and cost-effective

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<sup>26</sup> Dillinger, 'Urban Property Tax in Developing Countries', p. 17.

<sup>27</sup> Dillinger, 'Urban Property Tax in Developing Countries', p. 18.

<sup>28</sup> Rosengard, *Property Tax in Developing Countries*, p. 14.

collection of the tax<sup>29</sup>. Poor administration in the form of incomplete tax rolls, haphazard valuations, and low collection efficiency reduces the proportion of the statutory base that is effectively taxed, and introduces an arbitrariness and an element of uncertainty into the incidence of the tax. Moves made to bring about improvements in tax administration offer the possibility of improving the equity of the tax, thereby improving compliance amongst citizens and increasing yields. Such equity may be achieved by improving the comprehensiveness of the tax rolls and widening the statutory base, and through enhancing the objectivity of valuations and enhancing the efficiency of collections – measures which aim to increase municipal revenues by increasing the tax burden of those citizens who either underpay or have so far evaded the tax net<sup>30</sup>.

Alone, however, improvements in administration might not be worthwhile, particularly if tax rates remain low and the absolute level of property tax collected is trivial and not worth collecting. This is largely because property tax is difficult to administer cost-effectively, involving as it does a large number of individual tax-paying units, each yielding a relatively small amount of revenue<sup>31</sup>. In a developing world context this is particularly pertinent as, not only does the tax base have a tendency to change constantly as a consequence of rapid urban growth and (often) high inflation, the taxing authority suffers from shortage of skilled staff and the sources of information used to facilitate property tax administration in developing countries (such as records of property

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<sup>29</sup> Dillinger, 'Urban Property Tax in Developing Countries', p. 24.

<sup>30</sup> Rosengard, *Property Tax in Developing Countries*, p. 18.

<sup>31</sup> Dillinger, 'Urban Property Tax in Developing Countries', p. 24.

transactions, title information, and building permits) are either badly maintained or even non-existent for large portions of the property market<sup>32</sup>.

As this thesis deals with the improvement of a tax administration system through the introduction of a computerised database and the use of digital mapping techniques to track compliance and check evasion, it is appropriate here to discuss in brief the administrative constraints placed on improving the fairness and revenue-generating capability of the property tax. Such constraints to improving the equity and revenue productivity of property tax lie in four facets of property tax administration within which there is ample scope for strategic interaction between the various key actors.

### **3.2.1. Discovery and Identification of Property Site and Ownership**

The problems of identifying ownership and assembling a complete enumeration of properties are perhaps the greatest constraints to efficient administration of property tax<sup>33</sup>. The administration of property taxes is based on a system of property records known as the fiscal cadastre, with each record containing for every property:

1. An identifying number, permitting the record to be linked to the parcel of land on the ground;

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<sup>32</sup> Bahl and Linn, *Urban Public Finance in Developing Countries*, p. 109.

<sup>33</sup> Bahl and Linn, *Urban Public Finance in Developing Countries*, p. 109.

2. The data used to determine ownership of the property and, consequently, tax payer liability;
3. The data used in determining the property's value;
4. The data used for billing.

The property tax yield depends to a great extent on the completeness of the cadastre, both in terms of the authority having a record corresponding to every property on the ground, and also relating to the accuracy of the information contained within each record<sup>34</sup>. The cadastre also is a simple means by which parcels of land may be easily kept track of and linked to assessment, billing, and property transfer records; and the preparation of cadastral maps is consequently an expensive but essential step in the successful valuation and collection of property tax.

While historically many developing countries relied on owner declarations to compile their fiscal cadastres, in practice locating properties and identifying the owner often required large amounts of time and a high degree of ingenuity and resourcefulness on the part of the tax assessor for it to be done effectively<sup>35</sup>. This was particularly so because property title records and other sources of information available on ownership and sales values tended to be in extremely poor shape. The difficulty of the task was further compounded by the fact that an estimated 20% - 40% of all urban households in

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<sup>34</sup> Kelly, 'Designing a Property Tax Reform Strategy in Sub-Saharan Africa', p. 50

<sup>35</sup> K.P. Sinha, *Property Taxation in a Developing Economy* (New Delhi: Puja Publications, 1981), p. 63.

developing countries (a figure much higher in many developing country cities) lived on land for which neither they nor their landlords possessed proper legal titles<sup>36</sup>.

Today most governments now resort to assembling their own cadastre by making periodic field inventories<sup>37</sup>. The conventional method of conducting such an inventory begins with the preparation of a base map of the taxed jurisdiction, followed by a field survey to determine and delineate the boundaries of each property. From this, detailed cadastral maps are prepared, and each parcel of land is assigned an identification code. During the field survey, data to be employed in valuations such as the area of the land and materials used to construct the property are collected and incorporated into the property record, whilst billing data is usually obtained from a title or deeds registry which determines legal ownership.

### **3.2.2. Record Keeping and Records Management**

The inadequacy of property tax records is a large problem for administering property tax in developing countries<sup>38</sup>. The problem may manifest itself in several ways: in the form of an incomplete tax roll or inadequate ownership information; or may also appear as duplicate records, poor or dated information on improvements, or simply a poor method of maintaining and filing data<sup>39</sup>. Further, data on changes of ownership, sales prices, and new constructions may not be recorded promptly by the assessor; and without

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<sup>36</sup> Stephen K. Mayo, Stephen Malpezzi and David J. Gross, 'Shelter Strategies for the Urban Poor in Developing Countries', *World Bank Research Observer* 1, no. 2, 1986 p. 192.

<sup>37</sup> Dillinger, 'Urban Property Tax in Developing Countries', p. 26.

<sup>38</sup> Dillinger, *Urban Property Tax Reform*, p. 28

<sup>39</sup> Bahl and Linn, *Urban Public Finance in Developing Countries*, p. 111.

an effective means of keeping and retrieving property records it becomes difficult to identify, track, and bring to task all but the most obvious tax defaulters and collect arrears due, particularly in developing countries like India which have rapidly expanding urban populations<sup>40</sup>.

Underlying the problem of poor recordkeeping is often a distinct lack of attention by the government agency responsible for data collection, and a lack of coordination between the local, state, and central government offices involved. Procedures for updating records thus tend to be inappropriate, the records themselves poorly designed, reports sometimes incomplete, and an overall shortage of skilled staff<sup>41</sup>. This lack of skilled staff is often a particular issue: the personnel requirements for annual tax assessments made by representatives from the assessor's office are usually very large, and in developing countries this difficulty is circumvented by making *ad hoc* assessments – in a majority of cases – at the assessor's desk by simply copying the returns of the previous tax year. Consequently, improvements (and sometimes the land itself) are typically assessed well below their market value<sup>42</sup>. In addition, it has become usual for assessors in developing countries to depend on the taxpayer to report items of taxable property; a practice which, whilst making detailed inspections by the assessor unnecessary, leaves wide open opportunities for tax evasion and corruption.

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<sup>40</sup> Dillinger, 'Urban Property Tax in Developing Countries', p. 35.

<sup>41</sup> Bahl and Linn, *Urban Public Finance in Developing Countries*, p. 112.

<sup>42</sup> Sinha, *Property Taxation in a Developing Economy*, p. 63.

### 3.2.3. Property Tax Assessment

The valuation of a property lies at the heart of the assessment process, arising from the need to provide a basis for distributing the burden of the property tax across the citizenry in as equitable and as objective a manner possible<sup>43</sup>. The essential features of a tax valuation system are 1) that it is objective so that it may produce legally defensible valuations, 2) the methodology is appropriate to the skill levels of the local authority, and 3) market information is available for the local jurisdiction<sup>44</sup>. Value for tax purposes is generally calculated in one of two ways: as annual rental value or as capital (or sales) value. The definition used in a specific country often reflects its colonial history, much of Africa and South Asia have traditionally defined value on the basis of rent, whilst Latin America and East Asia have historically defined value on the basis of sales or market value<sup>45</sup>.

Changing the mind-sets of key actors in the property tax game is often central to successfully reforming the method of valuation. On the one hand, public reluctance to adopt new methods is a major obstacle to changes in assessment when undertaking property tax reform, often arising from a certain degree of unawareness and an aversion to shouldering an increased tax burden. In addition, those taxpayers who seek to use existing flaws in the system to their own advantage – to either partially or completely evade taxes – may also be reluctant to accept a better, more fool-proof system<sup>46</sup>. At the same time, the attitudes of government officials also need to be dealt with during the

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<sup>43</sup> Sinha, *Property Taxation in a Developing Economy*, p. 64.

<sup>44</sup> Dillinger, 'Urban Property Tax in Developing Countries', p. 27.

<sup>45</sup> Dillinger, 'Urban Property Tax in Developing Countries', p. 27.

<sup>46</sup> Adapted from Sinha, *Property Taxation in a Developing Economy*, pp. 65 – 66.

reform process as any change in procedure is bound to bring about modifications in existing systems, with resistance arising when staff are confronted with the need to develop new skills and where well-entrenched power structures and old mental models are challenged<sup>47</sup>. The degree to which both the public and the bureaucracy are willing to adapt to reforms is thus important, as these attitudes often shape the political response to changes in the administrative set-up of tax regimes and to reassessments of the tax rate.

### **3.2.4. Billing and Collection**

The production of revenue ultimately depends on an effective system of billing and collection, two administrative aspects of property tax systems that are often overlooked in favour of reforms in the areas of discovery and assessment<sup>48</sup>. The objective of a billing system is to fulfil the tax authority's legal obligation to notify the taxpayer of his liability, where success depends on both the legal definition of liability and on the mechanism by which the bill is produced and developed. As discussed in Dillinger (1988), the legal definition of liability should relieve the tax authority of any obligation to prove legal ownership, and instead permit the authority to impose non-compliance penalties against the property or the property's presumptive owners in the case of non-payment of dues<sup>49</sup>.

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<sup>47</sup> Shefali Virkar, 'Information and Communication Technologies in Administrative Reform for Development: Exploring the Case of Property Tax Systems in Karnataka, India' in Jacques Steyn, Jean-Paul van Belle and Eduardo Villanueva Mansilla, eds., *ICTs for Global Development and Sustainability: Practice and Application*, (Hershey: IGI Global, 2011), p. 138

<sup>48</sup> Adapted from Dillinger, 'Urban Property Tax in Developing Countries', p. 33.

<sup>49</sup> Dillinger, 'Urban Property Tax in Developing Countries', p. 33.

At the same time, policy decisions related to making improvements in the collection process are complicated as they involve a mix of administrative, legal, and political constraints. This is particularly so because a good system of collection involves making compliance convenient and non-compliance subject to swift, certain, and costly penalties. Many local governments in the developing world currently require that property tax payments be made in person at the city hall or local revenue office: a process which, for a large proportion of residents, often entails at the minimum a commute and a long wait in a queue, the sheer inconvenience of which often discourages compliance. Evidence from the field suggests that payments can be made convenient simply by decentralising the process through the establishment of easy-to-access local collection points, allowing for them to be either collected at branches of commercial banks or by permitting them to be made in quarterly or biannual instalments<sup>50</sup>.

### 3.3. Urban Local Bodies and Property Tax in India

Despite the fact that the country has recently become one of the fastest growing economies in the world, and its social indicators having improved relative to what they were a few decades ago, India is still faced with a large number of challenges that are typical of developing countries. Ineffective revenue collections ensure that, even in relatively prosperous parts of Indian cities, constraints are imposed on the quality of local public goods and services like water, electricity, garbage collection, and roads in a manner that their level of provision is strikingly low and that existing inefficiencies

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<sup>50</sup> Roy Kelly, 'Implementing Property Tax Reform in Developing Countries: Lessons from the Property Tax in Indonesia', *Review of Urban and Regional Development Studies*, vol. 4 issue 2, 1992, p. 206

inherent in public service provision are even further compounded<sup>51</sup>. Indeed, a quick back-of-the-envelope calculation indicates that current tax revenue figures are a definite cause for national concern, for whilst urban area revenues constitute over 55% of the national gross domestic product (GDP), urban municipal revenues make up only a paltry 0.6% of this figure and grow at a slower rate than central or state revenues<sup>52</sup>. This implies that – even at the best of times – there are not enough funds for good roads, clean water, and 24-hour electricity for consumption by urban residents across the country.

In order to gain a better understanding of property tax reform in India and help identify the key actors involved, this thesis will briefly discuss the various methods of computing property tax: the Annual Rental Value (ARV) method, the Capital Value System (CVS) method, the Site Value method, and the Unit Value System method as the most common forms of taxation prevalent in the country. A basic understanding of these approaches is especially crucial to any study of property tax-related games for the simple reason that any change in the way tax is assessed and collected would, in the majority of cases, bring about changes in the way key actors perceive their environment, thereby altering the course of their interactions by influencing goals, strategies, and power relationships at a fundamental level.

The emphasis of reform programmes dealing with both urban and rural local government structures in India has been on the devolution of responsibilities for district planning to locally elected representatives, with the central goal of all these initiatives

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<sup>51</sup> NIUA, *Reforming the Property Tax*, p. 8

<sup>52</sup> NIUA, *Reforming the Property Tax*, p. 9.

being to improve access to information leading to more informed, better-reasoned decision-making<sup>53</sup>. As urban local government bodies (ULBs) in India derive their status and powers solely from state-level legislation, laws and practice have varied substantially across states, and in some respects – as is the case of rural local government bodies – are thus somewhat restricted in the scope of their activities. They are, however, relatively more fiscally self-reliant than rural government agencies<sup>54</sup> and, following the abolition of transport taxes in most parts of the country, have come to rely on property tax as a major source of income; with it oftentimes accounting for more than half of the overall revenue generated<sup>55</sup>.

The levying of property tax, however, whilst making significant contributions to municipality coffers, has been subject to its own problems: on the one hand, tax collection systems across states usually lack uniformity and are generally characterised by the presence of out-dated procedures for assessment and collection<sup>56</sup>, and on the other, municipal authorities are often beset by procedural inadequacies with administrative problems, legal issues, and corrupt practices eroding the tax yield from within<sup>57</sup>. In particular, a distinct lack of accountability, political interference, poor information collection, and overall disorganisation discourage the effective enforcement and use of

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<sup>53</sup> NIUA, *Reforming the Property Tax*, p. 9.

<sup>54</sup> See for example in Jai Bhagwan, *Municipal Finance in the Metropolitan Cities of India: A Case Study of Delhi Municipal Corporation* (New Delhi: Concept Publishing, 1983) ; Abhijit Datta, *Municipal Finances in India* (New Delhi: Indian Institute of Public Administration, 1984) ; N. Rajagopala Rao, *Municipal Finances in India (Theory and Practice)* (New Delhi: Inter-India Publications, 1986) ; Pardeep Sachdeva, *Urban Local Government and Administration in India* (Allahabad: Kitab Mahal, 1993) ; Nirvirkar Singh, 'Governance and Reform in India', *The Journal of International Trade & Economic Development*, vol. 6, issue 2, 1997, p. 179.

<sup>55</sup> Maheshwari, *Local Government in India*, p. 344.

<sup>56</sup> Datta, *Municipal Finances in India*, p. 10.

<sup>57</sup> See for example Datta, *Municipal Finances in India*, and N. Rajagopala Rao, *Municipal Finances in India (Theory and Practice)*.

such taxes, and tend to result in a large proportion of a city's properties escaping the tax net; to the extent that an annual average collection efficiency of more than 50% is rarely achieved<sup>58</sup>.

The notion of a tax 'system' is therefore emphasised, as the ability of property taxation to achieve the desired effects of revenue, equity, and allocation of resources depends on a balance in all aspects of the property tax regime – namely the identification of the tax base, the rate structure, the valuation principles, and administrative practices – with many of the problems encountered in urban property tax administrations stemming from the authority's failure to view the system holistically whilst undertaking reform<sup>59</sup>.

### **3.3.1. The Annual Rental Value System**

Annual Rental Value (ARV) property tax systems, which more or less resemble British rates, are still used in most of the former British colonies including India. Under an ARV system, the base is defined as the expected or notional rental value of a property<sup>60</sup>. The method, as practiced in India, is simple to administer, relying as it does on direct market evidence whereby to value a rented property the tax authority merely requests rental data from the occupant<sup>61</sup>. In certain cases, the assessing authority may also demand written confirmation (such as a rent receipt), have the power to reject questionable documents, and make valuations based on its knowledge of the property

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<sup>58</sup> NIUA, *Reforming the Property Tax*, p. 9.

<sup>59</sup> Rosengard, *Property Tax in Developing Countries*, pp. 1-2.

<sup>60</sup> S. Rama Rao, 'Some Problems of the Property Tax', in Abhijit Datta ed., *Property Taxation in India*, (New Delhi: Indian Institute of Public Administration, 1983), p. 1.

<sup>61</sup> Dillinger, 'Urban Property Tax in Developing Countries', p. 28.

market. In the case of owner-occupied properties where rent receipts are not available, ARV systems have to use alternative methods to value a property, and usually assessors have to use their discretion in estimating values based on comparable rents.

### **Definition and Coverage of Base**

The concept of annual rental or annual rateable value is, in theory, expected to reflect the rent that a particular building will fetch in a free market where a tenant and landlord are able to arrive at a mutually acceptable rent under competitive conditions<sup>62</sup>. In actual practice, however, there is usually a wide divergence between assessed annual value and net market rent, and the tax base is often artificially narrowed through the enactment of rent control laws that seek to place a cap on rents, other legally permissible reductions in the annual value, political and administrative problems that lead to infrequent reassessment, and other assessment difficulties (particularly those related to non-residential properties)<sup>63</sup>. The tax base under annual rental value systems is further reduced by the exemption of certain classes of property and by a range of preferential assessments. For example, most ARV systems fully exempt those properties belonging to the government, religious and charitable organisations, foreign embassies, and (sometimes) owner-occupied properties from paying property tax<sup>64</sup>.

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<sup>62</sup> Mohan, 'Indian Thinking on Property Tax Reform', p. 122.

<sup>63</sup> G. V. Ramakrishna, 'Municipal Property Tax: A New Approach' in Abhijit Datta ed., *Property Taxation in India* (New Delhi: Indian Institute of Public Administration), pp. 83 - 84.

<sup>64</sup> Bahl and Linn, *Urban Public Finance in Developing Countries*, p. 86.

## **Rate Structures**

Studies have shown that there are important differences amongst developing country cities in the level, structure, and flexibility of ARV tax rates; and statutory rates may vary according to whether or not the land is developed, where the property is located within the urban area, and whether or not it is owner-occupied. Two objectives underlie the need for periodic revision: the first is the need to allocate property tax burdens according to the ability to pay, reflected in the progressive features of statutory rate schedules<sup>65</sup>. A flat rate tax structure is thus not as common as one that is progressive. The second objective stems from the need to allocate property tax burdens according to benefits received. Thus, taxes are lower in areas where public service levels are felt to be lower. This is the thinking behind lower rates on both suburban properties and on underdeveloped properties, and the division of the total property tax rate into separate rates for different public amenities.

## **Assessment Procedures**

No matter what the base and rate structure is stated to be, scholars such as Bahl and Linn (1992) contend that any evaluation of the equity, elasticity, and performance of ARV systems must begin with a careful examination of the methods used to determine annual rental value. Central to any assessment practice is its potential to keep pace with property values and thereby give some buoyancy to the revenue yield<sup>66</sup>. There must be, therefore, a system in place for accurately and regularly determining changes in market

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<sup>65</sup> Bahl and Linn, *Urban Public Finance in Developing Countries*, p. 87.

<sup>66</sup> Bahl and Linn, *Urban Public Finance in Developing Countries*, p. 87.

value; an assessment procedure that is both objective and in some senses horizontally and vertically equitable, and enough staff available for the assessing authority to match assessment practices with stated procedures.

Assessment practices under ARV systems in developing countries, however, generally satisfy only a few of these requirements at a time. Whilst the main advantage of the ARV method is that the calculation of tax is based on a concept of income that is easy to explain to the taxpayer<sup>67</sup>, local tax authorities in India face a number of additional problems. The notion of ARV, rooted as it is in the idea of free market rent, is essentially hypothetical as the housing market is seldom free of distortions and control<sup>68</sup>. Stemming from this, the central issue is the difficulty in measuring the annual hypothetical value of rent to be taxed. Measurements of net rents are often arbitrary and, in absence of frequent reassessments, tax is often computed and levied at the discretion of the assessing authority.

Secondly, it is possible that the urban local body will be unable to take advantage of any rise in property values, owing to the fact that whilst the true value of land and its improvements may rise over a period of time, there is likely to be a cap on rent fixed by a higher government authority in the form of a Rent Control Act<sup>69</sup>. Although this may be remedied by periodic revisions, it is safe to say that the tax base will not widen as fast as the capital value of land and buildings.

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<sup>67</sup> Rama Rao, 'Some Problems of the Property Tax', p. 1.

<sup>68</sup> Mohan, 'Indian Thinking on Property Tax Reform', p. 122.

<sup>69</sup> Ursula Hicks, *Development from Below: Local Government and Finance in Commonwealth Countries* (Oxford: Clarendon Press, 1961), p. 356.

The ARV method is also vulnerable to abuse, as valuations are not obtained from any observable characteristics of the property, but are instead derived from statements or written evidence supplied by the property's occupant or the local tax inspectors<sup>70</sup>. In the case of rented properties, such an arrangement provides opportunities for collusion either between the landlord and tenant to provide false rent receipts, or between the tenants/owner-occupiers and tax assessors to undervalue the property itself.

### **3.3.2. The Capital Value System**

In contrast to ARV, the Capital Value System (or CVS) provides for the assessment of property tax based on the capital value of buildings and land, and is thus based on objective, measurable property characteristics used to determine the sale value of a property<sup>71</sup>. Since equating actual sale values with direct market evidence and using this as a basis for valuing individual properties is not an option, given that only a small percentage of properties are sold within a fixed period, tax authorities employing the capital value system must instead devise a means of calculating a hypothetical sales value from the data that is available. Individual property valuations are thus generally calculated by obtaining data on the physical characteristics of each property to be valued and applying pre-determined unit costs (including, but not limited to the value per square

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<sup>70</sup> Dillinger, 'Urban Property Tax in Developing Countries', p. 28.

<sup>71</sup> Bangalore Mahanagara Palike, *Assessment and Calculation of Property Tax Under the Capital Value System (New SAS): 2007- 2008*, Unpublished Handbook, p. 1.

foot of land in various neighbourhoods, and the value per square foot of improvements of various types and conditions) to them<sup>72</sup>.

### **Definition and Coverage of the Tax Base**

The tax base under the Capital Value System is defined as the assessed value of the land plus improvements or, under the site value version of the CVS, as the assessed value of the land<sup>73</sup>. Most capital value systems in developing countries assess land independently from improvements, hence the site value approach differs from most other capital value systems only in that it does not tax buildings. In theory, the assessed value of a property is almost always defined by statute to equal full market value – the value a willing seller could be expected to receive for his property from a willing buyer on reasonable terms in the free market<sup>74</sup>. In practice, however, the actual assessed value is generally lower than the market value because of infrequent readjustments in the rate and poor assessment practices. In addition, a number of exclusions from the base such as a complete or partial exclusion of improvements made on the land often result in a difference between the market value and taxable value of the property<sup>75</sup>. That said, the CVS is considered to have three major advantages: the tax may be applied to all types of properties as the current market value is the basis of assessment, the tax base has the propensity to continually expand owing to the fact that tax is based on the market value

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<sup>72</sup> Dillinger, 'Urban Property Tax in Developing Countries', p. 29.

<sup>73</sup> Bahl and Linn, *Urban Public Finance in Developing Countries*, p. 91.

<sup>74</sup> Mohan, 'Indian Thinking on Property Tax Reform', p. 122.

<sup>75</sup> Rama Rao, 'Some Problems of the Property Tax', p. 3.

of properties, and that vacant lands also fall under the purview of assessment, potentially leading to the increased use of land in urban areas<sup>76</sup>.

### **Rate Structures**

Three important features of CVS rate structures distinguish them from ARV systems – viz. the common use of flat rates, the more frequent use of differential taxation of land and improvements, and a higher degree of complexity in the rate structures as compared to the ARV method<sup>77</sup>. Studies suggest a different emphasis for those designing CVS rate structures, with there being a greater concern for the allocative effects of the tax (such as land use) under the CVS, or at least a concern that there is more flexibility to deal with these effects<sup>78</sup>. This is reflected in the differential taxation of land vs. improvements, improved land vs. idle land, and land situated in different locations within the urban area. At the same time, the general absence of progressive rate structures implies a conscious policy decision to not use the property tax to shape the distribution of income.

### **Assessment Procedures**

Whilst one definition of value is not necessarily better than another, evidence from the developing world suggests that methodologies relying on physical characteristics are more suitable to developing country conditions and are less open to

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<sup>76</sup> K. Venugopal, 'Towards an Expanding Property Tax Base' in Datta ed., *Property Taxation in India*, p. 14.

<sup>77</sup> Bahl and Linn, *Urban Public Finance in Developing Countries*, p. 91.

<sup>78</sup> Bahl and Linn, *Urban Public Finance in Developing Countries*, p. 94.

abuse as compared to those based on direct market evidence<sup>79</sup>. However such systems, whilst relatively more objective, are not simple to administer and often require a higher degree of technical sophistication than is available to local government bodies in those countries, with the same holding true for India. The strengths and weaknesses of the Capital Value System show up during its application through four features more common to the CVS than to an Annual Rental Value system<sup>80</sup>:

#### **A. Formula-based valuation:**

The assessment process under the CVS method is more formula-based and more complicated than that used in ARV systems. The process starts typically with a classification of land according to its location, amenities, and use; after which each class of land is given an assessed value according to a comparative sales analysis. Even though the actual valuation process differs across cities, and the assessor's judgement plays an important role, valuation under the CVS is more objective, and should result in more uniform treatment than would occur under an ARV system<sup>81</sup>. At the same time, Capital Value Systems are more costly to administer, as they require a basic urban plan that defines existing and desired land-use and a staff capable of carrying out comparative sales analysis<sup>82</sup>. This technique also presumes the existence of an up-to-date property tax roll – an accurate cadastre – whilst the assessment of improvements requires an up-to-

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<sup>79</sup> Dillinger, 'Urban Property Tax in Developing Countries', p. 20.

<sup>80</sup> Adapted from Bahl and Linn, *Urban Public Finance in Developing Countries*, pp. 95 – 98.

<sup>81</sup> Rama Rao, 'Some Problems of the Property Tax', p. 3.

<sup>82</sup> Bahl and Linn, *Urban Public Finance in Developing Countries*, p. 95.

date guide to construction costs and substantial fieldwork to record the features of each property<sup>83</sup>.

### **B. Separate assessment of land and improvements:**

Under the CVS, land and buildings are taxed separately, making possible the application of different assessment ratios and different rates of taxation<sup>84</sup>, thereby providing tax authorities with greater flexibility towards achieving the desired distributive effect.

### **C. Multiple sources of valuation information:**

The Capital Value System makes use of multiple sources of information to arrive at the taxable value of a property<sup>85</sup>. Basic land value information is obtained from comparative sales records, realtor and banker opinions, real estate boards, and self-assessment; whilst improvement values are often based on data provided by the government and collected from the private sector. The judgement of the tax assessor plays a major role in adjusting and combining the data.

### **D. Provisions for reassessment:**

Assessed values may be readjusted in one of three ways: 1) The least frequently used involves taking into account the yearly value of the property, 2) the most common

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<sup>83</sup> NIUA, *Reforming the Property Tax*, p. xiii.

<sup>84</sup> Bruhat Bangalore Mahanagara Palike (BBMP), *Assessment and Calculation of Property Tax Under the Capital Value System (New SAS): 2007- 2008, Bangalore, 2007* [Unpublished Handbook], p. 2

<sup>85</sup> BBMP, *Assessment and Calculation of Property Tax Under the Capital Value System (New SAS)*, p. 2

provision is for a specified reappraisal cycle, or 3) the rarely used option of simply indexing the tax base.

### **3.3.3. The Site Valuation Tax**

Under the site value tax (SVT) system, the capital value of the land is taxed, but not the built-up property<sup>86</sup>. The argument behind the site value tax is that land value increases are a direct result of public investment or external factors, and thus a tax should be levied on the land for the public good<sup>87</sup>. Whether based on ARV or Capital Value, the value of the land is an indeterminate part of the property value, and a well-administered tax would favour neither old nor new properties (so long as land values were rising and reassessments done frequently).

The main argument in favour of taxing the site value is that it does not impair the economic incentive for making a more productive use of land, and the chief aim of such a system of taxation would thus be to improve land use<sup>88</sup>. Scholars such as Lent (1967) further claim that “...if land is taxed to reflect its most productive use, such taxation can be employed to encourage the use of idle land and to put under-utilised land to optimum use<sup>89</sup>”. Owners of vacant plots and those who have made less than optimum use of their land would be most affected by this form of taxation as, instead of paying a nominal sum as tax dues under regular property tax (ARV or CVS), they would be required to pay tax

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<sup>86</sup> Mohan, ‘Indian Thinking on Property Tax Reform’, p. 127.

<sup>87</sup> K.T. Ammakutty, ‘Site Value Tax, Urban Development and Land Prices’, in Datta ed., *Property Taxation in India*, p. 94

<sup>88</sup> Ammakutty, ‘Site Value Tax’, p.100.

<sup>89</sup> George E. Lent, ‘The Taxation of Land Value’, *International Monetary Fund Staff Papers*, Volume XIV, 1967 quoted in Ammakutty, ‘Site Value, Urban Development and Land Prices’, p. 101.

equal to the amount due from a property owner with an optimally built-up plot in the same category and size as theirs<sup>90</sup>. In addition, the Site Value Tax is also very simple to administer, as structures do not need to be valued when calculating tax dues. However, the key problem with this type of taxation is that "...there is no meaningful way, in theory as well as practice, of separating the value of the site from the value of improvements if the site is not a vacant one"<sup>91</sup>. Further only taxing land and not improvements results in a narrowing of the tax base, and would require that a higher rate of tax be levied in order to generate revenue to the degree an ARV or a CV system might do so.

### **3.3.4. The Unit Value or Area-Based System**

The unit value system (UVS) or area-based system combines features from the three models discussed above<sup>92</sup>. The system attempts to make the process of tax valuation transparent and objective by basing the valuation of tax on certain parameters such as location, usage, and building characteristics. Under the area based or unit value system, the tax rate would vary according to 1) the different zones into which the city is divided and 2) the location of properties at important points such as major roads, parks, etc<sup>93</sup>. Additional surcharges and cesses may be levied depending upon the characteristics of the different zones in a way to ensure that property tax under the system also serves

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<sup>90</sup> Lent, 'The Taxation of Land Value', p. 101.

<sup>91</sup> D. Netzer, *The Economics of Property Tax* (Washington D.C.: The Brookings Institution, 1966), p. 128, quoted in Mohan, p. 127.

<sup>92</sup> NIUA, *Reforming the Property Tax*, p. xiv.

<sup>93</sup> Gangadhar Jha, 'Area Basis of Valuation of Property Tax: An Evaluation', in Datta ed., *Property Taxation in India*, p. 107.

urban development objectives. Two versions of the unit value system exist in India<sup>94</sup>, with cities that have adopted it claiming to have experienced an increase in tax revenues<sup>95</sup>:

### **Standard Zonal Rate**

In an attempt to make the property tax system more objective, immunise it from its susceptibility to subjective considerations in the valuation of properties, and make it simple to operate, one school of thought proposes to divide a city into different zones, done according to the physical and functional characteristics of the neighbourhoods, and arrive at a standard zonal rate for each zone. The system proposes to calculate the zonal rent per square foot of floor (based on the characteristics of the zone and the size and type of buildings in each zone), which must reflect the market rent for similarly sized properties. Individual properties are then assessed in relation to this standard rate<sup>96</sup>.

### **A Basic Tax and Extras on Area Details**

This version of the UVS is based on a rational classification of buildings according to simple characteristics, whereby a 'basic tax' on plinth or carpet area is levied on properties of all types and uses. Such a tax is usually accompanied by a surcharge on the land if it exceeds three times the covered area<sup>97</sup>. Further, this version of the system proposes to impose additional rates of tax according to location, type of

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<sup>94</sup> Adapted from Jha, pp. 109-110.

<sup>95</sup> NIUA, *Reforming the Property Tax*, p. xiv.

<sup>96</sup> Jha, 'Area Basis of Valuation of Property Tax: An Evaluation', p. 107

<sup>97</sup> Ramakrishna, 'Municipal Property Tax: A New Approach', p. 86.

construction, nature of land use, and age of the building under consideration. Buildings are generally classified into five or six gradations according to their individual features.

Most cities in India that have adopted either version of the Unit Value System have in parallel introduced self-declaration schemes, shifting the responsibility of filing tax returns according to set of certain parameters onto the shoulders of the citizen-taxpayers<sup>98</sup>. Property owners are required to correctly assess the tax owed by them and fill out self-declaration forms within a specified time, thereby drastically reducing the municipality's compliance costs. Collection of property tax is often made simpler by increasing the number of collection centres across a given city, and by facilitating payments made to commercial banks. Self-assessment schemes score on two points – they make citizens aware of their tax liability and empower them to assess their own tax, and in doing so take excess discretionary powers away from revenue staff. There is, however, a danger that the self-declaration of tax returns without proper checks could result in underassessment (accidental or intentional) of tax dues, leading to low tax revenues for the levying authority<sup>99</sup>.

### 3.4. Corruption and Tax Evasion Games

The administration and collection of tax revenue invites several forms of malpractice – on the one hand, taxpayers may try to evade their legal liabilities, whilst on the other tax inspectors may solicit bribes in order to facilitate tax evasion or more

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<sup>98</sup> NIUA, *Reforming the Property Tax*, p. xiv.

<sup>99</sup> Lars P. Feld and Bruno S. Frey, 'Tax Compliance as the Result of a Psychological Tax Contract: The Role of Incentives and Responsive Regulation', *Law and Policy*, vol. 29 issue 1, p. 115

generally abuse the authority of which they are entrusted<sup>100</sup>. A sizeable literature on tax evasion has evolved over the last few decades, which today includes a number of principal-agent-client models and game theory-based models, dating back to Allingham and Sandmo's (1972) seminal paper, which proposes that in order to deter or reduce tax evasion, a tax administration needs to design an audit strategy whereby audits that compel taxpayers to disclose their true (as against reported) incomes are carried out by agents whose objectives are assumed to be in line with the goals of the tax administration<sup>101</sup>. Such an argument, however, overlooks the role of those agents whose objectives may conflict with that of the administration, particularly within a hierarchical setup where a principal delegates a task to an agent, together with some discretion over certain decisions and within which there is subsequent room for collusion.

Most recently, therefore, economists have moved to bridge this gap by developing models that incorporate the possibility of corruption in tax administration<sup>102</sup>. Collusive corruption in the tax system arises for two reasons: firstly, it is necessary for the government to delegate authority to tax officials who have the ability to obtain the necessary information to make the determination; and secondly, the government is unable to properly monitor its officials, a problem particularly acute in developing countries like

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<sup>100</sup> Jean Hindriks , Michael Keen , Abhinay Muthoo 'Corruption, Extortion and Evasion', *Journal of Public Economics*, no.74, 1999, p. 395.

<sup>101</sup> Michael G. Allingham and Agnar Sandmo, 'Income Tax Evasion: A Theoretical Analysis', *Journal of Public Economics*, vol. 1, 1972, pp. 323-338, cited in Waly Wane 'Tax Evasion, Corruption, and the Remuneration of Heterogeneous Inspectors', World Bank Development Report [date for source not given] p. 1.

<sup>102</sup> Parkash Chander and Louis Wilde, 'Corruption in Tax Administration', *Journal of Public Economics*, no. 49, 1992, p. 333.

India whose accounting and bookkeeping standards are relatively poor<sup>103</sup>. Both these factors give rise to opportunities for collusion between taxpayers and inspectors, and bribes are either paid to tax inspectors in return for reductions in tax dues or to prevent officials from reporting a taxable income higher than true. Firm evidence on the extent of such practices is hard to come by, but a small literature initiated by Virmani (1987) and Chu (1990)<sup>104</sup> exists, and anecdotal evidence abounds.

The flip-side of tax evasion – compliance – is as much a societal phenomenon that is difficult to explain. A large part of tax compliance hinges on citizen attitudes towards the government and tax burdens, and convincing the public that it is worth their while to pay taxes requires a sustained campaign and concrete action on the part of the tax collecting authority. But what exactly drives people to pay their taxes? Is it the fear of being caught and penalised? Is it because they believe it is for the common good? Or it is because they follow what they think everyone else is doing?

Economists see the problem of compliance as a rational decision made under uncertainty. This implies that cheating on taxes is a gamble; either paying off in the form of lower taxes or – with the probability of detection – ending in sanctions<sup>105</sup>. This view of taxpayer behaviour was first presented as a formal model by Allingham and Sandmo (1972), influenced by the economics-of-crime approach, which suggests that the level of

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<sup>103</sup> Frank Flatters and W. Bently MacLeod, 'Administrative Corruption and Taxation', *International Tax and Public Finance*, vol. 2, 1995, p. 398

<sup>104</sup> Arvind Virmani, 1987 and C. Chu, 1990 cited in P. Chander and L. Wilde, 'Corruption in Tax Administration', *Journal of Public Economics*, no. 49, 1992, p. 334

<sup>105</sup> Benno Torgler, 'Speaking To Theorists and Searching for Facts: Tax Morale and Tax Compliance in Experiments', *Journal of Economic Surveys*, vol. 16, no. 5, 2002, p. 657.

tax compliance depends on the degree of enforcement<sup>106</sup>. It is essential to recognise that this approach also concludes that an individual pays taxes because – and only because – of the fear of detection and punishment<sup>107</sup>.

More recently, however, it has been noted in the tax compliance literature that the willingness of citizens to pay taxes cannot be explained entirely by the level of enforcement, and that compliance seems to depend upon numerous factors other than deterrence and economic ones. Alm, Sanchez, and de Juan (1995), for instance, have argued that:

‘...a government compliance strategy based only on detection and punishment may well be a reasonable starting point but not a good ending point. Instead, what is needed is a multi-faceted approach (...) Put differently, explaining tax compliance requires recognizing the myriad factors that motivate individual behaviour, factors that go much beyond the standard economics-of-crime approach to include theories of behaviour suggested by psychologists, sociologists, and other social scientists. Until this effort is made, it seems unlikely that we will come much closer to unravelling the puzzle of tax compliance<sup>108</sup>.’

Whilst experiments have shown that positive incentives, perceptions of equity, institutional variables, and benefits from public services have all had a significant impact on tax compliance, more recent research efforts have increasingly analysed the consequences of non-traditional economic factors such as social norms which, according

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<sup>106</sup> C.f. Gary S. Becker, ‘Crime and Punishment: An Economic Approach’, *Journal of Political Economy*, vol. 76, no.2, 1968, 169–217.

<sup>107</sup> James Alm, ‘Tax Compliance and Administration’, Working Paper, University of Colorado at Boulder, 1998, p. 5.

<sup>108</sup> J. Alm., I. Sanchez, and A. De Juan, ‘Economic and Noneconomic Factors in Tax Compliance’, *KYKLOS*, vol. 48, issue 1, 1995, p.15.

to Elster (1989) consist of a pattern of behaviour which must be shared by other people and sustained by their approval or disapproval<sup>109</sup>.

Fehr and Gächter (1998) define social norms as ‘behaviour regularity that is based on a socially shared belief of how one ought to behave which triggers the enforcement of the prescribed behaviour by informal social sanctions<sup>110</sup>’, and state that ‘...reciprocity provides a key mechanism for the enforcement of social norms. In view of the fact that most social relations in neighbourhoods, families, and work places are not governed by explicit agreements but by social norms, the role of reciprocity as a norm enforcement device is perhaps its most important function’<sup>111</sup>. In other words, the game of tax compliance is one where certain moves and responses become established within a particular society, and it is important to understand them in order to play it successfully.

What then makes people comply? And how can this understanding be harnessed by government agencies wishing to engage their populations in a win-win game? Based on the results of several key psychological studies (outlined in *Box A*) scholars Richard Thaler and Cass Sunstein (2009) discuss the psychology behind human choices and how these can be influenced by public agencies and others acting as so-called ‘choice architects’<sup>112</sup>. Thaler and Sunstein conclude that when acting within a group, people are

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<sup>109</sup> Jon Elster, ‘Social Norms and Economic Theory’, *Journal of Economic Perspectives*, 1989, vol. 3, no.4, p. 100.

<sup>110</sup> Ernst Fehr and Simon Gächter, ‘Reciprocity and Economics: The Economic Implications of Homo Reciprocans’, *European Economic Review*, vol. 42, issue 3, 1998, p. 854.

<sup>111</sup> Fehr and Gächter, ‘Reciprocity and Economics’, p. 854.

<sup>112</sup> Richard H. Thaler and Cass R. Sunstein, *Nudge: Improving Decisions about Health, Wealth and Happiness* (London: Penguin Books Ltd., 2009), p. 63.

### **Box A: What Makes People Comply? The Experience of the Minnesota Revenue Department**

Psychologists have identified three basic hierarchical levels of how people make moral decisions, such as whether to comply or cheat on taxes. At the lowest level of reasoning, some people make decisions about right or wrong simply to avoid punishment. At the next level, people rely on social norms to make moral decisions. At the highest level, people use a set of internal ethical standards. But which is the most effective motivator?

In 1996, officials at the Minnesota Revenue Department conducted a study to determine the impact of alternative compliance strategies on voluntary income tax compliance. In the experiment, groups of randomly selected taxpayers were exposed to different compliance strategies: some were threatened with the possibility of a tax audit and the chance of being punished for noncompliance (fear of punishment), others were given information about how they might get help if they were confused or uncertain about how to fill out their tax forms (enhanced customer service), some were given simplified tax forms (simplification of processes), yet others were told that their taxes went to various public works such as education, police protection and fire protection (moral obligation), whilst the last group was just told that 93% of Minnesotans had already complied, in full, with their obligations under the tax law (the social norms approach). The study concluded that the intervention that had the most significant effect on tax compliance was the last one – the social norms approach. The experiment was repeated in 2006, and the results of the second experiment confirmed the results of the first.

*(Source: Coleman (1996, 2007)<sup>113</sup>)*

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<sup>113</sup> Stephen Coleman, 'The Minnesota Income Tax Compliance Experiment: State Tax Results', Minnesota Department of Revenue, 1996. This experiment is also described briefly in Thaler and Sunstein, *Nudge: Improving Decisions about Health, Wealth and Happiness*, p. 72, and Stephen Coleman, 'The Minnesota Income Tax Compliance Experiment: Replication of the Social Norms Experiment', Unpublished, 2007.

by-and-large conformists and often fall prey to what is known as ‘collective conservatism’: the tendency of groups to stick to established patterns of behaviour even as new needs arise.

Collective conservatism is often a result of what is termed *pluralistic ignorance* or ignorance on the part of all or most about what other people think. As human beings spend time conforming to social norms and fashions, when they think that others are closely paying attention to what they are doing, people may follow a practice or tradition not because they like it or think it is defensible but because they think others consider it acceptable and/or would like it<sup>114</sup>. It follows that if choice architects wish to shift behaviour, they might simply change the way they engage their citizens in games by drawing public attention on to what others are actually doing.

### 3.5. Conclusions

Local government agencies across the developing world, being at the bottom of the fiscal food chain, generally face stringent resource constraints to improving their operations and service delivery. Property tax, for all its weaknesses, presents itself as a viable means of financing the recurrent costs of municipal services. Through the discussion of property tax administration in the Indian context set out in previous sections, four sets of actors or choice architects and their motivations may be identified:

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<sup>114</sup> Thaler and Sunstein, *Nudge*, p. 65.

**Local Politicians:** are responsible for legislating on various aspects of tax administration. This group is usually motivated by the need to retain power and prestige, win votes, and advance career prospects within their respective parties. However, as they are easily held to account by the public, their chief actions in games of tax administration generally involve promoting policies that would be popular with the electorate whilst at the same time avoiding decisions that could result in electoral losses<sup>115</sup>.

**Senior Civil Servants:** are motivated either by the need to increase power and prestige, or by convenience and security. As they are relatively more accountable to elected representatives than to the public, their actions generally consist of either embracing change that would increase their own spheres of influence or resisting any reform that they feel might reduce their present privileges<sup>116</sup>. This may be done within themselves as a group, or through initiating interpersonal contacts with senior and junior officials from the adopting departments.

**Senior and Junior Revenue Officials:** responsible for the hands-on administration of the property tax within municipalities are, like their superiors, often motivated by the need to retain their own spheres of influence as well as by convenience and security. Again, their actions consist chiefly of embracing or rejecting reform depending on their perceptions of benefit and loss.

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<sup>115</sup> Eric Maskin and Jean Tirole, 'The Politician and the Judge: Accountability in Government', *The American Economic Review*, vol. 94, no. 4, 2004, p. 1035.

<sup>116</sup> Anthony Downs, *Inside Bureaucracy* (Boston: Little Brown, 1964), pp. 4 - 5.

**Citizens:** are chiefly concerned with maximising personal wealth and are generally influenced by political and socio-economic factors associated with paying tax. Current income levels, tax rates, and the degree of trust in government all play a part in inducing either voluntary compliance or tax avoidance behaviour<sup>117</sup>.

As property tax in India is highly localised, interactions associated with its administration tend to be played out within the arena of the local context. Two top-level types of games may be thus identified from preceding discussions: **tax administration games** and **tax system reform games**.

### **3.5.1. Games of Tax Administration**

These games are played out between the local government authority (senior civil servants and revenue officials of all ranks) and the general public. The key objective for government officials is to administer and levy property tax, and to ensure citizen compliance. Citizens generally either actively comply with or evade taxes, often reacting to prevailing perceptions of economic well-being and trust which are created by government action and policy. In recent years, the media may be counted as a third player in this game, as it is they who shape public opinion and in turn are used as indicators of public opinion by the government.

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<sup>117</sup> Eric Kirchler, *The Economic Psychology of Tax Behaviour* (Cambridge: Cambridge University Press, 2007), p. xii.

### 3.5.2. Tax System Reform Games

Tax system reform games generally involve changes in the rate of tax levied, changes to the system of administration itself, or often both. Three major types of games played during the reform of a tax system include:

- i) **The Re-election Game:** between elected representatives, the public, and (sometimes) senior civil servants. Elected representatives, motivated by the desire to retain power and influence for themselves and their party, react and respond to changes in public opinion in order to get re-elected. If necessary, they put pressure on civil servants to alter unpopular policy decisions to make them more palatable to the electorate. The game is played according to codified and unwritten rules pertaining to the conduct of elected officials working within a given mandate.
  
- ii) **The Overcoming Internal Resistance Game:** is played between pro-reform politicians and civil servants on the one hand, and those civil servants on the other who believe they have a lot to lose from the implementation of a particular policy. Here again, proponents of property tax reform seek to gain some degree of personal influence through the successful adoption of a programme. However, certain officials may be genuinely interested in public sector reform and therefore push policies for more altruistic reasons. Rules governing this game might include codes of civil service conduct and the unwritten rules of political interaction.

**iii) Power Struggles and Turf Wars:** result from changes in power relations within the organisation brought about by the reform programme. They are played out between civil servants and government officials within the reforming organisation as employees adjust to the new circumstances. Power struggles, as noted by Mintzberg (1985) and discussed later in this thesis, are generally highly destructive games with highly negative outcomes.

If administering an existing property tax system is complex and often unpredictable, the reform of property tax administration is an equally difficult game to play, not only because of the tax's high visibility and political sensitivity, but because it is often played by a number of actors harbouring competing interests. In the lead-up to the case study focused on in this thesis, the following chapter will briefly discuss the use of Information and Communication Technologies in public sector administration and reform.

## Chapter 4

# Designing and Implementing e-Government Projects: Actors, Influences and Fields of Play

A popular discourse in international development policy, and one that has been fast gaining ground in India in recent years, is the use of Information and Communication Technology (ICT) platforms and applications by the public sector as means of reforming government administration and providing citizens with a range of improved services. The new buzzword is e-Governance: “the use of ICTs by government, civil society, and political institutions to engage citizens through dialogue to promote greater participation of citizens in the process of institutional governance<sup>1</sup>”. This may be achieved through the use of ICTs to improve information and service delivery, and to encourage citizen participation in the decision-making process; thereby making government more transparent, accountable, and efficient<sup>2</sup>, and involving the governing or management of a system using electronic tools and techniques wherever the government offers services or information. The essential aims of e-governance are:

- To initiate a process of reform in the way governments work, share information, and deliver services to external and internal clients;

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<sup>1</sup> Subhash Bhatnagar, ‘Transparency and Corruption: Does eGovernment Help?’, Draft Paper prepared for the compilation of CHRI 2003 Report OPEN SESAME: looking for the Right to Information, 2003, p. 1.

<sup>2</sup> Suresh Misra, ‘eGovernance: Responsive and Transparent Service Delivery Mechanism’, in Amrita Singh ed., *Administrative Reforms: Towards Sustainable Practices*, (New Delhi: Sage, 2005), p.289.

- To produce greater transparency in the functioning of government machinery;
- To help achieve greater efficiency in the public sector;
- To deliver services to citizens and businesses on-line<sup>3</sup>, targeting tangible benefits such as convenient and universal access (time and place) to such services, and lowering transaction times and costs<sup>4</sup>.

#### 4.1. ICTs and the Reform of Public Administration

Since the early 1990s, a wealth of online applications have emerged which have transformed the original purely text-based read-only medium of the Internet into one that supports dynamic and modifiable rich-media content. e-Governance thus does not merely involve the insertion of computers and computer operators into an organisation, instead it involves the creation of systems wherein electronic Internet-enabled technologies are integrated with administrative processes, human resources, and the desire of public sector employees to dispense services and information to people fast and accurately. The concept thus consists of two distinct but intertwined dimensions– political and technical aspects relating to the improvement of public sector management capacity and citizen participation<sup>5</sup>. ICT-led reforms are often complex as they involve reforming both organisations and human behaviour, and cannot be made through legislation alone. Such

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<sup>3</sup> *On-line need not necessarily imply being connected Internet. It implies that transactions access/ update data bases immediately to minimize errors and speed up processing. If applications are submitted electronically, the movement and processing of documents is also electronic. The resulting benefits could be greater transparency and empowerment, increased convenience, reduced transaction costs and corruption, and improved revenue growth.*

<sup>4</sup> cf. Subhash Bhatnagar, 'E-Government: Opportunities and Challenges', World Bank Presentation, 2005.

<sup>5</sup> Bhatnagar, 'Transparency and Corruption: Does eGovernment Help?', p. 2.

reforms require not only a change in the way users think, act, how they view their work, and how they share information, but also a simultaneous re-engineering of the working of government. They thus work best when part of a broader reform agenda in which the *status quo* is broken down through delegation, decentralisation, and citizen empowerment<sup>6</sup>. The development and adoption of e-Governance technologies has thus become a large game within the ‘meta-game’ of a country’s development, and brings with it not only an array of benefits, but also numerous challenges and obstacles – all of which shape and are shaped by the perceptions and motivations of a multitude of actors.

Conceptually, e-Governance may be divided into **e-Democracy** (defined by the express intent to increase the participation of citizens in decision-making through the use of digital media) and **e-Government** (the use of Information and Communication Technologies by government departments and agencies to improve internal functioning and public service provision)<sup>7</sup>. The system dealt with in this thesis is primarily an example of e-government, and it is thus the second of these two concepts that will form the focus of the rest of this chapter.

## 4.2. e-Government: Definitions and Scope

Over the last 10 years, a number of scholars and international organisations have defined e-government in an attempt to capture its true nature and scope. A selection of

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<sup>6</sup> Misra, ‘eGovernance: Responsive and Transparent Service Delivery Mechanism’, pp. 286 – 287.

<sup>7</sup> Shefali Virkar, ‘Exploring Property Tax Administration Reform through the use of Information and Communication Technologies: A Study of e-Government in Karnataka, India’ in Jacques Steyn and Stephanie Fahey eds., *ICTs and Sustainable Solutions for Global Development: Theory, Practice and the Digital Divide* (Volume 2: ICTs for Development in Asia and the Pacific), (IGI Global, Hershey, P.A., 2011), p.130

key definitions is highlighted in Box B. Almost all definitions of e-government indicate three critical transformational areas in which ICTs have an impact<sup>8</sup>, illustrating that e-government is not just about the Internet and the use of Internet- and web-based systems with government and citizen interfaces<sup>9</sup>; instead it includes office automation, internal management, the management of information and expert systems, and the design, and adoption of such technologies into the workplace<sup>10</sup>.

**The Internal Arena:** where Information and Communication Technologies are used to enhance the efficiency and effectiveness of internal government functions and processes by intermediating between employees, public managers, departments, and agencies. The use of ICTs is thought to improve internal efficiency by enabling reductions in both the time and cost of information handling, as well as improving the speed and accuracy of task processing. In other words, technology is felt to significantly reduce processing times, eliminate inefficient bureaucratic procedures, and skirt manual bottlenecks; allowing information to flow faster and more freely between different public sector entities.

**The External Arena:** where ICTs open up new possibilities for governments to be more transparent to citizens and businesses by providing multiple channels that allow them improved access to a greater range of government information. ICTs also facilitate

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<sup>8</sup>Valentina Ndou, 'E-Government for Developing Countries: Opportunities and Challenges', *The Electronic Journal on Information Systems in Developing Countries*, vol. 18, issue 1, 2004, p. 4.

<sup>9</sup> Richard Heeks, *Implementing and Managing eGovernment – An International Text* (New Delhi: Vistar Publications, 2006), p. 4.

<sup>10</sup> Helen Margetts, 'Transparency and Digital Government' in Christopher Hood and David Heald eds., *Transparency: the Key to Better Governance?* (London: The British Academy, 2006), p. 197.

partnerships and collaborations between different government institutions at different levels of a federal structure and between the government and other non-governmental actors.

#### **Box B: Definitions of e-Government**

**Tapscott (1996):** “eGovernment is an Internet-worked government which links new technology with legal systems internally and in turn links such government information infrastructure externally with everything digital and with everybody – the tax payer, suppliers, business customers, voters and every other institution in the society.”

**Fraga (2002):** “Government is the transformation of public sector internal and external relationships through net-enabled operations, IT and communications, in order to improve: Government service delivery; Constituency participation; Society.”

**Commonwealth Centre for E-Governance (2002):** “E-government constitutes the way public sector institutions use technology to apply public administration principles and conduct the business of government. This is government using new tools to enhance the delivery of existing services.”

**World Bank (2010):** ““E-Government” refers to the use by government agencies of information technologies (such as Wide Area Networks, the Internet, and mobile computing) that have the ability to transform relations with citizens, businesses, and other arms of government. These technologies can serve a variety of different ends: better delivery of government services to citizens, improved interactions with business and industry, citizen empowerment through access to information, or more efficient government management. The resulting benefits can be less corruption, increased transparency, greater convenience, revenue growth, and/or cost reductions.”

(Source: *Commonwealth Centre for E-Governance (2002), Ndou(2004), World Bank(2010)*<sup>11</sup>)

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<sup>11</sup> Don Tapscott, *The Digital Economy: Promise and Peril in the Age of Networked Intelligence*, quoted in Valentina Ndou, ‘E-Government for Developing Countries: Opportunities and Challenges’, p. 4; Edward Fraga, *Trends in e-Government: How to Plan, Design, Secure and Measure e-Government* (New Mexico: Gartner Consulting, 2002) quoted in Ndou (2004), ‘E-Government for Developing Countries’, p. 19, Commonwealth Centre for E-Governance ‘E-Government, E-Governance and E-Democracy: A Background Discussion Paper’, International Tracking Survey Report Number 1, 2002, p. 8; World Bank, ‘Definition of E-Government’, 2010, Available at: <http://web.worldbank.org>

**The Relational Sphere:** where ICT adoption has the potential to bring about fundamental changes in the relationships between government employees and their managers, citizens, and the state, and between nation states; with implications for the democratic process and the structures of government.

Thus, although the term e-government is primarily used to refer to the usage of ICTs to improve administrative efficiency, it arguably produces other effects that would give rise to increased transparency and accountability, reflect on the relationship between government and citizens, and help build new spaces for citizens to participate in their overall development<sup>12</sup>. Broadly speaking, e-government may be divided into two distinct areas: (1) **e-Administration**, which refers to the improvement of government processes and to the streamlining of the internal workings of the public sector using ICT-based information systems, and (2) **e-Services**, which refers to the improved delivery of public services to citizens through ICT-based platforms. The adoption of e-government often involves interactions to reform the way governments, their agencies, and individual political actors work, share information, and deliver services to internal and external clients by harnessing the power of digital Information and Communication Technologies – primarily computers and networks – for use in the public sector to deliver information and services to citizens and businesses<sup>13</sup>.

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<sup>12</sup> cf. Mila Gascó, 'New Technologies and Institutional Change in Public Administration', *Social Science Computer Review*, vol. 21 issue 1, 2003, p. 6.

<sup>13</sup> Subhash Bhatnagar, 'E-Government: Building a SMART Administration for India's States' in S. Howes, A. Lahiri and N. Stern eds., *State-level Reform in India: Towards More Effective Government* (New Delhi: Macmillan India Ltd., 2003), p. 257.

### 4.3. Different Delivery Models for e-Government

e-Government applications tend to develop in two stages<sup>14</sup>. Initially, a back-office system is set up within the adopting agency to handle online processes and information about services provided by the agency is published on a website. The second step involves the setting up of the ‘front-office’: the use of ICTs in the actual delivery of a service, where citizens can interact with the site to download application forms and information sheets for a variety of services such as filing a tax return or renewing a license, with more sophisticated applications being able to process online payments.

A key three-stage strategy used by actors in games related to the design and development of e-government systems and technology policy, particularly those in developing countries who wish to radically transform public administration by moving government services from manual processes to online systems, is to adopt different models of service delivery at different stages of the development process. The first move generally involves the automation of basic work processes and the online provision of information and services by government departments from computers based within the departmental premises<sup>15</sup>.

Citizens interact with a designated government employee or private computer operator who accesses data and processes transactions on their behalf. Locating online

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<sup>14</sup> Subhash Bhatnagar, ‘Public Service Delivery: Does E-Government Help?’, in Sadiq Ahmed and Suman Bery eds., *The Annual Bank Conference on Development Economics 2003*, (New Delhi: The World Bank and National Conference of Applied Economic Research, 2003), p. 11.

<sup>15</sup> Subhash Bhatnagar, ‘Role of Government: As an Enabler, Regulator, and Provider of ICT Based Services’, Asian Forum on ICT Policies and e-Strategies, Asia-Pacific Development Information Programme, United Nations Development Programme, 2003, p.3

terminals within agency premises tends to result in greater ownership of the system by government staff, reducing resistance to technology and facilitating easier acceptance of change. However, the downside of this mode of delivery is that citizens are still required to visit different government departments to avail of different public services, all within their fixed hours of work. In addition, the dependence of an entire agency office on a single person (or small group of people) to operate the system may cause friction (see *Box C*).

**Box C: Innovative Solutions to e-Government Service Delivery**

In developed countries, services are generally offered through self-service Internet portals that become a single point of interaction for the citizen to receive services from a large number of departments. In developing countries, owing to the different sets of socio-economic and political rules and constraints that circumscribe interactions related to technology design and adoption, new models of service delivery different to those found in industrialised nations must be explored.

Unlike self-service models, where citizens interact directly with a one-stop portal from their homes or offices, most applications in the developing world are department-specific and are usually accessed by citizens at online service counters or public kiosks, where government or contracted private sector employees interact with citizens and mediate between them and computer screens to process transactions. More recently, Citizen Service Centres are created at convenient locations where citizens may access online services provided by several departments, though again citizens do not interact directly with web interfaces and the collection of processing charges and other dues is usually handled through conventional means.

In the context of an ecology of games, the employment of external computer operators in service delivery projects results in creation of a new group of actors whose primary role is to act as intermediaries between both sets of technology users (government servants and the public). Whilst the roles and actions of these players are often generally greatly curtailed by decisions and policies taken by their bosses in government administration, their mere presence in an office may have a significant impact on other players' perceptions of a given system – either speeding up the acceptance and adoption of technology by creating a positive impression in the minds of government employees or hindering it by stirring up feelings of jealousy and resentment.

*(Bhatnagar, 2003)*

The second stage in the evolution of service delivery is the use of conveniently located citizen kiosks or service centres in public places, again manned by public or privately hired operators<sup>16</sup>. This mode of delivery scores over the previous one as multiple services – municipal, state or federal – may be offered at each location. Kiosks also generally stay open longer than government offices, both before and after regular office hours, maximising system coverage by allowing working individuals to access services at times more convenient to them. In recent years, citizen service centres have become popular, particularly in countries where Internet penetration is low.

The final platform of e-government service delivery, popular in countries where Internet penetration and skills are high, is the one-stop shop online portal from where citizens with a computer and an Internet connection may, at any time of day, access a whole range of public information and services themselves without having to visit a kiosk or depend on a computer operator<sup>17</sup>. However, for such a mode of delivery to become ubiquitous, a number of conditions need to be in place – citizens must have the technological hardware and skills to access the system, the back-end of the government agency must be fully computerised, government staff must be trained on the new technology, security and privacy loopholes must be closed, and trust in online transactions must be built up.

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<sup>16</sup> Subhajit Basu, 'E-Government and Developing Countries: An Overview', *International Review of Law, Computers and Technology*, vol. 18, no.1, 2004, p. 112

<sup>17</sup> Darrell M. West, 'E-Government and the Transformation of Service Delivery and Citizen Attitudes', *Public Administration Review*, vol. 64 issue 1, 2004, p. 17

The step-by-step strategy outlined above is generally adopted by key political and administrative actors involved with the implementation of e-government projects, and if followed may reduce political tensions and controversies that might arise as the result of change by not only ensuring maximum citizen access to services, but also an increased acceptance of the technology by agency staff<sup>18</sup>.

#### 4.4. Gains from e-Government

e-Government has become an influential concept for the reform of public administration, and is increasingly being seen as the answer to a plethora of problems that country governments at all levels face in serving their citizens effectively<sup>19</sup>. A number of gains from e-government applications that accrue to both government and citizens may be found in current literature, many of which are often cited by project designers and champions as important reasons for pursuing ICT project design and adoption games within their respective organisations.

##### 4.4.1. Cost Reductions and Efficiency Gains

Efficiency gains and expenditure reductions in the private sector have long been associated with the introduction of ICTs, where studies have linked their deployment to increased competitiveness resulting from reductions in the cost of setting up and running an enterprise. It is now widely believed in policy circles that these benefits may be

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<sup>18</sup> Adapted from Subhash Bhatnagar, *E-Government: From Vision to Implementation* (New Delhi: Sage Publications, 2004), p. 29.

<sup>19</sup> Richard Heeks, 'The Approach of Senior Public Officials to Information Technology Related Reform: Lessons from India', *Public Administration and Development*, vol. 20, issue 3, 2000, p. 197.

realised by the public sector as well, and that putting services online and automating processes can substantially decrease working costs, increase operational efficiency, and enhance the transparency of many activities relative to the manual handling of tasks – all of which would have a significant impact on government finances<sup>20</sup>. A frequently cited example in developing countries is that of public procurement (the letting of contracts for major public works and the sale of public assets) which has traditionally been thought of as an expensive, time consuming process prone to so-called ‘grand corruption’ that often results in huge revenue losses for the government. The use of electronic procurement (or e-procurement) systems, according to supporters of e-government, can not only reduce the amount of revenue lost to corruption by increasing the transparency of the bidding process, but also save money by cutting down on paperwork, doing away with advertising, and lowering the price of procurement through increased competition<sup>21</sup>.

The use of ICTs in government is also thought to reduce the number of inefficiencies in processing by allowing information sharing across employees and departments, thereby contributing to the elimination of mistakes from manual processes and reducing the time required for transactions; to the benefit of both the transacting agency and the citizen<sup>22</sup>. Scholars such as Gramlich (1990) note that the savings accruing to individual consumers of public services in the form of time and travel may in some cases be much larger than any pecuniary savings accruing to the providers, as often, saving time is the single most important benefit derived by a citizen from an e-

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<sup>20</sup> Kelly D. Edmiston, ‘State and Local E-Government: Prospects and Challenges’, *The American Review of Public Administration*, vol. 33, issue 1, 2003, p. 22.

<sup>21</sup> Subhash Bhatnagar, *E-Government: From Vision to Implementation* (New Delhi: Sage Publications, 2004), p. 56.

<sup>22</sup> Ndou, ‘E-Government for Developing Countries’, p. 9.

government project<sup>23</sup>. The same can be said of time and convenience gains made by government employees who use a digitised system. Efficiency, according to Edmiston (2003), is therefore not about simply minimising the government's cost of providing a given level of public services, but also about minimising social cost – a large part of which is the cost to those employees and constituents using or receiving public services. This may be attained through the streamlining of internal processes by enabling faster, more informed decision-making and by speeding up transaction processes<sup>24</sup>.

#### **4.4.2. Quality of Service Delivery**

Under the paper-based model of public service delivery, evidence from the field suggests that processes are often long, time-consuming affairs that lack transparency and generally result in poor service quality and high levels of citizen/business dissatisfaction<sup>25</sup>. e-Government initiatives that put services online and simplify procedures through automation are believed to have the potential to enhance service delivery in terms of time, content, and openness by reducing red tape, offering round-the-clock accessibility, and enabling fast and convenient transactions<sup>26</sup>. To start with, proponents of e-government argue that easily accessible information means that citizens need to spend less effort in finding out how a good or service might be obtained and are

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<sup>23</sup> Edward M. Gramlich, *A Guide to Benefit-Cost Analysis 2 edn.* (Prospect Heights: Waveland Press, 1990), quoted in Edmiston, 'State and Local E-Government: Prospects and Challenges', p. 22.

<sup>24</sup> Edmiston, 'State and Local E-Government: Prospects and Challenges', p. 22.

<sup>25</sup> Cf. Zhiyuan Fang, 'E-Government in the Digital Era: Concept Practice and Development', *International Journal of The Computer, The Internet and Management*, vol. 10 no.2, 2002.

<sup>26</sup> Ndou, 'E-Government for Developing Countries', p. 9.

required to make fewer visits to government departments to avail of the required service. By automating routine clerical work, staff time can be freed up for more substantial tasks.

Quick processing times reduce the total time spent on transactions and reduce waiting periods, whilst automating processes ultimately results in more efficient services through the introduction of competition between departments<sup>27</sup>. ICTs thus also potentially allow for the replacement of what has traditionally been labelled “street-level bureaucracies”, substituting these with what Reddick (2005) calls “system-level” or “server-based” public organisations that permit citizens to access public services online using ICTs, entirely side-stepping any face-to-face contact with the actual providers and facilitators<sup>28</sup>.

In cases such as these, it is important to note that the expectation that ICTs will somehow improve the trustworthiness of government agencies (thereby increasing citizen’s trust in government and raising the image of public service providers) entails the premise that ICTs themselves are seen as trusted mediators or actors involved in the performance of an agency’s task<sup>29</sup>. However, the validity of such an assumption – as demonstrated by the vast literature on the subject – cannot be taken for granted. Instead, scholars such as Carter and Bélanger (2005) and Wankentin et. al (2002) have recognised that even if successfully implemented, e-government services themselves may not be

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<sup>27</sup> Bhatnagar, *e-Government: From Vision to Implementation*, p. 50.

<sup>28</sup> Christopher G. Reddick, ‘Citizen Interaction with e-Government: From the Streets to Servers?’, *Government Information Quarterly*, vol. 22 issue 1, p.38

<sup>29</sup> Chrisanthi Avgerou, Andrea Ganzaroli, Angeliki Poulmenakou, and Nicolau Reinhard, “ICT and Citizen’s Trust in Government: Lessons from Electronic Voting in Brazil”, Paper presented at the Ninth International Conference on Social Implications of Computers in Developing Countries, Sao Paolo, 28 – 30<sup>th</sup> May 2007, p. 3

trusted enough by the population at large<sup>30</sup>, and their adoption by government agencies requires the implementation of transparent mechanisms that inspire trust<sup>31</sup>.

#### **4.4.3. Transparency, Anticorruption and Accountability**

Another strong argument in favour of e-government is the impact that ICTs are thought to have on corruption and accountability. Corruption is seen to flourish when there is no transparency in government functioning, particularly under manual or paper-based systems where citizens have to visit government departments in person, hand over application forms, and pay fees to designated officials in order to obtain a service<sup>32</sup>. Complex and ambiguous rules and cumbersome procedures, coupled with extensive face-to-face contact give officials the opportunity to extract bribes and use their monopoly powers to commit corrupt acts, particularly by delaying or denying services to citizens.

Information and Communication Technologies offer benefits not found in conventional information systems that make anti-corruption reforms possible by introducing transparency in the data, decisions, actions, rules, procedures, and performance of government agencies; thereby simplifying processes and rules, taking away discretion by automating processes, building accountability, introducing competition between delivery channels, standardising documentation for effective

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<sup>30</sup> M. Warkentin, D. Gefen, P.A. Pavlou, and G.M. Rose, "Encouraging Citizen Adoption of e-Government by Building Trust", *Electronic Markets*, vol. 12 issue 3, p. 158

<sup>31</sup> L. Carter and F. Bélanger, "The Utilisation of e-Government Services: Citizen Trust, Innovation and Acceptance Factors", *Information Systems Journal*, vol. 15 issue 1, 2005, p. 7

<sup>32</sup> Bhatnagar, 'Transparency and Corruption: Does eGovernment Help?', p. 2.

supervision, and centralising and integrating data for better audit and analysis<sup>33</sup>. As scholars and practitioners such as Colby (2001), Budhiraja (2003), and Chaurasia (2003) have noted, ICTs allow for greater accessibility and instant communication; facilitating automatic record keeping, the systematic classification and recovery of data, better knowledge management, and the improved sharing of information<sup>34</sup>.

The government and its officials are thus made accountable for their actions as, unlike in manual or paper-based environments, those responsible for particular decisions or activities are readily available and administrative actions are easily traceable; thereby transforming public administration and improving government-citizen interactions<sup>35</sup>. e-Government projects also eliminate face-to-face contact, bringing services to citizens' doorsteps and, in doing so, improving the quality of information, striking at the root of corruption by enhancing transparency, reducing opportunities to commit corrupt acts, and increasing the likelihood of exposure for those who indulge in them<sup>36</sup>. The availability of a variety of official documents and publications regarding the activities of public

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<sup>33</sup> Bhatnagar, 'Transparency and Corruption: Does eGovernment Help?', p. 2 & 7.

<sup>34</sup> See Sally-Shelton Colby, 'Anti-Corruption and ICT for Good Governance', Deputy Secretary-General, OECD in *Anti-Corruption Symposium 2001: The Role of Online Procedures in Promoting and Good Governance*, 2001, p. 15; Renu Budhiraja, 'Electronic Governance: a Key Issue in the 21<sup>st</sup> Century', Additional Director, Electronic Governance Division, Ministry of Information Technology, Government of India, 2003, pp. 1-2, Available at: <http://www.mit.gov.in/eg/article2.htm> ; Alok R. Chaurasia, 'Information Technology in Governance: Potentials and Prospects', Bhopal: Centre for Excellence in Information Technology, Academy of Administration and Management, 2003, pp. 2-4, Available at <http://unpan1.un.org/intradoc/groups/public/documents/EROPA/UNPAN014372.pdf#search='Information%20Technology%20in%20Governance.%20%20Potentials%20and%20Prospects%20by%20chaurasia>

<sup>35</sup> Subhash Bhatnagar, 'The Economic and Social Impact of E-government', Background technical paper for E-government, the citizen and the state: Debating governance in the information age, the proposed UNDESA publication (World Public Sector Report for 2003), p.13

<sup>36</sup> Bhatnagar, *e-Government: From Vision to Implementation*, p. 43.

agencies together with the economic and legislative aspects of government helps raise transparency as well<sup>37</sup>.

#### **4.4.4. Improvements in the Quality of Decision Making**

Community creation and the continuous interaction between the government and its citizens made possible through the use of ICTs is felt by scholars to have a positive impact on the quality of decision-making by allowing policy elites to tap into wider sources of information, perspectives and solutions<sup>38</sup>.

It is often argued that the speed and immediacy of ICT networks allow citizens to communicate, give feedback, ask questions, complain, exchange information effectively and build relationships with their representatives; whilst at the same time allowing policymakers the opportunity to interact directly with the users of public services and solicit their opinions<sup>39</sup>. Citizens benefit from being able to contribute their own ideas and share knowledge and information through active participation in political and governmental discussions, and political elites are at the same time able to take better decisions after listening to and understanding the needs and requirements of their constituents<sup>40</sup>. This two-way relationship can help build trust in government and improve the relationship between the government and the public, as well as between various

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<sup>37</sup> Ndou, 'E-Government for Developing Countries', p. 10.

<sup>38</sup> OECD, 'Engaging Citizens in Policy-making: Information, Consultation and Public Participation', OECD Public Management Policy Brief Number 10, July 2001, p. 2.

<sup>39</sup> Shefali Virkar, '(Dis) Connected Citizenship: Exploring Barriers to eConsultation in Europe', Report for the European Commission, Deliverable 2 of the Breaking Barriers to e-Government: Overcoming Obstacles to Improving European Public Services Project, 2007, p. 11.

<sup>40</sup> Ndou, 'E-Government for Developing Countries', p. 11.

departments and public agencies. However, it is often forgotten that improvements in the speed and quality of decisions also depend on a number of factors; including the willingness of the government to empower its citizens with new information, the ability of government staff to work on new systems and process large amounts of data, the prevailing organisational values within the public sector, and the ability of the adopting public agency to make the transition from a hierarchical model of public administration to a more flexible, decentralised one<sup>41</sup>.

#### **4.4.5. Increases in the Capacity of Government**

The use of ICTs is also thought to offer opportunities to increase government capacity by making necessary the reorganisation of internal administration, transactions, communication, and easy information exchange<sup>42</sup>. ICTs allow for databases to be shared between departments and skills and capacities to be pooled; resulting in faster information exchanges, quicker and cheaper provision of goods and services, and overall faster decision making processes – benefitting both government and businesses/citizens. In this way, such technologies have an impact on the structure of government and various aspects of public management including bureaucratic and political arrangements within departments, decision-making processes, and the means of ensuring transparency and accountability<sup>43</sup>.

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<sup>41</sup> Ndou, 'E-Government for Developing Countries', p. 11

<sup>42</sup> Ndou, 'E-Government for Developing Countries', p. 10

<sup>43</sup> Carole Radoki, 'Politics and Performance: the Implications of Emerging Governance Arrangements for Urban Management Approaches and Information Systems', *Habitat International*, vol.23, 2003, p. 524

Further, the introduction of technology in government has transformed the way in which roles and responsibilities are allocated within and across public sector agencies at different levels<sup>44</sup>. The creation of an information infrastructure is therefore central to the transition of a public agency from pre-existing information systems, structures, and procedures to a fully digitised organisation that would support the process of government reform<sup>45</sup>. However, Navarra and Cornford (2005) note that this change requires more than just simply introducing electronic versions of existing services: instead the focus should be on designing and implementing systems that might be exploited across and within new service channels, essentially supporting both the ‘invention’ and ‘re-invention’ of government<sup>46</sup>.

E-government initiatives have also been used by authoritarian regimes to not only provide services to citizens and make the business environment more competitive, but also to consolidate the power of the central government over its own local representatives and to contribute towards the depoliticisation of society through tighter grassroots control<sup>47</sup>. In his seminal paper on the use of ICTs by authorities in China, Kluver (2005) notes how the use of such initiatives has been to add “...stability and order to a chaotic governing process and social change, and to re-establish the control of governing authorities, including improving the quality of surveillance and data gathering, and hence policy making, the elimination of corruption, and ultimately the re-legitimation of the

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<sup>44</sup> M. Jae Moon, ‘The Evolution of E-Government among Municipalities: Rhetoric or Reality?’, *Public Administration Review*, vol. 62 issue 4, 2002, pp. 425 - 426

<sup>45</sup> Diego Navarra and Tony Cornford, ‘ICT, Innovation and Public Management: Governance, Models and Alternatives for e-Government Infrastructures’, in Proceedings of the 13<sup>th</sup> European Conference on Information Systems, 2005, p. 2

<sup>46</sup> Navarra and Conford, ‘ICT, Innovation and Public Management’, p. 3

<sup>47</sup> Randolph Kluver, ‘The Architecture of Control: a Chinese Strategy for eGovernance’, *Journal of Public Policy*, vol. 25, issue 1, 2005, p. 75

Communist Party in China<sup>48</sup>.” However, although the significance of these goals is worth noting as they raise important questions regarding the role of ICTs in the transformation of governance, it is important to remember that the powers exercised by the central authority in China are often greatly different from those held by either developed or developing democratic governments, and the wider applicability of the lessons drawn might thus be altogether fairly limited.

In sum, from an administrative point of view, the new Information and Communication Technologies – and more specifically the Internet – may change the way governmental actors pursue their goals. Firstly, new opportunities to improve efficiency arise when the government and its agencies use ICTs to create and maintain networks. To quote Mechling (2002) “...public organizations are rapidly becoming networked [both within government departments and across them] and they are using these networks to produce and deliver services. This will ultimately lead to efficiency improvements, much as has happened with the private sector<sup>49</sup>”.

Secondly, digitization has cut transaction costs, in some cases all the way to zero. This holds particularly true for cost savings generated by the payment of bills online and document downloads where, according to Fountain (2001), the “movement from paper-based to web based processing of documents and payments typically generates

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<sup>48</sup> Kluver, ‘The Architecture of Control: a Chinese Strategy for eGovernance’, p. 76

<sup>49</sup> Jerry Mechling, ‘Information Age Governance’, in Elaine Kamarek and Joseph S. Nye Jr. eds., *Governance.com: Democracy in the Information Age* (Washington, DC: Brookings Institution, 2002), p. 155.

administrative costs savings of roughly 50 per cent<sup>50</sup>”. The possibility of lowering costs gives rise to further efficiency gains as governments and their agencies have the chance to achieve their objectives using fewer resources such as time, money, and physical inputs. Finally, the introduction of ICTs brings about important transformations at the organisational level as they affect the chief characteristics of the Weberian bureaucracy; reshaping the processes of production, coordination, control, and direction that take place within the public sector<sup>51</sup>. Many simple clerical tasks prevalent in paper-based bureaucracies have already been replaced by computerised databases and digital documents: desktop computing capacity and the availability of multiple databases and analytical tools have collapsed the work of different positions into a few or one position that deals with many tasks, and the use of digital tools has allowed relatively unskilled employees to make sophisticated evaluations<sup>52</sup>.

From a citizen perspective, services can be delivered more rapidly, with shorter processing and information retrieval times increasing the quality and efficiency of service delivery. Waiting times may be reduced, as routine cases are dispensed with quickly and access to different databases allows civil servants to cut down processing times. e-Government helps in the creation of “transaction-capacity governance”, where citizens are empowered, are no longer information-poor, no longer required to wait in long queues for services and are no longer exposed to the socio-economic consequences of

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<sup>50</sup> Jane E. Fountain, *Building the Virtual State: Information Technology and Institutional Change* (Washington, DC: Brookings Institution, 2001), p. 5.

<sup>51</sup> Jane E. Fountain, ‘A theory of federal bureaucracy’ in Elaine Kamarck and Joseph S. Nye Jr. eds., *Governance.com: Democracy in the Information Age*, pp. 123 – 125.

<sup>52</sup> Fountain, ‘A Theory of Federal Bureaucracy’, p. 124.

corruption<sup>53</sup>. The result is greater civic engagement and less corruption, leading to better governance. Citizens have easier access to service agencies through, for example, information kiosks and have access to public information at the click of a button. In turn, increased access to services can stimulate the openness of government by taking away discretion, curbing opportunities for arbitrary action, and increasing chances for disclosure<sup>54</sup>. Indeed, e-government pilots in some developing countries have already demonstrated a marked positive impact on corruption, transparency, and quality of service provision<sup>55</sup>.

#### 4.5. Public Sector Reform Games: Process Reengineering and e-Government

Information and communication technologies bring about rapid changes in management patterns, such as the breakdown of traditional administration hierarchies and the streamlining of decision-making within and across agencies. Steps to adopt and use ICTs in government are thus generally taken as part of a broader reform or change-management agenda driven by actors from different levels, where new technology is introduced to solve existing administrative problems. The re-engineering of administrative processes is possibly the most important step in implementing an application, as it requires that an agency undertakes substantial reform of its

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<sup>53</sup> C.K. Prahalad, *The Fortune at the Bottom of the Pyramid: Eradicating Poverty Through Profits*, (Pennsylvania: Wharton School Publishing, 2005) quoted in R. D. Pathak and R. S. Prasad, 'The Role of eGovernment in Tackling Corruption: the Indian Experience' in Raza Ahmad ed., *The Role of Public Administration in Building a Harmonious Society, Selected Proceedings from the Annual Conference of the Network of Asia-Pacific Schools and Institutes of Public Administration and Governance (NAPSIPAG)*, December 5 – 7 2005, 2005, p. 438.

<sup>54</sup> Bhatnagar, 'Transparency and Corruption: Does eGovernment Help?', p. 7.

<sup>55</sup> Bhatnagar, 'E-Government: Building a SMART Administration for India's States', p. 257.

organisational structure<sup>56</sup>. This is particularly true as using ICTs with out-dated or inappropriate processes can increase corruption and other forms of poor governance by providing opportunities for officials to perform dishonest activities faster and still avoid detection<sup>57</sup>.

Re-engineering processes often involves playing games to change the mind-sets and culture of an organisation's workforce, including using strategies that recognise the need to train employees, improve skill sets, and deploy appropriate supporting infrastructure to enable online processes that are useful to both the user and the implementing organisation. A common strategy in a successful implementation game is to map existing methods and procedures, usually followed by the simplification of these procedures in such a way that the overall task can be completed in as few steps as possible<sup>58</sup>.

The looked-for outcome of such an exercise is that of mutual cooperation; where all the players in the game accept the modification of processes that result in fewer steps, any eventual reduction in the number of people needed to perform tasks, and the automation of certain operations that result in eventual back-end computerisation. However, this is not always the case, and re-engineering games may get stymied in conflicting moves made by different key players. This thesis argues, therefore, that the use of ICTs alone will not guarantee the success of a project in achieving its objectives and reaching its full potential. Successful e-government systems and re-engineered

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<sup>56</sup> Bhatnagar, *e-Government: From Vision to Implementation*, p. 66.

<sup>57</sup> Pathak and Prasad, 'The Role of eGovernment in Tackling Corruption', p. 450

<sup>58</sup> Misra, 'eGovernance: Responsive and Transparent Service Delivery Mechanism', p. 288.

processes standardise rules and procedures, but it is the well thought-out games played by project designers and implementers which ultimately bring down resistance and fear, reduce opportunities for exercising discretion, and create an environment conducive to the adoption of the new technology.

Related to this, project managers, whilst implementing a project, have to decide whether they will adopt a top-down approach to decision-making or whether they will select a more participatory style. Whilst a top-down approach to project management does yield a number of benefits – including the speeding up of decisions that might otherwise be difficult to make (particularly true for cases like the one under study, where employees might attempt to resist the introduction of technology when faced with dramatic changes) – such an approach means that during the planning of a system, priority goes to those features and aspects which are seen as important by a select, centralised group of planners. There is a danger that some of the priorities of the main users, the staff on the ground, may be overlooked and any mismatch between design and user needs may result in employees rejecting the system. To add to this, most of the literature on organisational change in the private sector stresses the importance of employee participation in the planning of change-inducing projects<sup>59</sup>, particularly to enhance staff morale, an idea which is catching on in public sector management and e-government circles<sup>60</sup>.

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<sup>59</sup> For an interesting discussion see Elisabeth Lefebvre and Louis A. Lefebvre, 'Chapter 3', *Information and Telecommunication Technologies: the Impact of their Adoption on Small and Medium-sized Enterprises*, International Development Research Centre, 1996, Available at: [http://www.idrc.ca/en/ev-30730-201-1-DO\\_TOPIC.html](http://www.idrc.ca/en/ev-30730-201-1-DO_TOPIC.html)

<sup>60</sup> See Heeks, *Implementing and Managing eGovernment*, p. 226.

## 4.6. Game Changers: Challenges to e-Government Implementation

Whilst e-government in particular and ICTs in general have the potential to be powerful drivers of wealth creation and growth, the multidimensionality and complexity of such initiatives implies the existence of a wide variety of factors that hinder constructive interactions and the smooth acceptance and adoption of ICTs. Employee resistance is still the biggest barrier to successful change, and many e-government projects face substantial internal resistance from government staff as computerisation changes workloads, work profiles, and work content<sup>61</sup>. Government employees often fear both change and ICT applications, as they see computerisation as leading to a loss of power and responsibility, causing redundancy and job losses, and view easily- and widely- accessible information as a loss of control. In addition, politics and individual interests, considered by some to be the strongest determinants of e-government success or failure<sup>62</sup>, also create resistance to change, internal conflicts, and turf issues within public organisations<sup>63</sup>. Fear of the unknown – an uncertainty of the benefits that may accrue from the new system or a perception whose disadvantages outweigh advantages – can also lead to problems<sup>64</sup>. Addressing resistance successfully, therefore, requires the existence of incentives for employees to learn and change, and the establishment of well-structured plans that embrace employee participation throughout all stages of the implementation process<sup>65</sup>.

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<sup>61</sup> Bhatnagar, *E-Government: From Vision to Implementation*, p. 68.

<sup>62</sup> Heeks, *Implementing and Managing eGovernment*, p. 225

<sup>63</sup> Henri Barki, Suzanne Rivard, and Jean Talbot, 'Toward an Assessment of Software Development Risk, *Journal of Management Information System*, vol. 10, issue 2, 1993, p. 208.

<sup>64</sup> Bhatnagar, *e-Government: From Vision to Implementation*, p. 68.

<sup>65</sup> Ndou, 'E-Government for Developing Countries', p. 14.

From the point of view of the analytical framework used to explain actor behaviour within such projects, issues that create discord and resistance may be seen as game-changers as their presence (or absence) impacts and changes the actor perceptions and motivations which underlie game objectives, moves, and strategies. Although there is no single list of challenges to e-government initiatives available, a look through the literature reveals the existence of several issues consistent across different disciplines<sup>66</sup>.

#### **4.6.1. Challenges Relating to ICT Infrastructure**

Poor infrastructure is recognised by many scholars as one of the main challenges to the successful implementation of e-government projects<sup>67</sup>, for inhospitable working environments and badly designed systems are bound to have a negative impact on employee mind-sets. For instance, while the use of ICTs in government offers the potential for substantially improving public sector employee performance, these gains are often not realised owing to difficulties arising from flaws in system design, issues of compatibility, access, and lack of basic computer literacy.

#### **4.6.2. Organisational and Managerial Challenges**

e-Government systems affect the civil service in many ways. The computerisation and automation of work processes alters accountability, reduces discretion and flexibility, and makes performance visible and easy to monitor. It requires that staff retrain and

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<sup>66</sup> J. Ramon Gill-Garcia and Theresa A. Pardo, 'E-government success factors: Mapping practical tools to theoretical foundations', *Government Information Quarterly*, no. 22, 2005, p. 190.

<sup>67</sup> Ndou, 'E-Government for Developing Countries', p. 12.

retool. By making information available to all, computerisation alters the power and authority vested in different levels, flattening the hierarchy within the organisation<sup>68</sup>. Change management issues must therefore be addressed as new work practices, new processes, and new ways of performing tasks are introduced so that uncertainties and fears are addressed during the early stages of implementation.

#### **4.6.3. Human Capital Challenges**

A major barrier to the successful implementation of e-government projects in the public sector is the lack of skills required to deal with new technologies and new ways of working; as e-government projects require hybrid human capital capacities, together with technological skills for system design, installation, and operation; and commercial and managerial skills for handling online processes, functions, and customers<sup>69</sup>. This is a particular problem in developing countries where there is often a chronic lack of qualified staff and inadequate human resource training, generally resulting in extreme frustration and resentment amongst employees if not dealt with properly<sup>70</sup>.

#### **4.6.4. Legal, Institutional and Environmental Challenges**

Additional challenges to the successful implementation of ICTs in government relate to a more general institutional framework and policy environment within which the

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<sup>68</sup> Bhatnagar, *e-Government: From Vision to Implementation*, p. 68.

<sup>69</sup> Rachel Silcock, 'What is e-Government?', *Parliamentary Affairs*, vol. 54, no.1, 2001, p. 92.

<sup>70</sup> UNPAN, *Benchmarking E-government: A Global Perspective*, 2002, p. 52, Available at: <http://unpan1.un.org/intradoc/groups/public/documents/un/unpan021547.pdf>

adopting government organisation operates<sup>71</sup>. As e-government systems increase in sophistication, they often require the introduction of a new range of rules, policies, laws, and legislative changes to address electronic activities; such as freedom of information, electronic archiving, data protection, computer crime, intellectual property rights, and copyright issues<sup>72</sup>. There is also need to reform complementary (though un-automated) processes and systems through legislation to ensure that they do not conflict with laws and instead give support to the new system. External pressures such as policy agendas and politics may also pose challenges to the successful outcome of an ICT-for-government initiative as, in making any kind of decision, public managers have to take into account a large number of (often) restrictive laws and regulations, leading to an innate desire to resist change and preserve the *status quo*<sup>73</sup>.

#### **4.6.5. Information and Data Issues**

e-Government is about the capture, storage, use, and dissemination of information by the public sector, and thus a number of challenges to its successful implementation relate to the quality of data and data structures. First and foremost, data quality problems that could hamper the uptake of an e-government system, the quality of decisions, and processes flowing from it include inaccuracies, inconsistencies, and incompleteness of data<sup>74</sup>. Scholars such as Ballou and Tayi (1999) further identify the lack of proper

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<sup>71</sup> Stephen T. Bajjalay, 'Managing Emerging Information Systems in the Public Sector', *Public Performance and Management Review*, vol. 23, no. 1, 1999, p. 44.

<sup>72</sup> Ndou, 'E-Government for Developing Countries', p. 13.

<sup>73</sup> Cf. Christine Bellamy, 'The Politics of Public Information Systems', in G. David Garson ed., *Handbook of Public Information Systems* (New York: Marcel Dekker Inc., 2000), pp. 85 – 98.

<sup>74</sup> Thomas C. Redman, 'The Impact of Poor Data Quality on the Typical Enterprise', *Communications of the ACM*, vol. 4, issue 2, 1998, p. 80.

appropriate data as a challenge to the implementation of ICT initiatives, and one that might cause users of a system to reject it in the long-term<sup>75</sup>.

#### **4.6.6. Strategy Challenges**

Another reason that some e-government projects result in user frustration and can degenerate into negative interactions is the failure on the part of project planners to develop and establish a feasible, context-tailored strategy<sup>76</sup>. Many public institutions go in for e-government projects by simply transferring information, processes, and services online without considering the organisational changes needed to take advantage of their full benefits<sup>77</sup>. Devising a good strategy is a difficult task, as it requires planners to take a holistic view of a project, its different aspects, and current processes; as well as think about its long-term focus and objectives. A clear strategy needs to engage in a rigorous assessment of the reality on the ground: the laying out of an inventory of project details and a statement of costs and benefits, followed by a continuous monitoring and evaluation of the process of project implementation and use. Only then will actors be completely aware of the situation and the role that they are required to play.

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<sup>75</sup> Donald P. Ballou and Giri Kumar Tayi, 'Enhancing Data Quality in Data Warehouse Environments', *Communications of the ACM*, vol. 42 issue 1, 1999, p. 73.

<sup>76</sup> Heeks, *Implementing and Managing eGovernment*, p. 42.

<sup>77</sup> Ndou, 'E-Government for Developing Countries', p. 15

#### 4.6.7. Leadership Challenges

A final challenge to effective e-government implementation is the development and maintenance of committed leadership<sup>78</sup>. As e-government is a complex process accompanied by large investments, high risk, and radical change; there is a need for senior public managers who can understand the real costs and benefits associated with projects and be able to lead, motivate, influence, and support employees under their charge. Every project needs its 'e-champions': leaders who have the vision, commitment, and skills to oversee the implementation of the project, empower workers in the new digital office environment, and defend experimental action<sup>79</sup>. Strong leadership and clear lines of accountability are thus vital to overcoming employees' resistance to change, marshalling the resources needed to improve management, and building loyalty to the project within an organisation.

#### 4.7. Conclusions

Prompted by declining computing costs, a number of developing countries have begun to direct administrative reform towards achieving decentralised development planning through the diffusion of technology to relatively small units of administration<sup>80</sup>. Those behind this programme are often strong leaders motivated, not only by the spirit of

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<sup>78</sup> General Accounting Office, *Electronic Government: Challenges Must Be Addressed With Effective Leadership and Management*, GAO-01-959T, 2001, p. 1 Available at: <http://www.gao.gov/new.items/d01959t.pdf>

<sup>79</sup> Barbara A. Allen, Luc Juillet, Gilles Paquet, and Jeffrey Roy, 'E-governance and Government Online in Canada: Partnerships, People & Prospects', *Government Information Quarterly*, vol. 18 issue 2, 2001, p. 102

<sup>80</sup> Shirin Madon, 'Introducing Administrative Reform through the Application of Computer-Based Information Systems: A Case Study in India', *Public Administration and Development*, vol. 13, 1993, p. 37.

public service, but by the power, influence, and reputation that associating themselves with such a trendy, cutting-edge agenda can bring.

The use of ICTs in public service provision is also encouraged by actors originating from civil society bodies, multinational companies, and the public at large; people who believe that technology can, over time, shift the balance of power between different players in the governance game by not only making government agencies more citizen-centric and responsive, but also enhancing their own status as serious players in policy and decision-making circles. However, despite the potential of ICTs to support reform, there remain substantial problems for (a) the public sector of a developing country to enter the ICT-reform era at all, and (b) for a country to move on within a short time period from a paper-based environment to an integrated approach that effectively uses ICTs to enable the delivery of reform objectives.

Introducing e-government initiatives into public bodies is therefore a tricky game to play, as computerisation alters the work-load, work profile, and work content of the average public sector employee; impacting accountability, reducing the opportunities for exercising discretion, making performance more visible, flattening the hierarchy, often forcing the need for retraining and retooling, and sometimes creating redundancy<sup>81</sup>. Many projects tend to face internal resistance from staff – particularly from the middle to lower levels of the civil service – with moves made to re-engineer processes and effect back-end computerisation having a profound effect on the way civil servants perform their duties and perceive their jobs. Very often in developing countries, it is the fear of the

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<sup>81</sup> Bhatnagar, *e-Government: From Vision to Implementation*, p. 68.

unknown that drives this resistance, particularly if the introduction of new technology results in a change of procedures and the need for new skills. Further, in corrupt service delivery departments, there may be pressure to slow down or delay the introduction of technology-led reforms due to the impending loss of additional income.

The implementation of e-government projects in the developing world is also often complicated by the reality that, whilst developmental problems in these countries are many, the resources available to tackle them are scarce. At the national level, the players of games to develop technology policy compete with those who seek to advance other development objectives. Low rates of Internet penetration in these countries, for instance, mean that in order for any project to be successful, governments would have to first invest heavily in the infrastructure and skills needed to generate an atmosphere conducive to increased public sector employee use and citizen access<sup>82</sup>. Large investments in both the initial groundwork and the project itself would inevitably divert resources away from other high-priority areas such the provision of basic infrastructure, primary education, health services, and water and sanitation requirements. It is thus doubly imperative that projects are successful: not only must they improve standards of living, but in doing so must justify the investment made in them. Success, however, cannot be guaranteed, and failures risk compounding the problems of the developing world.

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<sup>82</sup> Sumit Roy, *Globalisation, ICT and Developing Nations: Challenges in the Information Age* (New Delhi: Sage, 2005), p. 106.

Critics of e-government, and particularly its introduction in a developing country context, contend that administrative reform is not an important enough issue to justify exposing cash-strapped governments to the risks and opportunity costs associated with ICT projects<sup>83</sup>. It comes as no surprise, therefore, that while e-government initiatives have been pursued with vigour in the developed world over the past few decades, governments in the developing world have been less enthusiastic about investing heavily in the necessary infrastructure. It is only recently that government leaders, particularly in Asia, have made efforts to implement technology-driven reforms within government bodies across the region<sup>84</sup>.

In recognising the need to turn property tax into a viable revenue instrument that delivers high tax yields without compromising on citizen acceptance, the Greater Bangalore Municipal Corporation (BBMP) sought to improve its property tax administration system through the introduction of a computerised database and the use of digital mapping techniques to track compliance and check evasion. From the discussion of meta-games of tax administration reform and ICT4D projects presented in Chapters 3 and 4, it may be concluded that the project under study in this thesis is extremely interesting in two respects. On the one hand, it is an example of an innovative game played by a developing country local government agency to improve its revenues from property tax. On the other, it is also an instance of the application of relatively sophisticated e-government technology in a developing country setting.

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<sup>83</sup> Randolph Kluver, The Architecture of Control: a Chinese Strategy for eGovernance, *Journal of Public Policy*, vol. 25, issue 1, 2005, p.76.

<sup>84</sup> Thomas Parks, A Few Misconceptions about eGovernment, 2005, p.1, Available at: [http://www.asiafoundation.org/pdf/ICT\\_eGov.pdf](http://www.asiafoundation.org/pdf/ICT_eGov.pdf)

Both aspects have political implications – the politics of power and influence drove the design of the project, political reputations were staked on the outcome, opinions varied on whether certain aspects of the system were economically and politically viable or indeed desirable, politics circumscribed what could and could not be implemented, and reactions to reforming the system had and still have deep political implications. Both chapters thus aimed to give the reader a thorough understanding of key concepts involved in the case study and the larger games that underlie them. Building on these foundations, the following chapters will discuss the case study in detail, looking first at the impact of the system on tax revenue, tax compliance, and the tax officials themselves; and then ahead to the games that were played and their eventual outcome.

## Chapter 5

# Property Tax Administration in India: The Case of the Greater Bangalore Municipal Corporation

In order to identify and study the games that led to the implementation of the Property Tax Information System within the Bruhat Bengaluru Mahanagara Palike (BBMP) revenue department, in-depth interviews were conducted for this thesis which traced not only the history of the system itself, but also the expectations and reactions of its chief designers and users within the context of tax administration in Bangalore city. Information gained from interviews was supplemented with official documents and media reports to provide the reader with a full picture of the existing dynamics within the Greater Bangalore Municipal Corporation.

### 5.1. Beginnings: Exploring the Setting of the Case Study

It is common belief amongst several scholars and practitioners of e-government that the introduction of technology into a government agency should be accompanied by the reform of back office procedures<sup>1</sup>. Process re-engineering – as it is called – often

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<sup>1</sup> Cf. Subhash Bhatnagar, *eGovernment: From Vision to Implementation - A Practical Guide with Case Studies* (New Delhi, Sage, 2004), p. 14; and Thomas Matheis, Jörg Ziemann, Peter Loos, Daniel M. Schmidt, & Maria A. Wimmer, 'Towards eGovernment in the Large: A Requirements-Based Evaluation Framework', in Vishanth Weerakkody ed., *Applied Technology Integration in Governmental Organizations: New E-Government Research* (Hershey, P.A.: IGI Global, Inc., 2010), p. 228-229.

requires that the adopting agency implements substantial reforms in organisational structure, initiates exercises to change organisational culture and mind-sets, trains and builds the skills of its employees, and puts into place the requisite supporting ICT infrastructure to facilitate the digitisation of processes in way that is beneficial to both government employees and citizens<sup>2</sup>. However, process change is a challenging task for any organisation, particularly when it potentially involves workforce reductions and changes in power structures, issues which hold particularly true for public organisations with their hierarchical employee structures and tradition of job security until retirement<sup>3</sup>.

The State of Karnataka is particularly interesting when studying the various games and interactions related to the use of information technology for public service reform within Indian government departments, as ongoing processes of change within different government agencies in the state have the use of ICTs deeply implicated in them. Karnataka is the eighth largest state in India, both in area and in population, and is the fourth most industrialised state in the country after Maharashtra, Gujarat, and Tamil Nadu<sup>4</sup>. According to the 2001 National Census Report, the population of Karnataka is 52.73 million people<sup>5</sup>, of which over one-third live in urban areas<sup>6</sup>. Most of the urban population lives in Class I cities, *i.e.* cities with a population of over 100,000 people.

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<sup>2</sup> Bhatnagar, *eGovernment: From Vision to Implementation*, p. 66.

<sup>3</sup> Deepak Bhatia, Subhash Bhatnagar and Jiro Tominaga, 'How Do Manual and E-Government Services Compare? Experiences from India ', in *Information and Communications for Development* (Washington D.C.: World Bank Publications, 2009), p. 77.

<sup>4</sup> Centre for Policy Research, *The Future of Urbanisation: Spread and Shape in Selected States* (New Delhi: CPR, 2001), p. 171.

<sup>5</sup> Third State Finance Commission (Government of Karnataka), *Decentralisation in Karnataka: A Status Report* (Bangalore: Government of Karnataka, 2007), p. 15.

<sup>6</sup> Directorate of Municipal Administration (DMA) – Govt. of Karnataka, *Nirmala Nagara: Towards a Better Living Environment*, 2003, Available at: <http://municipaladmn.kar.nic.in/NNe.htm>

In the last fifteen years, Urban Local Bodies (ULBs) in the state have been reconstituted into a four tier system: City Corporations, administering cities with a population of more than 300,000; City Municipal Councils, which govern those cities that have a population of between 50,000-300,000 people; Town Municipal Councils, which oversee the running of towns that have a population of between 20,000-50,000 people; and Town Panchayats, which administer those towns that have a population of more than 10,000 people. There are currently 211 urban local bodies in Karnataka, including 8 City Corporations, 37 City Municipal Corporations, 93 Town Municipal Corporations, and 68 Town Panchayats plus 5 Notified Area Committees<sup>7</sup>; which together are run and administered by a total of 6,896 elected representatives. Prior to 1994, municipal bodies in the state were governed by two laws: the Karnataka Municipal Corporations Act of 1976 (which governs City Corporations) and the Karnataka Municipalities Act of 1964 (which governs the other ULBs)<sup>8</sup>.

Following the passing of the 74<sup>th</sup> Constitutional Amendment Act by the Central Government in 1993, Karnataka amended the municipal acts to meet its requirements, and two new acts – the Karnataka Municipalities (Amended) Act and the Karnataka Municipal Corporations (Amended) Act – became effective from June 1994<sup>9</sup>. Both the KMCA and the KMA require ULBs to perform obligatory and discretionary functions, in addition to which they also perform additional functions laid down in the 74<sup>th</sup> Constitutional Amendment Act<sup>10</sup>. Major obligatory functions include the maintenance of

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<sup>7</sup> Third State Finance Commission, *Decentralisation in Karnataka*, p. 15.

<sup>8</sup> Centre for Policy Research, *The Future of Urbanisation*, p. 192.

<sup>9</sup> S. R. Maheshwari, *Local Government in India* (Agra: Lakshmi Narain Agarwal, 2008), p. 226.

<sup>10</sup> Third State Finance Commission, *Decentralisation in Karnataka*, p. 16.

roads, streetlights, sanitation, water supply, registration of births and deaths, public immunisation, and regulation of residential and non-residential construction; whilst discretionary functions include the formation and maintenance of parks, schools, libraries, and hospitals.

## 5.2. A Brief History of the Bruhat Bengaluru Mahanagara Palike

The capital of Karnataka, Bangalore, is a fast-growing metropolis with over 5.9 million inhabitants living in its metropolitan and outlying areas<sup>11</sup>. The city's metropolitan region, with which this research project is chiefly concerned, is home to 4.3 million people, most of whom live in the Western part of the city. The area itself is divided into three administrative zones – North, South and East.

The Bangalore Municipal Corporation (otherwise called the Bangalore City Corporation, Bangalore Mahanagara Palike or BMP) was constituted in December 1949 through the amalgamation of the erstwhile Bangalore City Municipality and Bangalore Cantonment Municipality under the Bangalore Municipal Corporation Act of 1949<sup>12</sup>. From an initial 70 wards given to it by the Act, the jurisdiction of the BMP increased to 100 wards in 1995. Today, the Bruhat Bengaluru Mahanagar Palike (BBMP, translated as the Greater Bangalore Municipal Corporation) is in charge of the civic administration of the city, and was formed in 2007 by merging the 100 wards of the old BMP with 7

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<sup>11</sup> Government of India, *Census Data 2001*, 2001, quoted in Santosh Sateesh, 'Institutionalised Income Disparity: Preliminary Results of a Self-Assessment Property Tax Scheme', eGovernments Foundation Unpublished Paper, 2005, p. 3.

<sup>12</sup> Mathew P. Idiculla, 'The Delayed BBMP Elections and Governance Reforms in Bangalore', Centre for Budget and Policy Studies, Research Paper, 2009, p. 12. Available at: [http://www.cbps.in/visitor/Frm\\_G\\_Publications.aspx?Action=Latest](http://www.cbps.in/visitor/Frm_G_Publications.aspx?Action=Latest)

neighbouring City Municipal Councils (Rajarajeshwari, Dasarahalli, Bommanahalli, Krishnarajpuram, Mahadevpura, Byatarayanapura and Yelahanka), one Town Municipal Council (Kengeri) and 110 villages around Bangalore<sup>13</sup>. The wards themselves were reconstituted in 2009, taking their total number to 198. For the purposes of analysis, however, it must be remembered that this thesis will concern itself only with the original 100 wards of the city which fall under the jurisdiction of the old BMP.

It is worth noting that the city of Bangalore has, in recent years, become a recognised and much-renowned centre for global software innovation and development; and that the metropolis has, in consequence, experienced a rapid increase in urban growth that has forced its officials and administrators to learn how to cope with an associated, increased demand for civic services<sup>14</sup>. The city's municipal bodies, however, have been hard-pressed to find the resources and capabilities necessary to provide the services required to cater for the growth in population and associated demands on infrastructure, with the prevalence of poor administrative and governance structures further compounding the problem and often resulting in huge revenue losses for the agencies concerned.

A look through existing documents for nominal figures of tax collection in the city indicates that, for instance, when adjusted to take into account inflation, revenue

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<sup>13</sup> Afshan Yasmeen, 'Greater Bangalore, but Higher Tax?', *The Hindu*, 18 January 2007 Available at: <http://www.hindu.com/2007/01/18/stories/2007011820460300.htm>

<sup>14</sup> Janaki Nair, *The Promise of the Metropolis: Bangalore's Twentieth Century* (New Delhi: Oxford University Press, 2007), p. 1

from property tax has been stagnant over recent years<sup>15</sup>. One survey further estimated that for the year 2002-2003, out of the 720,000 properties in the city, only two-thirds of that number (approximately 530,000 properties) had been taxed. The estimated loss as a result of these omissions was close to Rs. 3 billion for the Revenue Department<sup>16</sup> – a poor reflection on the efficiency of the city’s municipal corporation to extract essential revenue to meet the infrastructural demands of Bangalore’s rapidly growing population.

In recent years, there has been growing pressure placed by citizen groups, international agencies, and the local media on the city corporation and the state government’s Urban Development Department to rationalise existing revenue collection structures and improve the collection of property tax within both the city and the state at large. In view of the need to turn property tax into a productive tax instrument, the BBMP teamed up with a series of private and quasi-governmental technology firms in partnerships that aimed to improve property tax collection in the city using computerised revenue records and Geographical Information Systems (GIS)-based property mapping<sup>17</sup>.

### 5.3. Key Milestones in the Development of the Case Study

The property tax system in Bangalore is defined within the legislative provisions of the Karnataka Municipal Corporation (KMC) Act and the Karnataka Municipalities Act which, in their original form, stipulated that property tax in Karnataka was to be

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<sup>15</sup> Shirin Madon, Sundeep Sahay and Jyotsna Sahay, ‘Implementing Property Tax Reforms in Bangalore: An Actor-Network Perspective’, *Information and Organisation*, vol. 14, 2004, p. 271.

<sup>16</sup> eGovernments Foundation, ‘The eGovernments Foundation Property Tax Application’, Prepared: October 2004.

<sup>17</sup> For a summarised timeline delineating the evolution of the *Bruhat Bengaluru Mahanagara Palike* (BBMP) Property Tax System with GIS Capability, see *Appendix B*.

calculated according to its expected annual rental value (ARV), i.e. the reasonable estimated value of rent a property might bring in for the coming year (see *Appendix B*). According to Section 109 of the Karnataka Municipalities Act (1976), the basis of assessment of property tax in the State was to be the rateable value of a building, defined as the annual rent at which the building was expected to be let<sup>18</sup>. The courts interpreted ‘rateable value’ to mean the fair rent according to existing rent control legislation – the Karnataka Rent Control Act of 1961 – which prescribed the adoption of rent on the basis of 1) the prevailing rates of rent, 2) the rental value of the property entered in municipal records, and 3) external circumstances. The Act further restricted the enhancement of the rate of rent, so that at no stage could there be an increase of over 100 per cent.

The Karnataka Rent Act replaced the Karnataka Rent Control Act in 1999, and provided a more concrete basis for the assessment of rent<sup>19</sup>. Section 7 of the Act defined ‘standard rent’, stipulating that this was equal to 10 per cent per annum on the cost of construction of the building at the time of construction, together with the market price of the land. Section III further enhances the standard rent, stating that for buildings constructed after 1<sup>st</sup> January 1995, rent can increase by 75 per cent of annual inflation based on the wholesale price index. In addition, the rent enhancement permitted was limited to the built-up area of the building. Thus, in sum, the Karnataka Rent Act of 1999 aimed to ensure that even if rent assessments were made on fair rental value, it would provide a reasonable basis to calculate property tax.

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<sup>18</sup> NIUA, *Reforming the Property Tax* (New Delhi: National Institute of Urban Affairs, 2004), p. 27

<sup>19</sup> NIUA, *Reforming the Property Tax*, p. 27.

The KMC Act was amended in 2001, changing the method of tax calculation across the state to the Capital Value System (CVS), based on the taxable capital value of the property, including both land and improvements in the calculation<sup>20</sup>. Following the amendment, numerous attempts were made by the BBMP to implement the CVS in Bangalore city, all of which were put on hold by the Municipal Council (the elected representatives of the citizens). Interviews with senior bureaucrats conducted by this researcher revealed that members of the Council were reluctant to support a move that potentially entailed increased taxes, as they feared it would cost votes<sup>21</sup>.

They therefore attempted, at every stage, to block the implementation of the CVS, both by stealthy manoeuvring and by open lobbying of the State Government. In early 2008, when the most recent attempt to adopt the new method of assessment was followed by a public outcry at a possible increase in taxes, the BBMP succumbed to pressure from the councillors and decided to abandon its implementation altogether<sup>22</sup>. It was decided that tax would continue to be temporarily calculated according to the ARV system, supplemented by two compulsory cesses: a monthly Solid Waste Management Cess and an annual Infrastructure Cess<sup>23</sup>. The uncertainty ended a few months later when a final deal was struck with the elected council, which saw the BBMP administration agree to compute property tax according the Unitary Value System (UVS), as a compromise between the ARV and the CVS.

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<sup>20</sup> Bangalore Mahanagara Palike, *Assessment and Calculation of Property Tax Under the Capital Value System (New SAS): 2007- 2008*, Unpublished Handbook, 2007, p. 1.

<sup>21</sup> Personal Interview with PP1, August 2006.

<sup>22</sup> 'RWAs Question Legality of the CVS', *Times of India*, 19<sup>th</sup> April 2008, p. 2.

<sup>23</sup> 'Get Ready to Pay Infra and Waste Cesses: Remit It Along with SAS', *Times of India*, 7<sup>th</sup> October 2009, p. 1.

## 5.4. Property Tax Administration and its Reform

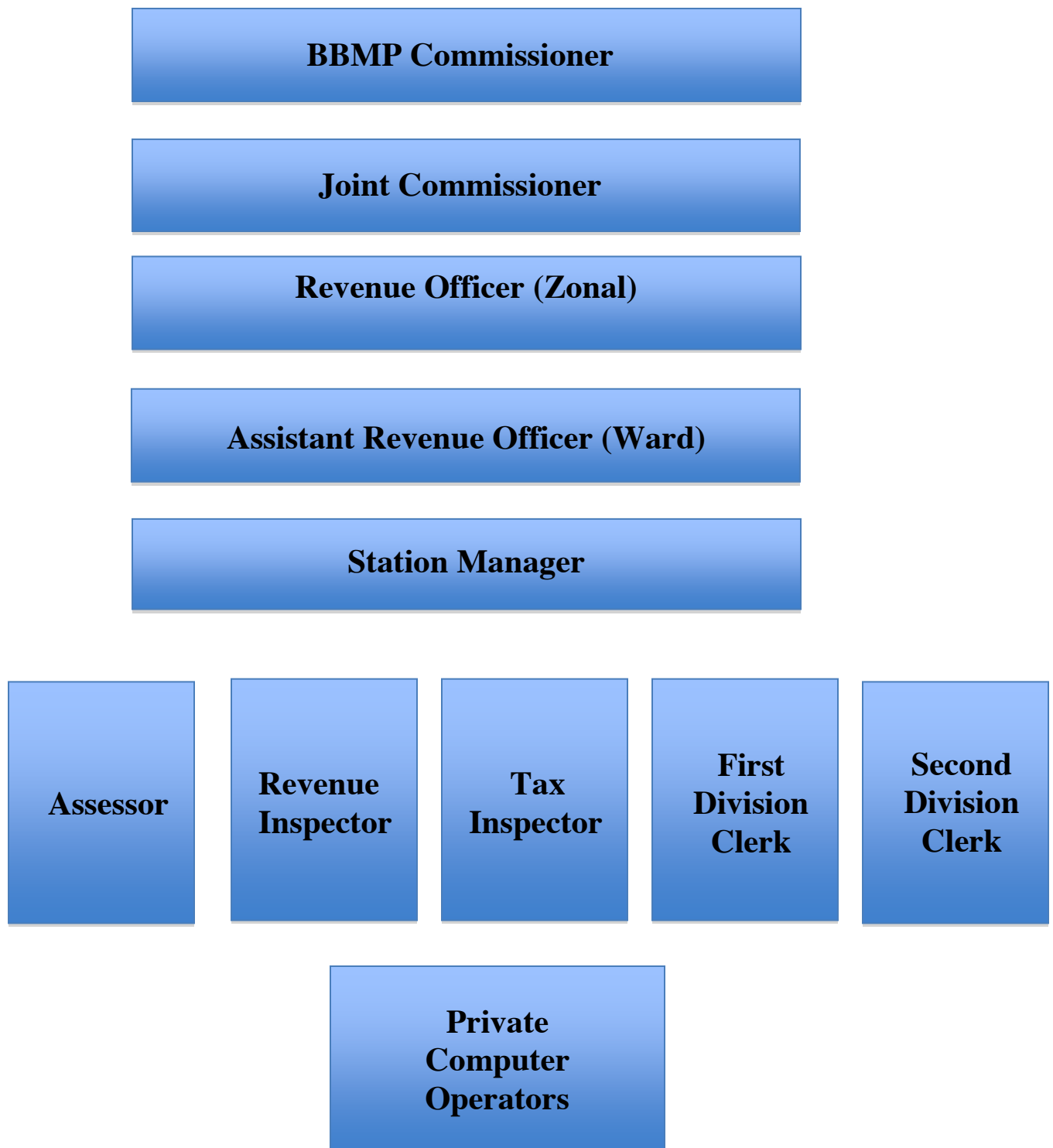
For the purposes of civic administration, the city of Bangalore is divided into 8 administrative zones. Each zone is headed by an Additional or Joint Commissioner, under whom works a Deputy Commissioner, 2 to 4 Revenue officers, between 5 and 10 *Assistant Revenue Officers*, and other junior revenue staff (*Assessors, Revenue Inspectors, and Tax Inspectors*)<sup>24</sup>. The key player in the system is the Assistant Revenue Officer, or ARO, who is the *de facto* head of a local revenue office and is responsible for the overall administration of tax in 3 to 4 of the city's wards (*see, Figure 5.1* below). In addition to the collection of property tax, revenue offices are also responsible for issuing other property-related documents including building permits and *Khatha* certificates (a statement of account and proof of payment of property tax dues, often used in lieu of a title deed).

Under the manual system of property tax, first laid down by the British in the latter half of the 19<sup>th</sup> century, tax administration in Bangalore centred around three registers: the Assessment Register or the MAR 19 (which contained information on all properties in a municipality, including property location, plot size, and built-up area), the Mutation Register (which logged changes in ownership, property bifurcation, etc.), and the Demand, Collection and Balance or DCB Register (which contained details of property tax payments – taxes due, amount collected, and the balance remaining)<sup>25</sup>.

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<sup>24</sup> BBMP, *Bruhat Bengaluru Mahanagara Palike: Revenue Department*, 2010, p. 3 Available at: <http://www.bbmp.gov.in/images/Revenue/introductionandobjectives.pdf>

<sup>25</sup> Directorate of Municipal Administration, Government of Karnataka, *Untitled*, 2007, Website: <http://municipaladm.kar.nic.in>



**Figure 5.1: Organisational Structure – Bruhat Bengaluru Mahanagara Palike Revenue Department (2010)** (Source: Bruhat Bengaluru Mahanagara Palike, 2010 )

Each ward had its own set of registers, which were kept in the custody of Assistant Revenue Officers (AROs) based in revenue offices spread out across the city.

The process of property tax administration consisted of three basic steps: Assessment, Collection, and Appeals. The assessment process typically began with the Tax Inspector and Revenue Assessor physically inspecting properties and assessing their taxable value (the “demand amount” or taxes due). The estimated taxes due were then verified, first by the ARO whose job it was to act as the point of contact with the public, and then at different levels of the BBMP depending on the property’s size and value<sup>26</sup>. After the verification process was complete, the details of each property, together with the tax amount due, was entered into the three registers.

Property tax was then collected (or ‘recovered’) by the tax inspectors, who made annual visits to all the properties in the areas allocated to them, and who were expected to correctly assess taxes due and serve property owners with payment notices. Payments were either made on the spot to the tax inspector or could be made by citizens at the local revenue offices or designated banks, with remittances made at revenue offices directly noted in the appropriate register by the accountant handling collections. In the field, the tax officer was required to note down property details and payments made into a handbook, which he/she then used to manually update the tax registers. In addition to the assessment of tax, the registers were also vital to the preparation and procurement of tax-related documents, and to obtain these citizens would have to visit the revenue office where a junior clerk would look up the records and copy out the information required by

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<sup>26</sup> Madon, Sahay and Sahay, ‘Implementing Property Tax Reforms in Bangalore’, p. 281.

hand. Taxpayers had the option of filing a three-step legal appeal under the KMC Act against any perceived unfair or wrong assessment.

This system remained in operation until the late 1990s, and involved both citizens and officials in a series of elaborate games and interactions. The tax registers were large and unwieldy – usually running into several volumes – and retrieving information from them was often a tedious, time-consuming affair. As one station manager said:

“...In order to retrieve a record, staff would have to search through an enormous book – take the DCB [register]. Each DCB book weighed approximately 8 kgs! All records would be noted down in the book...the actual DCB register consisted of 8 books and it took at least a year for a new recruit to familiarise himself with the contents. (SM1)”

The size of the books and the sheer volume of data contained in them turned even the simplest process into a long drawn out, complex affair. Take, for example, the process of procuring property tax-related documents. To obtain a document, a citizen would have to visit his local revenue office and meet with the one junior official in charge of that particular process. It was almost a given that either the revenue official in charge of handling such requests would not be on hand, or would take a long time to locate a particular entry in the records; forcing the taxpayer to make repeated trips to the revenue office in order to pin them down. Some officials would take advantage of the situation and intentionally delay the process, demanding that they be given a bribe to speed things up.

The situation was further compounded by problems of poor recordkeeping and bad information management practices. Bangalore's Assessment Register in the late 1990s made a mention of less than 50% of the city's properties, with a majority of those entries not listing property numbers or street addresses, let alone important details required to calculate tax such as plot size and built-up area. Similarly the DCB register was not regularly updated by the local tax collectors; resulting in taxes, penalties, and arrears not being calculated accurately or collected on time.

This meant that the amount of tax that could be levied was often calculated at the discretion of the tax collector, leading to a variety of problems: some collectors were harassed by citizens who sought to use their political clout and influence to reduce their tax burden, others colluded with property owners to undervalue or simply ignore the existence of properties in return for a bribe, whilst in other cases taxpayers were put under pressure from local tax officials and were regularly charged excess tax. Citizens routinely filed appeals against what they perceived to be unfair tax burdens and corrupt practices, resulting in prolonged legal battles and huge litigation costs for the Corporation<sup>27</sup>.

## 5.5. Implementing a New System: A Brief History of the Revenue Department Computerised Property Tax System

In response to numerous complaints and a huge backlog of legal appeals, the BBMP passed a resolution in April 2000 to introduce a self-assessment system (SAS), by

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<sup>27</sup> Personal Interview with PP1, August 2006.

which citizens were made responsible for filing their own tax returns according to set parameters<sup>28</sup>.

The process of tax administration changed slightly:

“First the citizen would file his returns using the SAS form. Then, the tax inspector – the TI – would look up the records and cross-verify the amount of tax due, the balance remaining and so on, and thus the final figure would be arrived at. The tax inspector would manually update the record books and issue a hand written receipt. To identify defaulters, the TI would look up the record books and pay a visit to the property, issue a notice and collect tax and arrears due. (AR5)”

The government hoped that making citizens responsible for filing their own returns would reduce the discretionary powers of the tax inspectors, thereby reducing the scope for corrupt practices and introducing an element of transparency into the system<sup>29</sup>. The move to the SAS was considered by administrators to be a vital step in making citizens, who until then paid tax in response to a visit from the inspector, more proactive in the settling of their dues. According to the scheme, the entire area under the jurisdiction of the BBMP was classified into six zones, with properties divided into six categories and different roads classified at different rates. Citizens had simply to look up the chart, determine the rate applicable for properties on their street or in their locality, and assess their own tax. A year later, BBMP officials deemed the introduction of the SAS to be a success, citing a 20% increase in voluntary payments for the tax year 2000/2001 and a Rs. 4 billion increase in overall collections during that same period<sup>30</sup>.

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<sup>28</sup> Bangalore Mahanagara Palike, *Property Tax Self-Assessment Scheme: Golden Jubilee Year 2000*, Mahanagara Palike Council Resolution No. 194/99-2000 (Handbook), 2000, p. i.

<sup>29</sup> Directorate of Municipal Administration, ‘The Intention of Self Assessment of Property Tax: Part 1’, 2008, Available at: <http://municipaladmn.kar.nic.in/SASel.htm>

<sup>30</sup> Personal Interview PP1, August 2006, PP2, August 2006.

However, whilst making citizens responsible for filing their own tax returns improved tax collections to a degree, the SAS did not completely do away with corrupt practices, non-compliance, poor record keeping, and long drawn out procedures. Property tax revenue figures remained low, and it was felt in some quarters of the administration that a continued lack of proper records and opaque procedures resulted in some citizens (either inadvertently or deliberately in collusion with tax inspectors) undervaluing their properties<sup>31</sup>. Additionally, it did not in any way increase the efficiency of a property tax-related transaction: citizens still had to visit a tax office or bank within a specific area to pay their taxes, and any request for tax-related documents still took weeks to be processed.

In 2001, therefore, the Corporation decided to computerise the property tax system; a move that was felt would benefit both the agency itself and the taxpayers. The Karnataka Urban Infrastructure Development and Finance Corporation (KUIDFC) issued a call for tenders for the computerisation of the revenue accounts, and following a successful bid, awarded the contract to the Computer Maintenance Corporation (CMC) later that year. Almost immediately, the CMC began the task of creating a comprehensive computerised database for each revenue office from data contained in the three property tax registers. The software system intended for the corporation was a C-DAC system: a client-server application that was to be used individually in the 30 range offices across

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<sup>31</sup> Personal Interview with PP1, August 2006.

the city and under which each office had to maintain its own servers, keep its own back-ups, and deal individually with any software updates<sup>32</sup>.

However, the distributed set-up designed by the CMC was unsurprisingly complicated to maintain, and only served to exacerbate some of the problems of the paper-based system. A year and a half after the data collection and entry had commenced, it became obvious that efforts to create an electronic database along those lines were proving to be futile. The BBMP, unhappy with the final product, terminated their contract with CMC and the project would have given up the ghost had not several senior figures within the Corporation, including the Commissioner and the Deputy Commissioner for Revenue, been determined to see the property tax system fully computerised. They recognised, however, that as no-one within the Municipal Corporation had had much experience with ICT-based applications, they would require outside help to evaluate the feasibility of any proposed design. In desperation, they contacted the Indian Space Research Organisation (ISRO) and requested the services of a scientist well-versed in technology to work with them for a couple of years. Following an agreement with ISRO, a senior scientist was deputed to the BBMP to act as an IT consultant and to oversee the process of computerisation in the Revenue Department<sup>33</sup>.

The computerised property tax system in its current form was first conceptualised in January 2003, when the BBMP project team approached the eGovernments Foundation

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<sup>32</sup> Personal Interview with PP6, August 2006.

<sup>33</sup> Personal Interview with PP1, August 2006.

and asked them to create an electronic system that built on the work done by the CMC<sup>34</sup>. System architects from the Foundation confirmed that the distributed server system set up by the CMC was far too complex and cumbersome for the purpose and so, in order to simplify the system, decided as a first step that the databases of all the ARO offices would be centralised with each office connected online to a central server based at the BBMP headquarters.

Having identified senior state revenue officials, municipal tax administrators, and local tax collectors as the target users of the system, the ultimate aim of the project designers was to create an Internet-based ‘back-office’ database which could be used to monitor all aspects of property taxation: in essence property identification, tax dues assessment, revenue collection, and tax compliance monitoring. The application was put together using an Oracle database on an open-source software platform, with the architects using J2E and Java technology to construct the back-end application servers. Personal Digital Assistant (PDA) devices were integrated into the system so that revenue officers could go out in the field to collect taxes, and then use them to upload data back in real time. It was envisaged that citizens would in time also become users of the system, and would be able to have unrestricted access to their property records (and those of the entire city) online. The system’s single-most unique feature was to be its eventual use of Geographic Information Systems (GIS) or online virtual mapping tools<sup>35</sup>; to visually aid

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<sup>34</sup> Personal Interview with PP5, August 2006.

<sup>35</sup> ‘E-governance, GIS: New Face of BMP’, *Times of India*, 22<sup>nd</sup> July 2006, p.1.

the revamping of the addressing system and to improve tax coverage through more comprehensive property identification and stricter monitoring<sup>36</sup>.

The eGov Property Tax Information System (or PTIS as it was then called) was first piloted in Ward No. 79, Shivajinagar in April 2003. The pilot lasted for a couple of months, during which time the processes for collecting data in the remaining wards of the city from the manual registers, and the verification of that data through ground-level surveys, were streamlined. The system soon went live in ward-after-ward until, in December 2003, it was announced that it was fully functional and ready for use across Bangalore city<sup>37</sup>. To supplement revenue collection at the ARO offices, the BBMP opened five Citizen Service Centres across the city from where the system could be accessed and where taxes could be collected.

Between 2004 and 2007, the external face of the project – the BBMP Revenue Department website – remained rudimentary and formed only a small part of the main BBMP site. As the central focus of the Revenue Department project was to boost the efficiency of property tax administration through the automation of back-office processes, project planners by and large ignored the need to provide citizens with a user-friendly front office gateway and online services. The parts of the site devoted to property

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<sup>36</sup> For a more advanced analysis of Geographic Information Systems (GIS); their definition, their basic constituent elements, their application to the spatial analysis of urban areas, and the impediments to their successful use therein, see Robin Flowerdew and John Stillwell, 'Undertaking Applied GIS and Spatial Analysis Research in an Academic Context', in John Stillwell and Graham Clarke, eds., *Applied GIS and Spatial Analysis*, Chichester, John Wiley & Sons Ltd., 2004, pp.377-396, and Mike Coombes and Simon Raybould, 'Planning a Network of Sites for the Delivery of a New Public Service in England and Wales', in John Stillwell and Graham Clarke, eds., *Applied GIS and Spatial Analysis*, Chichester, John Wiley & Sons Ltd., 2004, pp.315-333.

<sup>37</sup> Personal Interview with PP2, August 2006.

tax sought chiefly to provide information to citizens about the various aspects of self-assessment and payment, including a handful of downloadable guidebooks and tax forms. However, the information provided on the website was far from comprehensive, with many crucial government reports or publications – such as copies of the all-important property tax handbook – being unavailable for download. As the website developed, some property tax forms and guidelines were made available online, but citizens could not fill these out electronically, manipulate data online, or interact with corporation officials in a virtual space.

Senior BBMP officials soon concluded that streamlining agency processes and improving public sector efficiency was only part of the solution to boost tax compliance, and instead felt that the other half lay in facilitating online payments and transactions<sup>38</sup>. However, project planners were initially reluctant to give taxpayers greater control over the system, and so slowed down the development of the website by proposing that it be done in series of steps. They decided that the first step towards the development of a citizen interface was to be the use of a virtual gateway to speed up front-office transactions in revenue offices. This gateway would not be accessible online to the wider public, instead it would only be made accessible to select government employees working on intranet-linked computers in their respective offices.

Supporters of this move justified their decision by claiming that citizens still did not have the capacity to pay their taxes online at home, and officials did not have the ability to handle online transactions. Further, they argued that keeping the system in

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<sup>38</sup> Personal Interview with SO1, August 2009.

agency hands in the short term would reassure revenue employees that their jobs were not under threat<sup>39</sup>. The planning committee soon discovered, however, that this arrangement did have its drawbacks. For one thing, it did not do away with losses resulting from petty corruption; for another, citizens continued to have direct access to and were able to ‘harass’ officials if they were not happy with their assessments; and finally, it was found that revenue staff were often simply not equipped to handle sophisticated software. To counter these problems, project planners decided in 2006 to employ private computer operators to manage databases and relied on banks to handle electronic payments<sup>40</sup>.

It was also decided that the system would be integrated with an innovative project known as *BangaloreOne*; a series of public service counters set up by the Government of Karnataka across the city which aimed to make available round-the-clock multiple services to the public under one roof<sup>41</sup>. The project was finally realised in August 2009<sup>42</sup> and the computerised system of property tax administration became the only means of assessing and collecting tax in the city following the complete dismantling of the manual system later that year<sup>43</sup>. The promise made to the people of Bangalore was that the property details of every citizen would be stored in digital databases, and every citizen who paid tax or applied for property tax-related documents would receive a computer-generated receipt and printed-out certificates.

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<sup>39</sup> Personal Interview with PP2, August 2006.

<sup>40</sup> Personal Interview with PP1, August 2006.

<sup>41</sup> Shashidhar Sarangamath, ‘BangaloreOne: Integrated Citizen Service Centre’ in Ashok Agarwal ed., *eGovernance: Case Studies* (Hyderabad: Universities Press, 2007), p. 53.

<sup>42</sup> ‘Pay property tax at BangaloreOne’, *Deccan Herald*, 27<sup>th</sup> August 2009, p. 3

<sup>43</sup> Personal Interview with PP1, August 2006.

Assistant Revenue Officers were each allocated a username and password and, in being given access to the databases of the wards under their care, could check on the progress of their staff, the inflow and outflow of revenue, individual citizens' tax status, and for any discrepancies that might arise in the calculation and collection of tax dues. At the same time senior revenue officials based in BBMP headquarters could maintain control over the entire property tax database and could retrieve information that enabled them to monitor performance of individual wards. In this way, the system was designed so that supervision could be maintained upwards along the chain of command through a strong internal audit processes.

However, despite initial success with the system, relations between the BBMP and the eGovernments Foundation became strained in 2006. Interviews with senior members of the BBMP and the eGovernments Foundation conducted by this researcher revealed differences of opinion between the representatives from the government agency and the software team over a number of issues. None was as contentious, however, as the debate over the future role of the system and the use of its data for in-depth analysis<sup>44</sup>. On the one hand, system developers from the Foundation saw themselves as more than just mere software engineers and were keen that their technology be used to gather a broad range of civic data that could be applied to in-depth analysis and policymaking. In doing so, they hoped to play a greater role in the policy process. As one software engineer on the project planning team said:

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<sup>44</sup> Personal Interview with PP5, August 2006.

“...There was a lot of friction between the BBMP and us, because we wanted to be more than just software providers. We wanted to be more of a partnership sort of thing, and that didn't really go along well with some of the people at the BBMP. That was one of the reasons why we didn't do...we didn't implement some ideas.” (SE1)

Senior Foundation figures were also extremely disappointed that BBMP officials simply wanted a system that would automate existing manual processes, and were upset that they would not be given a significant role in helping to exploit the system's full potential.

At the same time, many BBMP officials claimed not to have been wholly impressed by the way in which the digitisation of the system had been done: one senior bureaucrat in particular complained that doing away with manual records completely and moving tax administration online without creating sufficient property histories had caused complete chaos and untold inconvenience to both citizens and revenue staff<sup>45</sup>. Discussions with project planners on both sides indicated that the rift caused by differences of this sort was too large to bridge, evidenced by the fact that the eGovernments Foundation and the BBMP parted ways after the Corporation decided to award the contract to complete the GIS portion of the project to another organisation – the National Informatics Centre – in late 2008.

The project to develop the GIS database had actually begun earlier that year, when the BBMP set in motion an extensive physical survey of the 850 sq. km that comprised its jurisdiction<sup>46</sup>. By early 2009, it was reported that over 300 people were working for the Corporation on GIS-related activities and the final result, in March 2009,

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<sup>45</sup> Personal Interview with SO1, August 2009.

<sup>46</sup> ‘Beware, Big Brother to Watch Your Property’, *Times of India*, 2<sup>nd</sup> November 2008, p. 2.

was the unveiling of *Palike* – a GIS software that used pre-loaded data about every house and every building in the city including details related to type, use, age, street, and zone to facilitate the visual identification of tax defaulters and automatically generate notices when tax payments were made<sup>47</sup>. Today the GIS database contains the details of 1.6 million properties across the city, their exact location, the names of all owners, their total built-up area, the exact site dimensions, number of floors of a building, the exact usage of the property (residential, commercial or mixed), and the property tax details for 2008-09; thereby giving officials at a glance a full visually represented run-down of each property, its owners, and its tax status. According to current BBMP commissioner Bharat Meena Lal: "...With the property database almost ready now, we are technically equipped to handle the non-taxpayers. We have already sent out notices to some of these property owners"<sup>48</sup>.

Interest in providing citizens with greater online autonomy over their payments was renewed and the website received a fillip when, as part of an attempt to reduce the number of assessment-related complaints dealt with by their officers and to make citizens more responsible for filing accurate tax returns, the BBMP launched the Online Property Tax Calculator on 7<sup>th</sup> January 2009<sup>49</sup>. Reports in the media and evidence from the BBMP suggest that calculator was an instant hit with the local population, many of whom lauded it for its "comprehensive and user-friendly" software. The Corporation followed up this triumph by launching a number of equally popular schemes throughout the year,

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<sup>47</sup> 'False Declarations May Soon be History: BBMP Software Targets Property Tax Defaulters', *Times of India*, 31<sup>st</sup> January 2009, p. 3.

<sup>48</sup> As quoted in 'Can't Evade Tax, Property Register is Ready', *Times of India*, 12<sup>th</sup> April 2010, p. 2.

<sup>49</sup> 'Popular Debut for Online Tax Calculator: Applicable for Residential Properties, Citizens Rue Increase in Net Amount', *Times of India*, 8th January 2009, p. 2.

including the opening of more Citizen Service Centres and the provision of tax rebates for ‘early-bird’ payments, all of which were supported by a well-timed publicity campaign.

In July 2009, the website launched a much-vaunted ‘complaints box’, designed to encourage citizens to look up the property tax figures of their neighbours and report any discrepancies to the corporation<sup>50</sup>. The online complaints box was based on an idea developed during the early days of project planning by the eGovernments Foundation: “...if I could see my neighbour’s property tax record and how much he/she paid,” explained a senior eGovernments Foundation representative, “and if I paid my full fair share and my neighbour did not, chances are I would let the neighbour know one way or another. [In other words] peer pressure was an important component to improve compliance in the city. So that was a decision that we encouraged the city to make and they did make that decision” (PP2).

The final step to encourage greater tax compliance was taken by the BBMP that very month when, buoyed by their success and a new-found belief that the Bangalorean public was perhaps ready for virtual service provision, the Revenue Department introduced a secure online payment gateway on its website to enable citizens to pay their taxes electronically<sup>51</sup>. Today, the property tax system has its own dedicated webpage accessible from the BBMP site. Some tax-related functions, such as the printing of

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<sup>50</sup> ‘Now, spy on tax evaders online’, *Times of India*, 5<sup>th</sup> June 2009, p. 2.

<sup>51</sup> ‘Log in Online and Log out Tax Headache’, *Times of India*, 30<sup>th</sup> July 2009, p. 4.

receipts, once only available from the CSCs, can now be accessed online from anywhere although other processes such as *Khatha* services still need to be applied for in person.

To give tax enforcement some real bite, the State Government passed the Karnataka Municipal Corporations (Amendment) Ordinance in 2008, which empowered BBMP officials to cross-check tax returns by inspecting a property, reassessing the value of the building, and recovering the difference plus a fine according to a set of strict rules and a pre-determined inspection format<sup>52</sup>. Enforcement was given yet another boost in 2010, when the BBMP announced that it would use the electricity board's database of household meters to cross-verify property details with those recorded in its own property database<sup>53</sup>.

## 5.6. Conclusions

This chapter has traced the development and implementation of the BBMP property tax revenue system project, seeking to provide the reader with a comprehensive knowledge of the circumstances and the backdrop against which the project to digitise property tax administration in the city was rolled out. It also aimed to identify the key players involved in the process and focus on some of their aims and objectives. These elements are taken forward in the following chapter, which furthers the analysis of the case study through an examination of its impact on revenue officials based in field offices across the city. It will present data gathered from 40 personal interviews and informal

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<sup>52</sup> 'Hiding Property Tax Info? Face Checks, Pay Fine: Revenue Officials Can Now Come Calling', *Times of India*, 15th December 2008, p. 1.

<sup>53</sup> 'BESCOM Meters to Verify Property Tax?', *Times of India*, 4<sup>th</sup> September 2010, p. 2.

conversations, seeking to build on the narrative in this chapter and add to it the psychological perspective of the system's primary designers, managers and users.

## Chapter 6

# Investigating User Perceptions and Attitudes towards Digitisation and Process Reengineering

As discussed in previous chapters, past investigations of e-government have generally been limited in their consideration of the human element during project design and implementation, and tend to overlook the way in which different actors relate to one another and influence outcomes via political processes such as cooperation, alliance building, and conflict. It was felt important, therefore, to develop a complete picture of the attitudes and opinions of those individuals directly involved with the chosen case study as end-users, designers, or facilitators. This research project makes use of data obtained from 40 in-depth interviews and informal conversations, with project planners and BBMP officials of different ranks based in different revenue offices across Bangalore city. The results of these interviews are presented in the following sections of this chapter, and serve to throw light on the games and interactions that influenced the development of the computerised property tax administration system in Bangalore City.

## 6.1. The Manual System of Property Tax Assessment and Collection

The first step towards identifying the various interactions involved in the design and implementation of the project was to examine the attitudes of both project planners and revenue staff towards the paper-based system of property tax administration. It was felt that attitudes and perceptions towards a manual way of working would both indicate the motivations of the project planners that led to their decisions and actions, and influence the way in which revenue staff received and acted on the proposed changes.

<b>Institutional Actor</b>	<b>Key Motivations and Perceptions</b>
Senior BBMP Officials	<ul style="list-style-type: none"> <li>• Identified two major problems present in the manual system: poor recordkeeping and haphazard administration</li> <li>• Need to computerise tax records to reduce tax evasion and petty corruption</li> </ul>
Senior Revenue Officials	<ul style="list-style-type: none"> <li>• Recognised serious problems with the manual system of tax administration</li> <li>• Need for computerised database to cut down on time/resource wastage</li> </ul>
Junior Revenue Staff	<ul style="list-style-type: none"> <li>• Felt that manual system of tax administration was extremely slow and time-consuming</li> <li>• Need for computerised records to increase efficiency and reduce workloads.</li> </ul>

**Table 6.1: Motivations and Perceptions of Key Institutional Actors Regarding the Manual System of Property Tax**

Interviews with senior members of the BBMP and software providers revealed that they saw poor recordkeeping as the key problem of the manual system of tax administration; a problem which resulted in large numbers of properties escaping the tax net, and caused both tax officials and citizens to waste large amounts of time negotiating the bureaucracy associated with property tax. The motivations and perceptions of key institutional actors regarding the manual system of property taxation are summed up in *Table 6.1 (above)*. Interviewees felt that corruption (either collusive or coercive) and tax evasion were the end-results of poor recordkeeping and data management stemming from such long drawn out processes, and it was hoped that the introduction of a computerised database and the setting up of both citizen service centres and other collection points would remove temptations and opportunities for malpractice by eliminating regular face-to-face contact between citizens and revenue officials<sup>1</sup>.

In order to understand the day-to-day working of revenue staff in a paper-based environment, officials in the field were asked a series of questions relating to the manual system of property tax administration. It was hoped that their answers would provide insight into issues such as the time it took them to look up records and retrieve data manually, together with any difficulties they faced during the manual process of tax assessment and collection.

Most revenue officials interviewed felt that there had been serious problems with the manual system of tax administration, with only four officials expressing the opinion that they “...*didn't face any major problems*” and that “*the system worked and [they]*”

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<sup>1</sup> Personal Interview with PP2, August 2006.

*followed the system*". They also believed that the biggest hurdle to the efficient administration of tax that they encountered prior to the introduction of the computerised database was the large amount of time wasted as a result of poor, haphazard recordkeeping and large amounts of paperwork that needed to be done by hand or in person. According to one Assistant Revenue Officer:

"I think the biggest problem was the time we took to do our work. Everything was done by hand, and even to write out a simple receipt meant we had spend lots of time to look for information in files and books. If information was wrong, missing or lost, we had to waste a lot of time looking for the documents and correcting our mistakes (AR12)."

Even junior officials were aware of this:

"Under the manual system, the rate of tax collection was very slow: we could only cover 10 – 15 houses per day as the tax collector would first have to knock on the door of the house, make small talk, build a rapport and then collect the tax. Sometimes he might have to visit the same house 2 – 3 times before he was able to collect tax. (SM2)"

In addition, many staff believed that under the manual system, it was easy for someone be inefficient or dishonest and escape detection. As a station manager noted:

"...[W]hile most of the staff were punctual with their work some were not sincere and they held up the work, and it was difficult to catch these people and make them work more efficiently. This speed (or lack of it!) was a big problem." (SM1)

Some interviewees said that they were concerned about the amount of time citizens had to waste on administrative red tape<sup>2</sup>. They pointed out that citizens were often obliged to visit revenue offices repeatedly to meet revenue staff when applying for and whilst collecting tax-related documents or resolving tax-related disputes.

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<sup>2</sup> Personal Interview with AR4, August 2007.

Almost all subjects identified poor recordkeeping and the lack of systematic data management practices as the key problems of the manual system. Since property details and tax records were kept simultaneously in several different books – different volumes of the DCB register, as well as tax inspector’s notebooks or *Khirdi* books – information was scattered and there was often no one complete record for a property. As one revenue official described it:

“Consulting the DCB register took us a lot of time and we sometimes made mistakes because information was incorrect or missing. Sometimes, especially during peak season, the information from the *Khirdi* book was not copied into the DCB because the [Tax Inspectors] were really busy collecting tax and didn’t have time to update the DCB.” (AR11)

The process of calculating tax dues, administering collections and checking up on defaulters consequently became extremely haphazard, he added. Unsurprisingly, none of the revenue officials interviewed touched on sensitive issues such as the misuse of the system by their colleagues for personal gain.

Tax evasion was, however, another matter, with many staff members speaking freely about the difficulties they faced in identifying and catching citizens wanting to evade their dues, particularly when it came to issues relating to the ease with which they were able to disregard demand notices and delay tax payments under the old system. “Everything under the manual system took us a lot of time,” said one official, “It was difficult to find the information we needed to calculate tax because the DCB register was so big and sometimes details were missing, and it was difficult to identify defaulters and keep track of how much they owed us in penalties and when they finally paid us<sup>3</sup>.” One

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<sup>3</sup> Personal Interview with AR1, August 2007.

official believed that another major problem under the old system was a lack of public awareness about property tax: he felt citizens were reluctant to pay their taxes and often undervalued their properties as a consequence of not being aware of how the system actually worked.

## 6.2. Managing the Design and Implementation of a Project Using New Technology

Designing a successful e-government project requires that the system be relevant, efficient, effective, and above all sustainable. Project management must thus facilitate interactions between actors that engender either cooperation or constructive opposition, not conflict.

<b>Institutional Actor</b>	<b>Key Motivations and Perceptions</b>
Senior BBMP Officials	<ul style="list-style-type: none"> <li>• Need to constitute a core project group to design and manage project</li> <li>• Need to consult senior and mid-ranking revenue officials before initial design stage</li> </ul>
Senior Revenue Officials	<ul style="list-style-type: none"> <li>• If consulted, felt that their contribution had made a difference</li> <li>• If not consulted, not unduly worried or upset</li> </ul>
Junior Revenue Officials	<ul style="list-style-type: none"> <li>• Not upset about having no part to play in the consultation process</li> </ul>

**Table 6.2: Motivations and Perceptions of Key Institutional Actors Regarding the Design and Implementation Phase of the Project**

It was hence thought important to explore the style of management and decision-making in interviews as an introduction to the project itself.

*Table 6.2* summarises the key motivations and perceptions of actors involved during the design and implementation phase of the project. Interviews with software providers and senior BBMP officials revealed that a “*focus team*” or core decision-making group was put together in 2000 during the initial stages, consisting of the (then) current BBMP Commissioner, the Deputy Commissioner for Revenue, the former Deputy Commissioner for Revenue, a scientist deputed from the Indian Space Research Organisation (ISRO), and senior software engineers working for the software provider. Revenue officers from different wards and ranges “*who had a lot of experience*” were also included “*from time to time*”<sup>4</sup>.

In order to gauge the extent and degree to which revenue officials were consulted by the core project team, interviewees taking part in the study were asked a series of questions relating to their role during the process of system design and implementation. Of the 20 Assistant Revenue Officials interviewed, six reported that they had indeed been consulted during the design and implementation stage of the project. All those who made this claim had held lower ranking posts (chiefly Assessors and Reporters) at the time. The remaining officials – those who stated that they had not been consulted – had only come to use the system after their promotion to the level of ARO, or after being transferred to wards where the computerisation process was already underway. A few knew of colleagues from other wards who had contributed opinions, but the large majority did not.

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<sup>4</sup> Personal Interview with PP5, August 2006.

None of the junior officials spoken to for the purposes of this study had either been asked to give input during the design stage of the project or knew anybody who had.

All six of the officials who said they had been consulted claimed that they had been very positive about the proposals put to them during the consultation process, with at least two observing that they had told the consultation team that they considered the project to be a “*good idea*” which would help the department “*save time and improve accuracy*”<sup>5</sup>. Although all interviewees admitted to not possessing any technical knowledge of the proposed system, they still believed that they had been able to make constructive suggestions. For instance, the majority view suggested that “*the system should allow citizens and revenue staff to access property records from anywhere, and that they should include a feature that allows both citizens and officials to calculate tax accurately so that there are no disputes*”, with at least one official stressing the system’s importance for “*transparency*”.

### 6.3. Switching to the Computerised System: Impact on Office Processes

A key component of the computerised revenue system was to be the re-engineering of office processes within the department to speed up integration of the new technologies in the office environment. Accounts of the use of technology gained from senior BBMP officials and software providers indicated that the computerised system merely automated existing processes within the Revenue Department, and did not in any

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<sup>5</sup> Personal Interview with AR5, August 2007.

way alter old ways of functioning or encourage the use of innovative methods of working. It was thus thought important to gain from officials on the ground a sense of the changes that had taken place within the BBMP revenue department as *they* saw them, and to gauge how they felt that these changes had impacted their daily work rhythm.

<b>Institutional Actor</b>	<b>Key Motivations and Perceptions</b>
Senior BBMP Officials	<ul style="list-style-type: none"> <li>• Wanted the system to be designed as a mere replication of current office processes</li> <li>• Were at odds with eGovernments Foundation members on the project planning team, who wished to design a system with greater functionality</li> </ul>
Senior Revenue Officials	<ul style="list-style-type: none"> <li>• Majority of the opinion that the system did not result in a radical change of office processes</li> <li>• Willing to accept a system that did not result in a heavier workload/new skills</li> <li>• Small number believed the introduction of the Self Assessment Scheme was more significant than the computerised system</li> </ul>
Junior Revenue Staff	<ul style="list-style-type: none"> <li>• Recognised the system as a simple automation of work processes</li> <li>• Noted that computerisation had not done away completely with manual work</li> </ul>

**Table 6.3: Motivations and Perceptions of Key Institutional Actors Regarding the Impact of the System on Office Processes**

Revenue officials interviewed were therefore asked to describe the process of tax administration after the introduction of technology, and whether or not and to what

degree there had been a difference in office processes and workplace culture as a result of the use of computers in the workplace.

As noted in *Table 6.3*, only a small number of officials believed that the introduction of technology had not greatly impacted old work processes. Out of these, some were adamant that, despite claims that the digitised system had completely replaced the old paper-based one, the introduction of technology had in reality not completely done away with manual processes. To quote one Assessor:

“The computerised system hasn’t totally done away with manual work – in order to make online calculations we still have to feed property details manually into the database.” (JO6)

Other interviewees appeared keen to point out that technology had been used simply to automate existing processes, although they did acknowledge that the use of digitised records, computer printouts, and online databases had all had a positive impact on their work. As one interviewee said:

“The system of working is essentially the same as under the manual system, only now we use computers to maintain property records, issue certificates and receipts and track down defaulters. Ever since the citizen service centres and help centres opened, tax payers no longer have to come to us to pay tax – the computer system allows them to pay at whichever centre they like at their own convenience” (AR14).

Another interviewee said that he hadn’t felt a change in his own way of working, stating: “...Well, I feel that things are the same as before – there have been no real changes due to computerisation, in the sense that the same [manual] processes have been computerised” (AR7). However, even he admitted that there were benefits to the system, saying that it had helped him and his staff save time, and had made it easier for them to

search for and retrieve property records. For yet another official, the direct automation of existing processes was a source of relief:

“...I thought it would require us to work in a completely different way and that we would have to make a lot of effort to adjust, but after using [the computerised system] I have realised it is the same as under the manual system – the only difference is we use computers to do the work for us.” (AR13)

For junior staff, the introduction of the Self-Assessment Scheme as a means of making citizens responsible for paying their taxes and reducing the workload of revenue staff was almost as important as the introduction of technology into the workplace. However they were willing to acknowledge the psychological impact that computerisation had on taxpayers:

“...The presence of computers in the system has encouraged people to pay voluntarily and to take initiative in paying their tax on time to avoid penalties. As a result in most years we collect the bulk of the tax well before the deadline, for example this year we have already collected 70% [of the tax yield due to us]!” (AR9).

## 6.4. Features of the System Preferred by Users

Central to this angle of enquiry is the identification of features of the system that users were happy with, and which they felt had aided them in their work. As seen in *Table 6.4*, interviews with those behind the design and implementation of the project revealed that the top management of the BBMP expected that the replacement of paper records with a computerised database, online records, and GIS mapping techniques to aid in the tracking of payments and identification of defaulters would greatly help tax officials do their work and would thus be universally welcomed and accepted<sup>6</sup>.

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<sup>6</sup> Personal Interview with PP5, August 2006.

Revenue officials were therefore asked questions about those aspects of the system which they used most frequently, and which they found to be particularly useful in the process of tax administration. Nineteen out of the twenty Assistant Revenue Officers interviewed admitted that, as a consequence of their office hiring a private computer operator, they themselves had not actually used the computerised system and were thus completely unaware of its features. Eight officials stated bluntly that they were “*not familiar*” with the technical features of system and thus “[*could not*] name any features”. The remaining members of this group, despite not having accessed the system of their own accord, were all able to list at least one feature and justify why they believed it had been beneficial to their work.

<b>Institutional Actor</b>	<b>Key Motivations and Perceptions</b>
Senior BBMP Officials	<ul style="list-style-type: none"> <li>• Placed great emphasis on the GIS component as the system’s most important feature</li> </ul>
Senior Revenue Officials	<ul style="list-style-type: none"> <li>• Little or no knowledge of the GIS component of the project</li> <li>• Little or no knowledge of how to operate the system in general</li> </ul>
Junior Revenue Staff	<ul style="list-style-type: none"> <li>• No basic knowledge of the system</li> <li>• Apparent unawareness of even basic features of the system</li> </ul>

**Table 6.4: Motivations and Perceptions of Key Institutional Actors Towards Key System Components**

The most frequently mentioned feature was the online database, with interviewees stating that it helped them find complex information quickly, make accurate calculations, keep track of payments, and identify and track defaulters. As one official enthused:

“...I think the computerised records are great. Using my password I can log into the system and check the details of any property in my ward. I can see the property ownership details, the specifications and materials, the tax they should be paying, the tax they are paying...it is really good!” (AR6)

This feeling was echoed by some of the junior staff, summed up in the words of a Tax Assessor:

“I can’t name three features, because I don’t operate the system myself. However I can tell you that it is easy to track bank remittances, easy to see the demand, collection and balance for each property and [the system has] made it easier to catch defaulters.” (JO5)

Interviewees also felt that another positive feature of the system was the assigning of a unique property identification number – the PID – and the linking of that number to property data online. Yet another benefit of the computerised database was, according to officials, the ease with which citizens could look up their personal details online without making a trip to the revenue office. Officials felt that it was a “*great relief*” that citizens did not have to “*harass*” them or “*file RTIs (Right to Information notices)*” in order to get access to their tax records.

Only one tax official mentioned the introduction of GIS mapping techniques as being useful to his work and that of his staff, saying:

“I think the biggest benefit has been the GIS link-up online: it is not just a database but now we can call up property details with a photo of the property. Everything – all the documents related to the property – is scanned and available to both us and the public, making everything more transparent” (AR7).

It is unclear why, despite the fanfare with which the GIS was launched and the emphasis placed on it by project planners, most interviewees omitted to mention it as a useful feature of the system. Two possibilities present themselves – either that at the time of interviewing GIS mapping had not been completed for certain wards and interviewees were thus unaware of its usefulness, or that a lack of technical knowledge and training on the system meant that interviewees and/or their staff were unable to harness the full potential of the technology. Interviews with senior BBMP staff, and participant observation carried out later in the study revealed that as late as late 2010, the GIS remained the preserve of a handful of select officials and computer technologists, with the actual database not fully complete<sup>7</sup>.

## 6.5. Examining User Attitudes to Computerisation

Interviews with senior members of the BBMP and software providers indicated that project planners stood firm in their belief that revenue officials in the field had responded positively to the introduction of the system. In order that this study might gauge initial user attitudes and reactions to computerisation, interviewees were asked to recall in detail their first impressions and opinions of the system, and whether these had changed over time as a result of continued exposure to the new technology. The results of this section are summarised above in *Table 6.5* below.

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<sup>7</sup> Personal Interview with SO1, August 2009.

Institutional Actor	Key Motivations and Perceptions
Senior BBMP Officials	<ul style="list-style-type: none"> <li>• Firm belief that revenue officials would respond positively to the implementation of the system</li> <li>• Convinced that changes would be accepted without question, thereby shoring up their own power and authority as senior BBMP figures</li> </ul>
Senior Revenue Officials	<ul style="list-style-type: none"> <li>• Most reported being delighted with the new system; some initial closet sceptics who were won over with time</li> </ul>
Junior Revenue Staff	<ul style="list-style-type: none"> <li>• Openly suspicious of the new system from the outset, primarily from fear of being replaced and/or made redundant</li> </ul>

**Table 6.5: Motivations and Perceptions of Key Institutional Actors Focusing on Attitudes to Computerisation**

Of the twenty AROs interviewed, two-thirds of them reported to have thought that the idea of a computerised database was a “*very good one*”, and stated that not only had they been “*very happy*”, but also that their first thoughts and opinions of the system had been “*very positive*”. One interviewee even said that he “*felt better with the computer in the office*”<sup>8</sup>. What excited them all was the speed and ease with which tax could be administered:

“Everything was faster, there was suddenly no need to go door-to-door to collect taxes, [and] together with the SAS system people [were] encouraged to take the initiative to pay and we could now focus on evaders” (AR5).

<sup>8</sup> Personal Interview with AR8, August 2007.

Many of those happy with the system said that in the beginning they had been quite willing to overlook any initial problems encountered through the adoption of the new technology, in the expectation that computerising the property tax database would result in efficiency gains and help them and their staff save time. As one interviewee said:

“I felt happy. Although in the year that the system was introduced we had double the work because we had to enter details into both the books and the database, I didn’t mind because I knew it would only be like that for a couple of years after which the [computerised] system would be fully working. I was looking forward to the time we would save once the system was in place, and I knew the system would be very useful for everyone at the office.” (AR9)

Amongst those AROs who stated that they initially were not completely pleased with the new system, three reported having “*mixed feelings*” or being “*doubtful*” about the use of technology. These interviewees said that for all the benefits of technology, they were apprehensive that a new system would only serve to “*complicate*” their work. In the words of one Assistant Revenue Official:

“I thought that the system had both advantages and disadvantages. I thought this way because on the one hand, the system speeded up procedures and made accessing information easy, as against under the manual system where writing up records by hand and searching for information was a time consuming process and open to human error. At the same time, I felt it had its disadvantages – if the system crashes there is a danger that records could get corrupted or lost, something that can’t happen under a manual system.” (AR6)

Interestingly, the remaining two interviewees stated that they had had no strong reaction one way or another to the introduction of the technology at the outset. Both saw computers as tools to help them do their job, and took their presence almost for granted. As one interviewee said: “I didn’t have a strong reaction to the system...you could say I was neutral towards it. I saw it as one of the tools to help me do my job...in a sense I knew it was there and I expected it to be there” (AR10). Junior officials interviewed

claimed to have been overall more suspicious of the new system than the AROs. Many of them spoke of having been “*afraid of the system*”, and of “*feeling mildly threatened*” by the introduction of technology into the workplace, whilst some doubted “*...whether the system was going to work, especially with the private computer operators*’.

Interviewees were then asked whether their attitudes had changed after using the computerised system for their work. They were also asked whether they felt that the introduction and use of the system had hindered or helped their work and, if they had detected a change, were asked to describe it. Of the AROs who had reported being happy with the system, almost all claimed that their initial opinions had “*not changed at all*” after using the system.

The greatest change in attitude was seen amongst those AROs who had had doubts about or been neutral to the introduction of the computerised database. All but one official reported a change in attitude after having used the system, and all those who noted a change reported being more positive towards the system; their fears about it over-complicating work or making staff redundant having been allayed. In the words of one interviewee:

“...I am grateful for the system as I realise how much easier it is to use the system than to do everything by hand. I would not go back to the manual system now” (AR14).

Only two AROs who noted a change in opinion said that although they remained happy with the system, they felt that their “*hopes [had] not been fully realised*”. As one official said:

“I am still happy with the system, but there are a few problems. In particular we have problems when there is a power-cut or the computer crashes – it stops us from working and we have to wait until the power comes back on or the computer is fixed.” (AR12)

Junior officials remained suspicious of the system, especially when it came to the appointment of private computer operators and the loss of contact with the public.

None of the interviewees questioned in the study said that the introduction of the computerised system had hindered their work in any way. When asked whether they felt that the use of the computerised system had made a positive impact, all twenty officials interviewed said that it had made a definite difference, especially in terms of the speed at which records could be search for and retrieved, the ease with which collections could be kept track of, and the immediacy with which transactions could be processed. “There is no question about it!” said one interviewee, “The computerised records are more accurate than the manual ones, they are easy to find when we need them and it is easy to see who has and who hasn’t paid their taxes<sup>9</sup>.” Another official said:

“The system has multipurpose uses. Using the system helps us save time, for instance we can make automatic calculations at the click of a button. It also gives our calculations a high degree of accuracy.” (AR4).

## 6.6. Enumerating the Benefits of Computerisation

Interviews with senior BBMP officials suggested that the introduction of a computerised database and the use of technology in the collection and administration of tax had done away with human error and reduced the scope for misuse of the tax system

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<sup>9</sup> Personal Interview with AR3, August 2007.

for personal gain. Further, according to these officials, the Revenue Department on the whole was happy with the changes brought about by the use of technology in the system and revenue staff felt that the problems they faced under the old system had been solved.

<b>Institutional Actor</b>	<b>Key Motivations and Perceptions</b>
Senior BBMP Officials	<ul style="list-style-type: none"> <li>• Belief that problems of the manual system had been completely done away with and that changes to the way of working in revenue offices had been accepted without question</li> <li>• Need to reiterate seniority and authority in the BBMP pecking order</li> </ul>
Senior Revenue Officials	<ul style="list-style-type: none"> <li>• Recognition that computerisation resulted in a reduction in administrative costs</li> <li>• Belief that in the long-run the system would bring about the increased ability to act autonomously, especially reducing dependence on junior staff and making it easier to keep an eye on them</li> </ul>
Junior Revenue Staff	<ul style="list-style-type: none"> <li>• Recognition of a reduction of burden/work load</li> <li>• Not (openly) unduly worried about being subject to greater scrutiny by senior officers</li> <li>• Acknowledgement of the role played by BangaloreOne centres and the introduction of the Self Assessment Scheme</li> </ul>

**Table 6.6: Motivations and Perceptions of Key Institutional Actors Regarding the Benefits Resulting from Computerisation**

Within the context of this study, it was felt that sounding out revenue officials on what they believed to be the major benefits gained from the introduction of technology formed

an important means of assessing the nature of the project's impact on the revenue department and evaluating the project's overall success or failure. Further, in getting end-users to enumerate benefits, the study sought to determine whether benefits mentioned in theoretical discussions of e-government had had any practical bearing on the case study itself. Interviewees were thus asked questions regarding what they perceived to be the biggest benefits of the system and name those that they felt had had a positive impact on their work (*see Table 6.6* above).

**1. Lower administrative costs:** Almost all the interviewees in the sample study mentioned a reduction in the amount of time and effort needed to locate individual tax records and the ease with which the digital database and proposed online payments system would help them keep track of those who had filed or defaulted on their tax payments:

“I think the biggest benefit is that it helps us save time – we can do all the work we have to in half the time it took us earlier. It is also easy for us to record data and keep tax records up-to-date.” (AR10)

The use of technology was also seen to bring about greater taxpayer compliance, with less effort needed to identify defaulters and chase up remittances. As one official said:

“Because of the computerised system, the public is more aware of their tax responsibilities as they know they can't depend on the tax inspector to remind them. They have become more willing to stand in long queues to pay their taxes” (JO3)

**2. Better data storage, easy retrieval, and increased efficiency in public administration:** A marked improvement in data management practices was the second-most common benefit mentioned by revenue officials of different ranks. Interviewees felt

that the system could “*do the work of 10 humans*” and that it had contributed towards the efficient working of staff:

“...There is no need for us to maintain the DCB register manually anymore. It is easy to update records using the computerized database and to issue receipts for large amounts. It is easy to identify defaulters. It is easy to file bank remittances and track bouncing cheques.” (AR6)

Officials felt that they now had “*better records...with fewer mistakes in the data*” available to them “*at [the] click of a button*”, making it easier for them and their colleagues to save time and work more efficiently.

**3. Faster and more accurate response to requests and queries:** Interviewees felt that the system had freed them and their colleagues from long drawn out manual processes, and that they were now able to focus on being more responsive to citizen requests and queries. This was particularly true for AROs, who felt that it gave them a certain degree of independence. In the words of one official:

“If I want information I don’t need to call my assistants, I just check the computer records myself. It gives me and my staff more time to deal with public queries and complaints.” (AR8).

**4. Increased transparency and accountability:** It is interesting to note that only two respondents in the study mentioned the impact the system had on accountability and transparency, whilst the issue of corruption was not touched upon at all. Both interviewees were Assistant Revenue Officers, who felt that having instant access to the system meant that they could monitor the work of their staff and easily keep an eye on various administrative processes:

“...I think that the first benefit of the system is that it brings transparency into the tax collecting process. It also brings about accountability, and together with transparency it helps improve the efficiency of my staff. As ARO, I can check on the work of my staff using my password, and I can also keep an eye on the amount of revenue that has been collected and the amount that is owed to us” (AR7).

Revenue officials also believed that the centralisation of data, the ease with which citizens could access their tax information in their own homes, and the setting up of tax collection points across the city had all helped in improving taxpayer compliance and had resulted in an increase in the number of properties being brought under the tax net. According to one interviewee: *“With the computerisation of the database and the setting up of citizen service centres across the city, [the burden on us] has been reduced – tax inspectors don't have to go in person as citizens pay their taxes at one common point, either at B1 centres or now at the help centres. Now under the computerised system, we expect to collect tax for approximately 250 houses per day!”* (SM1). The introduction of the Self-Assessment Scheme (SAS), by which citizens were made responsible for filing their own tax returns, had also helped reduce the work burden of revenue department staff by allowing them to focus on identifying and chasing defaulters.

## 6.7. Exploring Changes to Skills and Staff Numbers

In order to gauge the impact that the introduction of the system had had on the human resources of the BBMP revenue department, revenue staff interviewed for this thesis were asked about the number of employees working at the Department before and after the introduction of the system, and also the types of skills that they had had to learn as a result. In addition, junior officials were asked about their own experiences of the

system within the context of their skill levels. Their key motivations and perceptions are summarised in *Table 6.7*.

<b>Institutional Actor</b>	<b>Key Motivations and Perceptions</b>
Senior BBMP Officials	<ul style="list-style-type: none"> <li>• The appointment of private computer operators to bridge the skills gap in Revenue Offices seen as key issue, no other major changes to staffing</li> <li>• Perception that appointments would be accepted without question by revenue staff, who would also see the logic in their being made</li> </ul>
Senior Revenue Officials	<ul style="list-style-type: none"> <li>• Deeply worried about not having the requisite skills to operate the system themselves</li> <li>• Worried that the appointment of computer operators would further erode their authority within the revenue office set-up</li> </ul>
Junior Revenue Staff	<ul style="list-style-type: none"> <li>• Openly critical of being completely dependent on external (private) employees</li> <li>• Worried about the weakening of their own positions and spheres of influence within the revenue office</li> </ul>

**Table 6.7: Motivations and Perceptions of Key Institutional Actors to Changes to Staff Numbers and Skills Required**

Interview data and information collected from the BBMP set the number of positions available at a revenue office between 31 – 35 posts at any given moment. Prior to the introduction of the computerised system, interviewee data shows that on average 27 of these posts were filled, and that the rest usually lay vacant. Seventeen out of the

twenty AROs reported that the situation in their offices had remained unchanged since the introduction of the system; that the number of posts in each office had “*stayed the same*” since the technology was introduced. An ARO explained the reason for this:

“There has been no change in the number of staff employed at the ARO since the introduction of the system. We simply cannot do without staff who know how to administer the property tax. While we need a computer operator to feed in the data, that operator has simply no idea how to administer the tax. He or she simply updates the system with the data we give them. We need our staff to administer the tax...we can't do without them.” (AR10).

Only one interviewee reported in a *reduction* of the number staff that worked at his ARO, but was quick to add that he felt it was “*not because of the system*”. Two interviewees reported an *increase* in the number of staff at their revenue office as a result of the system: AR11 reported an increase of two employees, whilst SM1 was of the opinion that no less than 10 new positions had been created in her office as a consequence of technology adoption!

Interviewees of all ranks were then asked about the kind of skills they and their colleagues had had to learn as a result of ICT adoption. The responses were startling. Of the forty officials spoken to, all but one did not know how to operate even the most basic features of the computerised database. Only AR7 reported using his password to access the system of his own accord. No one from any of the revenue offices under study reported being given any formal training on the system since its implementation, though almost all expressed a desire to learn how to use it themselves. Those who did have basic computer skills did so because they had taken classes outside work, and yet were not able to use the property tax database themselves.

All the interviewees reported being completely dependent on a private computer operator to feed in, change, and retrieve electronic property tax data. In the words of one Assistant Revenue Officer:

“...I do not know how to use the system. I have never been given any training to use the system and I rely on the private operator to enter and change the data. Some of my staff know how to use computers and can read computer printouts but none of them has been given any training to use the system. They too rely on the private operator.”(AR1).

Many openly complained about this. Some interviewees, particularly junior officials, felt they had been “*disadvantaged*” by the lack of training that they personally and revenue staff in general had received, whilst other believed that “*the manual system was more advantageous, and less prone to manipulation*” as “*the correct assessment of tax [now] depends on the integrity of the person who has access to the password*”, and was not open to general cross-verification. Almost all revenue officials interviewed expressed a desire to learn and operate the system. Further, many of them saw this total dependence as unhealthy and detrimental to the interests of the revenue department. As one interviewee said:

“...We hire a private computer operator [to operate the system] and she uses my password to fill in and change the data. However, she knows nothing about property tax administration – she can only fill in the data according to what I and my staff tell her. Some of my staff know how to use a computer but none of them have had any formal training to learn how to use the system. I would like them to learn, as I feel it would be better if someone with a knowledge of property tax could use the system” (AR2).

Human error in recordkeeping still appeared to be persistent problems, with a number of interviewees reporting that there were still errors in the computerised database as a result of poor data entry.

## 6.8. Determining and Solving the Unforeseen Problems of Computerisation

A major complaint amongst those interviewed (*see Table 6.8 below*) was that despite being provided with computers to aid them in their work, they lacked the basic facilities and infrastructure necessary for those computers to function.

<b>Institutional Actor</b>	<b>Key Motivations and Perceptions</b>
Senior BBMP Officials	<ul style="list-style-type: none"> <li>• Refusal to acknowledge that the system suffered from any unforeseen/unplanned problems, possibly as a public relations ploy</li> </ul>
Senior Revenue Officials	<ul style="list-style-type: none"> <li>• Large majority pointed out that basic infrastructural issues contributed to the under-utilisation of the system</li> </ul>
Junior Revenue Staff	<ul style="list-style-type: none"> <li>• Employment of private computer operators still the biggest ‘unforeseen’ problem for junior staff</li> </ul>

**Table 6.8: Motivations and Perceptions of Key Institutional Actors in Confronting Unforeseen Problems**

In particular, officials complained about poor office environments and frequent electricity outages. As one frustrated interviewee said:

“...What is the point of a computer if there is no electricity for it to work?!”  
(AR2).

Technical issues appeared to compound the problem, with many interviewees saying that they were hampered by out-of-date technology, poor Internet connectivity, viruses, and frequent system crashes. Given the complaints, a surprising number of interviewees claimed to have encountered absolutely no technical problems with any aspect of the system. It is unclear, however, whether those interviewed were being cautious in their responses for fear of getting into trouble with their bosses, or simply took electricity shortages, computer breakdowns, and poor working conditions in their stride.

Another unforeseen problem emerged as a result of hiring private computer operators. Although none of the AROs either overtly expressed a fear of losing their jobs through back-office digitisation or admitted to possessing knowledge of any such feelings amongst their staff, it was quite a different matter amongst the lower levels of revenue officials. As one station manager bluntly said:

“...There is a fear amongst the staff that the introduction of computers might result in redundancy...staff are afraid that if they are not computer literate they might lose their jobs and they are worried because they are not given any formal training by the government” (SM2).

Senior tax officials were more concerned that a lack of training on the system and a complete dependence on outside help left them vulnerable to mistakes or surreptitious wrongdoing. As one ARO said:

“...The system is open to misuse by the private operators, because they use the ARO’s password to access the system, and they alone know how to change the data and operate the system. If records are missing and need to be updated, the operator alone can do the needful. As a rule, if any data is missing they should verify it with the assessment register, but if they misuse the system using my password, no one in the office will be able to tell the difference and the blame might fall on me”(AR10).

## 6.9. Exploring the Impact of Technology on Citizen-Government Relations

It was felt that an important part of the study would be to determine officials' perceptions of their relationship with the citizens they served, both before and after the implementation of the system. Interviewees were therefore asked questions relating to their impressions of their interactions with citizens, and whether they felt that these interactions had improved in quality following the implementation of new ways of government agency functioning.

<b>Institutional Actor</b>	<b>Key Motivations and Perceptions</b>
Senior BBMP Officials	<ul style="list-style-type: none"> <li>• Belief that successful implementation of the system would improve the BBMP image in the eyes of the public</li> <li>• Done to bolster official reputations as pro-active members of the government</li> </ul>
Senior Revenue Officials	<ul style="list-style-type: none"> <li>• Noted significant decrease in interactions with the public</li> <li>• Belief that overall interactions were positive as a result of computerisation</li> </ul>
Junior Revenue Staff	<ul style="list-style-type: none"> <li>• Noted a significant decrease in workload and interactions</li> <li>• Belief that positive interactions have been done away with, left with negative face-to-face tasks, although even these had become more positive in tone</li> </ul>

**Table 6.9: Motivations and Perceptions of Key Institutional Actors Regarding the Impact of Technology on Government-Citizen Relations**

The results are summarised in *Table 6.9* below. All the officials interviewed were unanimous in their view that the frequency of interactions with the public had “*decreased significantly*” since the introduction of the computerised system. The reduction in interactions was seen as a direct consequence of the public’s ability to not only check their tax details online anytime and anywhere, but also a result of the emergence of citizen service centres, BangaloreOne centres and BBMP help centres to accept tax payments and issue digitised certificates.

In other words, under the new system, citizens were not required to go to their local revenue office to check their tax details, pay tax, or get copies of certificates: all these things could now be done at the citizen’s convenience at kiosks located across the city. Interactions with tax officials were thus limited to solving problems related to miscalculations and to settling disputes. As one ARO said: “...Our interactions with the citizens are greatly reduced as they now go to the citizen service centres [BangaloreOne centres] and help centres to pay [their taxes]. We tend to now deal only with complaints” (AR6).

A little over half the officials interviewed felt that, to the extent that they did interact with the public, their relationship with citizens had improved through the introduction of the digitised system. Indeed, most of the interviewees talked of having a “*great*” and “*very positive relationship*” with taxpayers, with some saying that the introduction of the system had been “*very good for the BBMP’s image*”. The general

perception was that citizens now saw the revenue department as being “*more efficient*” and tax administration being “*more transparent than before*”. According to one ARO:

“Yes, I feel that our interactions have improved. Citizens like the speed at which we can now work, they like the fact that their records are properly kept and they do not have to make repeated visits to the revenue office. I think they also like being able to pay their taxes anywhere in the city at their convenience.” (AR2)

Another Assistant Revenue Officer was also convinced that the relationship between tax officials and citizens had improved because the ease with which citizens could access their records and pay their tax meant that they would no longer have to “*bother*” and be kept waiting by busy revenue staff.

Those officials who believed that the system had not made a difference to their relationship with the public did so on the grounds that the way of working under the computerised system resulted in very little actual contact with taxpayers. However only one interviewee – a Station Manager – went so far as to say that government-citizen interaction had actually been better under the manual system, when the tax collector was able establish a personal relationship with each taxpayer during the course of his daily rounds. In her words:

“...There used to be a better rapport between the government and citizens under the manual system as the tax inspector used to personally know each house and interact with the people who lived in them. However, since the introduction of the help centres, the tax inspector has no need to visit each house and thus his knowledge of the locals has decreased and he has little opportunity to establish a link with the residents” (SM1).

## 6.10. Examining the Impact of Computerisation on Tax Yields

Interviewees were almost unanimous in the view that property tax revenue yields had been increasing steadily since the introduction of the Self-Assessment Scheme in 2000. Their responses, summed up in *Table 6.10*, reflected the assertion made by one Assistant Revenue Officer who said that “*there has definitely been an increase in tax collections*”, and that they had seen “*an increase in demand and subsequently in revenue*” (AR9) with only one ARO feeling that there had been no real change in tax yields<sup>10</sup>.

<b>Institutional Actor</b>	<b>Key Motivations and Perceptions</b>
Senior BBMP Officials	<ul style="list-style-type: none"> <li>• Increased tax yields through digitisation set as one of the primary project goals</li> <li>• Firm belief that this had been achieved</li> </ul>
Senior Revenue Officials	<ul style="list-style-type: none"> <li>• Recognition that tax yields had increased in the years following computerisation</li> <li>• Mixed response as to whether computerisation was in fact responsible</li> </ul>
Junior Revenue Staff	<ul style="list-style-type: none"> <li>• Recognition that tax yields had increased</li> <li>• Feeling amongst some officials that computerisation had had little or no impact on the collection levels</li> </ul>

**Table 6.10: Motivations and Perceptions of Key Institutional Actors Regarding the Impact of the System on Tax Yields**

<sup>10</sup> Personal Interview with AR6, August 2007.

One ARO thought it important enough to point out that in actual fact no property tax had been collected for the year 2008/2009 as a result of the confusion that followed in the wake of a failed attempt by the BBMP to adopt the Capital Value System (CVS) as a means of calculating property tax (AR7).

It was interesting to note that senior field officials were divided in their opinion of whether or not the computerisation of the system had actually led to improved tax yields. Out of the 19 AROs who believed that there had been an increase in tax revenue over the years, only two felt that tax yields had increased as a direct result of computerising the system, and only one felt that it had contributed to a “*large extent*”. Two officials – one Station Manager and one ARO – were categorical in their assertion that there was no link whatsoever between computerisation and improved tax collections, whilst the remaining tax officials contended that digitisation was only one of a number of reasons that tax revenues had increased.

Both officials who felt that tax collections had improved stressed the importance of the ease with which citizens could now check their details on the system and pay tax in their own time at centres across the city. As one of the interviewees said, “I definitely feel that [the increase in property tax revenue] is because of computerisation. Citizens can pay anywhere, and the system is transparent so they can check their details and those of others from anywhere at their own convenience.” (AR7). For the Assistant Revenue Officer who felt that computerisation of the property tax system had influenced revenue

collection to “*a large extent*”, the most important reason for this belief was the improvement of recordkeeping and the automatic monitoring of payments and defaulters by the system: “...Better records mean we can see which properties have to pay what amount of tax, and recording more properties means more demand. As a result it is easier for us to keep track of who has paid, who hasn’t paid, and who owes us penalties.”(AR16)

The two officials who felt that the computerised system had had no impact on the increase in tax yields, did so for differing reasons. For one interviewee, increased tax compliance was a matter of citizens possessing a particular mindset, a sense of “*duty*”, and she felt that introducing a computerised system had no part to play in instilling this state of mind:

“Collections have increased but I don’t believe it is because of the computerised system. I don’t feel that installing a computerised system changes mindsets. People living in old areas like Malleswaram tend to be very prompt with paying as they have a sense of duty...there is no whip to insure payment, they do it out of a sense of duty.” (SM1)

The other revenue official who believed that computerisation had not led to improved taxpayer compliance was of the opinion that increases in property tax were a result of changes in government policy, in particular changes to tax rates and in ward boundaries and jurisdictions, and that the use of technology in the workplace was not in any way responsible.

Most tax officials interviewed were more balanced in their approach: they believed that to some extent the introduction of the computerised system had positively

impacted tax collections, but at the same time acknowledged that it was only one of many reasons why tax yields had improved. All cited improved efficiency and transparency in revenue office functioning as a reason for why tax collections had increased. In particular, the “*speed and ease with which transactions [could] be processed*” was often cited as a reason why citizens felt inclined to comply.

The accuracy of the system, interviewees felt, was another important reason as to why revenues had increased. As a result of computerisation, both citizens and tax officials were better aware of the “*correct amount*” of tax that had to be paid, with electronic systems leaving little room for “*miscalculations or misuse*”, and it was felt that “*no-one (ARO, staff, or citizen) [could] misuse the system by changing the figures*”.

As one Assistant Revenue Officer said:

“The system allows us to do our work more efficiently – we have a reasonably accurate figure of the total demand and we can tell from the system who has to pay how much. Citizens can also see how much they have to pay, so it is all very clear. Under the manual system some revenue was lost due to calculation errors. Now, in the end we get the revenue due to us. As more people comply, revenue increases.” (AR13)

The ease with which defaulters could be identified and tracked, and the accuracy with which the amount due from them to the tax authority could now be calculated, was also another reason why tax officials felt that the computerised system had contributed to increased revenues. Fear of incurring and not being able to escape penalties, it was felt, prompted people to pay:

“...It is also easy to track defaulters. As a result, citizens pay promptly and we collect what is due to us.”(AR2)

The final reason cited by tax officials was the ease and convenience with which citizens

were able to pay their taxes: citizens could “see exactly how much they have to pay and it is easy for them to pay their taxes at help centres across the city.” (AR11)

## 6.11. Conclusions

This chapter describes the history of the PTIS and analyses the results of interviews conducted with 40 tax officials and the core project planning team in an attempt to not only identify the main games that were played out during the design, implementation, and adoption of the system; but to build a platform on which their impact on the outcome of the project may be examined.

Against the background of technological innovation in Karnataka state, project planners felt that the manual system of property tax administration was archaic, opaque, and inefficient. All the members of the core project group believed that property tax collections under the manual system had suffered from poor recordkeeping and bad information management practices, slow processing times, and overcomplicated assessment and payment procedures. These had, in turn, created frustration amongst taxpayers and resulted in low levels of compliance. The computerised property tax system was thus borne out of a need to reform the manual system of property tax administration in Bangalore and improve tax revenues and compliance through the improvement of back-office efficiency, the simplification of tax collection, and the reduction of money lost as a result of malpractice through the effective detection and deterrence of tax evasion: all spurred on by the need to enhance power, authority, and reputations.

Interviews with tax officials revealed that most felt there had been serious problems with the manual system of tax administration. They claimed that the biggest hurdles to the effective administration of tax encountered prior to the introduction of the computerised database were again poor and haphazard recordkeeping and large amounts of paperwork that needed to be done manually. Information was scattered and the process of calculating tax dues, administering collections, and checking up on defaulters was extremely unsystematic. Whilst, as expected, none of the revenue officials interviewed mentioned government employee corruption as being serious problem, many interviewees spoke of the difficulties they faced in identifying and catching tax evaders.

Most officials interviewed felt that the introduction of technology had greatly impacted old work processes and had helped alleviate the difficulties they faced under the old system. They believed that the centralisation of data, the ease with which citizens could access their tax information, and the setting up of tax collection points across the city had all helped in bringing more properties into the tax net and had contributed significantly towards improving taxpayer compliance. All the officials interviewed felt that their interactions with the public had significantly decreased since the introduction of the computerised system, and a little over half them believed that their overall relationship with citizens had improved as a result.

However, whilst acknowledging that the use of digitised records, computer printouts, and online databases had had a positive impact on their work; some

interviewees were quick to point out that technology had been used simply to automate existing processes, and that old infrastructural problems (such as poor electricity supply and old computers) and problems related to a lack of skills and training on the computerised system had not been resolved.

Only a small percentage of revenue officials reported that they had been consulted during the design stage of the project. Further, there appeared to be no mechanism in place to solicit user feedback once the initial system had been developed. Almost all the officials interviewed said they felt disconnected. Most professed a high degree of unfamiliarity with the system, and were completely unaware of its key features. For instance, only one tax official mentioned the introduction of GIS mapping techniques as being useful to his work and that of his staff, a worrying fact given that the core project team had placed much store by GIS maps as a tool to track property tax payments and identify defaulters. These are not good signs, as effective system implementation requires employees to fully accept and adopt a technology in the belief that it will do them some well-defined good.

Further, none of the officials interviewed knew how to operate even its most basic features. With no scheme in place to give them any formal training on the system, all the interviewees reported to be completely dependent on a private computer operator to feed in, change, and retrieve electronic property tax data. This, research demonstrated, created a new problem within revenue offices and limited the effectiveness of the system; as it resulted in a shift in the balance of power within the workplace to the disadvantage of

revenue officials and consequently hardened their attitude towards computerisation. Senior officers, once enthusiastic about the system, spoke about the frustration they felt at being unable to fulfil their supervisory role and at being put at the mercy of a junior employee. Junior tax officials, already slightly sceptical of the system, feared that their skill levels would put them at a disadvantage within the office and could eventually result in redundancy.

Opinions were divided as to whether or not computerisation of the system had led to improved tax yields. Most tax officials felt that whilst the introduction of the new system had had a positive impact on tax collections to some extent, there were many other reasons as to why tax yields had improved. For others, the introduction of the Self-Assessment Scheme as a means of shifting responsibility of tax payments onto the shoulders of citizens and reducing the workload of revenue staff was almost as important as the introduction of technology into the workplace. It may be concluded from the interviews that general citizen apathy towards property tax is to a large extent a consequence of poor public awareness about the benefits of paying tax, a lack of enforcement measures and a general dislike of cumbersome processes: problems which cannot be solved through the introduction of technology alone.

The interviews and available documentation on which this chapter is based indicate the presence of a number of games operating at different levels or ‘arenas’, all of which had an impact – direct or indirect – on the effectiveness of the system. The

following chapter identifies and discusses those games in the light of the material presented here.

## Chapter 7

# Key Design and Implementation Games in Bangalore, India

Chapter Seven will examine the prevalence, the significance, and the impact of those *extensive-form games* identified as operating at different levels, or ‘arena’, by this researcher during a detailed analysis of the textual interview data generated through the realization of the in-depth research interviews presented in the preceding chapter, whose results have also been delineated therein, and whose informational content will subsequently be triangulated with other sources of data in forthcoming sections of this thesis; including a qualitative data set furnished by the *Bruhat Bengaluru Mahanagara Palike (BBMP)*, analysing property tax data trends between 1998-2008 for Bangalore City as a whole, and for twelve randomly-selected wards across the city during the same time-period.

The study presented in this chapter will, additionally, make use of the overarching disciplinary framework of *Behavioural Game Theory* in the identification and the framing of game sequences and arenas of strategic human action (outlined in *Chapter 2(2.3)*), predominant in the project under study; nuanced further to take forward the work’s central theoretical framework, the *Ecology of Games*. In doing so, the research presented herein will attempt to answer conclusively the dual research questions posited by this thesis in *Chapter 1(1.2)*; of *why e-government initiatives succeed or fail, particularly in developing countries, and* of *whether an understanding of the goals and*

*objectives of actors within government institutions would shed light on the human dynamic behind that success or failure.*

The identification of the strategic interactions occurring between the various actors that characterise the design and the implementation of an e-government project was, for the purposes of this thesis, undertaken in three steps. First, available background literature was studied to explore the environmental context into which such projects are typically introduced; defining the boundaries of the arenas within which extensive-form games are played, and laying out some of the basic rules that circumscribe strategic interactions and decision-making behaviours.

Research interview data was then used to identify the scope and nature of the games predominant within the project under study, themselves: *the key players, their motivations, and their moves*; placing them within the context of the prevailing game-environment. Within the environmental context described above, an examination of the interviews and other data collected during field research reveals that the eventual outcome of the Revenue Department project can be interpreted as the consequence of the synergies extant between the diverse game concept elements discussed in *Chapter 2*; in other words, as a direct result of a variety of players making moves within a number of separate but interrelated games concomitant to the project's design, implementation, and adoption.

And finally, based on Dutton's (1992) definition of *games* as being arenas of highly structured and regulated competition and cooperation circumscribed by sets of rules and assumptions regarding the psychology behind political, social, and economic actions and policy, and given the idea that a so-called meta-interaction might be referred to as an *ecology* or the sum total of actor activity, the key games identified during the course of this research were analysed and interpreted through an elucidation of the eight significant constituent elements of actor-game analysis first set out in *Chapter 2*: the **Key Arena or Field of Play**, any significant **Game Rules**, the **Key Actors** involved, the combination of **Actor Goals and Motivations** identified, the **Key Strategies and Tactics** resorted to, all **Key Moves** made, the role of **Arbiters and Referees**, and the **Prizes** available at the end of an interaction.

## 7.1. Key Factors Influencing the Outcome of Games

To identify the environmental factors circumscribing key games, this thesis adapted an investigatory framework laid down by Heeks (2002) where, in order to judge the initial outcome of an initiative, the comprehensiveness of a project environment was evaluated on the basis of six questions, each relating to certain key project areas<sup>1</sup>. Data used in this section is based on interviews and field research described in the previous chapters.

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<sup>1</sup> Adapted from Richard Heeks, 'e-Government in Africa: Promise and Practice', *Information Polity*, vol. 7, no. 2, 2002, pp. 102 – 103.

### **7.1.1. Data Systems Infrastructure**

It is first important to establish the extent to which policy is put in place to manage information systems, data standards, records, and work processes needed to provide the quality and quantity of data. At the national level, the Department of Information Technology (Government of India) is responsible for formulating guidelines pertaining to the standardization, testing, and quality of ICT hardware, as well as procedures related to the application of ICTs in tasks related to e-government for use by national, state, and local agencies. However, these guidelines are merely suggestions of best practice and are thus not detailed, legally binding, or enforceable in any manner. Further the Central government does not require State governments to enact them into law, and it is left up to individual public managers to observe the recommended guidelines when conceptualising and implementing a system.

In the case of the project under study, interviews with project planners and direct observation by this researcher revealed that great care was taken to improve the quality of raw data and streamline work processes in preparation for their digitisation. The core project team also mapped out the planned changes to work processes and management systems that were to take place within the BBMP Revenue Department as a result of computerisation. However, this was done almost entirely as a result of project leader initiative, driven largely by the private sector partner, and not as a consequence of any directive issued by the state or local government authority.

### **7.1.2. Institutional Infrastructure**

e-Government can only progress if institutions exist to act as a focus for awareness and as a means for facilitation of the governing process. It is thus important to determine whether the implementing agency has co-ordinated with other levels of the administration to provide the right institutional environment for e-government. In India, the Department of Information Technology is responsible for the creation and effective implementation of India's e-government strategy at the national level. Within the Government of Karnataka, the Department of Information Technology is responsible for the coordinating the state's e-government efforts. Both these departments liaise with other government departments and agencies in the development and execution of projects. Apart from government departments, there exist in India several policy institutions, semi-governmental, and non-governmental organisations that often collaborate with public agencies and are able to provide them with much-needed technical expertise and policy advice.

The wide range of senior officials involved with the conception, design, and implementation of the computerisation of the BBMP revenue department system indicates that the project greatly benefitted from interdepartmental cooperation. To begin with, the core project team itself comprised of members from different BBMP departments: whilst the majority of BBMP officials involved with the design of the system came from the Revenue Department, senior figures responsible for driving the project after its initial implementation were drawn from the Department of Utilities and the Department of Finance. In addition, the project gained from the input and expertise of

officials belonging to other public sector agencies, most notably the Indian Space Research Organisation (ISRO). The BBMP took advantage of the presence of the large number of private sector and non-governmental organisations operating within the city, eventually collaborating with a non-governmental organisation on the design of the system.

### **7.1.3. Technological Infrastructure**

Technology is a key element of any e-government system, and includes not only digital information technologies but also other information handling technologies, from paper to analogue telephones. In recent years, Karnataka has been the centre of the Indian software industry boom, with government agencies at all levels benefitting greatly from the presence of that industry in the state. The software industry in Karnataka includes companies operating in various fields like telecommunication, software programming, avionics, database creation, automobiles, networking, semiconductors, mobile technology, Internet applications, and business process outsourcing. Government agencies, particularly those based in the capital city Bangalore, can thus potentially avail themselves of technology experts with both sound local knowledge and foreign experience, as well as internationally recognised technologies that are adapted to local conditions and systems. However, basic infrastructure needed to support such systems is often bad with, for example, the state suffering from a chronic shortage of electricity.

The BBMP project was able to gain from Karnataka's large pool of software engineers, teaming up with a number of experts who had vast experience in systems

development abroad and who were skilled and knowledgeable enough to be able to adapt cutting-edge technology to the local context. The composition of the core project planning team, on paper, meant that final decisions would be a practical blend of both technological possibility and political reality; enabling the correct technology to be chosen to meet the needs of the Revenue Department. However, in practice, interviews revealed that there was reluctance on the part of different actors to compromise on core values and give up pet ideas. Further, the BBMP was initially badly prepared for the implementation of a computerised system on such a large scale: technology in most revenue offices was generally out of date and prone to break downs and virus attacks; and several basic infrastructural problems such as poor electricity supply and poor office environments had not been adequately dealt with. The situation gradually improved with the introduction of kiosks and citizen service centres across the city, although they too are still currently subject to the vagaries of Bangalore's periodic power outages.

#### **7.1.4. Human Infrastructure**

If technology is important for the creation of an e-government system, it is equally vital that the human element - the attitudes, knowledge, and skills of end-users that are required to initiate, implement, and sustain the e-initiative – are in place at the right time. In Karnataka, as a result of the rapid development of the software industry, the number of software engineering institutions has risen rapidly, fuelling a boom in the number of software specialists graduating each year. However, interviews with senior government officials done during the course of this research suggest that the government has not been able to take advantage of this growth in the talent pool; on the contrary it

suffers from a distinct lack of computer literate staff. Further, there is little importance placed on giving training to government employees in order to equip them with the skills that they need to operate in a digital environment. It would thus seem that although there is no dearth of top-level political will to push e-government within different agencies in the state, resistance is often encountered amongst more junior officials who feel threatened and frustrated by technology and by the people brought in to handle it for them.

This situation is highlighted in the case at hand. Project planners did not have a clear-cut plan to manage change within the Revenue Department: they stopped staff training programmes following the departure of the eGovernments Foundation, assuming that simply automating existing systems and cutting down employees' workloads would be enough to facilitate acceptance. Instead of directly addressing the skills-gap prevalent in the Department through training, they chose to bridge it by outsourcing the whole operation of the system to private operators. The result was that government officials were not prepared to cope with the computerisation of their functions and began turning against the project when they felt they were being replaced.

### **7.1.5. Leadership and Strategic Thinking**

The penultimate environmental factor deals with issues of project leadership; whether there is an e-champion or a small group of e-champions who have the vision to put e-government within a broader reform agenda and who make it all happen. On a general level, Karnataka has been lucky insofar as there has been renewed commitment

from senior officials at different levels of government to not only promote the development of the software industry within the state to enhance economic growth, but also to harness the spin-off benefits created by this industry (in the form of cheaper, more widely available technology, well trained computer engineers, and skilled programmers) to improve the delivery of public services to citizens and to improve the functioning of government machinery.

In the case of the BBMP project, the computerisation of the property tax system benefitted from the sustained participation of a core group of project planners, consisting of senior state government and corporation officials, as well as senior technology experts from the Indian Space Research Organisation (ISRO) and senior members of the software firm. This group sought to provide both the initial vision for the project as well as the top-down leadership necessary to guide the project successfully through the design and implementation stages. However, in assuming overall responsibility of the project and centralising control, the project committee by and large ignored the need to build up a cadre of leaders in the field from amongst senior ranks of the Revenue Department such as Revenue Officers and Assistant Revenue Officials.

#### **7.1.6. Legal Infrastructure**

The last area for discussion seeks to ascertain whether the laws and regulations required to facilitate and support the move to e-government have been put in place prior to the system's implementation. Whilst the original question posed by Heeks deals primarily with laws pertaining to issues related to data security and privacy in a digital

environment, this thesis proposes to enlarge its ambit and include those laws and regulations that deal with the process or department affected by digitisation.

In the case under study, interviews with senior figures reveal that the IT Act of 2000, with all its shortcomings, still remains the only legislation in the country aimed at regulating electronic activities such as e-commerce and e-governance. In exercise of the powers conferred on State Governments by an amendment of the Act in 2006, the Government of Karnataka issued a set of IT Rules in 2007, laying down the framework for the smooth working of e-government in the State including issues of personnel employment and training<sup>2</sup>. These measures do not, however, cover all aspects of e-government, with legislation lacking detail in areas related to e-procurement, data protection, privacy policies, and the reuse of information. Further, whilst property tax laws in the state have been constantly amended to ensure a balance between adequate revenue for the BBMP and fair, equitable assessment, not all efforts have been successful. For instance, the BBMP's attempt to change the property tax system from the archaic Annual Rental Value method to the Capital Value System failed largely due to a huge public outcry at the perceived increase in tax rates.

It may be concluded that whilst most of the organisational and institutional factors were in place at the time of implementation, key issues such as basic infrastructure, the skill level of human capital, and an appropriate regulatory framework were not adequately dealt with during the planning stage and had the potential to cause problems

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<sup>2</sup> Government of Karnataka, Information Technology Rules, 2007, Available at: <http://nemadi.karnataka.gov.in/itrules/itrules.pdf>

during the project's implementation. Based on the taxonomy put forward in Chapter 2, the following section identifies the games that impacted the outcome of the project under study within the purview of the Ecology of Games framework; discussing the key players, their ultimate objectives, nature of their moves, and the rules that governed them within the context of the arena within which the interactions were played out.

## 7.2. Games Involved in the Development and Implementation of the Case Study

At least *six* major classificatory types of *strategic political extensive-form games* appear to have influenced the impact of the system on tax administration in Bangalore city; these include *expertise games*, *power and influence games*, *policy games*, *turf struggles*, *games of persuasion*, and *business games*<sup>3</sup>.

Within this dataset of games identified, a further matrix of strategic human behaviour might be delineated, based on the **game table** or **payoff table taxonomy** advanced in *Chapter 2* (2.3). The principal typographies of game-play distinguished herein have, first, been derived from game-theoretic constructs and, then, been advanced qualitatively as being predominantly *extensive-form strategic interactions*; operating otherwise as *normal-form*, *co-operative (coalitional)*, *non-co-operative (procedural)*, *competitive*, *non-competitive*, *pure- (dominant-) strategy*, *mixed-strategy*, *single-shot*

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<sup>3</sup> For an advanced discussion of the key classificatory types and forms taken by strategic political games, see Chapter 2(2.3.1), pp. ? ; as adapted from Harry Mintzberg, 'The Organisation as Political Arena', *Journal of Management Studies*, vol. 22, issue 2, 1985, pp. 134-139.

(dynamic), repeated (one-off), of complete (symmetric) or perfect information, or of incomplete (asymmetric) or imperfect information, in their nature and in their scope<sup>4</sup>.

Key strategic games thus identified during the course of the study were then subsequently classified and analysed according to the **four-part taxonomy of games, actors, and their environments**; again, proposed in *Chapter 2 (2.3.1.)*. The pre-eminent objective of the analysis was to determine whether the primary **playing field** (or cardinal **game arena**) was situated predominantly within *the project planning committee* involved with project design and implementation strategies, *the BBMP Revenue Department, Bangalore city, or the nation*. **Tables 7.1 to 7.4** identify some of the most salient points of strategic behaviour occurring within the given central sphere of action; grouping them by *type* and indicating the *key players, objectives, and moves* associated with each. Taken and discussed together, they indeed compose a complex ecology of symbiotic human interaction.

### **7.2.1. Project Planning Committee Games**

At the centre of the ecology, several extensive-form games played during the initial design and implementation of the system may be identified (*see Table 7.1, below*). These games are essentially interactions involving competition and cooperation between various constituent elements of the project planning committee: between BBMP

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<sup>4</sup> See James D. Morrow, *Game Theory for Political Scientists*, (Princeton, N.J.: Princeton University Press, 1994), p.76; and Kenneth C. Williams, *Introduction to Game Theory: A Behavioral Approach – International Edition*, (New York, N.Y.: Oxford University Press, 2013), pp.14-16

bureaucrats from different departments and between BBMP officials and representatives of the eGovernments Foundation.

<b>Games</b>	<b>Key Players</b>	<b>Key Objectives</b>	<b>Nature of Moves</b>
<b>e-Government Movement</b>	Various current senior BBMP officials, software providers	Encourage BBMP departmental reform through the use of technology	Positive Game Play
<b>System Conception and Design</b>			
a) Formation of the Core Project Planning Group	Various current senior BBMP officials, software providers	Take credit for initial idea of the system and take ultimate control of it	Negative Game Play
b) Initial Design and Conception of the System	BBMP officials on the project planning committee, eGovernments Foundation representatives	Design and launch a successful system	Altruistic Game Play
<b>Digital Democracy</b>	Senior BBMP officials and eGovernments Foundation members	Seek to influence the design of the PTIS to support their conception of democracy	Negative Game Play

**Table 7.1: Selected Design and Implementation Games Influencing Project Outcome**

Games discussed below include the e-Government Movement, the System Conception and Design Game and the Digital Democracy Game.

### **The e-Government Movement**

The events that brought about the realisation that the property tax system needed to be restructured using ICTs and which ultimately led to the design of the computerised system were strategic moves within a larger movement to reform BBMP departments using computers and other Internet-related technologies. The key promoters of e-government within the BBMP were computer-savvy politicians and senior bureaucrats rather than citizens, who pursued their objectives through seizing the opportunities provided by the need to reform the property tax system. The eGovernments Foundation played an important role as an ideological force in this game after it first became involved with the project in 2000.

The movement for the reform of local government services through technology was able to take root in the then current climate of enthusiasm for all things digital. A technology-friendly government headed by S. M. Krishna had come to power in Karnataka in 1998, and its policies came to have a marked influence on the senior levels of the Civil Service. Whilst some public servants believed in the transformational power of technology, others thought to embrace technology merely as a means of furthering their own careers and reputations under the new administration. This need to expand influence and improve career prospects, as well as true belief in the potency of technology, thus became key motivating factors in the game to promote e-government

within the BBMP. The game itself was circumscribed only by the rules of formal procedure within the BBMP and those of the state: proponents of e-government were allowed to present their case to the appropriate authorities, who in turn would decide whether the project would be allowed to go through, and who would be in charge of its design and implementation.

### **The System Conception and Design Game**

A related game in the development of the computerised property tax system, played in parallel with the e-Government Game, was all about the conception of the system and its initial design. Two sub-games were played out within this larger game, the first relating to the composition of the core project group and the other to hiring of the software providers.

#### **a) Formation of the Core Project Planning Group within the BBMP**

Interviews reveal that senior Revenue Officials and other BBMP bureaucrats initially jostled for places on the core project group, the ultimate prize being a place on the project planning committee. As the project was based in one of the BBMP's most important departments, and given its significance to the BBMP as a public relations coup, a position on the project planning committee would give the holder a chance to not only expand his/her influence over the taking of key policy decisions, but also benefit in terms of improved career prospects should the project succeed. The game soon became one of conflict as different actors sought to exert their pull to gain those all-important places.

The key moves in this game were made by powerful BBMP officials who sought to exclude people they considered to be threats or ‘negative influences’, and instead give precedence to senior current and former Revenue Department officials<sup>5</sup>; explaining that they would be best placed to design a system for the administration of property tax<sup>6</sup>. Despite the truth in this reasoning, the exclusion of several senior officials from outside the Department created a lot of residual bad feeling. An interview with one official revealed that those officials who had been left out believed that appointments to the core project group were ‘a result of political horse-trading and favouritism’ in order to ‘keep the system within the control of the Revenue Department’, and that this partiality had affected their ability to contribute effectively in an external capacity once the project was up and running<sup>7</sup>.

The rules of this game were those governing the appointment of committee members within the BBMP. It is difficult to pinpoint the person(s) ultimately responsible for the formation of the core planning group, as it is unclear from where the final idea for such a system came and there is no written evidence available that tells us why certain people were given the task over others. No less than three senior BBMP officials take credit for the idea of the system (PP1, SR1 and PP4), and all three have been careful to conceal the internal politics of the corporation from this researcher. The division within the BBMP over the composition of the core project group remains to this day a matter of anecdotal evidence and has not become a matter of public debate. Nonetheless, the constitution and composition of the core project team came to bear great influence on

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<sup>5</sup> Personal Interview with PP3, August 2006.

<sup>6</sup> Personal Interview with PP3, August 2006.

<sup>7</sup> Personal Interview SO1, August 2009.

games played later during the implementation of the project, and it must be mentioned as one of the factors that came to have an impact on the project's eventual outcome.

## **b) Initial Design and Conception of the System**

The game that resulted in the initial conception and design of the system was played between BBMP members on the project planning committee and members of the eGovernments Foundation who were hired to complete the project. The BBMP approached a senior trustee at the Foundation, seeking his organisation's experience and expertise to transform the failing system into one that would be more viable<sup>8</sup>. Two Foundation representatives were quickly brought on to the project committee and their ideas for a new system – including a complete overhaul of the existing technological architecture, changes to the property registers themselves, and the inclusion of the radically innovative GIS technology – were soon accepted and adopted by the officials in charge. The project planning committee also worked as a single unit to solicit feedback from junior officers in the field, design and run a pilot-project based on the information gained, and develop a schedule setting out the programme for the roll-out of the system across the city.

Interviews reveal that this game, in contrast to the appointment of BBMP members to the project planning committee, was one of mutual co-operation. Both sets of actors recognised that they stood to benefit from a successful reworking of a botched system: be it in terms of career, reputation or public welfare. Further, both sides

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<sup>8</sup> Personal interview with PP1, August 2006; Personal interview with PP2, August 2006

recognised that they were specialists in their own fields and neither appeared to be initially threatened by the presence of the other.

### **The Digital Democracy Game**

The third game that was played out during the conception and design stage of the project might be called the Digital Democracy game, as players sought to influence the design of the system to support their own conception of e-democracy. The game was played between BBMP officials on the one hand and software providers on the other, unfolding after the eGovernments Foundation engineers had joined the core project planning committee. Corporation officials were very clear about what they wanted: a computer-based system that would improve back-office efficiency and reduce tax evasion, and one which would achieve their ends of higher revenues and greater compliance. However the eGovernments Foundation came to the table looking for more: they wanted the system to eventually develop into something that would not only aid government administrative efficiency, but would also improve transparency, decision-making, increase skill-levels and employee participation within revenue offices, and citizen involvement in the policy process; all with a greater role for them as a civil society organisation<sup>9</sup>.

There were two conflicting viewpoints in this so-called trench war. On the one hand, eGovernments team members criticised senior bureaucrats for being unwilling to empower their field officers and open up the tax collecting process to full public scrutiny,

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<sup>9</sup> Personal Interview with PP5, August 2006.

for fiercely protecting the hierarchical structure of the organisation, and for defending the power and authority that went with it. Senior BBMP figures, on the other hand, claimed that their primary duty was to collect revenue to fund municipal projects and that they did not wish overburden their field officers, who would anyway consider it a ‘waste of time’ to analyse data in the way the Foundation had envisaged. Interviews reveal that a stand-off ensued between the two, with neither side willing to shift from its position.

Whilst conversations with senior bureaucrats and revenue officials, as well as direct observation of their actions and decisions, have reflected the view put forward by the eGovernments Foundation members (insofar as, contrary to official claims, some revenue staff would actually have liked to have had the opportunity to do more complex data analysis) this was a game of power politics which the eGovernments Foundation failed to win. Of all the e-democracy suggestions put forward to the BBMP, officials refused to accept all but one: universal online access to tax records to create ‘peer-pressure’ to discourage tax evasion. The game ended on a rather bitter note when the eGovernments Foundation withdrew from the project and the BBMP awarded the GIS portion of the contract to another (this time, semi-governmental) software agency.

### **7.2.2. BBMP Revenue Department Games**

Another set of extensive-form games that had been operating within the BBMP Revenue Department was not limited to the system itself but nevertheless influenced the eventual effectiveness of the project. These consist primarily of co-operation and conflict

<b>Games</b>	<b>Key Players</b>	<b>Key Objectives</b>	<b>Nature of Moves</b>
<b>System Acceptance Games</b>	Project planning group (Senior BBMP officials, software providers, external consultants), senior and junior revenue officials	Get officials on the ground to accept and adopt the system.	Positive Game Play
<b>Efficiency Games</b>	Senior BBMP officials, Assistant Revenue Officers, and junior revenue staff	Hold down costs and increase tax revenues by improving efficiency	Positive Game Play
<b>Management Control</b>	Senior BBMP officials, Revenue officials	Expand power and decisional control	Negative Game Play
<b>Game to Control Petty Corruption</b>	Senior BBMP officials, Revenue officials	Reduce revenue losses from petty corruption	Negative Game Play
<b>Revenue Office Politics</b>	Revenue Officials, Assistant Revenue Officers, Station Managers, junior revenue staff	Assert 'superior' status, retain power and authority within the field office	Negative Game Play

**Table 7.2: Selected BBMP Revenue Department Games Influencing Project Outcome**

between the project planning committee (either as a unit or smaller groups of actors) and the revenue officers in the different ward offices, thus shifting the field of play from the narrow confines of the project planning committee to the wider arena of the Revenue Department. Games include: System Acceptance, Efficiency, Management Control and Revenue Office Politics (*see* Table 7.2).

### **Games for System Acceptance**

The first game that was played within the Revenue Department was the System Acceptance game, where members of the project planning committee sought to introduce the system into revenue offices across the city and get field staff to accept and adopt it without question. The game was carefully crafted by project planners to elicit positive moves from revenue staff by, on the one hand, reducing suspicion and fear of the system and, on the other, demonstrating that it would protect their interests and career objectives.

The first move made by the project committee was to give staff a sense of ownership of the system. To show them that their input was really valued, project planners held consultations with revenue staff of different ranks during the design stage, after which a pilot project was run and its lessons incorporated into the final design. Planners then moved to convince staff that the introduction of the system would aid them in their work and would not disadvantage them in any way. In order to circumvent the inevitable opposition from those lower level staff who stood to lose the most from the proposed changes, the planning committee worked together to design a system which did not dramatically alter the old one, but instead functioned within existing legal and

administrative frameworks to digitise – and thereby streamline – existing methods of tax assessment and collection. The eGovernments Foundation also held training sessions to train some officials, and it was given out that no revenue official would be retired or transferred on account of his/her unfamiliarity with technology<sup>10</sup>.

The brilliance of the games to gain acceptance lay in their sheer simplicity – in taking the decision to not drastically change the fundamentals of the tax assessment and recovery process, the redesigned system called for no major legislation or huge changes in staff. At the same time, it targeted the improvement of core data management processes, winning support by striking at the heart of familiar problems faced by revenue officials across the city. In the event, interview data and informal conversations with revenue staff confirm that both strategies appear to have worked. On the one hand, almost all those revenue officials spoken to had either been consulted or knew of a colleague who had been. Confidence in the system (and hence its acceptance) was further boosted by the similarity of the system to what they had been used to: most officials spoken to claimed that they were happy from the outset when told of the design, and those who were not admitted that they quickly came round to it once they saw the system in action.

### **The Efficiency Game and the Management Control Game**

Two related games, the Efficiency Game and the Management Control Game, were deliberately initiated in quick succession by project planners eager to capitalise on the gains made from the game for initial acceptance. The first game played was the push

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<sup>10</sup> Personal Interview with PP5, August 2006.

for efficiency and lower costs. Here again, planners deliberately made moves that would foster co-operation between the different actors involved, building on the positive environment of the previous one. The push for efficiency was governed by the administrative rules and procedures already in place for work processes and revenue office administration.

The aim was to cement the idea in the minds of revenue staff that the system, once accepted, would do all the things it promised to do: improve data quality, lower resource costs and workloads, and improve administrative efficiency. However, conflict between different elements on the project planning committee and the games played by various members to preserve their power and spheres of influence (such as those discussed above) resulted in divisions within the committee and led to them taking a fragmented approach whilst interacting during the Efficiency Game. The departure of the eGovernments Foundation exacerbated the problem, and it became apparent that some of the more junior revenue staff were attempting to subvert the adoption process<sup>11</sup>.

To counter growing opposition, the remaining members of the core project team began to play a Management Control Game, using their position and authority within the agency to impose the aims of the Efficiency Game on field offices. The key move was the adoption of a top-down, centralised approach to decision-making as a way of providing leadership and devising strategy. Whilst the stated objective of adopting such a tactic was to ensure that the project would benefit from strong leadership and clear strategy, the approach adopted by the core project team served to distance the human

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<sup>11</sup> Personal Interview with PP5, August 2006.

element of the e-government system from its technological constituent: a disconnect, evidenced in interviews presented in previous chapters, which reduced the feeling of ownership employees felt towards the technology and resulted in a discontentment within the ranks that made the interaction between the two sides more divisive and discordant.

The Management Control Game, and the ensuing conflict, manifested itself most strikingly in the approach of the committee towards problem solving. Whilst not one revenue official spoken to felt that the system was a hindrance to the work of the revenue office, interviews revealed the presence of two major hurdles to smooth implementation. The first of these was basic infrastructural deficiencies in hardware and work environments and the second was deficiencies in human capital, both of which were dealt with without taking into account the actual needs of the officials on the ground. This was primarily because, in both cases, no mechanism was put in place to solicit regular revenue employee feedback, and interviews suggest that these crucial problems remained largely unsolved.

It is difficult to say how or why project planners missed such a vital move in the acceptance game, especially since they had invited feedback at the design stage of the project. No explanation, when asked for, was forthcoming. Whatever the reason, the result was that initial successes in the Acceptance and Efficiency Games were being gradually eroded, giving way to frustration and destructive political game play within the revenue offices. This was particularly true when it came to training where employees, though still enthusiastic about the project, were becoming more and more afraid of being

left behind by it, and expressed frustration at the fact that no provision had been made in the project design for any training on the system.

### **The Game to Control Petty Corruption**

A smaller, but equally important game was initiated by project planners in parallel with the Efficiency Game to curb revenue losses through petty corruption in revenue offices. The aim of the game was to develop the system as an electronic interface between the revenue offices and the tax paying public, cutting down face-to-face interaction between the two groups and eliminating opportunities for collusion and coercion.

Following the departure of the eGovernments team, the remaining members of the core project group decided to outsource the operation of the computers to private companies and hire a private operator for each ward office, moves which they believed would both fill the skills gap present in revenue offices and eliminate petty corruption in the system through the creation of a disinterested intermediary between the officials and the public. This move, however, had a largely negative effect on the atmosphere within revenue offices.

### **Power Games and Revenue Office Politics**

In creating the new role of (private) computer operator and instituting the division of tasks discussed above, project planners unwittingly created new destructive organisational and managerial games within revenue offices as revenue staff (even senior

managers) became wholly dependent on the new employees. For instance, it soon emerged in one interview that the work of an entire office could come to a complete halt in the event of an operator not coming to work<sup>12</sup>. Interviews and discussions reveal that both senior and junior revenue staff felt threatened by this disruption of the balance of power.

On the one hand, junior staff saw this as an incursion on their turf and a challenge to their primacy as the experts of property tax, whilst senior managers believed that a lack of skills and technical know-how prevented them from fully exercising their supervisory and managerial roles. The result was that the spirit of co-operation and trust between revenue officials gradually came to be eroded, with both senior and junior staff entertaining a hearty contempt for the private employees. Revenue offices saw the emergence of a number of turf struggles: junior staff were visibly reluctant to share their knowledge of the tax system with computer operators (preferring instead to feel superior to, and lord over them) and senior managers overcompensated by micromanaging and side-lining the electronic system – retaining old filing systems, working with printouts, and insisting on paper copies of electronically-generated ledgers.

This was not helped by the fact that, in a move aimed ostensibly at cutting down the amount of work done by field officers, senior BBMP officials had created a virtual little Empire Building Game around the GIS technology. Most field officers, largely as a result of their lack of technical skills and the reluctance of some senior officials to make the technology more mainstream, were found to be unaware of the existence of the more

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<sup>12</sup> Personal Interview with AR17, August 2007.

powerful features of the technology. The GIS became the preserve of a select few senior BBMP officials who were directly responsible for managing the software programmers working on the project. The observation of one such senior BBMP official revealed that he (and other similar officials) acted as information gatekeepers: any data that passed between the field offices and computer technicians had to be passed by them, and neither field officers nor data managers were able to take any decisions based on the information without his express approval.

### **7.2.3. Bangalore City Games**

Still other extensive-form games played in a much larger territory – that of the city – often not directly related to the PTIS proved nonetheless to be important factors in motivating the project’s initial conception and influencing its eventual outcome. They included the BBMP’s Image Building Game and the Tax Compliance Game (*see* Table 7.3, *below*). Unlike the internal interactions discussed previously, these games were played out between the BBMP and the public, usually in full glare of the local media spotlight. The games were complex in both their nature and impact: firstly, they were long-term games, consisting of several players making many interrelated, often parallel moves; and secondly, whilst it was those players and moves that ultimately determined the outcome of the system, their success also depended on the impact of moves made by players in internal games.

<b>Games</b>	<b>Key Players</b>	<b>Key Objectives</b>	<b>Nature of Moves</b>
<b>Image Building Game</b>	BBMP officials, the media, citizens	Improve image of the BBMP as an accountable, modern and responsive government agency	Positive Game Play
<b>Tax Compliance Game</b>	BBMP officials, the media, citizens	Encourage citizens to pay taxes through a mixture of carrot and stick initiatives	Largely Positive Game Play

**Table 7.3: Selected Games Played in Bangalore City Influencing Project Outcome**

### **The Image Building Game**

The first game identified within the arena of the city was the game played by senior BBMP officials to improve the agency's image, borne out of the belief that people were more likely to respond to calls for tax compliance if they perceived the Corporation to be responsible, citizen-friendly, and efficient. The two other groups involved in this game were local media, particularly the print journals, and the citizens of Bangalore city. Interviews with senior officials revealed that one of their major long-term priorities was to improve the public's perception of the BBMP, and that they felt introduction of the property tax system was a key step in the process; a belief echoed by a number of senior revenue officials in the field. The moves of BBMP officials in this game were circumscribed by the official rules laid down in the Karnataka Civil Service (Conduct)

Rules, 1964, which prevented all but the most senior officials from making carefully worded statements to the media<sup>13</sup>. The media, and through them the public, had their access to official information governed by the Official Secrets Act, 1923, and the Right to Information Act, 2005.

BBMP officials had two key objectives. The first was, as the name of the game implies, the improvement of the corporation's image in the eyes of Bangalore's citizens to boost its effectiveness by presenting itself as a modern, 21<sup>st</sup> century government organisation using cutting-edge methods to keep in touch with the needs of its constituents. The other, less obvious reason was that some officials saw this as an opportunity to build their own professional reputations in the eyes of both their superiors and the public. The media too had a stake in the game for, as one media professional pointed out, not only would the local press boost its own image by covering the improvements at the BBMP, but also "most changes were likely to be radical, even controversial and would make for a good story"<sup>14</sup>. The third set of actors – Bangalore's citizens – was the group the BBMP was out to impress, and therefore their opinions – shaped by and shaping the reporting in the media – were the ones that were thought to count the most.

Key moves in the game occurred both online and offline, and were usually related to one of the many projects developed and implemented by the Corporation to boost its

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<sup>13</sup> Government of Karnataka, Karnataka Civil Service (Conduct) Rules, 1966, Available at: [http://www.karnataka.gov.in/dpal/pdf\\_files%5C25-Kar.State%20Civil%20Services%20Act-1978-Page-491-501.pdf](http://www.karnataka.gov.in/dpal/pdf_files%5C25-Kar.State%20Civil%20Services%20Act-1978-Page-491-501.pdf)

<sup>14</sup> Informal discussion with MP1, August 2009.

popularity. These included updates to the BBMP website, the introduction of citizen-friendly initiatives, and a carefully orchestrated media campaign of press ads and public notices to emphasise its new image as being, on the one hand, accessible and, on the other, tough on anti-social behaviour. Specific property tax-related online moves included efforts to make the Revenue Department website more user-friendly and to develop a dedicated property tax site with value-added features like a comprehensive list of downloadable forms, guidelines, a property tax calculator, and (ultimately) an online payment gateway. Offline moves included the setting up of helplines and citizen service centres, and the integration of online facilities and services with other service delivery portals such as *BangaloreOne* – all to allow citizens access to a multiplicity of public services with ease and convenience.

### **The Tax Compliance Game**

The Game of Tax Compliance in Bangalore city is not a new one. Indeed, of the various games identified in this chapter, it is possibly the longest running and most complicated, involving as it does a large number of players, moves, and rules stretching back over a long period of time. In this context, the development of the computerised system may be seen to be the most recent step in the Corporation's efforts to curb tax evasion and increase revenues. The first moves in the current Tax Compliance Game may be traced back to the setting up of a project committee in the late 1990s to begin the process of tax record computerisation. In 2000, the BBMP moved to adopt a resolution that offered citizens the Self-Assessment Scheme (SAS) by which they could independently assess their tax dues. This decision to make citizens responsible for their

tax payments was especially critical, as it compelled the taxpayer to play an active role in the process of tax assessment and collection. Spurred on by the positive reception to the SAS, moves were made between 2003 and 2008 to institute the Capital Value System of tax assessment to keep revenues in step with increasing property values. However, citizens countered these moves with angry protests in the media and the BBMP, under pressure from elected representatives, was forced to back down<sup>15</sup>.

With the computerised system in place by early 2009, BBMP officials moved again to create a positive impression of the system and to encourage compliance by upgrading citizen service centres and increasing the number of kiosks accessible to citizens after regular government working hours. The months that followed saw many improvements being made to the website – a cleaner user interface, a property tax calculator, and online payment facility – all of which aided the accurate calculation of liabilities and facilitated immediate payments. By August 2009, the Corporation completed the integration of the programme with city-wide platforms such as the popular *BangaloreOne*<sup>16</sup>. The key objective for the BBMP in this version of the Compliance Game (and one of reasons later listed by project planners as justification for the computerisation of the tax administration system), was to use the project and its associated tax schemes to encourage and facilitate tax compliance amongst citizens and reduce the degree to which tax evasion occurred in the city.

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<sup>15</sup> ‘Citizens Happy Its Not CVS’, *Times of India*, 2<sup>nd</sup> November 2008, p.2

<sup>16</sup> ‘Pay property tax at BangaloreOne’, *Deccan Herald*, 27<sup>th</sup> August 2009, p. 3

The BBMP also opted to pursue a media campaign to educate citizens about the benefits of paying tax. On the one hand, as public image building was thought to be an integral part of compliance, BBMP officials sought to project the computerised system as citizen-friendly, and to generate citizen support by introducing schemes such as tax rebates for early payments.<sup>17</sup> To discourage evasion, however, the BBMP adopted a much tougher line<sup>18</sup>. Along with periodic newspaper articles detailing the development of the electronic system and the potential of the GIS to track down evaders, another key move in the game to discourage evasion was to encourage ‘honest’, ‘law-abiding’ citizens to play the ‘confidential big brother’ – in other words act as whistle-blowers who would alert the Corporation to tax evaders and other deviations seen in their ward by means of an online, much-advertised ‘complaints box’<sup>19</sup>. Media reports suggest that between its launch in June 2009 and its suspension in late 2010, the Complaints Box was a great success, and was in no time ‘overflowing’ with ‘at least two to three deviations reported in every ward’ per day. In fact, the box was shut down only because the BBMP found it didn’t have the capacity to fully investigate the ever-mounting number of allegations<sup>20</sup>.

Much-publicised consequences for tax evasion today range from conventional punishments like fines to more unconventional ones such as having one’s name handed over to the local residents’ welfare association or being published in the newspaper

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<sup>17</sup> ‘Rebates for lump sum payment of property tax’, *Deccan Herald*, 4<sup>th</sup> February 2009, Available at: <http://archive.deccanherald.com/Content/Feb42009/city20090204116459.asp>.

<sup>18</sup> It must be noted that the two key moves in this game aimed at deterring tax evasion had their roots in the decision taken at the planning stage by the BBMP at the behest of the eGovernments Foundation to use peer-pressure to exert a moral influence on defaulters and cheats.

<sup>19</sup> ‘Now, spy on tax evaders online’, *Times of India*, 5<sup>th</sup> June 2009, p. 2.

<sup>20</sup> ‘Wait gets longer for updated property tax register’, *Times of India*, 3<sup>rd</sup> July 2010, p. 2.

together with an accompanying photograph<sup>21</sup>. The Corporation has also involved other government agencies and public utilities providers –such as BESCOM, the Bangalore Electricity Supply Company, who hold details of the city’s properties – in the Tax Compliance Game, using their databases to cross-verify information on the property registers<sup>22</sup>.

The rules circumscribing the Tax Compliance Game were many and complex. These included not only formal legislation – the financial constraints dictated by the budget and legislated on by the council and the State Government as well as the legal and administrative rules surrounding tax administration and collection and evasion – but also more informal, unwritten rules relating to officials’ interaction with the media and media participation in official matters. To win the current round of the game, the BBMP strategy was to use a carrot-and-stick approach: encouraging compliance by projecting the new, simplified methods of assessing and collecting tax (including voluntary self-assessment and the projection of the computerised system as being fair and convenient to use), whilst at the same time discouraging evaders and would-be evaders by devising unusual enforcement schemes and emphasising features of the system such as the GIS which would aid the identification and apprehension of defaulters. BBMP officials, the media and the citizens of Bangalore thus became, willingly or unwillingly, key players in the Game for Tax Compliance.

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<sup>21</sup> ‘BBMP babus set out on foot to mobilise property tax revenue’, *DNA*, 3<sup>rd</sup> August 2010, p. 3.

<sup>22</sup> ‘BESCOM Meters to Verify Property Tax?’, *Times of India*, 4<sup>th</sup> September 2010, p. 2.

#### 7.2.4. National Games

The development and eventual outcome of the Revenue Department project can also be understood in terms of two extensive-form games being played in the national arena – the Innovation Game and the Game for Business Competition – by the primary movers-and-shakers of the project (*see* Table 7.4). These games differ from the other three categories in that they involved many actors who were not directly involved in games related to the project itself.

<b>Games</b>	<b>Key Players</b>	<b>Key Objectives</b>	<b>Nature of Moves</b>
<b>Innovation Game</b>	BBMP officials, non-profit software providers	Introduce and be associated with a new idea, policy, or technology to improve the national image of the city and agency	Positive Game Play
<b>Business Competition</b>	Software developers	Be associated with a successful project to gain national recognition	Positive Game Play

**Table 7.4: Selected Games Played in the National Arena Influencing Project Outcome**

The rules governing such games themselves are key features of the larger national and international political and socio-economic systems. Scholars of public policy have long held that these structures have a systematic effect on policymaking at lower levels of

government, as national policies and frameworks can shape the rules and moves of games played in other sub-national arenas<sup>23</sup>. Indeed, the discussion below illustrates that these frameworks do have a role to play within the ecology of e-government system design and implementation games.

### **The Innovation Game**

Played parallel to games of project conception, design, and innovation, the first national game that impacted the eventual outcome of the project was the Innovation Game. Key players of this game included actors represented on the project planning committee: namely officials from the BBMP and the eGovernments Foundation. The interest in public sector renewal and the promise of large amounts of Foreign Direct Investment (FDI) has, from the late 1990s onward, sparked ferocious competition between different government agencies in India, leading them all to seek more and more innovative (usually e-government-based) solutions to public sector reform<sup>24</sup>. At stake were reputations, improved career prospects, election victories, and happier citizens revelling in the economic benefits of increased FDI – jobs, wealth creation, and better standards of living.

Indeed, the most forward looking states and cities with the best administrative and physical infrastructure stood to gain huge investments from both multinational corporations and local heavy industries. In the wake of India's software boom, the cities

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<sup>23</sup> William H. Dutton 'The Ecology of Games Shaping Telecommunications Policy', *Communication Theory*, vol. 2, issue 4, 1992, p. 315.

<sup>24</sup> Murali D.R. Chari & Parthiban David, 'Sustaining Superior Performance in an Emerging Economy: an Empirical Test in the Indian Context', *Strategic Management Journal*, vol. 33, issue 2, 2012, pp. 218–219

of Bangalore and Hyderabad have become increasingly attractive destinations for investment and the almost simultaneous election of two technology-friendly governments in both Karnataka and Andhra Pradesh saw the two cities vying to attract more and more investors by encouraging the development of e-government applications to promote better public service provision<sup>25</sup>.

In the context of the project under study, the primary objective in the Innovation Game played by its key players was thus the successful development and implementation of a sustainable, innovative e-government system. The strategy adopted was to design a system that was at once trendsetting and practical, in a hitherto neglected area of administration whose improvement could have potentially far-reaching impacts<sup>26</sup>. The pivotal technological innovation of the system was the use of GIS maps as an integral part of the administration process, allowing revenue officials to track the tax status of individual properties by linking them with the digital tax register.

The prize for both the BBMP and the eGovernments Foundation was a national reputation – personal and organisational – that could be gained through association with a highly successful innovation. Initially, the prizes at stake in the Innovation Game encouraged both sets of actors (governmental and non-governmental) to co-operate and work together towards the successful design and launch of the system. Soon, however, it became clear that each group of players held conflicting ideas about the kind of reputation they wanted, and this difference in priorities bred distrust and friction that

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<sup>25</sup> See for example: James Heitzman, *Network City: Planning the Information Society in Bangalore* (New Delhi: Oxford University Press, 2004), pp. 202-203 and p. 280.

<sup>26</sup> Personal Interview with PP1, August 2006.

finally resulted in the BBMP using its power as the contracting party to remove the eGovernments Foundation – though not, it would seem, its central innovative ideas – from the project.

Key moves in the Innovation Game therefore included the proposal made by eGovernments Foundation representatives to use a Geographic Information System (GIS) as a tool to aid government decision-making, the ready acceptance of the idea by the BBMP, the subsequent attempts made by the eGovernments Foundation to introduce further technological innovation, the refusal of BBMP officials to approve them, and the continued use of the GIS idea by the BBMP once the eGovernments Foundation had left.

### **Competition for Business**

The second game operating in the national arena was that of competition for business within the country and beyond. This game was played primarily by the eGovernments Foundation, the non-for-profit private sector organisation involved with the project. The obvious prize was receiving excellent press in the short term, offers of new projects in the medium term and the establishment of a reputation as a frontline, cutting-edge civil society player in the long term. The game was governed by the rules and logic of the market place, the rules that governed tendering for public contracts in India, and the constraints placed on not-for-profit organisations to compete for those contracts.

To achieve its ends, the Foundation insisted on not only being the software programmers for the project, but the ideological force that transformed the project from a mere exercise in efficiency to an experiment in e-Democracy. When its key members realised that the BBMP was going to restrict its role within the project, the Foundation decided to withdraw, choosing instead to focus on projects with other government agencies across the country, where they could realise the full extent of their driving values. Chief amongst these was a collaborative venture with the Urban Development Department of the Karnataka State government, which sought to roll out the eGovernment Property Tax System with GIS in 57 towns and cities across the state (see *Appendix E*)<sup>27</sup>.

### 7.3. Conclusions

This chapter has identified the games played by different actors involved with the Revenue Department project and nature of the relationship of the various players within each arena. Building on this, the following chapter analyses property tax revenue data obtained from the BBMP as a means of determining the impact of these games on revenue collections in Bangalore city and in selected wards for the tax years 1998/99 – 2007/08. Performance of the revenue system will be measured along two axes: absolute revenue and collection efficiency, to determine not only whether taxes increased in absolute terms during the given period of time, but also if the new administrative

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<sup>27</sup> Shefali Virkar, 'Exploring Property Tax Administration Reform through the use of Information and Communication Technologies: A Study of e-Government in Karnataka, India' in Jacques Steyn and Stephanie Fahey eds., *ICTs and Sustainable Solutions for Global Development: Theory, Practice and the Digital Divide* (Volume 2: ICTs for Development in Asia and the Pacific), (IGI Global, Hershey, P.A., 2011), p. 20.

measures such as the Self-Assessment Scheme and the introduction of computerised records had an impact on collections and citizen compliance. It was envisaged that such an analysis would corroborate and complement the observations and conclusions arrived at in this chapter and contribute towards an assessment of whether or not the system, when implemented, was able to deliver on its stated goals and aims.

## Chapter 8

# Property Tax Revenue Collections and Compliance Data

In order to determine the ways in which the games played out during the reform of BBMP property tax administration system have impacted property tax yields and tax compliance, this chapter analyses Property Tax data for Bangalore city and selected wards for the tax years 1998/99 – 2007/08 obtained by this researcher from official sources<sup>1</sup>. Data analysed includes the total annual revenue accrued from property tax in Bangalore City for the years under study (including expected revenue, actual revenue, and the shortfall if any), total number of properties assessed annually for the period between 2001/02 and 2007/08, and the annual average revenue per property from 2001/02 to 2007/08.

Separate analysis was also conducted to compare the relative performance of different wards within the city separately and with each other for the period from 1998/99 to 2007/08. Twelve wards from different parts of the city were selected based on interviews with BBMP officials, their common location in the west of the city, and the availability of complete property data. The wards were then classified into three groups, devised expressly along the lines of existing classificatory taxonomies prevalent in (then-

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<sup>1</sup> Bruhat Bengaluru Mahanagara Palike, Property Tax Data for Bangalore city and 12 select wards – Revenue Data Sheets, 2009 (See Appendix C).

) current municipal property tax registers<sup>2</sup>: **Commercial-Residential** (depending on the primary source of tax income obtained), **Old-New** (where old wards were defined as those wards which were under the jurisdiction of the old Bangalore City Corporation or BMP prior to 1995, and new wards which came under BMP jurisdiction post-1995), and **Rich-Poor** (where rich wards were those having a population that belonged to the upper middle class or upper class with an income of greater than Rs.200,000 (~\$4,000) per annum, and poor wards whose population belonged to the lower middle or poor class of society and earned less than Rs.200,000 (~\$3,231) per year<sup>3</sup>. Property tax revenue data for each ward was obtained from the respective ward officer, whilst demographic information given to this researcher from the BBMP was based on data obtained in the most recent national census; that of 2001.

It is noted that figures for property tax revenue acquired thus were initially adjusted to take into account inflation at current levels<sup>4</sup>; based on guided rates fixed according to the provisions of the KMC (Amended) Act (2001), and levied at such a percentage of the ‘...the taxable capital value of the buildings or [vacant lands or both] having regard to location, type of construction of the building, nature of use to which the [vacant land] or building is put, area of the [vacant land], plinth area of the building, age of the building and such other criteria as may be prescribed [*sic.*]<sup>5</sup>.’

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<sup>2</sup> Personal communication from PP1, August 2010

<sup>3</sup> Based on a classification of India’s population done by the National Council of Applied Economic Research (NCAER), ‘The Great Indian Market: Results from the NCAER’s Market Information Survey of Households’, 2005, p.7, Available at: <http://www.ncaer.org/downloads/PPT/TheGreatIndianMarket.pdf>

<sup>4</sup> Personal Interview with PP1, conducted August 2006

<sup>5</sup> Government of Karnataka (1976) ‘The Karnataka Municipal Corporations Act, 1976’, p. 422. Available at: [http://dpal.kar.nic.in/pdf\\_files/14%20of%201977%20%28E%29.pdf](http://dpal.kar.nic.in/pdf_files/14%20of%201977%20%28E%29.pdf)

The performance of the revenue system was subsequently assessed by this researcher against two distinct axes, as described briefly *above*. For the express purposes of this study, the first axis was defined in terms of **absolute revenue collected** over the ten-year period under examination, based on figures given to this researcher by the BBMP. Property tax revenue targets were plotted for the city and for each ward, and compared to actual revenue collections over the period under study. The figures for expected revenue were also obtained by this researcher from the BBMP Revenue Department, and were indicated to be internal targets set by individual field offices<sup>6</sup>. Whilst no satisfactory definition was forthcoming regarding the precise nature of the computation, it was presumably based on the current year's expected revenue from existing properties corrected for depreciation, plus projected revenue from new residential and commercial properties in the coming year. Changes and trends in absolute figures at specific points in time (particularly during the tax year 2000/01 when the Self-Assessment Scheme was introduced, and in 2004/05 when computerised records were first implemented) were noted.

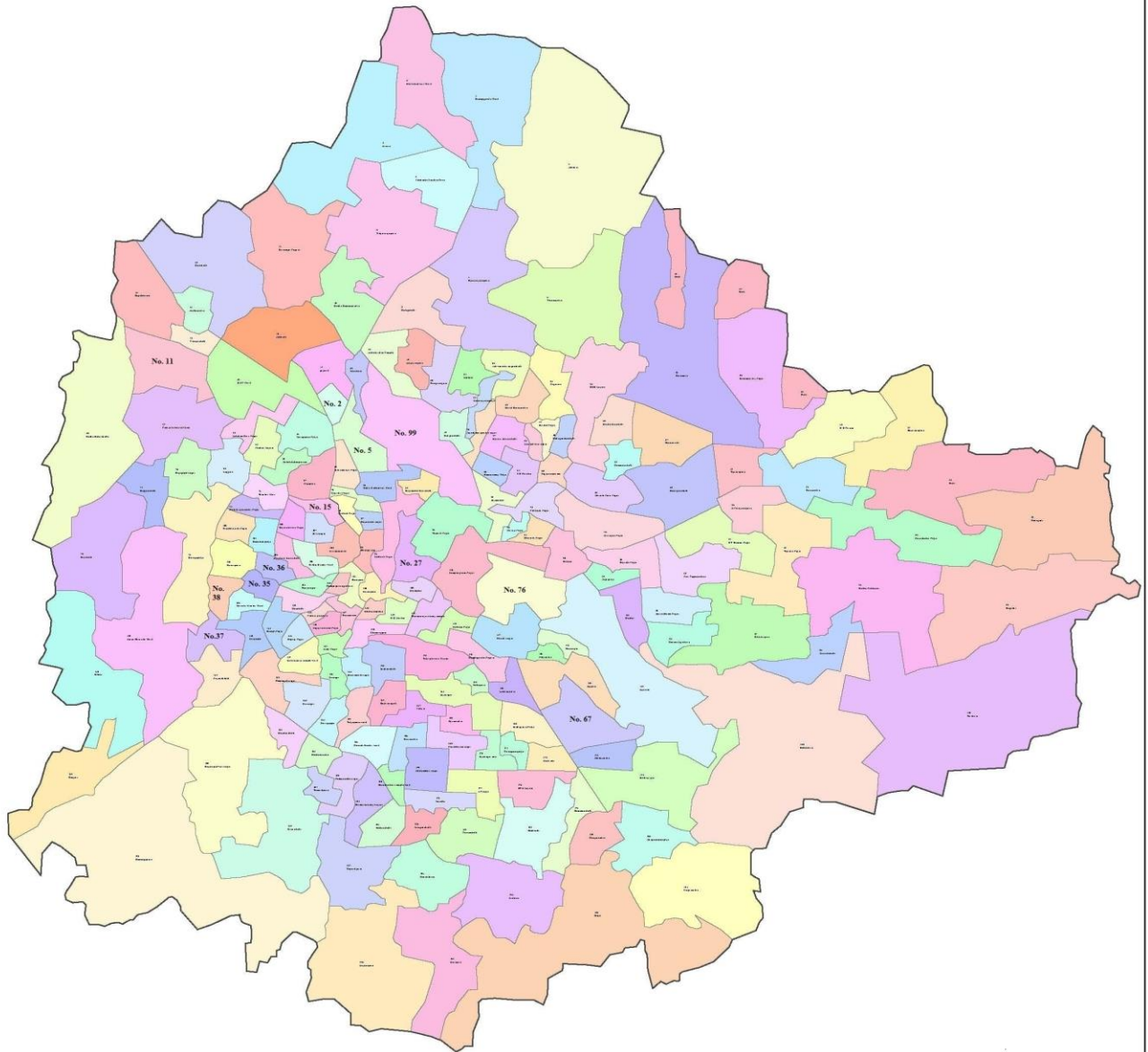
The second performance indicator was **collection efficiency**. Expressed as a percentage, the collection efficiency figure is calculated using the difference between projected and actual revenue figures, and indicates not only the percentage of projected revenue collected by the tax levying authority but also the level of tax compliance in the ward for the tax year under study. Thus, whilst absolute revenue figures would indicate whether taxes were increasing or not over a given period of time, and whether or not new

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<sup>6</sup> Personal Communication from PP1, August 2010

administrative measures such as the Self-Assessment Scheme and the introduction of computerised records had an impact on collections, collection efficiency would throw light on how effective these new measures actually are in encouraging people to pay.

It must be noted that prior to 2009, Bangalore city was divided into 100 wards each administered by its own respective ward office. In 2009, in order to improve the administration of the city, the BBMP undertook a process of ward delimitation, by which process ward boundaries were redrawn and the city was divided into 198 wards as shown in *Figure 8.1*. Some of the old wards remained although their boundaries changed, whilst some wards disappeared and were included in newly created administrative areas. Although some of the wards in this study no longer exist as a consequence of delimitation, this thesis will look at the result of computerisation on the finances of each ward *prior* to the process of delimitation (i.e. between the period 1998/99 and 2007/08). The ward numbers used in this chapter are, hence, the old ward numbers used before the delimitation.



Source: Bruhat Bengaluru Mahanagara Palike, 2011

**KEY: SELECT WARDS UNDER STUDY**

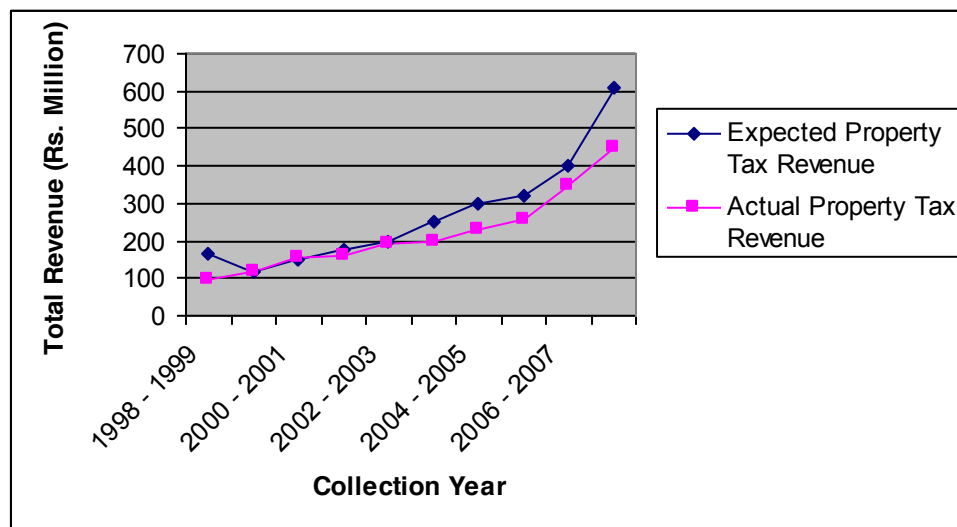
- |                              |                                     |
|------------------------------|-------------------------------------|
| Ward No. 67 : Koramangala    | Ward No. 11: Peenya Industrial Area |
| Ward No. 76: Richmond Town   | Ward No. 5: Malleshwaram            |
| Ward No. 38: Moodalapalya    | Ward No. 27: Gandhinagar            |
| Ward No. 37: Amariyothinagar | Ward No. 15: Rajajinagar            |
| Ward No. 36: Govindrajnagar  | Ward No. 2: Yeshwanthpur            |
| Ward No. 35: Marenahalli     | Ward No. 99: Aramanenagar           |

**Figure 8.1: Map of Bangalore City Showing the Selected Wards Under Study**

(Source: Bruhat Bengaluru Mahanagara Palike, 2011)

## 8.1. Property Tax Revenue Data Discussed: Bangalore City

The first set of graphs in this chapter seeks to analyse property tax revenues for Bangalore city as a whole. As mentioned in the previous section, prior to delimitation in 2009, the BBMP administered 100 wards (not including the outlying areas) which – according to the 2001 census – spanned an area of 211.71 square kilometres, with a population of 4,301,326 inhabitants<sup>7</sup>.



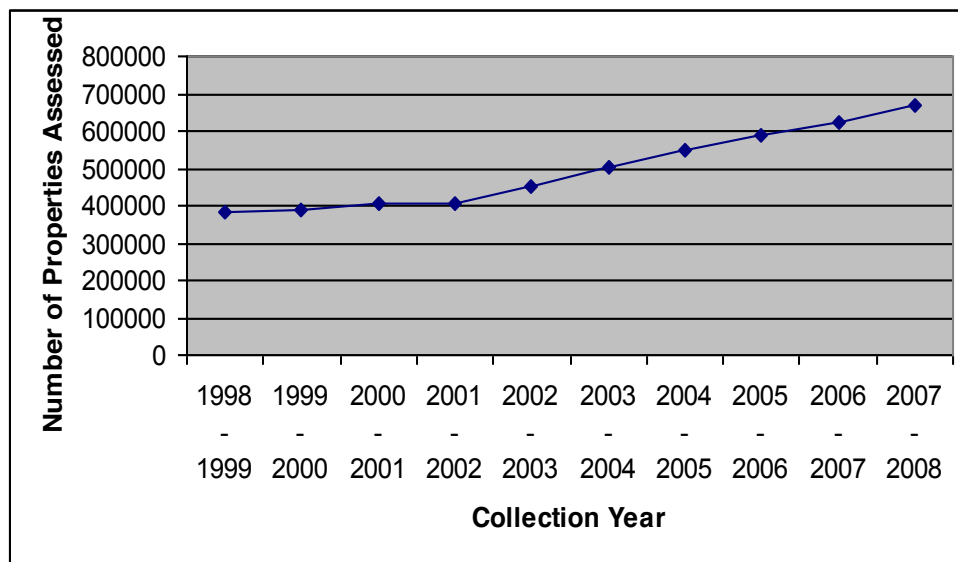
**Figure 8.2: Property Tax Revenue for Bangalore City (1998/99 to 2007/08)**

(Source: Author analysis, Bruhat Bengaluru Mahanagara Palike, 2009)

Figure 8.2 illustrates the total property tax revenue (expected and actual) collected for Bangalore City from 1998 to 2008. It may be seen that while both expected and actual revenue figures are rising, there is generally a shortfall between the amount of revenue expected by the tax authority and the amount actually collected. Prior to the introduction of the SAS in 1998/99, only 57% of the expected property tax revenue was

<sup>7</sup> Bruhat Bengaluru Mahanagara Palike, 'BBMP Delimitation 2009: Composition of the BBMP', 2009, Available at: [http://www.bbmpwards.org/bbmporg/Composition\\_of\\_BBMP.aspx](http://www.bbmpwards.org/bbmporg/Composition_of_BBMP.aspx)

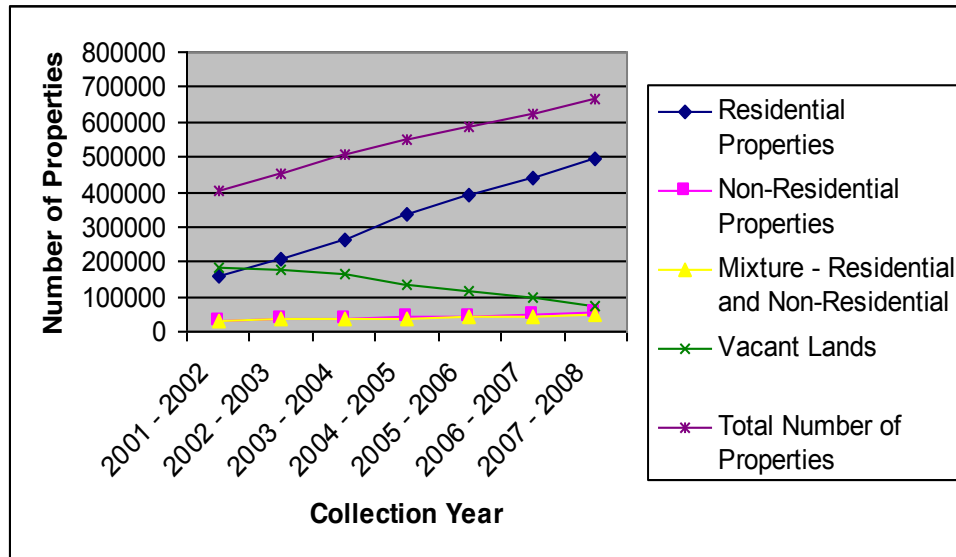
collected. Collection efficiency peaked 2000/01 (the year in which the Self Assessment Scheme was introduced), touching 105% before falling to 92% the following tax year and further still to 73.5% by 2007/08. Between 2001/02 and 2007/08 collection efficiency was erratic, fluctuating between 97.5% and 77.3%, with a general overall decline in the percentage of expected revenue collected. Overall, however, collection efficiency for Bangalore city was high, with an average of 84.9%.



**Figure 8.3: Number of Properties Assessed in Bangalore City (1998/99 to 2007/08)**  
 (Source: Author analysis, Bruhat Bengaluru Mahanagara Palike, 2009)

Figure 8.3 shows the change in the number of properties brought under the tax net in Bangalore city between 1998-99 and 2007-08. Overall, the number of properties assessed for tax in Bangalore city rose from 380,956 in 1998/99 to 668,535 in 2007/08 (an increase of 75%). A more detailed look at the figures reveals that between 1998/99 and 2000/01, prior to the introduction of the Self-Assessment Scheme, the rise in the number of properties assessed was slow, increasing from 380,956 to 404,500 (a percentage increase of 6.1%). In the years following the implementation of the SAS, from

2000/01 to 2007/08, it may be seen that there was a steady, sharper rise in the number of properties brought under the tax net: from 404,500 in 2000/01 to 547,354 in 2004/05 (an increase of 35.3%) and then to 668,353 in 2007/08 (an increase of 22.1%), with an overall increase of 264,036 properties assessed between 2000/01 and 2007/08.

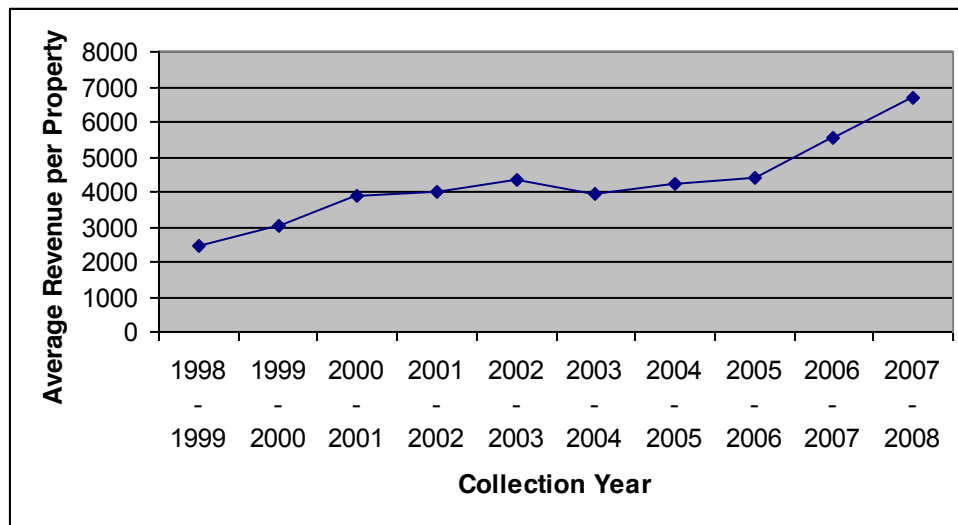


**Figure 8.4: Change in the Number of Properties Assessed (2001/02 to 2007/08)**

(Source: Author analysis, Bruhat Bengaluru Mahanagara Palike, 2009)

Figure 8.4 shows the change in the number of properties assessed depending on the nature of their use for the period 2001/02 to 2007/08. For the given period, it may be seen that overall there was an increase in the total number of properties assessed for tax purposes from 405,864 properties in 2001/02 to 668,535 properties in 2007/08 – an increase of 64.7%. A more detailed analysis reveals that the number of residential properties rose from 155,930 properties in 2001/02 to 494,658 properties in 2007/08: an increase of 217.2%! At the same time, the number of properties used for non-residential purposes also rose, from 31,268 properties in 2001/02 to 54,950 properties in 2007/08 (a more modest, yet significant increase of 75.7%). The number of properties classed as

‘mixed use properties’ (used for both residential and non-residential purposes) increased by 41.3%; from 33,410 properties in 2001/02 to 47,233 properties in 2007/08. Simultaneous with these increases, the city saw a significant decrease in the number of vacant lands assessed, with that number dropping from 185,256 in 2001/02 to 71,694 in 2007/08 – a fall of 61.3%.



**Figure 8.5: Average Revenue per Property for Bangalore City (1998/99 to 2007/08)**  
 (Source: Author analysis, Bruhat Bengaluru Mahanagara Palike, 2009)

Figure 8.5 illustrates the change in average revenue per property accrued to the BBMP Revenue Department from the period 1998/99 to 2007/08. For the given period, average revenue per property increased from Rs. 2,474.56 (~\$50) in 1998/99 to Rs. 6,712.13 (~\$135) in 2007/08; an increase of 171.24%. However, a closer look at the data reveals that there has not been a steady increase in average revenue per property for the period under study. For instance during the period 2000/01 to 2007/08 average revenue per property fluctuated, despite there being a steady rise in the number of properties assessed during the same duration. Average revenue rose from Rs.3,893.69 (~\$78) in

2000/01 to Rs. 4,326.19 (~\$86) in 2002/03 before falling to Rs. 3,961.40 (~\$79) the following year, after which it increased steadily from 2004/05 onward.

<b>Year</b>	<b>Compliance Level (%)</b>
1998 – 1999	57.73164309
1999 – 2000	97.91666667
2000 – 2001	105
2001 – 2002	92.85714286
2002 – 2003	97.5
2003 – 2004	80
2004 – 2005	77.31666667
2005 – 2006	80.65625
2006 – 2007	86.8125
2007 – 2008	73.56229508

**Table 8.1: Levels of Tax Compliance for Bangalore City between 1998 and 2008**

These findings may be further underlined by looking at tax compliance data for the city as indicated in *Table 8.1*. Thus for Bangalore city overall, the data shows that while the number of properties brought under the tax net increased relatively steadily between 1998/99 and 2007/08, actual revenue collected by the BBMP did not increase at the rate expected – rising dramatically during the years following the introduction of the Self-Assessment Scheme, then gradually falling behind expected revenue. One may conjecture, therefore, that the SAS allowed for the undervaluation of declared tax per property, possibly in collusion with tax assessors, and that such a fluctuation in revenue is

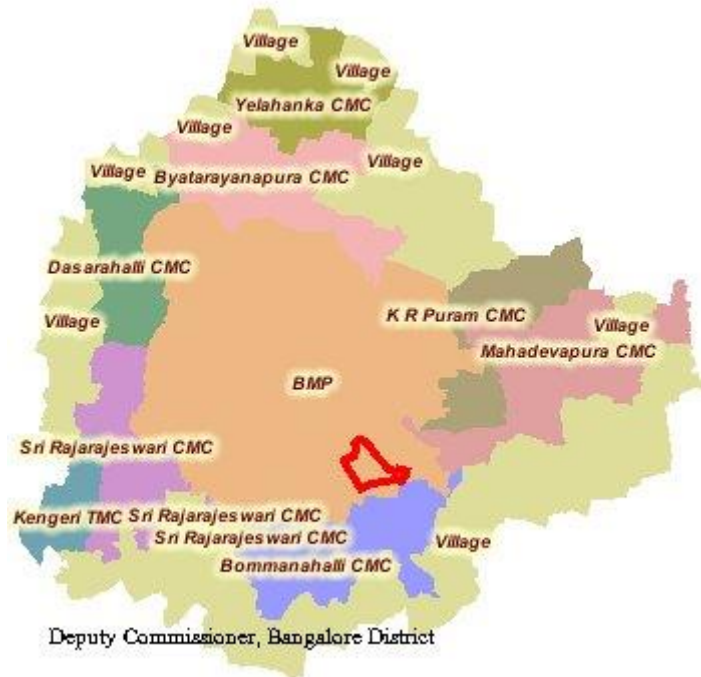
indicative of poor compliance as a steadily increasing number of properties brought under the tax net should otherwise logically result in a steady increase in revenues for the government. The introduction of computers, done between the years 2004 and 2005, does not seem to have made an impact in on BBMP revenue collections for the city as a whole. The increase in the number of properties may to a large extent, however, be attributed to the improvements in recordkeeping and information management practices stemming from the use of digital databases at the BBMP.

## 8.2. Property Tax Revenue Discussed: The 12 Select Wards

In order to determine whether the trends remarked upon in previous sections of this chapter could be picked up at the level of individual wards, a study was made of 12 randomly selected BBMP wards spread out across the city. The results and trends from within those wards are discussed below.

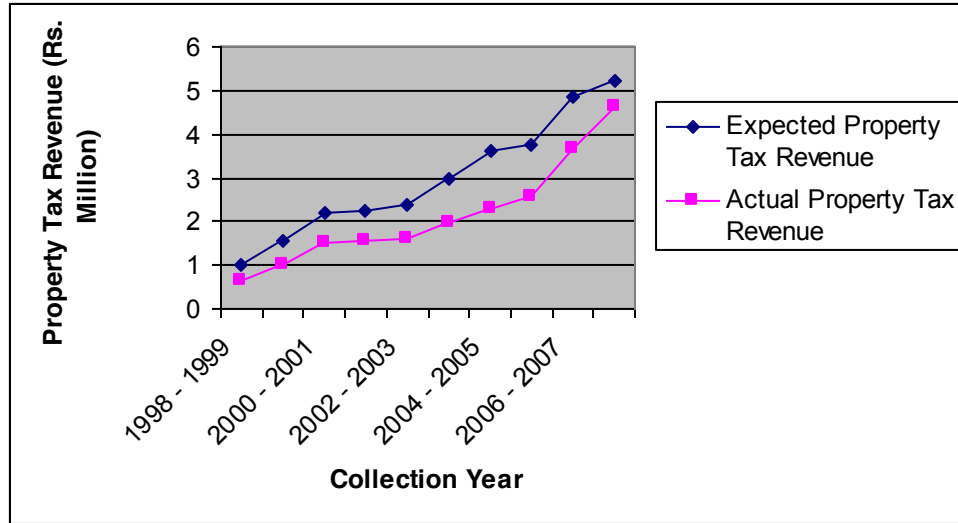
### **8.2.1. Ward No. 67: Koramangala**

Koramangala (Ward 67) may be found in the south-eastern part of Bangalore city. According to BBMP data based on the 2001 census, the ward spans an area of approximately 3.71 square kilometres and has a population of 35,359 people.



**Figure 8.6: Map of Bangalore City showing the approximate location of Ward 67**  
 (Source: Government of Karnataka, 2009)

The ward is one of the older, richer wards of Bangalore city, with its inhabitants belonging to the upper-middle classes of society. For revenue purposes, the ward is said to have a mix of both residential and commercial properties. *Figure 8.7* illustrates the total expected and actual property tax revenue collected for Ward No. 67 (Koramangala) for the period 1998/99 to 2007/08. The data shows that for the period under study expected property tax rose steadily from Rs. 1.01 million (~\$20,000) in 1998/99 to Rs. 5.213 million (~\$99,000) in 2007/08, whilst during the same period, actual revenue rose from Rs. 636,000 (~\$10,275) to Rs. 4.647 million (~\$75,000).



**Figure 8.7: Total Property Tax Revenue for Ward No. 67 (1998/99 to 2007/08)**

(Source: Author analysis, Bruhat Bengaluru Mahanagara Palike, 2009)

It may be seen, therefore, that despite a rise in revenue collections, there is a shortfall between the amount of revenue expected by the tax levying authority and the amount of money actually collected. Collection efficiency, as indicated by *Table 8.2* fluctuated between 62.9% and 69.8% for the period 1998/99 to 2005/06, rising to 76% in 2006/07 and then to 89.1% in 2007/08. The percentage of revenue collected rose from 62.9% in 1998/99 to 68.9% in 2000/01 and then to 69.8% in 2001/02. It may be concluded that the introduction of the SAS in 2000/01 appears to have had a positive effect on revenue collections in the ward. Computerisation of the tax administration also appears to have had an effect on tax revenues, with collection efficiency rising from 62.9% in 2004/05 to 76% in 2006/07 and subsequently to 89.1% in 2007/08. On average, collection efficiency for the ward is 69.5%, indicating a moderately high level of tax compliance.

<b>Year</b>	<b>Compliance Level (%)</b>
1998 – 1999	62.97029703
1999 – 2000	65.60956023
2000 – 2001	68.99049344
2001 – 2002	69.85391766
2002 – 2003	67.09920469
2003 – 2004	65.25367156
2004 – 2005	62.99972429
2005 – 2006	68.1124498
2006 – 2007	76.00660747
2007 – 2008	89.14252829

**Table 8.2: Levels of Tax Compliance for Ward No.67 (Koramangala) between 1998 and 2008**

### **8.2.2. Ward No. 76: Richmond Town**

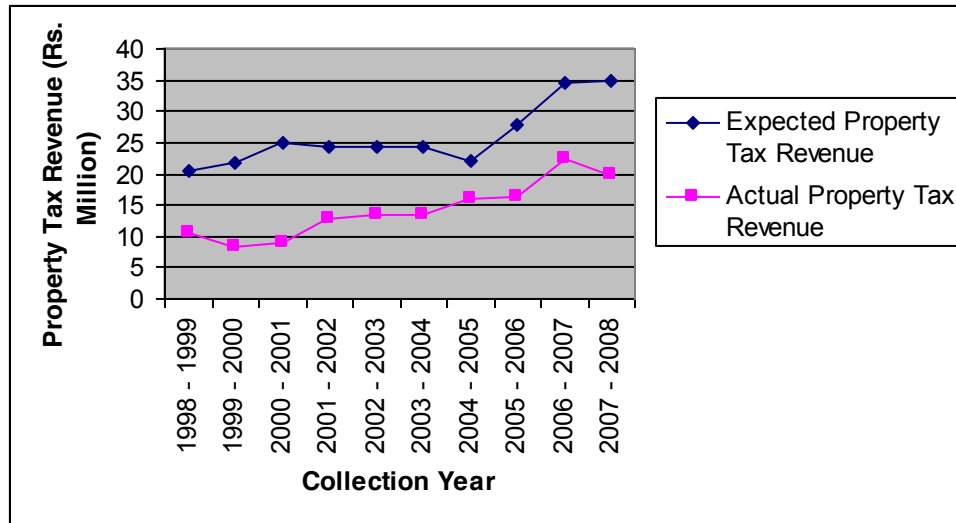
Richmond Town (Ward 76) is located in the south-east of Bangalore city. The 2001 census found that the ward had a population of 36,426 people, and spanned an area of approximately 2.7 square kilometres. The ward is old and rich, as it a traditional commercial centre comprising mainly of large business establishments. Consequently, tax revenues in the ward tend to be high.



**Figure 8.8: Map of Bangalore City showing the approximate location of Ward 76<sup>8</sup>**  
 (Source: Government of Karnataka, 2009)

The total revenue expected and collected by the BBMP for Ward No.76 during the period 1998/99 to 2007/08 is shown in *Figure 8.9*. It may be seen from the graph that both expected and actual revenue fluctuates during the period under study, and that actual revenue yields often fall well short of expected targets. It is interesting to note that the biggest shortfall of revenue was in 2000/01, the first year of the Self Assessment Scheme. The tax authority collected only 36.3% of the total property tax revenue expected for that year – Rs. 9.04 million (~\$152,000) out of an expected Rs. 24.87 million (~\$405,000) – a figure even lower than collection efficiency for 1999/00 (38.3%).

<sup>8</sup> Following the delimitation of wards in 2009, Richmond Town now falls under the jurisdiction of Ward 117 (Shantinagar). However, as this thesis makes use of data from the years prior to delimitation, conclusions remain unchanged.



**Figure 8.9: Total Property Tax Revenue for Ward No. 76 (1998/99 to 2007/08)**

(Source: Author analysis, Bruhat Bengaluru Mahanagara Palike, 2009)

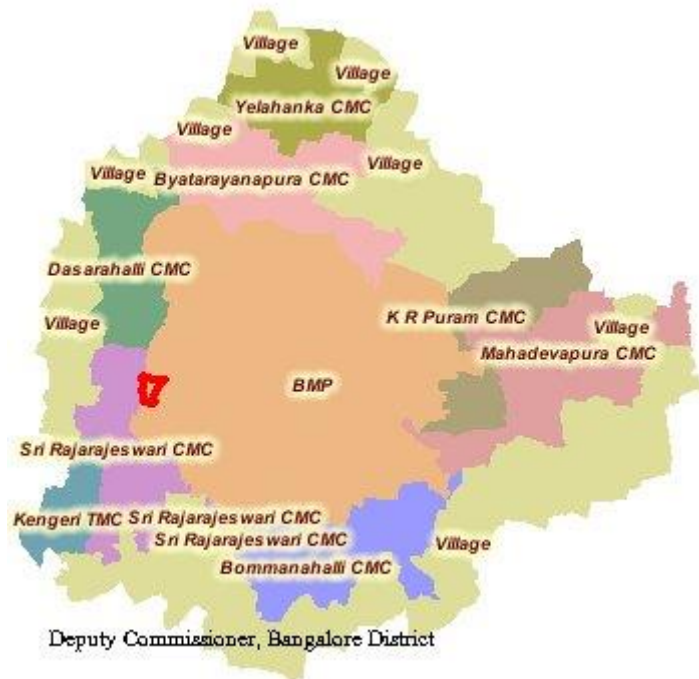
Therefore, for Richmond Town, the introduction of the SAS appears to not have had any immediate impact on revenue collections in the ward. Collections appear to have improved gradually in the years afterwards, peaking at a collection efficiency of 72.2% in 2004/05 – the year in which the computerised system was first introduced. However since then, whilst expected revenue from property tax has been rising steadily, collection efficiency has fallen and become erratic: in 2006/07 it rose from 59.4% (2005/06) to 64.5% before falling again to 57.2% in 2007/08. After an examination of *Table 8.3* below, it may be concluded that computerisation has had only short-term benefits in the ward and has not had a significant, long-term effect on tax yields. On average, collection efficiency for Richmond Town was calculated as being 54.2%, indicating relatively poor tax compliance in the ward.

<b>Year</b>	<b>Compliance Level (%)</b>
1998 – 1999	51.06899903
1999 – 2000	38.39409322
2000 – 2001	36.34901488
2001 – 2002	53.07377049
2002 – 2003	54.94054941
2003 – 2004	55.40983607
2004 – 2005	72.21223022
2005 – 2006	59.4731144
2006 – 2007	64.54598034
2007 – 2008	57.28672134

**Table 8.3: Levels of Tax Compliance for Ward No.76 (Richmond Town) between 1998 and 2008**

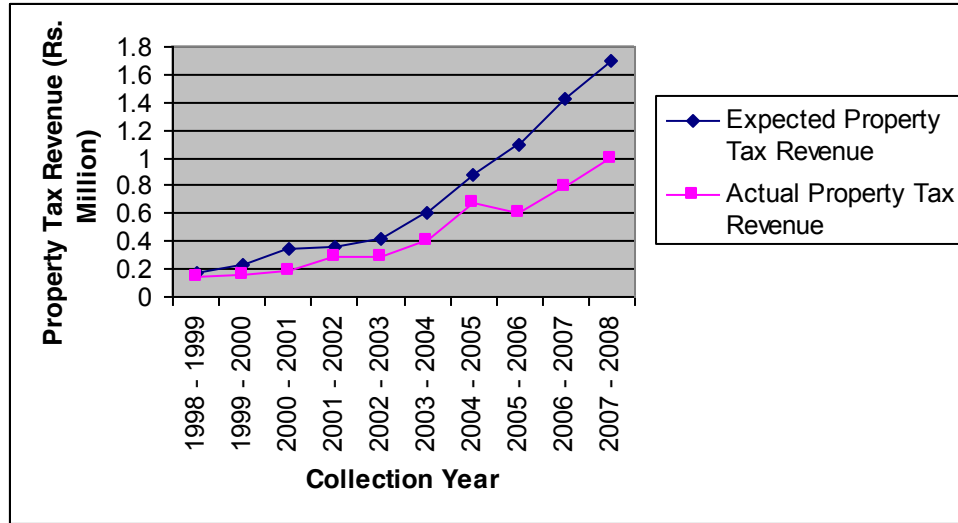
### **8.2.3. Ward No. 38: Moodalapalya**

Moodalapalya (Ward 38) is a ward located in the western part of Bangalore city. According to BBMP records, the ward covers an area of 0.98 square kilometres. The 2001 census puts the population of Moodalapalya at 24,487 people.



**Figure 8.10: Map of Bangalore City showing the approximate location of Ward 38**  
 (Source: Government of Karnataka, 2009)

For the purposes of tax collection, revenue officials describe the ward as being a new area recently included into Bangalore city limits. It is further described as a primarily residential area, with its inhabitants being lower middle class to very poor. *Figure 8.11* shows the total revenue from property tax – estimated and actually collected – for Moodalapalya between 1998/99 and 2007/08. From the graph it may be seen that the two major developments in the administration of property tax during that time, the introduction of the Self Assessment Scheme and the implementation of the computerised system, both seemingly had an impact on expected property tax revenue collections within the ward.



**Figure 8.11: Total Property Tax Revenue for Ward No. 38 (1998/99 to 2007/08)**

(Source: Author analysis, Bruhat Bengaluru Mahanagara Palike, 2009)

Data for 2000/01 show a spike in the amount of property tax expected for that year, whilst figures for 2004/05 and the years following demonstrate a dramatic increase in the amount of expected revenue. However, it would appear that actual revenue collections did not respond as strongly to changes in the administrative system. Whilst expected revenue saw an increase of 48.6% from 1999/00 to 2000/01 when the Self-Assessment Scheme was introduced, actual revenue collected only increased by 17.7% during that same period. Further 2000/01 recorded a collection efficiency of a mere 56.6%, down from the previous year's collection rate of 71.4%.

Revenue collection appears to have responded better to the rolling out of the computerised system: while expected revenues grew by 44.6% from 2003/04 to 2004/05, actual revenues grew faster at 67.3%. *Table 8.4* shows tax compliance figures for Ward 38 during the 10-year period under study. It may be seen that, for this period, collection efficiency peaked at 76.9% in 2001/02 during the initial introduction of the Self-

Assessment Scheme; however, the results of this enthusiasm appear to have been short-lived with revenue collection becoming erratic and collection efficiency falling to under 60% in the following three years.

<b>Year</b>	<b>Compliance Level (%)</b>
1998 – 1999	84.18079096
1999 – 2000	71.49122807
2000 – 2001	56.63716814
2001 – 2002	76.98630137
2002 – 2003	67.93349169
2003 – 2004	66.61211129
2004 – 2005	77.0361991
2005 – 2006	55.18181818
2006 – 2007	55.58659218
2007 – 2008	58.05882353

**Table 8.4: Levels of Tax Compliance for Ward No.38 (Moodalapalya) between 1998 and 2008**

Average collection efficiency for Moodalapalya for the period under study was 66.9%, implying a moderate level of tax compliance in the ward.

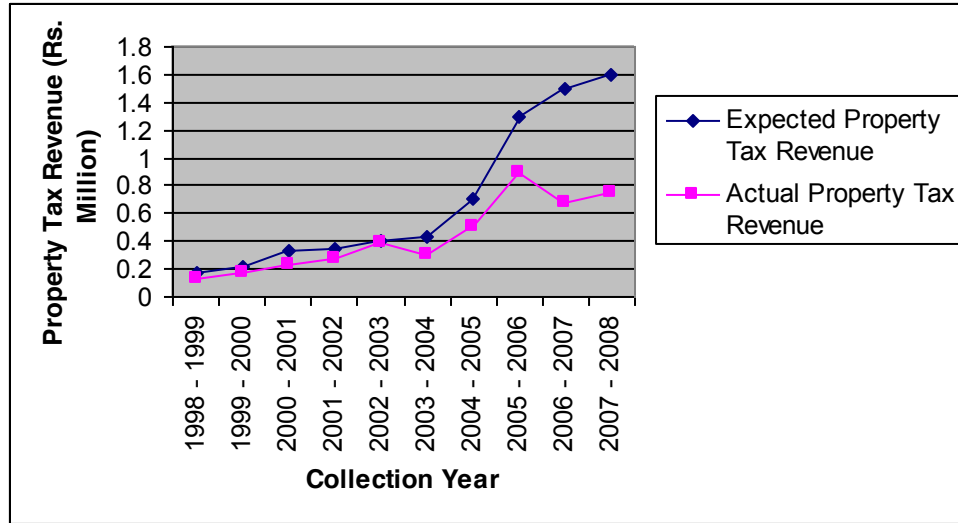
#### **8.2.4. Ward No. 37: Amarjyothinagar**

The next ward under study for this chapter is ward no. 37, Amarjyothinagar, which is located in the western part of the city.



**Figure 8.12: Map of Bangalore City showing the approximate location of Ward 37**  
 (Source: Government of Karnataka, 2009)

According to official data, at the time of the 2001 census, the ward had a population of 36,077 people and covered an area of approximately 0.73 square kilometres. For administrative purposes, the ward is classed as a new residential area with inhabitants belonging to the lower middle classes and poor strata of society. *Figure 8.13* illustrates the total amount of property tax revenue, both expected and collected, for Amarjyothinagar over the 10 year period. Judging by the constant – often dramatic – increase in expected revenue, it may be conjectured that (as in the case of Moodalapalya) both the introduction of the Self-Assessment Scheme and the implementation of the computerised system appear to have had an impact on property tax assessments.



**Figure 8.13: Total Property Tax Revenue for Ward No.37 (1998/99 to 2007/08)**

(Source: Author analysis, Bruhat Bengaluru Mahanagara Palike, 2009)

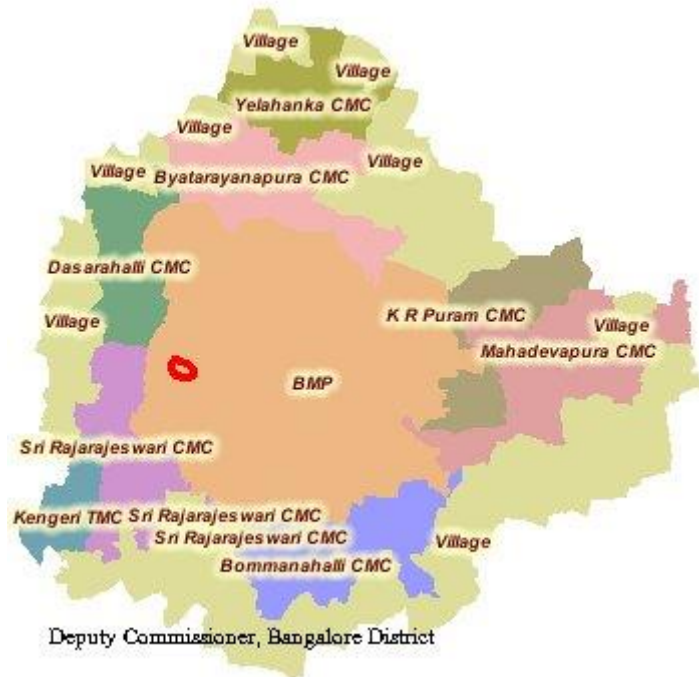
This seems to hold particularly true for the implementation of the computerised system where tax assessors, aided by better recordkeeping and a lighter workload, seem to have anticipated great gains in tax revenue in the years following 2004/05. However, this expectation was not borne out in reality: data show that actual revenue collections have been erratic and that over the years the gap between expected and actual revenue has grown rather than closed. Further, as demonstrated in *Table 8.5*, whilst collection efficiency peaked at 70.5% in 2004/05 – possibly owing to the implementation of digital record keeping and the newness of the system – it fell dramatically in the following years and by 2007/08 was as low as 47%. Tax compliance was overall moderately high in the ward, with the average collection efficiency standing at 69.9%.

<b>Year</b>	<b>Compliance Level (%)</b>
1998 – 1999	75.28735632
1999 – 2000	81.13207547
2000 – 2001	66.96428571
2001 – 2002	76.42045455
2002 – 2003	96.25
2003 – 2004	70.657277
2004 – 2005	70.57491513
2005 – 2006	69.52822892
2006 – 2007	45.43637575
2007 – 2008	47.63680599

**Table 8.5: Levels of Tax Compliance for Ward No. 37 (Amarjyothinagar) between 1998 and 2008**

### **8.2.5. Ward No. 36: Govindrajnagar**

According to data obtained from the BBMP revenue department, Govindrajnagar (Ward 36) covers an area of approximately 0.77 square kilometres in the west part of the city.

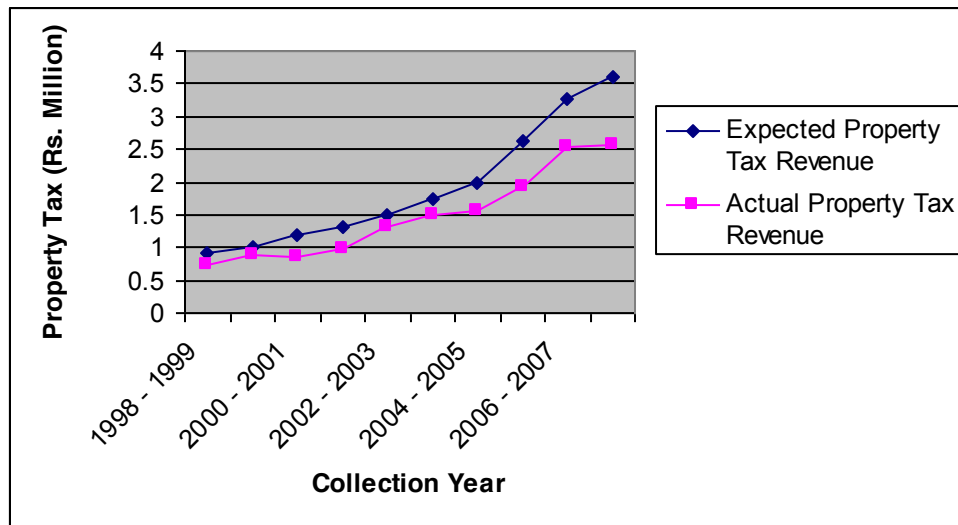


**Figure 8.14: Map of Bangalore City showing the approximate location of Ward 36**  
 (Source: Government of Karnataka, 2009)

The 2001 census recorded the ward as having a population of 25,773 inhabitants, who are described as upper middle class or ‘rich’. Revenue officials describe the ward as being recently created or ‘new’ and, being a residential area, as primarily consisting of residential properties.

*Figure 8.15* shows the difference between the total property tax revenue expected by the BBMP and the total property tax revenue actually collected between the years 1998/99 and 2007/08 for the ward. A first glance at the figures indicates that whilst both demand and collection have consistently increased during this period, there remains a gap (known in BBMP tax jargon as the ‘balance’) between the amount of tax revenue expected by the tax authority and the amount of revenue actually collected. Overall, the balance for Ward No. 36, fluctuated wildly depending on the amount of revenue collected

each tax year, remaining largely consistent but gradually widening towards the latter years of the period under study.



**Figure 8.15: Total Property Tax Revenue for Ward No. 36 (1998/99 to 2007/08)**  
*(Source: Author analysis, Bruhat Bengaluru Mahanagara Palike, 2009)*

A better idea may be gained through an examination of collection efficiency. Data shows that overall collection efficiency for Govindrajnagar has been high, with a maximum of 88% and minimum of 71% for the given period, indicating that tax compliance for the ward has generally been good. Collection efficiency was on average generally high in the ward, with an average of 78.7% compliance for the period under study. However, it has not been increasing consistently: there are some years during which collection efficiency has increased, and others during which it fell. Data indicate that collection efficiency has increased in the years after the introduction of the SAS, peaking in 2002/03 at 88.2%.

<b>Year</b>	<b>Compliance Level (%)</b>
1998 – 1999	80.37486218
1999 – 2000	88.3
2000 – 2001	72.14765101
2001 – 2002	74.20333839
2002 – 2003	88.26666667
2003 – 2004	84.84848485
2004 – 2005	77.30460922
2005 – 2006	72.99962078
2006 – 2007	77.26302956
2007 – 2008	71.69076752

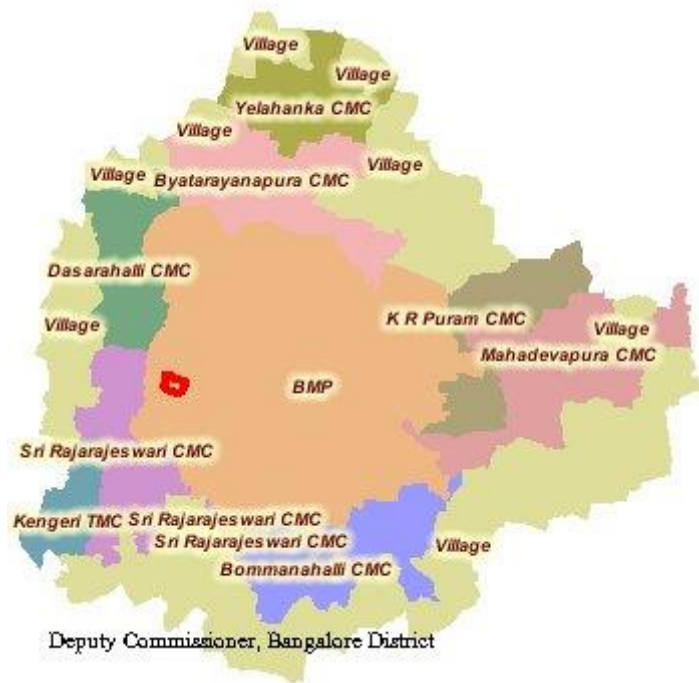
**Table 8.6: Levels of Tax Compliance for Ward No. 36 (Govindrajnagar) between 1998 and 2008**

However, since then its fall has been relatively consistent, and it would appear that the introduction of the computerised system has not succeeded in improving collections and has had little or no effect on tax compliance.

### **8.2.6. Ward No. 35: Marenahalli**

Located in the western part of the city, ward 35 (Marenahalli) covers an area of approximately 0.69 square kilometres, according to BBMP records, with a population of 20,068 people according to the 2001 census. BBMP officials class Marenahalli as a new

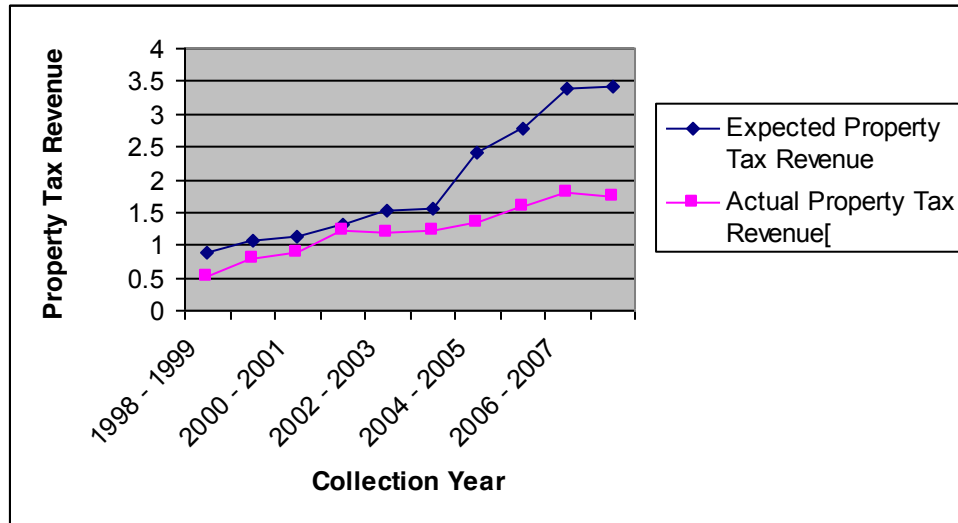
ward with primarily residential properties, and whose inhabitants not very well-to-do and belong mainly to the lower middle class strata of society.



**Figure 8.16: Map of Bangalore City showing the approximate location of Ward 35**  
 (Source: Government of Karnataka, 2009)

Figure 8.17 below illustrates the total property tax revenue expected by the BBMP for ward number 35 (Marenahalli) and the total actual amount of property tax revenue collected over the period 1998/99 to 2007/08. It may be seen from the graph that whilst both actual and expected revenue both rise over the years under study, actual collections increase at a slower rate than expected revenue and always fall short of the amount of revenue expected. A closer look reveals that revenue collections appear to keep pace with expectations until 2003/04, after which they slow down dramatically resulting in an ever-widening gap between the amount of revenue expected and the amount actually collected. It is interesting to note that the drop in collections appears to

coincide with the introduction of the computerised system, and that during the implementation phase (the years following 2004/05) there is no dramatic improvement in tax collections.



**Figure 8.17: Total Property Revenue for Ward No. 35 (1998/99 to 2007/08)**

(Source: Author analysis, Bruhat Bengaluru Mahanagara Palike, 2009)

Figures for collection efficiency, as seen in *Table 8.7*, tell a similar story. Collection efficiency increases steadily between the years 1998/99 and 2000/01, peaking in 2001/02 at 91.8 %. This peak indicates that, in all likelihood, the introduction of the Self-Assessment Scheme the previous year had had a positive effect on tax compliance in the ward. However three years later, by the time the computerised system was introduced, collection efficiency dropped to just 56% and continued fall in consequent years.

<b>Year</b>	<b>Compliance Level (%)</b>
1998 – 1999	58.15279361
1999 – 2000	73.65491651
2000 – 2001	79.36507937
2001 – 2002	91.8490566
2002 – 2003	78.64205669
2003 – 2004	79.74193548
2004 – 2005	56.04166667
2005 – 2006	56.76354503
2006 – 2007	52.86849073
2007 – 2008	50.51154633

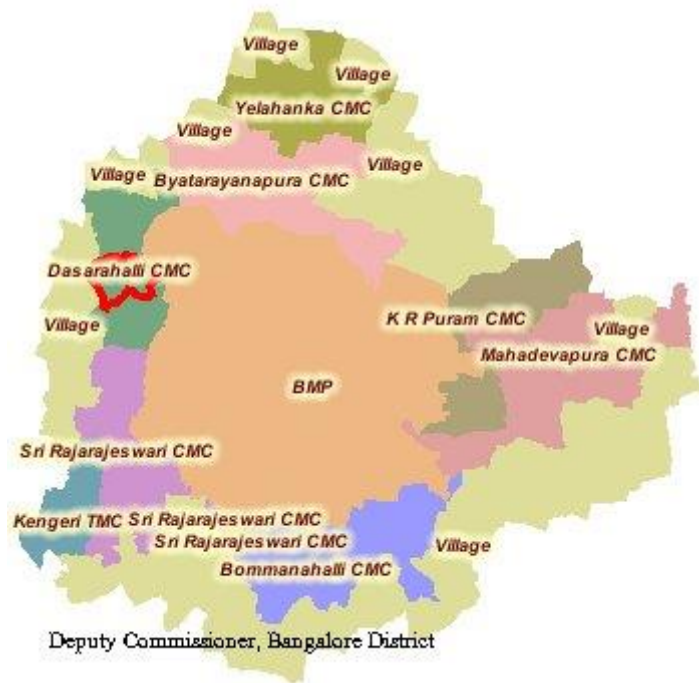
**Table 8.7: Levels of Tax Compliance for Ward No. 35 (Marenahalli) between 1998 and 2008**

It may be concluded, therefore, that the introduction of the computerised system seems to have not had a positive impact on tax compliance in Marenahalli. However, tax compliance was on the whole middling, with the ward having an average collection efficiency of 67.7%.

### **8.2.7. Ward No. 11: Peenya Industrial Area**

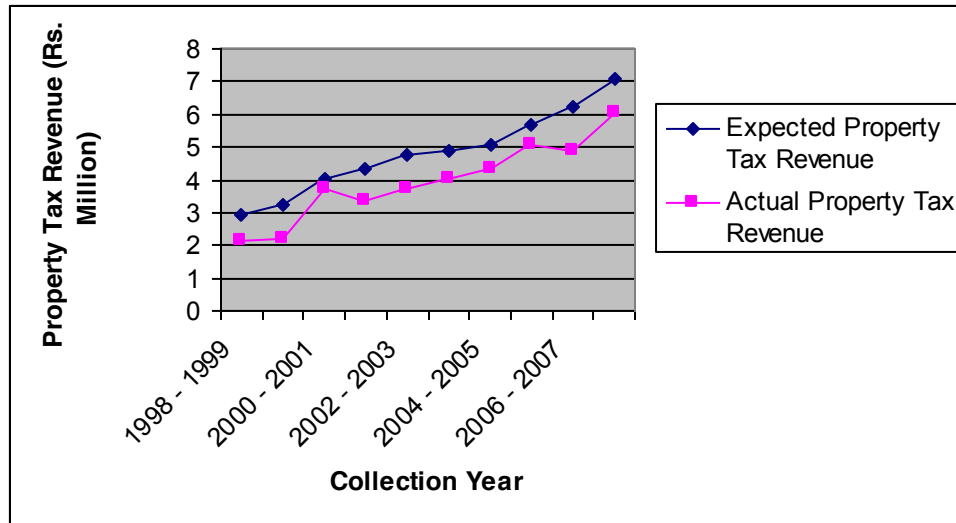
Ward 11, Peenya Industrial Area, covers an area of 5.59 square kilometres in the north-western corner of Bangalore City, and is categorised as an old ward by the BBMP.

The 2001 census put the population of Peenya at 27, 467 people and, though an old industrial area, BBMP officials describe its inhabitants as being ‘lower middle class’.



**Figure 8.18: Map of Bangalore City showing the approximate location of Ward 11**  
 (Source: Government of Karnataka, 2009)

The total property tax revenue expected and collected for Ward No. 11 between the years 1998/99 and 2007/08 is shown in *Figure 8.19*. It may be seen from the graph that both expected property tax revenue and actual collections for Peenya rise steadily during the period under study. It may further be seen that although property tax collections almost always fall short of expected targets, the gap between the two is never very large.



**Figure 8.19: Total Property Tax Revenue for Ward No. 11 (1998/99 to 2007/08)**  
 (Source: Author analysis, Bruhat Bengaluru Mahanagara Palike, 2009)

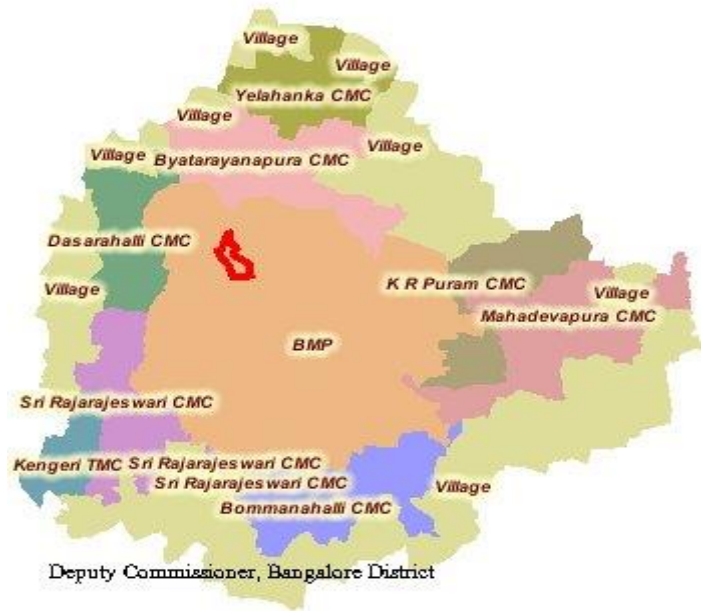
Calculations done by this researcher based on figures issued by the BBMP reveal that collection efficiency in the ward was very high for the period under study, averaging 81% over the 10 years indicating a high level of compliance. This may be seen in *Table 8.8* below. The introduction of the Self-Assessment Scheme in particular appears to have had a marked effect on collection efficiency: prior to its introduction tax compliance had been decreasing, but in the year of its implementation jumped to 91.9%. The introduction and implementation of the computerised system also appeared to have an effect (if slightly less dramatic) on tax compliance in the area, with collection efficiency rising from 81.9% in 2003/04 to 86% in 2004/05 and then to 88.9% in 2005/06. Average collection efficiency was high at 81%, implying a very level of high tax compliance for the ward overall.

<b>Year</b>	<b>Compliance Level (%)</b>
1998 – 1999	72.00135916
1999 – 2000	69.01057872
2000 – 2001	91.99604743
2001 – 2002	78.00185443
2002 – 2003	79.01286648
2003 – 2004	81.99225912
2004 – 2005	86.00749951
2005 – 2006	88.99454129
2006 – 2007	77.99808123
2007 – 2008	85.48980747

**Table 8.8: Levels of Tax Compliance for Ward No.11 (Peenya Industrial Area) between 1998 and 2008**

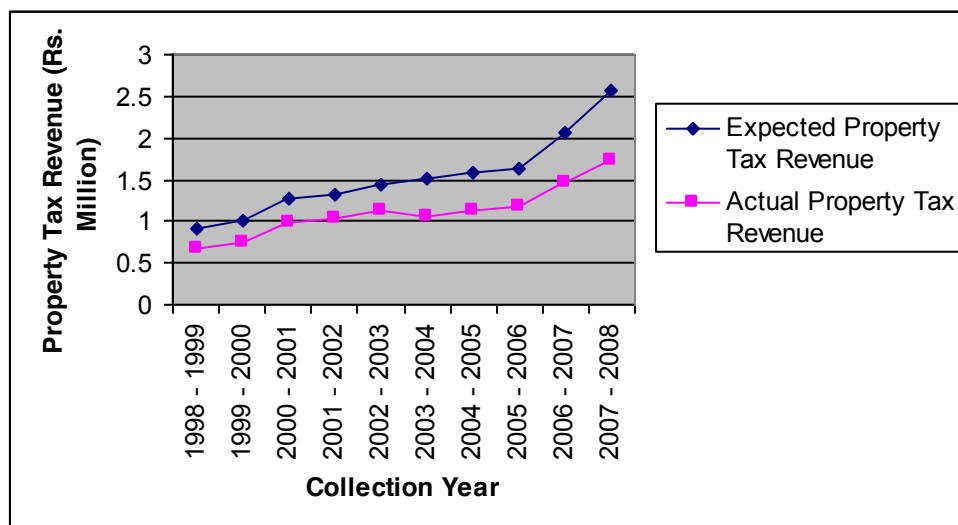
### **8.2.8. Ward No. 5: Malleshwaram**

According to BBMP records, Malleshwaram (Ward 5) is a district in the north-west of Bangalore that covers an area of approximately 1.81 square kilometres. The ward, whose properties are almost entirely residential, has a population of 36,321 according to the 2001 census. The inhabitants of the ward are categorised by the BBMP as being rich middle to upper-middle class citizens.



**Figure 8.20: Map of Bangalore City showing the approximate location of Ward 5**  
 (Source: Government of Karnataka, 2009)

Figure 8.21 illustrates the total property tax revenue accruing to the BBMP from Ward 5, Malleshwaram, between the years 1998/99 and 2007/08, and the actual property tax revenue collected over the same period.



**Figure 8.21: Total Property Tax Revenue for Ward No. 5 (1998/99 to 2007/08)**  
 (Source: Author analysis, Bruhat Bengaluru Mahanagara Palike, 2009)

From the graph it may be seen that, as in other wards, both expected revenue and actual revenue are consistently rising over the period under study. However, neither the implementation of the Self-Assessment Scheme in 2000/01, nor the introduction of the computerised system in 2004/05, appear to have had a significant positive impact on collections in the ward. If anything, data indicates that from 2004/05 onward the gap between expected and actual revenue collections widened as a result of a slowing down of the collection rate relative to the growth of expected revenue.

<b>Year</b>	<b>Compliance Level (%)</b>
1998 – 1999	75.33039648
1999 – 2000	73.37917485
2000 – 2001	76.3322884
2001 – 2002	77.89155015
2002 – 2003	78.911440501
2003 – 2004	71.0859427
2004 – 2005	71.33798351
2005 – 2006	71.02860621
2006 – 2007	71.08081792
2007 – 2008	66.9263732

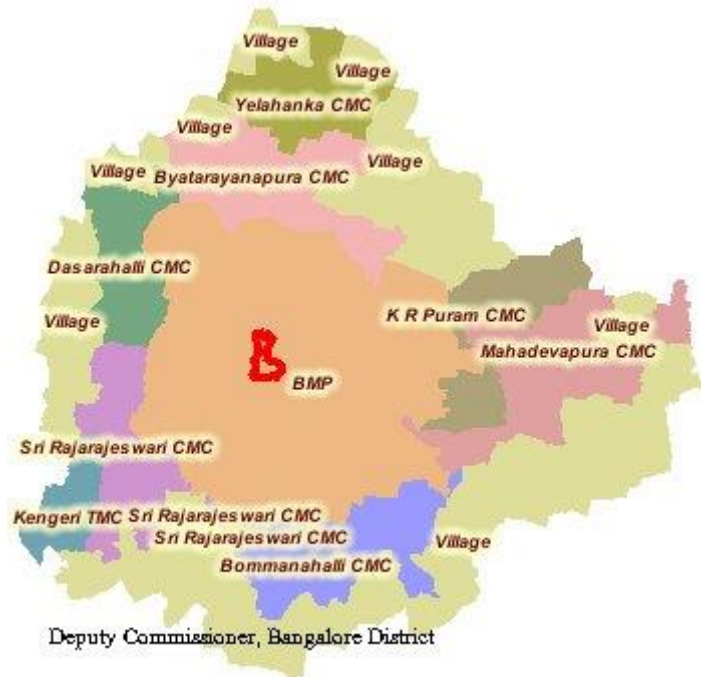
**Table 8.9: Levels of Tax Compliance for Ward No. 5 (Malleshwaram) between 1998 and 2008**

Collection efficiency figures for the ward as seen in *Table 8.9* bear out this trend: collection efficiency appears to improve slightly during the first year of the Self-

Assessment Scheme and in the two years subsequent to its implementation (rising from 73.3% in 1999/00 to 76.3% in 2000/01 and then to 78.9% in 2003/04), indicating that the SAS probably had an effect on tax compliance within the ward. However, collection efficiency fell to 71.3% in 2004/05, the first year of the computerised system, and continued to fall consistently until 2007/08 when it hit a low of 66.9%. Average collection efficiency for Malleshwaram is calculated to be 73.3%, indicating a moderately high level of tax compliance in the ward.

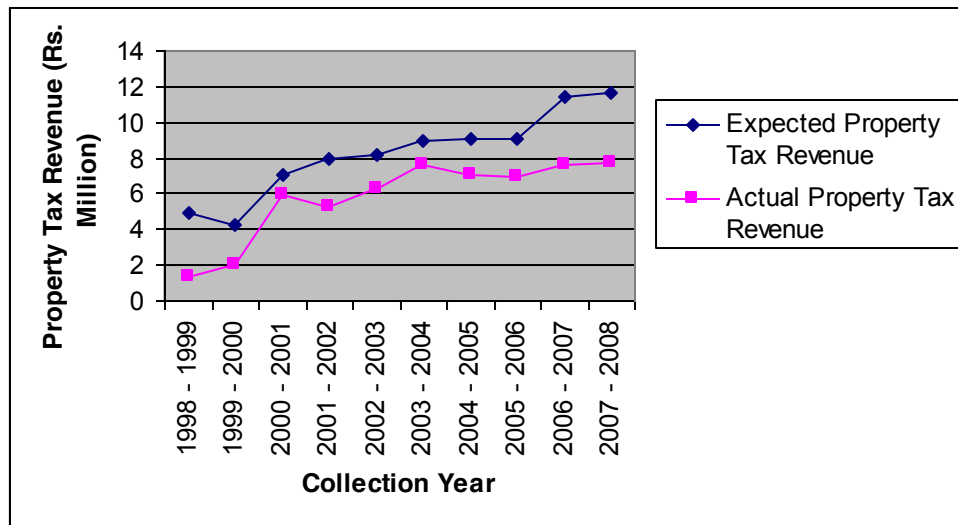
### **8.2.9. Ward No. 27: Gandhinagar**

Located close to the heart of the city Ward 27, Gandhinagar, covers an area of approximately 1.93 square kilometres and has a population of 35,310 inhabitants according to the most recent census. BBMP officials class this ward as being an old but rich ward – a business area comprising mainly of properties classed as commercial buildings for tax purposes.



**Figure 8.22: Map of Bangalore City showing the approximate location of Ward 27**  
 (Source: Government of Karnataka, 2009)

The total property tax revenue expected and actually collected by the BBMP Revenue Department in Gandhinagar is illustrated in *Figure 8.23*.



**Figure 8.23: Total Property Tax Revenue for Ward No. 27 (1998/99 to 2007/08)**  
 (Source: Author analysis, Bruhat Bengaluru Mahanagara Palike, 2009)

It may be seen that, in keeping with the general trend, both expected and actual property tax revenue rise steadily over the given time-period. However, despite a relatively steady increase in expected revenue, actual revenue levels fluctuate.

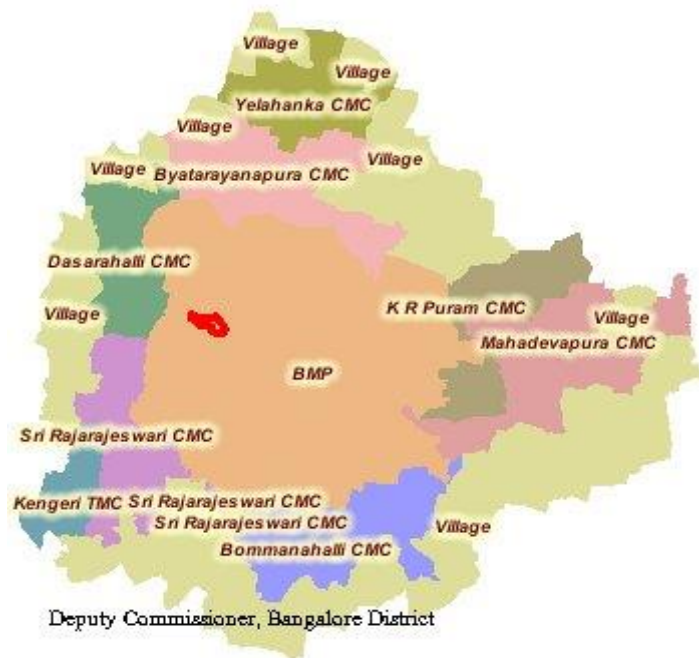
<b>Year</b>	<b>Compliance Level (%)</b>
1998 – 1999	27.87086228
1999 – 2000	47.4084641
2000 – 2001	83.31686662
2001 – 2002	66.38697558
2002 – 2003	76.8115942
2003 – 2004	84.9866548
2004 – 2005	77.22423843
2005 – 2006	76.64145566
2006 – 2007	67.09237229
2007 – 2008	66.03368276

**Table 8.10: Levels of Tax Compliance for Ward No.27 (Gandhinagar) between 1998 and 2008**

Further, it may be seen that there is a clear spike in revenue collections in the ward in 2000/01, coinciding with the introduction of the Self-Assessment Scheme. However, revenue collections fell in the year the computerised system was first implemented, from Rs.1.88 million (~\$36,000) in 2003/04 to Rs.1.35 million (~\$27,000) in 2004/05, and continued falling despite a predicted rise in the amount of revenue owed to the tax authority. Collection efficiency figures in *Table 8.10* show that during the year

the Self-Assessment Scheme was introduced, tax compliance amongst residents of the ward reached 83.3% (up from the previous year's abysmal level of 47.4%). However, compliance figures slumped to 66.3% the following year, before rising to 84.9% in 2003/04. The introduction of the computerised system in the ward appears to have done nothing to boost compliance – collection efficiency fell in 2004/05 and continued falling until the end of the period under study. The ward recorded an average collection efficiency of 67.3%, implying a moderate average level of tax compliance for the period under study.

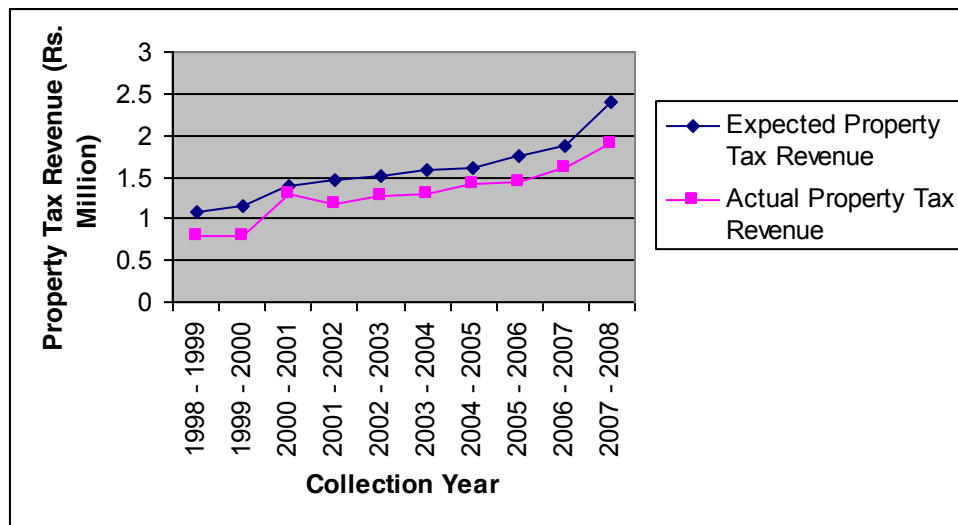
#### 8.2.10. Ward No. 15: Rajajinagar



**Figure 8.24: Map of Bangalore City showing the approximate location of Ward 15**  
 (Source: Government of Karnataka, 2009)

Rajajinagar (Ward 15) is a newly added, up-and-coming ward located in the west of Bangalore city. The ward covers an area of 0.86 square kilometres and, according to the 2001 census, has a population of 33,231 people. BBMP officials describe this ward as a primarily residential locality, with its inhabitants belonging to the wealthier, upper-middle class.

Figure 8.25 illustrates the total property tax revenue expected and collected in Rajajinagar between the tax years 1998/99 and 2007/08. A look at the data reveals that, in keeping with the general trend, both expected and actual revenue increase steadily (if not rapidly) over the given time period. Although actual revenue collections in the ward never quite catch up with projected targets, there is nonetheless only a small difference between the two.



**Figure 8.25: Total Property Tax Revenue for Ward No. 15 (1998/99 to 2007/08)**  
 (Source: Author analysis, Bruhat Bengaluru Mahanagara Palike, 2009)

It may be seen that whilst there was a spike in revenue collected in the tax year 2000/01 (which coincided with the city-wide implementation of the Self-Assessment Scheme), where collected revenue almost equalled the target for the year, there was none in the year 2004/05 when the computerised system was first introduced. Collection efficiency figures, shown in *Table 8.11*, are generally high for the ward, ranging between 69.3% and 93.3% with an average of 81.6% and indicating a generally high level of tax compliance.

<b>Year</b>	<b>Compliance Level (%)</b>
1998 – 1999	72.80296022
1999 – 2000	69.39843069
2000 – 2001	93.35239457
2001 – 2002	79.46793997
2002 – 2003	84.0474621
2003 – 2004	82.29695431
2004 – 2005	88.41387856
2005 – 2006	82.52148997
2006 – 2007	86.12004287
2007 – 2008	78.52990033

**Table 8.11: Levels of Tax Compliance for Ward No.15 (Rajajinagar) between 1998 and 2008**

A closer look reveals that the highest levels of tax compliance are to be found in the tax years 2000/01 (where collection efficiency reached 93.3%) and 2004/05 (where

collection efficiency touched 88.4%) indicating that, in all likelihood, the introduction of both the Self-Assessment Scheme and the computerised system had a positive if short-term impact on tax compliance in the ward.

### 8.2.11. Ward No.2: Yeshwanthpur

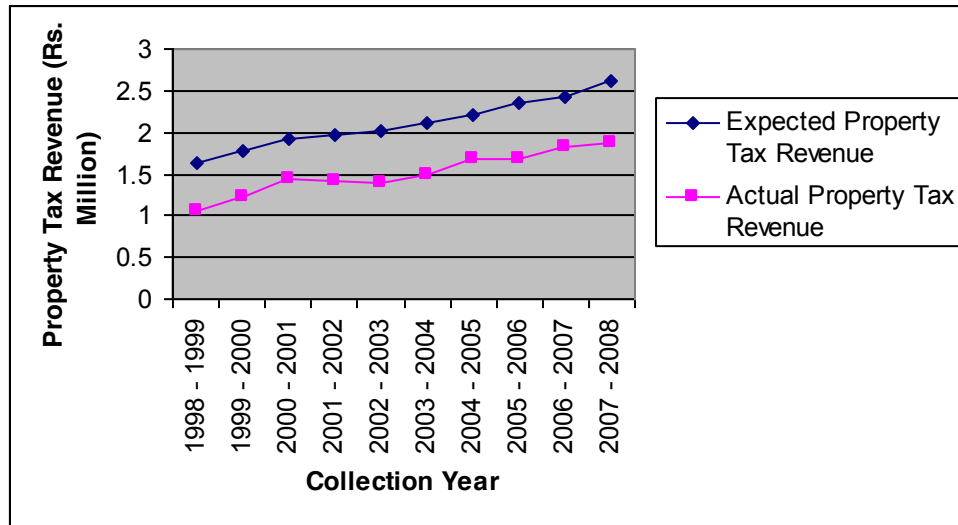
The penultimate ward under study in this thesis is Ward No. 2, Yeshwanthpur. Located in the North West of region of Bangalore City, Yeshwanthpur covers an area of 0.78 square kilometres.



**Figure 8.26: Map of Bangalore City showing the approximate location of Ward 2**  
(Source: Government of Karnataka, 2009)

According to the 2001 census, the ward has a population of 35, 972 people, whom BBMP records describe as being lower middle class. The area is described by revenue

officials as being an ‘old village area’, with a mix of both residential and commercial properties.



**Figure 8.27: Total Property Tax Revenue for Ward No. 2 (1998/99 to 2007/08)**  
 (Source: Author analysis, Bruhat Bengaluru Mahanagara Palike, 2009)

Figure 8.27 plots projected property tax revenue targets and actual revenue collections for the ward between the years 1998/99 and 2007/08. It may be seen from the graph that whilst projected revenue rises gradually and consistently during the period under study, the increase in actual revenue is not so smooth, and that there are two spikes in revenue collection – one in the year 2000/01 and the other in the year 2004/05 – and a period of falling revenue in between the two peaks. Collection efficiency in the ward is neither high nor low, with figures ranging between 64.8% and 76.1% with an average of 71.4%. Collection efficiency, as seen in Table 8.12, is highest for the years 2000/01 (75.6%) and 2004/05 (76.1%), implying that both the introduction of the Self Assessment Scheme and the computerised system did have an initial positive impact on tax compliance in the ward.

<b>Year</b>	<b>Compliance Level (%)</b>
1998 – 1999	64.80686695
1999 – 2000	68.21748879
2000 – 2001	75.69118414
2001 – 2002	71.42857143
2002 – 2003	68.96722939
2003 – 2004	70.87885986
2004 – 2005	76.1732852
2005 – 2006	71.32509587
2006 – 2007	75.12417219
2007 – 2008	71.86180422

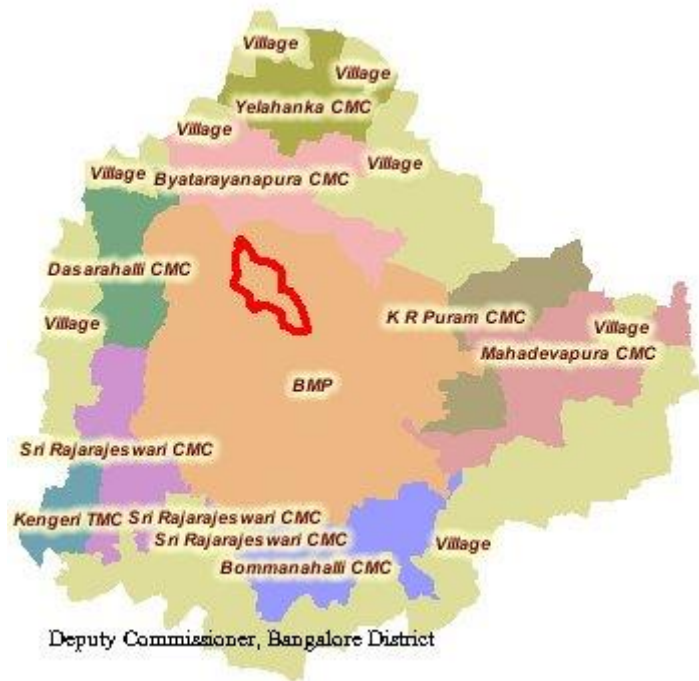
**Table 8.12: Levels of Tax Compliance for Ward No.2 (Yeshwanthpur) between 1998 and 2008**

However, tax compliance falls in the years following the two interventions, indicating that the revenue department has not been able to capitalise on the initial impact the two schemes have had in the ward.

#### **8.2.12. Ward No. 99: Aramanenagar**

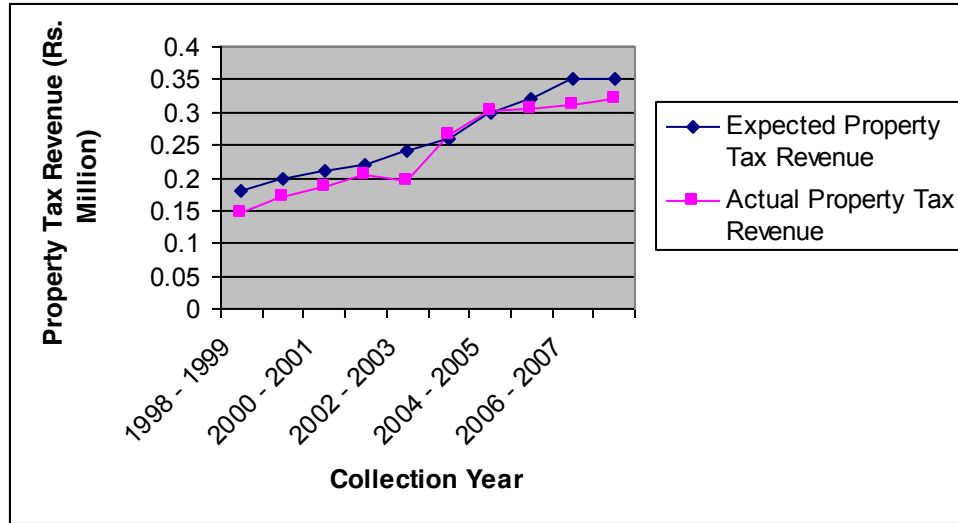
The final ward considered in this study is Ward number 99, Aramanenagar, may be found to the north-west of Bangalore city, spanning an area of approximately 7.47 square kilometres. The census of 2001 puts the population of the ward at 30,397 people,

most of whom belong to the lower-middle or low income groups. The ward is categorised as a new ward by the BBMP, and comprises chiefly of residential properties. *Figure 8.29* illustrates the total property tax revenue expected by the BBMP for Ward 99, together with the actual property tax revenue collected for the years 1998/99 to 2007/08.



**Figure 8.28: Map of Bangalore City showing the approximate location of Ward 99**  
*(Source: Government of Karnataka, 2009)*

It may be seen that whilst expected property tax revenues have been climbing steadily, actual revenues have been increasing erratically. Neither the introduction of the Self-Assessment Scheme in 2000/01 nor the implementation of the computerised system in 2004/05 appears to have had an impact on property tax revenues in the ward.



**Figure 8.29: Total Property Tax Revenue for Ward No. 99 (1998/99 to 2007/08)**

(Source: Author analysis, Bruhat Bengaluru Mahanagara Palike, 2009)

Year	Compliance Level (%)
1998 – 1999	81.6666667
1999 – 2000	85
2000 – 2001	88.57142857
2001 – 2002	93.63636365
2002 – 2003	81.6666667
2003 – 2004	101.9230769
2004 – 2005	100.6666667
2005 – 2006	95
2006 – 2007	88.57142857
2007 – 2008	91.42857143

**Table 8.13: Levels of Tax Compliance for Ward No.99 (Aramanenagar) between 1998 and 2008**

Collection efficiency figures in Aramanenagar over the ten-year period have been high, with some years recording close to 100% in collections and the average collection efficiency for the ward touching 90.8%, indicating a high level of tax compliance. However, as seen in *Table 8.13*, peaks in collection efficiency do not coincide with any major improvements implemented by the BBMP.

### 8.3. Comparison of Property Tax Revenue across Wards

Greater expected revenue targets, particularly in the latter half of the time period under study, indicate that the computerisation of BBMP property tax records has, to some extent, had a positive impact on tax administration in the selected wards. However, the tax authority has had mixed success in the actual recovery of this revenue as evidenced by compliance (collection efficiency) data. In order to examine further the impact that the computerised system has had on property tax revenue in the city, this study has compared tax revenue performance in 12 different wards across Bangalore.

Quantitative data obtained from revenue offices indicates that both the SAS and computerisation have met with only partial success. From an administrative point of view, expected revenues are seen to rise in all wards particularly towards the end of the 10-year period showing that, in all likelihood, the computerisation of records has resulted in more properties being brought under the tax net. However, these increases in expected revenue are not translating into actual returns, suggesting that initiatives such as the Self-Assessment Scheme are not really effective in the long-term.

It may be seen that on the one hand, richer and older wards with a greater proportion of residential properties have a tradition of paying taxes and, therefore, respond better to any new scheme that encourages tax compliance<sup>9</sup>. This is because owners have a vested interest in paying property tax regularly in order to keep their property titles secure, and are thus more responsive to schemes like the Self-Assessment Scheme as compared to taxpayers in other localities. Amongst the sample wards, this trend may be seen in Koramangala, Yeshwanthpur, and Rajajinagar, but is generally considered to be short term, with spikes in compliance in the years directly following the scheme's introduction indicating coincidence and not cause. The same trend may be observed in those older, more middle-class areas with a mix of residential and commercial properties such as Peenya Industrial Area. Some of the newer and less affluent wards such as Govindrajnagar, Moodalapalya, and Aramenenagar have also seen increases in tax compliance during the years following the introduction of the computerised system, as these are residential areas with a high percentage of residential properties. However, even in these areas, this trend also appears to be short term and is indicative of simultaneity of circumstance rather than cause.

On the other hand commercial areas, particularly those in older and richer wards, do not appear to have seen positive changes in tax compliance during the 10-year period under study. This is because the high rate of tax on commercial properties, particularly in richer wards, translates into a greater tax liability per property, meaning that property owners are often reluctant to make voluntary payments. Litigation relating to commercial properties is also often long-drawn out and expensive for the corporation, allowing

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<sup>9</sup> Personal communication from PP1, August 2010

owners to delay payments almost indefinitely<sup>10</sup>. This trend is true of the two wards in the sample – Richmond Town and Gandhinagar – which have a high concentration of commercial properties; but more particularly so for Richmond Town which saw a significant shortfall in tax in 2001/02 (the year after the SAS was implemented) followed by erratic collections in the years during which the computerised system was being rolled out.

One interpretation of these findings is that there is some confusion amongst revenue department officials as to the real purpose of the two schemes implemented over the 10-year period. On the one hand, the Self-Assessment Scheme is, and was always meant to be, a *means* of collecting taxes through voluntary declarations. The computerised system, on the other hand, was primarily instituted as a way of identifying properties and defaulters, and not a tool for collecting taxes *per se*, thus needing an enforcement mechanism to be useful as part of a more holistic tax administration system.

## 8.4. Conclusions

Data given to this researcher by the BBMP indicates that overall, both for Bangalore City as a whole and for the different wards under study, property tax revenues have been rising<sup>11</sup>. This trend is to be expected, as illustrated by *Figure 8.2* and *Figure 8.3*, given that the number of properties in the city has risen during the period under study as consequence of increased building activity. However, whilst both expected revenue

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<sup>10</sup> Personal communication from PP1, August 2010

<sup>11</sup> See *Appendix C*, p. 367

targets and actual revenue collections have been increasing for Bangalore as whole, actual collections have never equalled projected targets by a large margin. This tells us that while more properties are finding their way onto the assessment registers and are therefore being assessed, there are still a large number of properties in the city which are either on the records but not assessed or which are not on the records at all<sup>12</sup>. The same holds true for the select wards under study.

Collection efficiency figures show that tax compliance for Bangalore city was high, well above the national average of 60%. Average collection efficiency figures for the wards under study are mixed. Only one ward, Richmond Town, registers an average collection efficiency of less than 60%. Seven wards record an average collection efficiency of between 65% and 75%, indicating a moderate level of tax compliance. Three of the remaining wards have an average collection efficiency of between 75% and 85%, implying a moderately high level of tax compliance. Only the last ward, Aramanenagar, posts an average collection efficiency of over 90%, indicating very high tax compliance. This spread of figures tells us that while the current property tax administration system does encourage moderately high levels of compliance – brought about partly through amendments in the methods of assessing tax and partly by more thorough recordkeeping – a sizeable portion of expected income is still not being collected (not including income from those properties that have completely escaped detection by the tax authority). It is interesting to note that some of the richer, older wards post relatively low tax compliance figures, whilst some of the poorer wards record relatively high levels of tax compliance.

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<sup>12</sup> Personal Interview with PP1, August 2006; Personal Communication from PP1, August 2010.

This trend is further examined in the comparison between wards grouped into *residential/commercial*, *old/new*, and *rich/poor* categories. It may be seen that in absolute terms, old areas bring in more revenue than new areas, and rich areas bring in more revenue than poor areas. Increases in revenue are gradual in old areas and rich areas, and are more dramatic in new areas and poor areas. However, tax authorities in poorer areas and newer areas appear to be more efficient at identifying properties and collecting taxes than their counterparts in rich and old areas, illustrated by tax compliance levels. Data also shows that the introduction of the Self-Assessment Scheme and the computerised recordkeeping system has had mixed success in raising revenues and improving the collection efficiency of the local tax authorities. On the one hand both have succeeded in raising expected revenue figures by improving the efficiency of the tax authority, improving disclosures and bringing more properties onto the record books. However, their impact appears to be short lived: actual tax collections generally never meet projected targets, and data shows that these improvements to the system have brought about only temporary peaks in revenue collections and tax compliance.

One may conclude that in the wards under study, the impact of the computerised system has been particularly disappointing – in some wards revenue collections either don't peak or remain completely unaffected by its introduction and in others the effect is short-lived (i.e. it lasts one or two years before another dramatic fall in collections). In a lot of cases, the ability and efficiency of the tax authority to collect property tax appears to have decreased, indicated by collection efficiency figures. If the computerised system

has, as was claimed by interviewees, brought significant benefits to the revenue department in terms of time saved in processing tax returns, better recordkeeping, and greater efficiency in the administrative processes, the question needs to be asked as to why such gains have not translated into higher revenue collections and improved tax compliance. The possible reasons behind this failure and potential solutions will be discussed in the next chapter.

## Chapter 9

# What's in a Game? Discussing e-Government Success and Failure

The issue of differentials extant between ICT policy design and their eventual outcomes has, for the last thirty years, been the predominant subject of debate in academic research, and within those practitioner circles, concerned with the proliferation of information systems and with the development and adoption of the new digital Information and Communication Technologies in developing countries. This thesis, in seeking to unravel the social dynamics shaping e-government projects used to reform public sector institutions, extends this research agenda further; to include an in-depth evaluation of Heek's (2002) seminal *Design-Actuality Gap Framework*, and its direct application to local government-based e-government initiatives in India (*see* Chapter 2 (2.1)).

The value of such an approach is based on a review of existing development literature, together with a discussion of the scholarly canon concerned with both the evaluation of public policy, and with the discovery and discernment of instances of organisational 'best practice'; most of which has been found to err towards being largely anecdotal and overly systems-rational, in both its style and its content<sup>1</sup>. The main goal of this research was thus to approach the issues thrown up by the organisational and

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<sup>1</sup> For an advanced review and analysis of currently existing literature concerning the Design-Actuality Gap framework and its application within this thesis, *see* Chapter 2 (2.1).

institutional transformations that occur in public administration and, in adopting a three-pronged theoretical framework, to analyse a carefully selected case-study and attempt to bring a new perspective to the following questions:

1. Why do e-government projects succeed or fail, particularly in developing countries?
2. Would an understanding of the goals and objectives of actors in government institutions shed light on the dynamics of success or failure?

In attempting to answer these questions, this thesis focused on the empirical case study dealing with the design, implementation, and subsequent use of an electronic property tax system based out of the Revenue Department at the *Bruhat Bengaluru Mahanagara Palike* (BBMP) in Bangalore, India<sup>2</sup>. Central to data collection for the research project was the need to capture in full and to bring together a broad cross-section of different experiences. This requirement was achieved through a series of in-depth personal interviews with actors directly or indirectly involved on the project, with each giving an insight into different stages of the case's inception, implementation, innovation, and adoption.

## 9.1. The BBMP Project: A Critical Overview of Major Design-Actuality Gaps

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<sup>2</sup> See *Appendix A*, p. 361

Where the bounds of recent research on ICT policy evaluation and the discernment of *best practice* are limited to the identification of successes and failures of national public policies and flagship projects<sup>3</sup>, this thesis attempts to understand better the success, failure, and the transmutations inherent within information systems situated in developing countries through the practical application of the *Design-Actuality Gap framework* to its central case study. In doing so, the research presented herein builds on the given framework in order to develop a strong theoretical basis for the improved evaluation of government-sponsored ICT-for-development projects, and for a more nuanced analysis of participant actors and their strategic interactions.

The dimensions of the BBMP project *design*, as derived from a combination of research interviews conducted with governmental and non-governmental actors pivotal to the principle sphere of strategic game-play<sup>4</sup>, and a grounded theory analysis of government policy and action plan documents<sup>5</sup>, were found to be predominantly ‘hard’<sup>6</sup>; that is, they were determined to be as typically comprising of technical elements and standardised specifications that were characteristically *inflexible*, *unyielding*, and *resistant* to external stimuli-driven change. In contrast, the dimensions of project *actuality*, derived again from interviews with principle governmental and non-governmental actors<sup>7</sup>, and further informed

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<sup>3</sup> M. Naveed Baqir, Prashant Palvia, and Hamid Nemati, Evaluating Government ICT Policies: An Extended Design-Actuality Gaps Framework. In *Proceedings of Second Annual SIG GlobDev Workshop, Phoenix (USA), 14<sup>th</sup> December 2009*, p.2.

<sup>4</sup> For an advanced overview of research interview data as a primary source of evidence in the determination of the dimensions of project design, see Chapter 2(2.4.6.), pp.113-116.

<sup>5</sup> For an advanced overview of government documentation as a primary source of evidence in the determination of the dimensions of project design, see Chapter 2(2.4.6.), pp.116-117.

<sup>6</sup> For an advanced review and analysis of currently existing literature and evidence obtained from the central case study of this thesis, see Chapter 2(2.1), pp.38-40; Chapter 2(2.4.5.), pp. 110-113; and Chapter 7(7.1), pp.265-273.

<sup>7</sup> For an advanced overview of research interview data as a primary source of evidence in the determination of the dimensions of project actuality, see Chapter 2(2.4.6.), pp. 113-116.

by a grounded theory analysis of government policy documents<sup>8</sup>, were identified as being predominantly ‘soft’<sup>9</sup>; influenced and shaped primarily by the social context within which the system under discussion was situated.

### *1. The BBMP Project: Dimensions of Project Design*

The stated, overarching aim of the new computerised system was to improve tax revenues and tax compliance through the streamlining of tax administration processes by increasing back-office efficiency, simplifying methods of tax payment, reducing the amount of money lost through petty corruption, and by improving tax yields and citizen compliance through the speedy detection of tax evasion. Designers of the Revenue Department project sought to use automation and digitisation to improve data management in the revenue offices, reduce the use of discretion by government officials in revenue-related decisions, and make property tax collection processes more transparent. In particular, the system sought to increase revenues from property tax through better quality data, quicker evaluations, greater computational accuracy, and positive psychological reinforcement; whilst at the same time reducing losses in revenue occurred as a result of back-office inefficiencies and fraudulent practices through the use of digital databases and GIS maps.

An analysis of the BBMP project using data obtained through a series of in-depth interviews with revenue officials revealed that both project planners and revenue officials

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<sup>8</sup> For an advanced overview of government documentation as a primary source of evidence in the determination of the dimensions of project actuality, *see* Chapter 2(2.4.6.), pp. 116-117.

<sup>9</sup> For an advanced review and analysis of currently existing literature and evidence obtained from the central case study of this thesis, *see* Chapter 2(2.1), pp.38-40; Chapter 2 (2.4.5.), pp. 110-113; *and* Chapter 7(7.1), pp.265-273.

in the field felt that the manual system of property tax administration was archaic, opaque, and inefficient. Interviewees believed that property tax collections under the manual system had been bogged down by poor record keeping, slow processing times, and overcomplicated assessment and payment procedures; all of which had produced frustrated taxpayers and low levels of tax collection. It was felt that the computerised system would alleviate these problems and, by improving the corporation's image, would result in higher citizen compliance and greater tax yields.

To achieve this, the core planning team designed a system centred on an online digital database that would contain comprehensive tax-related data for every property in the city. This database was to be created not just by gleaning information from existing paper-based records, but through the complete overhaul of the manual property tax register system itself: a process by which data on each property would not only be collated from all possible paper-based sources, but also through physical checks of properties made by inspectors and surveyors to confirm existing details and identify new constructions. Once completed, the electronic database was expected to aid revenue officials in the process of tax administration and collection; reducing their workload by cutting down data inaccuracies, facilitating speedy data retrieval, and hastening back- and front-office processing times. More specifically, project planners hoped that the computerised system would translate into higher tax revenues for the municipal authority through:

1. Better quality data, which would lead to more accurate, quicker evaluations and fewer mistakes. Technology would allow tax officials to monitor their wards better and widen coverage; helping them stay aware of individual citizens' tax status and easily update records with the details of new properties. Further, up-to-date records would allow them to identify defaulters, keep track of them, and eventually collect tax and arrears due.
2. The introduction of an electronic interface (and the management of the system by private operators), which would reduce the amount of revenue lost through petty corruption; both by deterring fraudulent practices through the introduction of tamper-proof processes as well as by reducing the contact between revenue officials and the public.
3. A significant psychological impact on taxpayers, which was expected to boost compliance levels. On the one hand, it was hoped that citizens would respond favourably to faster processing times, fewer queues, better access to data and services (online and from multiple citizen-centric kiosks spread across the city), transparent processing, and improved customer service. On the other, the use of electronic databases was expected to deter tax evasion and corruption by playing on the perception that irregularities in the records would be more easily detected and followed up.
4. The development of a *Geographic Information System* (GIS) technology and its integration into the system, thought to be a crucial step towards improving

absolute tax revenue yields and boosting compliance levels. Project designers sought to create detailed digital ward maps which showed every property in the city and link these with property specifications and tax details, thereby making it easy for revenue officers to monitor tax payments and changes to properties.

From the above discussion, it may be concluded that in particular evidence are both *Hard-Soft Gaps*, or the differences arising between the proposed, rational design of the technology and the actuality of the social context within which it currently operates, and *Public-Private Gaps*, or the mismatch that emerged when a technology designed by and intended primarily for private sector organisations was used in the public sector without being adequately adapted to the recipient organisation. The following sections of this chapter will analyse and interpret the origins and impact of such gaps in greater depth.

## *II. The BBMP Project: Dimensions of Project Actuality*

Research presented previously in this thesis has demonstrated that the roll-out and implementation of the BBMP project has met with mixed success, and has had a varied impact on levels of tax revenue collection and on citizen compliance. This, as mentioned earlier, is primarily due to the emergence of a number of *design-actuality gaps* or *conception-reality mismatches* created during the initial design and implementation stages of the project that have not subsequently been addressed during its eventual implementation, and is clearly evident in the analysis of quantitative and qualitative data presented to the reader in earlier chapters.

On the one hand, initial signs have been encouraging: the efficiency of tax assessors has undoubtedly increased, with data showing that more and more properties are being brought into the tax net, and with interviewee reports corroborating that fact that a more systematic watch is being kept on the number of properties in the city and their various uses as a result of the system. Additionally, figures indicate that the development of simplified methods, tools, and downloadable applications to streamline work processes, such as the online tax calculator, has resulted in fewer disputes reported between revenue officials and citizens related to the accurate assessment and collection of tax. Interviews and anecdotal evidence suggest that citizen service centres and online payments facilities have resulted in a decrease in the amount of revenue lost through petty corruption. Media reports further indicate that there has been little resistance encountered, either internally from revenue staff or externally from the public, during the adoption of the new system. Collection efficiency figures further demonstrate that tax compliance for Bangalore City on average (and for most of the city wards under study) is higher than the national average of 60%.

On the other hand, the BBMP system has not completely achieved what planners had hoped it would. Property tax revenue data for Bangalore City taken from the period 1998/99 – 2007/08 indicates that whilst revenues increased in absolute terms over the ten year span as a result of greater building activity, with more properties coming under the tax net and (to some extent) improved compliance, there still exists a substantial gap between expected tax revenues and actual collections. It would thus appear that whilst many properties have been duly registered and assessed, a large number of citizens are

still managing to evade paying taxes owed. Gains accrued from improvements in back-office efficiency are also being lost due to a lack of effective enforcement measures required to collect tax from chronic defaulters.

In consequence, questions may also be raised about the true impact that the computerisation of property records has had on compliance, and whether these have exacerbated design-actuality mismatches. Changes in property tax data over the period under study indicate that increases in tax compliance responding to ‘improvements’ in the tax system tend to be short-lived, at best sustained for a couple of years. Contrary to project planners’ expectations, neither revenue officials nor citizens have responded to the digitisation of property registers as enthusiastically as they did to changes in the process of filing tax returns. In short, perceived gains in citizen goodwill made by the revenue department through the digitisation of records and processes appear not to have translated into concrete, sustained gains in terms of increased compliance and revenues.

### **9.1.1. Examining Key Design-Actuality Gaps**

Preliminary findings thus suggest that the project may, at the time of writing, be classed as a *partial failure* under Heeks’ three-fold categorisation. However, as evidenced by the discussion, it is neither a straightforward case of the outright inability to achieve objectives nor is it a so-called ‘sustainability failure’. Instead, whilst most major goals defined by project planners have been attained, the project has not wholly succeeded as a consequence of flaws in its stated design, resulting in a number of significant undesirable outcomes. The primary cause of the failure to meet stated aims

appears to be the emergence of and deepening of fundamental Hard-Soft gaps, stemming from competitive and divisive moves made by actors in key interactions relating to the system's design and implementation that have generated conflict and disharmony in and have disrupted later attempts to get both revenue officials and citizens to adopt the system seamlessly. Private-Public gaps are also in evidence; sectoral differences resulting, again, from fierce competition and culture clashes brought on by the differing values of private sector, public sector, and non-governmental players, each loaded with different objectives and differing work ethics.

Through the computerisation of the property tax system, project planners sought to improve levels of efficiency in the process of tax administration, particularly from the view of back-office functioning. An evaluation of whether this aim was met may be done using data obtained from interviews with revenue officials based in different ward offices. On the one hand, there is a resounding consensus amongst interviewees that the system has indeed improved recordkeeping, shortened processing times, reduced mistakes in tax administration, cut down the workloads of revenue staff, allowed for greater accountability and transparency in the revenue department, and made it easier for tax officials to identify and track defaulters.

Staff reported in interviews that the computerisation of paper-based records resulted in the creation and implementation of new, more comprehensive, and sustainable data collection processes which not only brought the records of existing properties up to date and helped maintain them, but also lead to the identification of new properties and

their subsequent inclusion in the tax net. Citizens no longer have to wait for a designated official to arrive at his office so that they might consult their records, all information is made available online or can be accessed from a network of citizen service centres and special kiosks spread out across the city.

Possibly the most serious design-actuality gap to arise, and the one which came to have a hugely negative impact on the eventual outcome of the project, was the Hard-Soft skill gap prevalent in revenue offices which project planners failed to take serious note of and bridge in time. The system, though extremely simple to use, was designed for revenue officials with both a basic knowledge of I.T. as well as a minimum familiarity with using digital databases. Although this was recognised early on in the project, the programme to train field officers was scrapped by the Corporation soon after the primary drivers of the scheme – the eGovernments Foundation – walked out, leaving a large number of staff untrained and unaware of the system's many features including the much-vaunted GIS.

One of the first decisions taken by the new project group was to hire private computer operators to bridge the skills gap in ward offices and to achieve a split in the process of tax administration whereby revenue officials were left with the responsibility of the overall administration of the tax, whilst the day-to-day mechanical maintenance of records, retrieval of data, and collection of payments would be outsourced to private computer operators who – having no stake in the tax collection process – would not have an incentive to take bribes or misuse property records. Although this strategy initially

proved successful, it was found to not have completely eliminated losses from petty corruption and do nothing to tackle the psychological mind-sets and material circumstances associated with the problem<sup>10</sup>. In fact, abandoning the training scheme put in place by the e-Governments Foundation in favour of private operators only exacerbated the poor skill levels within the department and created further problems.

Ward offices have come to depend heavily on the private computer operators assigned them, a dependence that has only succeeded in hampering office efficiency. To begin with, it has created a potential security risk with only one person in the entire revenue office possessing complete and potentially unlimited access to the property tax records of an entire ward. Whilst revenue employees can read and interpret data once it is fed into a machine, there is no-one else in the average revenue office, not even the Assistant Revenue Officer, who can ensure that data is being inputted and handled in the correct way. The theoretical check-and-balance in the system – the senior revenue official who could also access records with a specially assigned username and password – is in many cases rendered useless as the officials in question do not have the IT skills necessary to monitor digital records. In fact the stark reality is, that in most cases, the private computer operator logs on to the system using the ARO's name and password.

Thus, in attempting to eliminate contact between revenue officials and the public, the system in its current form has created a new set of intermediaries who have the power to manipulate and disrupt the smooth functioning of the system at will, should they choose to use it. Revenue employees are simply not equipped with the necessary skills

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<sup>10</sup> Personal Communication from PP1, August 2010

and mind-sets needed to adapt to a more digital way of working. This reliance and inability to use the technology directly has affected office dynamics and led to frustration amongst employees, as senior revenue officials do not have the knowledge or training necessary to fulfil their supervisory role and junior staff members feel a reduced capacity for independent work and consequently fear for their jobs.

The low skill level within revenue offices has also created another, related problem: underemployment. Whilst the introduction of computerisation and re-engineered processes has reduced revenue staff workloads, it has not been followed by either the re-organisation of the internal structure or by a paring down of the workforce that would have followed similar technological change in the private sector. This has left a number of junior officials with very little or nothing to do. The result, evident from interview data, is that frustration has set in as the disconnect from the system has grown, with even once-enthusiastic senior officials expressing dismay at their lack of training and feelings of helplessness. Low levels of motivation have not helped to build confidence in the system, indeed some junior officials have begun to openly criticise the use of an electronic interface between themselves and the public saying that it has harmed, rather than aided, the rapport so crucial to maintaining high levels of efficiency and increased tax compliance.

A worrying trend emerging from data gathered during the course of this research is that revenue officials on the ground are not at all familiar with the central element of the new property tax system: the GIS maps. This unfamiliarity brings to light a glaring

Public-Private gap; a sectoral difference relating to the attitude and values of different members comprising the core project group towards the purpose that these maps were meant to serve. For the private sector members of the group (namely those from the eGovernments Foundation), the GIS maps were meant to empower both revenue officials and citizens by allowing both groups to digitally map tax payments and tax histories online. However, public sector members viewed the functionality of these maps in a completely different way: whilst they too wanted to make the digital mapping of properties in the city the cornerstone of the project, they saw GIS technology merely as a means of identifying new properties and increasing tax compliance. This was reflected in the move to keep the technology as the preserve of either very senior officials or those AROs who had some background knowledge of computer systems, whilst the ‘average’ revenue official remained unaware of its existence and was left instead to track defaulters in the time-honoured way of trawling through the records.

## 9.2. Success and Failure in the Context of the Ecology of Games

An examination of interview data and other documents brought to light a number of extensive-form games in different game arenas, each involving key actors related to the project, whose interplay had a bearing on the project’s eventual outcome; its successful and unsuccessful aspects. No single strategic interaction between constituent actors can account for the ultimate outcome of the Revenue Department project, and instead the impact that the system has had on property tax administration can be best understood as an *interacting set*, or as an *ecology of games*; as discussed in previous chapters of this thesis. Games that shaped the development and adoption of the system

under examination appear to have be layered or ‘nested’; with some contained within others.

Key games found to have significantly shaped the outcome of the property tax system appear to have been played during the initial stages of the process; either at the level of the project itself (in the form of positive *and* negative interactions between members of the project planning committee), or at the stage of internal implementation and adoption (between the core project team and the intended end-users, i.e. the various field officers), thereby corroborating the findings of the design-actuality gap analysis discussed in the previous section. The Tax Compliance game, played between the BBMP and the taxpayers of Bangalore city, became the only city-level game to have had any significant impact on the project. In contrast, the other games occurring at the city and national levels have primarily been ideological games and games centred on the interplay of market forces; and have, hence, had little direct bearing on the tax administration system and its eventual fate.

### **9.2.1. Impact on Back-office Efficiency**

The eGovernment Movement provided the catalyst for the project, in that it set BBMP elites thinking about the need to differentiate Bangalore’s City Corporation from those of other cities – albeit for their own prestige – and spurred senior bureaucrats into designing and implementing a computerised system which enhanced and modernised the functioning of the Revenue Department. The next stage of the process, the formation of the core project planning team, saw a number of negative moves being played out

between the various actors involved. These, however, were quickly neutralised by altruistic game play during the key game of System Conception and Design, where public sector administrators put aside their differences and selfish motivations to work constructively with their private sector partners. This change in attitude proved crucial, as the positive interactions it engendered resulted in better understanding between key actors involved in the process of design and implementation, resulting in a large number of desired benefits being achieved.

In this way, many potential design-actuality gaps were avoided, and the chances of project success increased. The process of deliberation and discussion between project planners and field officials, for instance, that occurred at the beginning of the design stage, resulted in the identification of several key areas within which electronic systems needed to be deployed. The most important discovery to arise out of these discussions was that the very heart of the system – the tax records themselves – needed a complete overhaul; an insight that led to the eventually successful introduction and city-wide adoption of the digital database. Its implementation has resulted in a dramatic improvement in recordkeeping, and has produced a knock-on effect that has greatly benefitted the work of revenue officials in several ways.

The Digital Democracy game was followed closely by an extensive-form game for Efficiency played out at the level of the Corporation between project planners and revenue officials in the field. What ought to have been a highly constructive, coalition-building game, one that demonstrated to officers and junior staff how computerisation

could save time, money, and resources, turned exceedingly sour as the highly negative interactions that transpired in previous games led to the complete scrapping of the training programme which was to have built up basic IT skills in revenue offices. Instead, the skills deficit amongst the rank-and-file of revenue staff now resulted in an almost total rejection of the system. The remaining members of the project team also began to play a Management Control game that would eventually disrupt the internal balance within their respective branch revenue offices; creating power struggles and turf wars that reduced the overall efficiency of the revenue staff cadre.

The lesson here is, therefore, that the type of games played and attitudes adopted at the outset of the design and implementation stage of a project, and the nature of the moves and strategies adopted by players during these interactions, are crucial to the eventual outcome of a given endeavour; negative game play partaken in just prior to the rolling-out of a project is likely to have a harmful impact on the nature and the intensity of moves made and strategies chosen in subsequent actor interactions.

### **9.2.2. External Relationship with Citizens**

Key to the umbrella game of Tax Administration, involving as it did significant aspects of the Revenue Department's relationship with the public, was the outcome of the Tax Compliance game. Project planners aimed to improve tax revenues, overall citizen compliance, and reduce tax evasion using both *hard* (technical) approaches and *soft* (psychological) persuasion to increase revenues and to improve collection efficiency. The two central technical measures selected as means to achieve these aims were 1) the

setting up and maintenance of a complete up-to-date digital property register (which kept track of, amongst other things, changes to properties and to their tax status), and 2) the development of a GIS database consisting of detailed virtual ward maps (which, when linked digitally to the property register, allowed for a visual representation of each individual property's complete tax status).

Planners aimed to further boost the impact of their technical systems through the use of both *positive* and *negative reinforcement*; they hoped, for instance, that the new hassle-free system would encourage people to pay taxes, whilst at the same time supplying a law-enforcement deterrent in form of an express threat of penalised if caught evading taxes or indulging in petty corruption. However, this particular combination of tools meant that the outcome of any extensive-form or normal game played during the planning and implementation stage of the project would automatically have an impact on the nature and direction of Revenue Department interactions with citizens. In the same manner, the BBMP Image Building Game would, at a later evolutionary stage, also have a significant impact on the public's perception and reception of the system.

A clever move in the Game to Improve Tax Compliance was to make citizens responsible for paying their taxes. This was first done through the implementation of the Self-Assessment Scheme (*SAS*); an initiative that preceded the computerisation of property tax records, and which made citizens responsible for the assessment of their tax dues in providing them with the requisite tools (*forms, tax brackets, and other information*) necessary to make those calculations. With its introduction, barring a

handful of cases wherein citizens did not file their returns, tax inspectors no longer had to go door-to-door to make assessments and effectuate collections. The introduction of the computerised system made citizens further responsible for their taxes; firstly, by providing them with an online tax calculator to help them make accurate assessments, and then, by eliminating the restrictions previously placed on payment.

The online property database opened up, further, the opportunity for the Revenue Department to create new payment gateway windows, such as those at the Citizen Service Centres; set up across the city and open from dawn-till-dusk, these strategic interventions gave citizens the freedom to pay their property tax dues at collection points other than the local tax office or bank, at their own convenience. The digitised database was also integrated with an innovative one-stop portal named *BangaloreOne* (or *B1*); in order that citizens could attend their centres to access their tax records and to make payments. Today, tax inspectors are chiefly preoccupied with issuing computer-generated notices to defaulters, whilst more-senior officers tackle complaints (the number of which, according to interviewees, has gone down since the system was put into place). This kind of strategic game interactions has, however, not been without its drawbacks, for most revenue employees find themselves with little to do, not having had the training to adapt to a digital way of functioning.

Interviews with both project planners and officials in the field place great emphasis on the positive psychological impact that the introduction of the computerised system has had on taxpayers, as well as its importance to games of strategic Tax

Compliance and to those of strategic Image Building. Buoyed by the apparent success of the Self-Assessment Scheme in encouraging voluntary payments, project planners hoped that a digitised system would further incentivise prompt payments by increasing the degree of simplicity and transparency prevalent in current administrative processes. In strategically using this form of incentive as the centrepiece of both their Tax Compliance game and as part of a wider promotional initiative, the hopes of officials involved appear to have been borne out actively to a significant degree in reality. Revenue officials report that, from their perspective, the new system has resulted in better government-citizen relationships, and has gone a long way towards improving the Corporation's image by exploding some of the negative myths associated with paying property tax.

Salient major factors responsible for this increase in goodwill include the ease with which information has been made available to the public, the speed at which tax payments and property-related matters are processed, and the manner in which private system operators have been deployed to intermediate between the revenue offices and the public. In-game moves such as the digitisation of the property register, and the strategic act of making it available to the public online, have further simplified other aspects of the tax collection process; allowing for multiple payment points to open across the city, and for the incorporation of numerous additions to the website, including a secure online payment option.

In addition to a surge in goodwill accruing to the Corporation, project planners claim that there has been a marked fall in deliberate tax evasion; for, not only does the

system give no room for error whilst calculating tax and identifying defaulters, but the use of computers has also resulted in a decreased interaction between citizens and government tax inspectors, thereby cutting down opportunities for collusion between the two groups. In saying this, they claim, innovations such as the online property tax calculator, being accessible to both government officials and to citizens, have helped reduce arbitrary assessments; and have instead allowed for the precise calculation and collection of tax. Citizens are now able to accurately calculate property tax online prior to filing their returns, thereby being aware of exactly how much tax they owe the government, and being capable of reducing instances of erroneous assessments; whilst simultaneously, tax officials are also able to precisely compute how much tax revenue they ought to be receiving, in accordance with certain set criteria, and thereby aiding law-enforcement through the thwarting of attempts by citizens to undervalue their properties.

In this respect, whilst an online tax calculator alone would admittedly not completely stop officials from overcharging citizens or prevent taxpayers from making false declarations in games of competitive or non-co-operative import, its presence serves further to act as a deterrent for those tempted to undervalue their properties by making transparent – available to all, at the click of a button – the process and the criteria by which property tax is computed, and the precise amount of money that is owed to the tax authority. In the long term, in simplifying the process of tax assessment, an online calculator could make the prospect of filing taxes less daunting, and consequently more attractive, for the average citizen.

A few officials, however, take the opposite viewpoint. They contend that the moves and strategies utilised whilst computerising the old administrative system have resulted in a marked *depersonalisation* of the process; pensioners, for instance, as was reported in previously in *Chapter 6*, prefer to build a rapport with their taxman, and failed, as a result, to like the new system of having to interact with an anonymous kiosk operator. Similarly, the new system does not possess an adequate enforcement mechanism to back it up; whilst defaulters can be easily identified, they still have to be chased down by tax inspectors and, barring long drawn-out and expensive litigation, there exists no real in-built mechanism that can force them to pay.

### **9.2.3. A Brief Note on Collection Efficiency and Tax Compliance Data**

Current collection efficiency figures stand to illustrate that any positive effect on taxpayer compliance, realised from the complete computerisation of the old administrative system, has generally been of note only in the short-term, and has typically not as been as great as the impact that the Self-Assessment Scheme has seen some years earlier<sup>11</sup>. To add to the growing concern, reports in the media and conversations with senior tax officials indicate that both the digital property tax register and the GIS maps for the entire city stand far from being ready<sup>12</sup>. Hence, although collection efficiency figures for the city, and for most individual wards, are high, thereby indicating a relatively high level of tax compliance, a closer look needs to be taken at the precise

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<sup>11</sup> See *Appendix C*, p. 367

<sup>12</sup> PP1, Personal Communication, 2010.

impact that different government initiatives have had on the public's *willingness* to settle tax liabilities.

The Self-Assessment Scheme and *Palike* have succeeded in raising expected revenue figures; both, by enhancing the assessment efficiency of the tax authority, by improving the number of tax disclosures, and by bringing more un-registered properties onto the record books. However, figures collected for the city in its entirety, and within select wards, demonstrate that these strategic measures have met with mixed success: their impact appears to be short lived, with actual tax collections generally never equalling projected targets, and with improvements in the system appearing to only bring about temporary peaks in revenue collections and in tax compliance<sup>13</sup>. The overall game-strategic impact of the system comes across as particularly disappointing when discussed in terms of the negligible impact it has on both absolute revenue figures and on tax compliance. Data trends, particularly when framed in compliance terms, suggest that citizens tend to respond more to the game-strategic positive message of a simplified process of tax assessment that puts them in charge, rather than to the implementation of a toothless punitive system that makes empty threats about dealing harshly with tax evaders.

Therein lies the problem. Whilst the computerised property tax revenue system has improved back-office processes significantly, it does not, in its current form, possess any concrete mechanism built-in to encourage compliance and to aid in enforcement. In other words, *the introduction of a computerised database is not enough to close existing*

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<sup>13</sup> See *Appendix C*, p. 367

*loopholes in the self-assessment process.* Delays in the development of key system features, resulting primarily from conflicts of interest on different sides of the Design and Adoption game, have meant that people are still able to undervalue their properties, either on their own or in collusion with tax officials; resulting in low revenue collections despite more properties being brought under the tax net. In some cases, the right buttons haven't been pushed, the appropriate strategies not selected.

No attempt has been made, for instance, to educate the population regarding the importance of property tax revenue compliance; either for their own personal benefit (as form of proving property ownership), or for the well-being of the common good<sup>14</sup>. Tax officials on the ground – stripped of certain job functions, distanced from the public, and disconnected near-completely from the process as a consequence of poor IT skills – are often very frustrated and lack the motivation necessary to make the system work at its optimum level. Hence, whilst the process of tax administration has been successfully streamlined, simplified even, the computerised system has only partially succeeded in achieving its other stated aim of improving tax collections in the city; calling into question the overall viability of such a top-down, command-and-control approach as an operational strategy.

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<sup>14</sup> Personal communication, PP1, 2010

### 9.3. Workplace Organisation, Structure, and Political Institutions: Exploring Adaptation to Change in the Age of the Internet

The discussion above reveals that at the heart of a design-actuality gap usually lies a power struggle brought about through a deep-seated mistrust between different actor groups engaging in strategic manoeuvres. In particular, the case study demonstrates that gaps in otherwise highly structured plans arise because those with the power and authority to take design or implementation decisions are usually unwilling to allow any initiative to go ahead that would give the other actor group(s) in the game more autonomy or greater control over the given system.

The identification in *Chapter 3* of the actors engaging in strategic action related to the administration of property tax in India at its most basic, and the discussion of the games they play and the choices they make during the process of tax administration and reform, highlighted the fact that if property tax is administered and reformed almost exclusively by a local government authority using conventional policy and fiscal tools, then the game-arena within which games are played out remains highly localised, with the number of actors restricted and their moves limited or severely curtailed. However, as the central case study illustrates, the introduction of ICTs into the reform process will not only add more actors to the mix, but also introduce different levels of strategic interaction and open up the playing field to a larger number of moves and decisions; as the use of technology in development is connected to much larger national and international policy discourses.

As the analysis in *Chapter 6* has shown, certain key extensive-form games with local impacts get played out in different arenas between actors influenced by not only local, but also national and international factors. Design-actuality gaps open up and give way to unfavourable project outcomes if designers and top managers assume that localised outcomes result only from direct local influences; discounting the impact of other factors external to the project at hand. In the light of such an evaluation, what significance, it may be asked, has the computerised system had on the process of organisational reform within the context of the BBMP Revenue Department, and what effect has this in turn had on institutional change, vis-à-vis the *Bruhat Bengaluru Mahanagara Palike*?

From the discussion and analysis of the BBMP property tax system presented above and in previous sections of this chapter, it may be concluded that despite the presence of *self-interested* and *competitive* game-play during the development of the Revenue Department system, *co-operation* during the Introduction and Adoption stages of the process has resulted in positive steps being taken towards attaining organisational reform and institutional change within the given context. When spoken of in terms of changes at the base level of the organisation, the digitisation of the tax registers and the automation of processes have increased the efficiency and morale within the Department by speeding up tax administration processes, reducing mistakes, and lowering workloads.

Within the greater context of the institution, the project has also seen some success. By allowing citizens the right to access their records and to pay off their

liabilities at their convenience (either online or at designated kiosks), the corporation has adopted a radical citizen-centric approach to tax administration which has not only shifted the balance of power within the government-citizen relationship in favour of the citizenry, but has, at the same time, made citizens more responsible for the well-being of the general commonwealth. This approach may be considered as a real departure from traditional notions of Indian bureaucracy; wherein not only is power concentrated in the hands of a few bureaucrats, but also that citizens can afford to be passive actors in administration *meta-games*. However, as some of the key organisational and institutional variables have not yet been put into place within the framework of the project meta-environment, and there is as yet no mechanism by which problems might be identified and bridged during the implementation process, the long-term direction of these changes remains uncertain. Of particular concern in this respect are the attitudes of revenue employees towards the changes manifest in work processes, and towards the shifts occurring within occupational hierarchies.

#### 9.4. Analysing the Value of the Ecology of Games Framework Within the Context of Rational Choice Institutionalism and Behavioural Game Theory

The metaphor of games has long since been used as an analogy to explain certain features of political behaviour within the various organisations and institutions that comprise civil and civilised society. The concept of games, and the idea that human behaviour might be grouped into diverse spheres of strategic influence, as developed within the social sciences, assumes that, during their interactions, actors develop strategies for negotiating with others,

for taking rational and calculated decisions, and for maximizing their needs. This thesis focuses on the *prevalence, significance, and impact of Extensive-Form Games* in political institutions and in socio-economic organisations. The research presented herein adopts a *behavioural game-theoretic* approach to the study of *strategic human action*. One that endeavours to add a human dimension to the *basic rational actor* that is otherwise assumed in most models of *Rational Choice Institutionalism* and *New Institutionalism*, and in traditional (mathematical) *Game Theory*; particularly so by focusing on how real people actually play, or live out, predictive mathematical models and theoretical situations.

Located within the broader scientific disciplines of *Behavioural Game Theory* and *Rational Choice Institutionalism*, *The Ecology of Games* provides us with a *theoretical framework* appropriate for the discussion and analysis of the *strength* and the *impact* that the *interplay* of *individuals, groups, and interests* has on both the *shaping* of e-government projects, and on the *evolution* of the organisations and institutions that adopt them. The question, however, must be asked: *what added-value, if any, has the application of this theorem brought to the practical study of e-government initiatives and ICT4D projects?* Through a discussion of the central case study presented in previous chapters of this thesis, the answer to this enquiry has been progressively drawn out and illustrated forthwith; with the most salient points of the argument *in locus* being summarised succinctly *below*.

Firstly, the notion of an ‘Ecology of Games’ offers us a framework for thinking about an extremely complex set of strategic interactions; identifying and highlighting the roles played by those who shape and are shaped by the rules of a given game or *meta-game*, and the impact that each player has on the ultimate outcome of a project or an initiative. This emphasises, particularly, the potential for unanticipated, unplanned developments impacting and deflecting the nature and direction of project success; raising doubts over the validity of those more conventional, Information-Systems- based perspectives of e-government that see project implementation as being governed by a more controlled, isolated, and predictable system of action.

The framework also focuses on the notion of ‘*symbolic politics*’, what Dutton (1992) in his discussion of the theorem has described as the role played by ideas in political change<sup>15</sup>. Whilst democracy and democratic politics, and the formulation of policy, are, in part, a contest over ideas and about how to define and to achieve the common public good, it has been noted often that empirical scholars of political science have been altogether remarkably resistant to the notion of giving ideas a central explanatory place in their accounts and narratives<sup>16</sup>. The Ecology of Games amends this, emphasising, not only the way in which the development of ideas shapes political interactions, but also highlighting the emergence and the role of new bearers and interpreters of those ideas (such as the global media) as key players impacting the ultimate success or failure of an endeavour.

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<sup>15</sup> William H. Dutton, ‘The Ecology of Games Shaping Telecommunications Policy’, *Communications Theory*, vol. 2, issue 4, 1992, p. 325

<sup>16</sup> Jal Mehta, ‘Ideas and Politics: Towards a Second Generation’, *Perspectives on Politics*, forthcoming, 2010, Available at:  
[http://www.allacademic.com/meta/p\\_mla\\_apa\\_research\\_citation/0/2/2/1/1/pages22111/p22111-1.php](http://www.allacademic.com/meta/p_mla_apa_research_citation/0/2/2/1/1/pages22111/p22111-1.php)

As an approach to research, *The Ecology of Games* has yet another advantage, in that it helps identify cross-pressures facing key actors often involved in more than one game or strategic manoeuvre; recognising that e-government project development is not, contrary to conventional frameworks, a self-contained system of action<sup>17</sup>. Instead, as illustrated by the case study put forward in this thesis, the framework recognises that projects are usually formulated and implemented in parallel with other (sometimes unrelated) policies. As noted earlier by Dutton (1992), many players in one policy area interact simultaneously in others; and, hence, consequently, the outcome of the political process in one sphere of influence or of action often shapes decisions and interactions within another<sup>18</sup>. In analysing strategic political game-play, the framework provides us, therefore, with a more nuanced interpretation of the broader system of action within which the development of an e-government project emerges; emphasising again the role of unplanned, unanticipated interactions between various vested interests, and the formation of unconventional interests and alliances as a result of shared goals. Nothing is new about many of these interactions, they often repeat themselves through the ages within a variety of situations, yet conventional theories of strategy tend to either ignore or to underplay them.

Using the Ecology of Games perspective does, however, mean that a number of limitations and difficulties need to be acknowledged. *The Ecology of Games* is, firstly, subject to the same five weaknesses that characterise, and oft-typify, both *Rational*

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<sup>17</sup> Dutton, 'The Ecology of Games Shaping Telecommunications Policy', p. 324.

<sup>18</sup> Dutton, 'The Ecology of Games Shaping Telecommunications Policy', p. 322.

*Choice Theory* and *Behaviouralism* in all its forms<sup>19</sup>. The base framework, in its current avatar, is severely bounded by **Contextualism**, or the tendency of its proponents to subordinate political phenomena by watering them down into societal phenomena; in seeing politics as an integral part of civil society, but being less inclined to want to differentiate the polity from the rest of productive society. The theorem, in being more practitioner-oriented, and thereby applicative in its nature and its scope, also falls prey to **Reductionism**; in the gross propensity of its basic precepts to see political phenomena as the aggregate consequences of individual behaviour, rather than possessing the inherent ability to link political outcomes to either organizational structures or to rules of appropriate conduct.

The theory's base constructs are also inclined to conceive action as the product of calculated self-interest (or not), without acknowledging the response of political actors to either base emotions, as dictated necessary by the broad discipline of *Behavioural Game Theory*, or to obligations and duties; thereby finding themselves at odds with the cardinal precepts of **Utilitarianism**. Similarly, in affecting the assumption that history is an efficient process moving towards equilibrium, leading to the smooth and untroubled evolution of the political process, research and long-term studies centered around the *Ecology of Games* find themselves on the wrong side of **Functionalism**. Studies that utilise the *Ecology of Games* as their foundational theorem, do also, on balance, fall afoul of **Instrumentalism**; or the tendency of the base theoretical and applicative constructs to define the key concepts of decision-making and the allocation of resources

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<sup>19</sup> James G. March and Johan P. Olsen, 'The New Institutionalism: Organisational Factors in Political Life', *The American Political Science Review*, vol.78 no.3, 1984, p. 735

as the central concerns of political life, thus paying poor attention to the ways in which political life is organised around the development of meaning and identity through the concerted use of symbols, rituals, and ceremonies.

The second limitation of the *Ecology of Games* is that the perspective is essentially a 'sensitizing' construct; a *background theory* that offers us a certain way of *seeing*, of *organizing*, and of *understanding* complex reality<sup>20</sup>. Whilst this is not necessarily an express weakness, it does imply not only a limited usefulness for quantitative or formal mathematical approaches, but also a large degree of interpretive flexibility. Consequently, different researchers applying the *Ecology of Games* to the same situation are likely to perceive different ecologies, games, actors, strategies, and interactions. Any one interpretation can, therefore, be challenged by others, or by any researcher who can critically assess the overall depiction of a specific given ecology.

A third, related criticism is that whilst it provides us with a definite point of view, and alludes to a set of concrete methods available with which to conduct case studies, the *Ecology of Games* theory can only give the researcher an indication or an heuristic of the likely nature of the dynamics shaping outcomes. Based on human behaviour motivated by a particular set of influences, it is thus only a predictive theory, and, therein, limited; in the sense that the theorem will not be able to formally predict the concrete outcomes necessary for both micro- and more generalised macro-level decision-making. A final problem with the framework is that its application to research may lead to an extremely

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<sup>20</sup> Dutton, 'The Ecology of Games Shaping Telecommunications Policy', p. 311.

complex mapping of social reality<sup>21</sup>. The innate flexibility of the theorem possesses the propensity to lead a researcher to read deeper and deeper into what might be, in reality, only a few large *meta-games*. And finally, partly as a direct consequence of this tendency towards increased complexity, it becomes necessary for us to arbitrarily limit the depth of any analysis, lest it become too unwieldy. Such an arbitrary truncation feeds back into the discussion surrounding the interpretive flexibility of the theorem, and the value of the framework as a predictive tool; as different studies of the same of object would be likely to result in different analyses, and, if used as a policy tool, produce different policy decisions.

These disadvantages, however, might be overcome; as seen in recent work combining the *Ecology of Games* with other sociological perspectives such as *Network Theory* and *Social Constructivism*<sup>22</sup>. Within the context of this thesis, the analytical perspective of choice is that of the *Design-Actuality Gap* framework. It may be concluded, therefore, that the principal strength of the *Ecology of Games* perspective, as compared with those of other theoretical frameworks, is this: without taking away from the central issues at hand or diverting attention from the central field of action, the framework focuses on a variety of phenomena – *personality, values, historical circumstance, environment* – that are all too often considered peripheral to the central

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<sup>21</sup> W. H. Dutton, V. Schneider, and T. Vedel, 'Large Technical Systems as Ecologies of Games: Cases from Telecommunications to the Internet', forthcoming in J. Bauer, A. Lang, and V. Schneider eds., *Innovation Policy and Governance in High-Tech Industries: The Complexity of Coordination*, (Berlin: Springer, 2011 forthcoming), p. 23.

<sup>22</sup> See for example Benjamin Cornwell, Timothy J. Curry and Kent P. Schwirian, 'Revisiting Norton Long's Ecology of Games: A Network Approach', *City and Community*, vol.2, issue 2, 2003, pp. 121-142 and Gary A. Fine, 'Games and Truths: Learning to Construct Social Problems in High School Debate' *Sociological Quarterly*, vol.41, issue 1, 2000, pp. 103-123.

sphere of action by conventional theories, but, in truth, form the central core of the policy process, and are often key forces behind both organisational and institutional change. In recognising the strengths and weaknesses of the base framework, and in combining the perspective with other theories of grand social action, the Ecology of Games may provide researchers with a *highly advanced* and *significantly nuanced understanding* of how *strategic behaviour* and *actor dynamics* impact and influence political endeavour and policy outcomes.

## 9.5. Conclusions

Rapidly evolving economic and social contexts mean that political institutions and the people who constitute them cannot afford to get bogged down in traditional work practices or be impervious or resistant to change themselves. Whilst this does not necessarily mean a wholesale rejection of what has gone before, it does mean that there needs to be a constant assessment and reassessment of workplace values and current practices, eliminating those which result in behaviours that are detrimental to the functioning of the organisation and encouraging those that promote positive interactions. Organisations and institutions, particularly those that form the political core of a society, cannot afford to be seen as having been left behind, for the people within those institutions are generally looked to as political trendsetters and role models in addition to being responsible for societal welfare. With the private sector able to keep up with, and often being catalysts for, organisational change, there is a not-altogether-unreasonable expectation that the public sector with its access to public funds and the national talent pool should be able to keep up with and in some case become pace-setters for change.

When this expectation is not met, it results in growing political apathy and a broader, more general disillusionment with current political organisations, institutions, actors and practices.

Currently, revenue officials and citizens in Bangalore seem largely positive about the new system and, in understanding how it could benefit them, are making positive moves to adopt it. At the same time, frustration is mounting as gaps in skills and influence are widening, and destructive turf games within revenue offices have the potential to turn once-positive perceptions into negative ones and lead to an eventual rejection of the system. Institutional and legislative safeguards need to be put in place to ensure that no actor (revenue official, private computer operator, or citizen) may misuse the powers and responsibilities entrusted to them. Project managers too need to harmonise their goals with those of the end-users, recognising that design-actuality gaps are an inevitable part of project implementation, and that in the end it is only constructive game play – even in situations completely unconnected with the central issue – that can produce positive political outcomes.

## Chapter 10

# Conclusion: Implications for Policy and Areas for Future Research

The starting point of this thesis has been the recognition of an apparently new way of conceiving contemporary society, and the acknowledgement of the pivotal roles that *information*, *communication*, and *technology* play within it. Social scientists have long seen ‘information’ as *the* distinctive feature of the modern world, however, what makes today’s age distinct from before is the growing convergence of digital computing, telecommunications, and human infrastructure, reflected in the shift of terminology from *Information Technology* or *I.T.* to *Information and Communications Technology* or *ICT* (Virkar, 2014). Popular and academic literature tells us that we stand on the edge of the Information Age, where both information and technology have become ‘symbol(s) of political potency and economic prosperity’. We live and work in ‘weightless knowledge economies’ and will soon be part of a ‘global information society’.

These clichés are not used without reason. The world is continuing to witness the burgeoning growth of new electronic Information and Communications Technologies (ICTs) and their associated platforms and applications: the Internet and the World Wide Web have spawned multimedia and interactive technologies, video-conferencing, virtual realities, computer-aided design, the information superhighway, and technologies for

consumer profiling and surveillance; all of which enable the electronic production, transmission, processing, communication, and consumption of increasingly vast quantities of information. Like their predecessors – the printing press, the telegraph, the radio, and black-and-white television – advanced ICTs have become an intrinsic part of our everyday social, political, and economic lives. They are embedded in an array of networks and services across the spectrum of human activity: from education to politics, from the arts to sport, from medicine to music, these technologies are set to transform the way in which people work, think, act, and interact.

Whilst a ‘crisis of legitimacy’ is most often talked about in terms of the citizen reaction to political processes and institutions integral to advanced Western democracies, the problem is particularly central to and more far-reaching in fledgling democracies or to those emerging economies whose societies are experiencing very rapid change and/or growth for possibly the first time, and whose public employees and citizens are often unable to cope with the pace of change. Added to this, there is a tendency for power elites to lose touch with ground-level realities when devising projects for their organisations as well as for citizens under their jurisdiction, especially when planners comprise the higher echelons of government and operate within a top-down, command-and-control system of management. As the BBMP project demonstrates, there is a danger that high-level project planners will, in looking at macro outcomes, ignore outliers and how these may precipitate unexpected turns of events. This holds particularly true when existing patterns of communication and information exchange fail to be flexible or unable to adapt to changing situations.

The longer that issues of mistrust and general citizen and employee welfare are not tackled, both within and outside government organisations, the longer it will take for trust to be restored: an uphill task at the best of times given the general tendency for both citizens and more junior public sector employees to be extremely sceptical of the motives of government institutions and political actors, and to view most actions as manifestations of populist politics and empty promises. Gaps in communication also often result in organisations and institutions failing to tap into existing talent and infrastructure pools, to innovate and invest around personalities and talents, and to build on existing skills. Instead, a lack of critical information-flows result in much time and effort spent in duplicating work and money wasted in half-baked additions and replacements.

Overall, be it within an established democracy or a fledgling/transitional one, neither the loss of citizen trust and a sense of security nor a lack in the self-belief of government employees is healthy for government institutions, particularly in (though definitely not limited to) the long term. Whilst governing under make-shift conditions may get the job done, insofar as it ensures public employee co-operation and citizen compliance through the engendering of doubt, fear, and insecurity through a lack of both information and adequate outlets for deliberation and discussion of topical issues; neither deep-seated apathy nor disillusionment are desirable in the long term as both are usually hard to reverse. Any feeling that a double-standard exists, particularly in countries where trust in government and power elites is already reasonably low, only serves to subvert

attempts to widen the already prevalent democratic deficit and further erode confidence in the political system to deliver employee- and citizen-friendly outcomes. Appropriate information flows are thus needed to facilitate organisational and institutional adaptability, flexibility, innovation, and invention at minimum cost; to the benefit of both government and citizen.

The study presented for discussion in this thesis was developed in three stages: first, a conceptual framework anchored in the *Ecology of Games* and the *Design-Actuality Gap Model* was drawn up to analyse the formulation, implementation, and evaluation of e-government systems in developing countries. This framework drew on multidisciplinary theoretical literature and third-party empirical documentation to examine in detail the conception and design of the *Bruhat Bengaluru Mahanagara Palike (BBMP)* property tax system; the structure and operations of the paper-based system, attempts made to change its design, its implementation through the introduction of digital technology and new policy measures, and its subsequent outcome through an examination of interview data and property tax revenue figures.

Through its chosen case study, this research both took forward discussions surrounding both analytical frameworks<sup>1</sup>, and the idea that the development and implementation of *ICT-for-Development* projects carry deep political implications: *the politics of power and influence often drive the design of a project, political reputations*

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<sup>1</sup> S. Virkar, 'What's in a Game? The Ecology of Games as a Framework for Analysing e-Government Project Implementation', *Encyclopedia of Information Science and Technology (3rd Edition)*, IGI Global (*forthcoming*) 2014, and S. Virkar, 'Analysing e-Government Project Success and Failure: The Design-Actuality Gap Model', *Encyclopedia of Information Science and Technology (3rd Edition)*, IGI Global (*forthcoming*) 2014.

*may be staked on the outcome, opinions generally vary on whether certain aspects of a system are economically and politically viable or indeed desirable, that politics circumscribes what can and cannot be implemented, and that reactions to the reform of a system always have deep political implications<sup>2</sup>.*

The penultimate chapter of this thesis highlighted a number of areas wherein the interaction of competing strategic extensive-form games had highly negative implications, resulting in design-actuality gaps that led to project targets not being fully met. The chapter identified lack of trust between different actors as a significant reason why they often chose to behave in a self-interested manner, rather than in more cooperative ways that could have benefitted all parties concerned. In particular, strategic interventions made by project planners and those with authority within the BBMP were seen to have a profound influence on the moves and interactions of junior employees; and in fact were marked out as *game changers* in previous chapters of this work.

This chapter sets out a number of strategic policy interventions or moves, underlined by the *Ecology of Games* perspective, which could be employed to help bolster the functioning of the system and improve tax revenues by increasing revenue employee effectiveness and citizen compliance. This would occur through aiding the realignment of competition and co-operation amongst the multiple actors involved in this area of activity. In this context, the value of an *Ecology of Games* approach in suggesting

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<sup>2</sup> See S. Virkar, 'The Games People Play: The Politics of Software Platform Development and ICT Project Design for Public Sector Administration Reform', in Saqib Saeed, Imran S. Bajwa, and Zaigham Mahmood (eds.), *Human Factors in Software Development and Design*, IGI Global, 2014, and S. Virkar, 'What's in a Game? The Politics of Shaping Property Tax Administration in Bangalore, India', in Jonathan Bishop (ed.), *Gamification for Human Factors Integration: Social, Educational, and Psychological Issues*, IGI Global, 2014.

policy initiatives provides support for the potential of this approach to strategies aimed at facilitating the implementation of ICTs in a wider variety of situations and contexts.

The breadth of the proposals proposed below underlines the significance of the conclusions arrived at by this study; that the success of an e-government project is contingent on several non-technical factors that are often themselves influenced by political and institutional pressures. Indeed, this is particularly true for the Revenue Department project, as the system concerned deals with the politically-sensitive issue of property tax administration where making changes and bringing about reforms in the meta-game of tax administration would result in changes in actor rewards and game objectives and, consequently, in strategic actor behaviour itself.

## 10.1. Investing in Basic Infrastructure and Improving Office Environments

*Chapter 7* brought to the fore the extent to which the operational environment determined the nature and direction of actor behaviour within a given game. This holds true for physical office environments as well, where actors are more likely to respond positively to a project if it brings with it positive changes to their workplaces. In the context of the project under study, it is important that the BBMP makes a show of support to its employees, supplying each office with the right hardware (virus-free, and relatively powerful computers, printers, and peripherals) to run a sophisticated programme like the property tax system, together with investments in technical support. A longer-term strategy needs involve investments being made to improve the revenue

offices themselves. It would be hoped that positive game play from senior officials, demonstrating that they are in tune with their employees' needs and best interests, would in turn elicit positive responses from revenue staff who would be inclined to adopt a new project that brings them such tangible benefits. Such a virtuous cycle could, in an ideal situation, be stretched to include citizens should the local government agency seek to tackle basic infrastructural deficits such as electricity as part of a larger project aim.

## 10.2. Training for Government Employees

Both Mintzberg's (1985) political games discussed in *Chapter 2*, as well as those identified during the course of the case study, point to the fact that interactions within public organisations are often the result of power struggles where one group of actors is placed at a disadvantage relative to others. It is important, therefore, for project planners to think ahead to ensure that such a situation does not arise, and to tackle it immediately if it does. In the case under study, frustration built up because revenue staff felt that they were put at a relative disadvantage to externally hired computer operators in what they saw as their own territory of expertise. As evidenced by the interviews, low IT skill levels amongst revenue staff lead to lowered morale and office politics that negated any efficiencies and cost-savings created through the digitisation of processes.

The most straightforward method of reducing revenue employee frustration and promoting constructive interaction within the administration would thus be the provision of training to revenue officials, in order to increase their understanding of the system and facilitate its use. Openly recognising that employees with both a knowledge of

Information Technology and tax administration would be of huge use to the Department would doubtless require a significant change in the mind-sets of those top officials who were reluctant to give less senior people greater autonomy, and instead preferred a more top-down chain of command with power concentrated in their hands.

In opposition, however, this thesis has argued that strategic moves giving greater freedom to junior officials would, whilst resulting in positive outcomes for the project overall, not necessarily result in an equivalent loss of power for those concerned about keeping hold of it; even though such interventions would definitely restructure the meaning of power within the organisation, and the means by which that power would be obtained and held. Certain modes of control, for instance, such as the structure of decision-making within the agency, would in all likelihood remain unchanged. At the same time, the positive move of relinquishing the stranglehold on technology would result in not only the technology being used more effectively, but would also help planners garner feedback that would help to prevent or close design-actuality gaps. Further, focusing attention on groups of actors such as Assistant Revenue Officers and their deputies would help secure the hierarchy by permitting these officials to not only have the skills to use the system, but also help manage the expectations and frustrations of staff under them during times of change.

### 10.3. Expanding the Role of GIS Mapping Technology

The use (or non-use) of GIS mapping technologies embedded in the system is an illustration of how a power game can have harmful results. As discussed in previous

chapters, moves to keep the GIS the preserve of senior officials have backfired as they have only resulted in a population of revenue employees that is completely unaware of its existence and the under-utilisation of an expensive, potentially powerful technology.

This has, in turn, blunted its impact on tax collections and compliance: defrauders will be confident of making moves which defy the system so long as they are sure that their opponents – the taxmen – do not know how to use it. For its full potential to be realised, the GIS must become more mainstream: revenue staff in regional offices must not only know of its existence but also have the ability to access, manipulate, and interpret the data generated by it. If the project is to be successful in the context of improving revenues and compliance, it is important that senior officials reassess their actions and figure out a way of equipping their staff without hurting their own needs for power and control. Again, this researcher would argue that this is not entirely impossible. Additionally, any move to relinquish control of the GIS would be perceived as positive by revenue employees, and would motivate them to take the initiative to play games in a more positive, constructive manner.

#### 10.4. Successfully Playing Games of Tax Compliance: Government Agencies as Architects of Public Choice

In evaluating the impact of any tax-related measure, it is important to know not only whether it has resulted in an increase in absolute tax revenues collected, but also whether it has resulted in an improvement in the percentage of people complying with the legal requirement. The BBMP meta-game to improve compliance has so far concentrated

on encouraging property tax payments through increasing public awareness about the progress it has made in simplifying tax assessment procedures and facilitating tax payments, and by warning citizens about the risks they run if they do not comply with existing tax laws. Whilst these are no doubt important factors in encouraging citizens to file their returns on time (indeed, evidence has shown that citizen compliance appeared to respond to modifications in the tax administration process), too great an emphasis on non-compliance may in the long-run focus attention on the negative game of non-compliance itself and eclipse its potential benefits. This is because there is a general tendency for law-abiding citizens (not only in India, but also elsewhere) to believe that there are far more people who are able to easily break the law and evade their taxes than is actually the case.

Such cynicism is further compounded by limited faith in government, and impacts the efficacy of any system that those in power might put in place. A sustained awareness campaign that focuses on not only the achievements made by technology in the identification and apprehension of those citizens who don't comply, but which also touches on how the majority of citizens are benefitting by responding positively to its introduction, would go a long way in contributing to the success of the computerised system as an effective tool to improve tax revenues for the municipality.

## 10.5. Stronger Enforcement Measures to Back-Up Improved Assessment

Whilst the use of GIS mapping technologies is the right way forward, an analysis of the data reveals that monitoring and enforcement processes need to be made more robust if tax evaders are to be persuaded to play the Game of Tax Compliance. One way in which revenues may be increased and the system strengthened is through the institution of independent tax audits to bolster the tracking at present done through the use of GIS maps. Currently, municipal audits are carried out in-house with no outside verification, and there is a chance that the results can be manipulated unnoticed by people who have vested interests. This defeats any attempts made to remove corruption and bribery from the process of tax collection, including the computerisation of the system. An option, therefore, would be to have a department in the state government audit municipal tax collection in order to reduce the effects of those interests. The only problem with this solution is that it potentially creates another layer of bureaucracy.

Another possibility would be to alter the game environment through introducing graded levels of scrutiny to help tax enforcement. As mentioned earlier, the Self-Assessment Scheme provides for the random scrutiny of 5% of all returns filed, a figure increased to 15% in 2008<sup>3</sup>. However, this thesis proposes that the number of declarations scrutinised should increase further depending on the size of property, with a greater number of returns from bigger properties being scrutinised more closely as that is where the bulk of property tax revenue comes from. Wards in the city could be profiled in terms of property value and average income of the population, and this data could be contrasted with tax figures to get a picture of who does not comply. Further, this thesis recommends

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<sup>3</sup> 'Hiding Property Tax Info? Face Checks, Pay Fine: Revenue Officials Can Now Come Calling', *Times of India*, 15th December 2008, p.1.

that information regarding property transactions should be made readily available to the monitoring authority, in order to help them verify that the correct data is being used.

And finally, the judicial process needs to be streamlined to speed up property tax-related litigation. Discussions with revenue officials revealed that currently, the only way of retrieving money owed to them is by taking legal action against those property owners who default on their tax obligations. However, court cases in India are notorious for taking years to be resolved, and some citizens take advantage of this by dragging the Corporation into long drawn-out legal wrangles that cost the BBMP hugely in terms of time and money. It is felt that the efficient identification and tracking of defaulters together with more rigorous auditing and awareness campaigns are rendered useless if they are not backed up with swift legal action. The reform of tax-related judicial processes would give the current e-government system bite, as the Corporation would not only save money from shorter court cases, but would also be able to send out a message to defaulters that they could not misuse judicial loopholes to escape their liabilities.

## 10.6. Key Drivers of e-Government Success

From the analysis of extensive-form games conducted in previous chapters, a number of key drivers of success can be identified. Whilst the BBMP's project to computerise the administration of property tax in Bangalore has been significantly different from a large number of service delivery applications launched in India, in that its primary goal was to reform the working of a municipal government department, the lessons drawn from an examination of the project are, this researcher believes, highly

relevant for e-government projects implemented not only in India but in developing countries the world over.

### **10.6.1. Project Justification**

This research concludes that key to any successful implementation of an e-government project is the clear definition and communication of aims, benefits, and possible drawbacks to all actors at the outset of the project; initially by project planners during the design stage and then through a series of pilot studies and consultations. Whilst this lesson may seem elementary, a look through the literature reveals that design-actuality gaps resulting from the absence of any clear identification of project goals or clearly enunciated benefits have been the root cause of many unsuccessful ICT applications in India<sup>4</sup>. The identification of goals and outcomes and proper communication of them, as illustrated by the experiences of the project planners in the case under study, not only helps create a workable project by determining what is and what is not feasible, but also improves sustainability by managing expectations, reducing fears and resistance, and encouraging a feeling of ownership amongst different actor groups.

### **10.6.2. Multiple Service Centres and Kiosks**

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<sup>4</sup> Subhash Bhatnagar, 'Information Technology and Development: Foundation and Key Issues' in Subhash Bhatnagar and Robert Schware eds., *Information and Communication Technology in Development: Cases from India* (New Delhi: Sage Publications, 2000), p. 27.

The second key driver of success that might be derived from the case study concerns the adoption of models of service delivery that best reach the target population. In the provision of public goods, there are a number of areas where citizens must interface with government agencies to make payments and receive services. The very nature of public goods and services means that providers need to be located as close to the citizen as possible. For games of public service provision, especially those that involve taxes and where the government seeks to engage its citizens in an exchange of money for services, the channels through which transactions take place become especially important. One of the benefits of ICTs is that they collapse distances of space and time, and thus can potentially facilitate public service provision games to both the citizen's and the government's advantage. However, developing country governments often fail to capitalise on the promise of ICT applications as they fail to get their citizens to actively engage in transacting effectively through such channels. Successfully implementing and sustaining a project in the developing world thus requires the adoption of appropriate service delivery methods, including unconventional and hybrid ones like centres or kiosks, so that benefits from the application may accrue to the largest possible section of society; something that the BBMP has done with some success<sup>5</sup>.

### **10.6.3. Involving Actors and Increasing Ownership**

The case study has also underlined the need for project designers to involve end-users in the design process to make both sides aware of goals and driving objectives, thus helping to find middle ground to avoid design-actuality gaps from emerging. Periodic

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<sup>5</sup> This does not mean, however, that government employees should not be trained to use an ICT system.

assessments from users (particularly junior government staff), though perhaps time-consuming and expensive, could be particularly useful in helping project designers and managers detect previously unanticipated design-actuality gaps or unseen problems, allowing them to change the direction and nature of potentially harmful interactions before precious time and resources are invested into flawed systems. Feedback from end-users would also help ensure that the project is not only being kept on track, but also that the changing needs of its users are understood and met. The lesson here is that a wholly top-down approach to project planning tends to inhibit a participatory design process and, whilst some public officials would argue that a centralised technology push offers the possibility of quick decision-making and project execution, the issues raised in this thesis show that not taking into account actor feedback at different stages of implementation could compromise the overall efficiency and effectiveness of the system.

#### **10.6.4. Recognising the Need for a Level Field of Play**

The final key driver of success is the need for a levelled playing field, especially through sustained public sector employee training. For any e-government project to succeed, the system needs not only to be used by the citizens whom it purportedly serves but also requires the support of a back-office willing and able to deal with the data generated. Despite any amount of high-level political backing that a project may receive, information technology cannot simply be forced down the throats of unwilling government administrators who feel they are disadvantaged in games of power, responsibility, and prestige. To improve the effectiveness of e-government programmes,

public officials must be made aware that their quest for greater authority and responsibility within the organisation will not be side-lined by the technology.

## 10.7. Directions for Further Research

When discussing the impact of technology adoption on organisational reform and institutional change, Gascó (2003) has identified two important issues in need of further development<sup>6</sup>. The first has to do with the specific institutional constraints government agencies have to face when implementing e-government initiatives. Fountain (2001) has noted that they take the form of either oversight relationships, or the budget process, or a long tradition of adversarial bureaucratic politics; for “agencies are embedded in an institutional environment that discourages horizontal cross-agency initiatives and that encourages competition amongst autonomous agencies for resources<sup>7</sup>”. Secondly, more research needs to be done to identify strategies that facilitate positive institutional change, which in turn could result in the implementation of a sustainable, successful e-government-project. Both these areas could be examined using this case study as a starting point.

A first possible area for further research highlighted by this case study is an examination of the long-term sustainability of the computerised property tax system and the impact of policy changes on the BBMP Revenue Department. The new study would

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<sup>6</sup> Mila Gascó, ‘New Technologies and Institutional Change in Public Administration’, *Social Science Computer Review*, vol. 21, issue 6, 2003, p. 13.

<sup>7</sup> Jane E. Fountain, *Building the Virtual State: Information Technology and Institutional Change*, (Washington, DC: Brookings Institution, 2001), p. 101.

entail a detailed examination of the issues already covered by this thesis and their impact in the long-term, together with a recording of the changes in employee opinion, and the emergence of new challenges and ways of adapting as the project increases in technological sophistication and the government is obliged to bring in new policies. The effect of a paperless workplace on traditional bureaucracies could be studied, looking at arguments in the literature made for and against a digital environment and comparing these to the opinions of officials on the ground. An interesting angle would be to study the nature of power relations within revenue offices as a result of computerisation and track them over time. Research could be conducted using both qualitative and quantitative methods: qualitatively, further in-depth interviews with a large sample of revenue staff could be conducted; tracking staff responses and dynamics over a period of time. A more quantitative approach could also be adopted that measured staff efficiency and responses through a set of weighted parameters.

Another facet of the study could involve examining the citizen perspective of the project to see whether back-office reforms have affected them in any of the ways that government officials claim they have. Issues studied might include the impact of public sector reform on citizen perceptions of government, their acceptance of the system and new institutional norms, and the willingness of citizens to comply with property tax laws. In this respect, an interesting case study could be done about the role of Citizen Service Centres in enhancing the provision of public services. Data from this study could then be contrasted with perceptions of government officials to obtain an idea of the degree of government-citizen disconnect, as well as to determine what makes for a workable e-

government system in the given context. As with this thesis, the approach to data collection would be largely qualitative, requiring the canvassing of citizen opinions through in-depth interviews and focus groups.

There is also scope to study the potential danger that the use of e-government applications might have on civil servants, resulting in a lessening of responsibility and responsiveness of dissatisfied government officials. What might the repercussions of blaming technology as a standard excuse be for government officials seeking to explain away their own problems and inefficiencies? Is there a danger that officials could become more set in their own mental patterns and more fixed on achieving their own objectives at any cost, the less they physically see or speak to the people they are supposed to be serving and interacting with? Should this happen, would it defeat the purpose of making government more transparent and would it further undermine confidence in both the government and any scheme it proposes?

A related study could focus on the psychology of electronic tax filing systems: what the political motivations related to paying tax are and *what* makes electronic systems credible to *which* parts of society. The starting point of such a project would be the apparent differences in levels of tax compliance between different wards highlighted earlier in this thesis. The first step would be test whether this pattern was repeated in wards throughout the city. Should the pattern hold true, the next step would be to investigate it through a series of interviews, together with the reasons as to why different sections of society respond differently, and to help identify the factors that would make

them comply. Any conclusions drawn from this study would give insight into the approach government agencies could take when drawing up tax policy and implementing e-government systems.

Yet another smaller-scale study could look at the impact of citizens' perceptions of a system and the credibility of its long-term outcome. As the project develops from a back-office system to a publicly available Internet-based technology, its usage context of being a citizen-centric electronic tax-filing system will be quite different from its initial conception as a stand-alone application meant solely for administrative use. Recent research reveals that users' perceived credibility of web systems has a marked influence on their willingness to engage in online exchanges of money and personally sensitive information<sup>8</sup>; where most users who decline to provide personal information (in particular bank account and credit card details) to websites report it is because they do not trust those who are collecting the data. In India, a large proportion of the so-called networked population (who are able to access a computer either from work, home, or at public kiosks) is either not used to or is still sceptical about making online transactions. It would be interesting to see therefore, as systems such as the BBMP project increase in sophistication and start to process online monetary transactions, how citizen usage of online gateways changes as issues such as privacy and data security come to the fore.

In discussing the multitude of challenges faced by project planners in Bangalore through the responses of revenue officials to the digital system, this thesis may lead a

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<sup>8</sup>Yi-Shun Wang, 'The Adoption of Electronic Tax Filing Systems: An Empirical Study', *Government Information Quarterly*, vol. 20, issue 4, 2003, p. 336.

researcher to study the larger question of whether developing countries are jumping the gun in terms of implementing e-government. In particular, the impact of the implementation sequence on the success or failure of a project could be studied to determine whether – depending on the prevailing institutional and policy context – some government agencies would be better off focusing first on re-engineering administrative processes and putting in place new legislation *before* computerising the workplace.

From a more theoretical point of view, the research done in this thesis paves the way for a closer look at the use of the *Ecology of Games* in combination with the *Design-Actuality Gap* model as a means of arriving at workable policy solutions to bring about positive project outcomes. It is often said that policy and theory do not mix. However, as discussed at the beginning of this work, the two perspectives on paper do indeed complement each other, and more research is needed to determine whether this combination will succeed in satisfying those who seek to observe, analyse, and then act.

Whilst it is widely recognised that ICTs are strategically important to a country, and the impetus for investment in e-government is generally well-accepted, it remains unclear as to whether administrative reforms stimulated by e-government will, in the long run, feed into a country's other economic, societal, and development goals or simply divert resources away from areas where they are needed into already cash-rich sectors and industries such as those related to software design and hardware development. What is needed is a more holistic, multi-pronged approach when tackling the range of development issues that public administrations across the world face, supported by the simultaneous creation of an enabling environment for both the sustainable integration of

technology into local society and for its effective use in the short-term. Information technology might have made ‘all that is solid melt into air’, but digital bridges still require concrete foundations.

# Appendices

## Appendix A: Interview Framework

*The following questions were used to guide and shape each interview.*

### **General Questions**

- What is your current position in your organisation?
- Could you describe the role and how it fits into the overall working of the organisation?
- How long have you held this position?
- When did you first get involved on the project to computerise tax records? And in what capacity?

### **Questions Specific to Senior BBMP Officials and Senior Software Developers**

- Were you/are you still part of the core project team?
- If yes, what role did you/do you play?
- If no, how have you been involved with the project?
- Who in your opinion were the other key people/groups involved?
- Where did the idea come from?
- Could you please narrate the sequence of events from the initial conception of the project to its eventual implementation as you saw them unfold?
- What were some of the key design decisions taken?
- Who took those decisions? How were they taken?
- How were decisions shaped by legal, administrative and related concerns?
- Why was there a need to digitise property tax administration in the city?

- What did you see as essential parts of any project to computerise a revenue system?
- What were the initial hurdles the project encountered? How were these overcome?
- Do you think the project has been successfully implemented?
- Are there are still barriers to be crossed?
- What a) technical and b) non-technical innovations can then project boast of?
- How did Revenue Staff respond to the project initially? Has this changed over time? Why?
- How has this impacted the BBMP overall?
- What are the specific benefits it brings to revenue staff?

### **General Questions for all Revenue Staff**

- Could you describe the ward which you are partly responsible for administering?
- Could you please describe the revenue office in which you work?
- What is the approximate number of people who worked here before the introduction of the system?
- How has this number changed with computerisation?
- Could you describe the manual process of tax administration?
- What in your opinion were the major drawbacks of the process?
- Were there any good things about the process?
- How has this changed with computerisation?
- When did you first learn about the computerisation of the system?
- What was your initial reaction?
- Has this changed over time? In what way?

- During the design and/or implementation stage of the project, were your opinions or feedback solicited?
- If yes, then what did you say?
- Have you ever met any of the software designers for the project?
- What, in your opinion, are the three best (most useful) features of the new system?

### **Questions Specific to Senior Revenue Officers**

- Do you believe it was important to have digitised the prevailing system of tax administration?
- Do you think that computerisation has impacted work processes within your revenue department? Please explain.
- What direct benefits has the new system brought to your role?
- Have you had to learn new skills?
- How has the introduction of computerisation a) impacted your own role within the organisation, b) your relationship with your staff and c) your relationship with the public?
- In your view, has digitisation had an impact on tax revenues and compliance?

### **Questions Specific to Junior Revenue Officials**

- What impact has the new system had on your day-to-day work?
- Do you feel a significant change between the 'old' and the 'new' systems?
- Have you been given any training to use the computerised system?
- Has your relationship with a) your superiors, b) your co-workers and c) the public changed since the digitisation and change in work patterns? How?
- Do you feel citizens are more responsive now?

### **Questions for Software Developers**

- Who was the system designed for?

- What was the system designed for?
- Who identified the end-user group and how was the final decision taken?
- What were the technologies used for the system?
- Did the system have any serious teething problems?
- What factors have been especially successful? And which have required a rethink?

## Appendix B: Summary Timeline for the BBMP Property Tax System

<b>Date/Year</b>	<b>Milestone</b>
<b>1976</b>	Enactment of Karnataka Municipal Corporations (KMC) Act, Karnataka Municipalities Act
<b>1999</b>	Enactment of the Karnataka Rent Control Act
<b>2000</b>	Self-Assessment Scheme (SAS) introduced
<b>2001</b>	KMC Act amended  Decision to computerise tax records taken, CMC hired
<b>2003</b>	eGovernments Foundation replaces CMC (January)  eGovernments Property Tax System piloted in Ward No,79  System ready to go live across Bangalore (December)  First Citizen Service Centres and help desks open
<b>2006</b>	Private computer operators hired to manage RO databases  Tensions arise between key actors on project

<b>2008</b>	<p>BBMP and eGovernments Foundation part ways</p> <p>National Informatics Centre takes over GIS component</p> <p>CVS abandoned by BBMP</p>
<b>2009</b>	<p>KMC Act amended</p> <p>Online Property Tax calculator launched (January)</p> <p>Unveiling of <i>Palike</i> (March)</p> <p>Tie-up with <i>BangaloreOne</i> portal (August)</p> <p>Complaints box launched (October)</p>
<b>2010</b>	<p>Tie-up with Karnataka State Electricity Board database</p>
<b>2011</b>	<p>KMC Act amended</p>
<b>2013</b>	<p>KMC Act amended</p>

## Appendix C: BBMP Revenue Figures

Tax Year	Demand (Rs. Million)	Collection (Rs. Million)	Balance (Rs. Million)	Percentage Collected	Number of Properties	Annual Increase in Number of Properties (%)	Revenue Per Property (Rs)
1998 - 1999	1632.9	942.7	690.2	57.73164309	380956	0	2474.563992
1999 - 2000	1200	1175	25	97.91666667	388983	2.107067483	3020.697563
2000 - 2001	1500	1575	-75	105	404500	3.989120347	3893.695921
2001 - 2002	1750	1625	125	92.85714286	405864	0.337206428	4003.80423
2002 - 2003	2000	1950	50	97.5	450743	11.05764493	4326.190312
2003 - 2004	2500	2000	500	80	504872	12.00883874	3961.400117
2004 - 2005	3000	2319.5	680.5	77.31666667	547354	8.414409989	4237.659723
2005 - 2006	3200	2581	619	80.65625	588791	7.570420605	4383.558852
2006 - 2007	4000	3472.5	527.5	86.8125	623958	5.972747545	5565.278432
2007 - 2008	6100	4487.3	1612.7	73.56229508	668535	7.144230862	6712.13923

Primary Data Set 1: BBMP Property Tax Revenue Data for Bangalore City (1998 – 2008) with Author Analysis

Tax Year	Number of Properties				
	Residential	Non-Residential	Mixture - Res & NR	Vacant	Total
2001 – 2002	155930	31268	33410	185256	405864
2002 – 2003	205884	34230	35236	175393	450743
2003 – 2004	261440	37656	38659	167117	504872
2004 – 2005	334168	40243	37157	135786	547354
2005 – 2006	389581	43457	39896	115857	588791
2006 – 2007	437961	47917	42369	95711	623958
2007 – 2008	494658	54950	47233	71694	668535

**Primary Data Set 2: Total Number of Properties in Bangalore by Type (source: BBMP, 2009)**

Tax Year	Demand (Rs. Million)	Collection (Rs. Million)	Balance (Rs. Million)	Percentage Collected	Annual Change % (Demand)	Annual Change %
1998 – 1999	1.01	0.636	0.374	62.97029703	0	0
1999 – 2000	1.569	1.02	0.549	65.00956023	55.34653465	60.37735849
2000 – 2001	2.209	1.524	0.685	68.99049344	40.7903123	49.41176471
2001 – 2002	2.259	1.578	0.681	69.85391766	2.263467632	3.543307087
2002 – 2003	2.389	1.603	0.786	67.09920469	5.754758743	1.584283904
2003 – 2004	2.996	1.955	1.041	65.25367156	25.40812055	21.9588272
2004 – 2005	3.627	2.285	1.342	62.99972429	21.06141522	16.8797954
2005 – 2006	3.735	2.544	1.191	68.1124498	2.977667494	11.33479212
2006 – 2007	4.843	3.681	1.162	76.00660747	29.66532798	44.69339623
2007 – 2008	5.213	4.647	0.566	89.14252829	7.639892629	26.24286879

Primary Data Set 3: Property Tax Data for Ward No. 67 (source: author analysis; BBMP, 2009)

Tax Year	Demand (Rs. Million)	Collection (Rs. Million)	Balance (Rs. Million)	Percentage Collected	Annual Change % (Demand)	Annual Change %
1998 – 1999	20.58	10.51	10.07	51.06899903	0	0
1999 – 2000	21.67	8.32	13.35	38.39409322	5.296404276	-20.83729781
2000 – 2001	24.87	9.04	15.83	36.34901488	14.76695893	8.653846154
2001 – 2002	24.4	12.95	11.45	53.07377049	-1.889827101	43.25221239
2002 – 2003	24.39	13.4	10.99	54.94054941	-0.040983607	3.474903475
2003 – 2004	24.4	13.52	10.88	55.40983607	0.04100041	0.895522388
2004 – 2005	22.24	16.06	6.18	72.21223022	-8.852459016	18.78698225
2005 – 2006	27.71	16.48	11.23	59.4731144	24.59532374	2.615193026
2006 – 2007	34.58	22.32	12.26	64.54598034	24.79249368	35.4368932
2007 – 2008	34.755	19.91	14.845	57.28672134	0.506072874	-10.79749104

Primary Data Set 4: Property Tax Data for Ward No. 76 (source: author analysis; BBMP, 2009)

Tax Year	Demand (Rs. Million)	Collection (Rs. Million)	Balance (Rs. Million)	Percentage Collected	Annual Change % (Demand)	Annual Change %
1998 – 1999	0.177	0.144	0.028	84.18079096	0	0
1999 – 2000	0.228	0.163	0.065	71.49122807	28.81355932	9.395973154
2000 – 2001	0.339	0.192	0.147	56.63716814	48.68421053	17.79141104
2001 – 2002	0.365	0.281	0.084	76.98630137	7.669616519	46.35416667
2002 – 2003	0.421	0.286	0.135	67.93349169	15.34246575	1.779359431
2003 – 2004	0.611	0.407	0.204	66.61211129	45.13064133	42.30769231
2004 – 2005	0.884	0.681	0.203	77.0361991	44.68085106	67.32186732
2005 – 2006	1.1	0.607	0.493	55.18181818	24.43438914	-10.86637298
2006 – 2007	1.432	0.796	0.636	55.58659218	30.18181818	31.13673806
2007 – 2008	1.7	0.987	0.713	58.05882353	18.7150838	23.99497487

Primary Data Set 5: Property Tax Data for Ward No. 38 (source: author analysis; BBMP, 2009)

Tax Year	Demand (Rs. Million)	Collection (Rs. Million)	Balance (Rs. Million)	Percentage Collected	Annual Change % (Demand)	Annual Change %
1998 – 1999	0.174	0.131	0.043	75.28735632	0	0
1999 – 2000	0.212	0.172	0.04	81.13207547	21.83908046	31.29770992
2000 – 2001	0.336	0.225	0.111	66.96428571	58.49056604	30.81395349
2001 – 2002	0.352	0.269	0.083	76.42045455	4.761904762	19.55555556
2002 – 2003	0.4	0.385	0.015	96.25	13.63636364	43.12267658
2003 – 2004	0.426	0.301	0.125	70.657277	6.5	-21.81818182
2004 – 2005	0.707	0.499	0.208	70.57991513	65.96244131	65.7807309
2005 – 2006	1.293	0.899	0.394	69.52822892	82.8854314	80.16032064
2006 – 2007	1.501	0.682	0.819	45.43637575	16.08662026	-24.13793103
2007 – 2008	1.603	0.754	0.849	47.03680599	6.795469687	10.55718475

Primary Data Set 6: Property Tax Data for Ward No. 37 (source: author analysis; BBMP, 2009)

Tax Year	Demand (Rs. Million)	Collection (Rs. Million)	Balance (Rs. Million)	Percentage Collected	Annual Change % (Demand)	Annual Change %
1998 – 1999	0.907	0.729	0.178	80.37486218	0	0
1999 – 2000	1	0.883	0.117	88.3	10.25358324	21.12482853
2000 – 2001	1.192	0.86	0.332	72.14765101	19.2	-2.604756512
2001 – 2002	1.318	0.978	0.34	74.20333839	10.5704698	13.72093023
2002 – 2003	1.5	1.324	0.176	88.26666667	13.80880121	35.37832311
2003 – 2004	1.749	1.484	0.265	84.84848485	16.6	12.08459215
2004 – 2005	1.996	1.543	0.453	77.30460922	14.12235563	3.97574124
2005 – 2006	2.637	1.925	0.712	72.99962078	32.11422846	24.75696695
2006 – 2007	3.281	2.535	0.746	77.26302956	24.42169132	31.68831169
2007 – 2008	3.596	2.578	1.018	71.69076752	9.600731484	1.696252465

Primary Data Set 7: Property Tax Data for Ward No. 36 (source: author analysis; BBMP, 2009)

Tax Year	Demand (Rs. Million)	Collection (Rs. Million)	Balance (Rs. Million)	Percentage Collected	Annual Change % (Demand)	Annual Change %
1998 – 1999	0.877	0.51	0.367	58.15279361	0	0
1999 – 2000	1.078	0.794	0.284	73.65491651	22.91904219	55.68627451
2000 – 2001	1.134	0.9	0.234	79.36507937	5.194805195	13.35012594
2001 – 2002	1.325	1.217	0.108	91.8490566	16.84303351	35.22222222
2002 – 2003	1.517	1.193	0.324	78.64205669	14.49056604	-1.972062449
2003 – 2004	1.55	1.236	0.314	79.74193548	2.175346078	3.604358759
2004 – 2005	2.4	1.345	1.055	56.04166667	54.83870968	8.818770227
2005 – 2006	2.787	1.582	1.205	56.76354503	16.125	17.62081784
2006 – 2007	3.399	1.797	1.602	52.86849073	21.9590958	13.59039191
2007 – 2008	3.421	1.728	1.693	50.51154633	0.647249191	-3.839732888

Primary Data Set 8: Property Tax Data for Ward No. 35 (source: author analysis; BBMP, 2009)

Tax Year	Demand (Rs. Million)	Collection (Rs. Million)	Balance (Rs. Million)	Percentage Collected	Annual Change % (Demand)	Annual Change %
1998 – 1999	2.943	2.119	0.824	72.00135916	0	0
1999 – 2000	3.214	2.218	0.996	69.01057872	9.20829086	4.672015101
2000 – 2001	4.048	3.724	0.324	91.99604743	25.94897324	67.89900812
2001 – 2002	4.314	3.365	0.949	78.00185443	6.571146245	-9.640171858
2002 – 2003	4.741	3.746	0.995	79.01286648	9.89800649	11.32243685
2003 – 2004	4.909	4.025	0.884	81.99225912	3.543556212	7.447944474
2004 – 2005	5.067	4.358	0.709	86.00749951	3.218578122	8.273291925
2005 – 2006	5.679	5.054	0.625	88.99454129	12.07815275	15.97062873
2006 – 2007	6.254	4.878	1.376	77.99808123	10.12502201	-3.482390186
2007 – 2008	7.064	6.039	1.025	85.48980747	12.95171091	23.80073801

Primary Data Set 9: Property Tax Data for Ward No. 11 (source: author analysis; BBMP, 2009)

Tax Year	Demand (Rs. Million)	Collection (Rs. Million)	Balance (Rs. Million)	Percentage Collected	Annual Change % (Demand)	Annual Change %
1998 – 1999	0.908	0.684	0.224	75.33039648	0	0
1999 – 2000	1.018	0.747	0.271	73.37917485	12.11453744	9.210526316
2000 – 2001	1.276	0.974	0.302	76.3322884	25.34381139	30.38821954
2001 – 2002	1.316	1.024	0.292	77.81155015	3.134796238	5.133470226
2002 – 2003	1.437	1.134	0.303	78.91440501	9.194528875	10.7421875
2003 – 2004	1.501	1.067	0.434	71.0859427	4.453723034	-5.908289242
2004 – 2005	1.577	1.125	0.452	71.33798351	5.063291139	5.435801312
2005 – 2006	1.643	1.167	0.476	71.02860621	4.185161699	3.733333333
2006 – 2007	2.054	1.46	0.594	71.08081792	25.01521607	25.10711225
2007 – 2008	2.567	1.718	0.849	66.9263732	24.97565725	17.67123288

Primary Data Set 10: Property Tax Data for Ward No. 5 (source: author analysis; BBMP, 2009)

Tax Year	Demand (Rs. Million)	Collection (Rs. Million)	Balance (Rs. Million)	Percentage Collected	Annual Change % (Demand)	Annual Change %
1998 – 1999	4.894	1.364	3.53	27.87086228	0	0
1999 – 2000	4.206	1.994	2.212	47.4084641	-14.05803024	46.18768328
2000 – 2001	7.085	5.903	1.182	83.31686662	68.44983357	196.0381143
2001 – 2002	7.985	5.301	2.684	66.38697558	12.70289344	-10.1982043
2002 – 2003	8.142	6.254	1.888	76.8115942	1.9661866	17.97774005
2003 – 2004	8.992	7.642	1.35	84.9866548	10.43969541	22.19379597
2004 – 2005	9.093	7.022	2.071	77.22423843	1.123220641	-8.113059409
2005 – 2006	9.123	6.992	2.131	76.64145566	0.329924117	-0.42722871
2006 – 2007	11.432	7.67	3.762	67.09237229	25.30965691	9.696796339
2007 – 2008	11.638	7.685	3.953	66.03368276	1.801959412	0.195567145

Primary Data Set 11: Property Tax Data for Ward No. 27 (source: author analysis; BBMP, 2009)

Tax Year	Demand (Rs. Million)	Collection (Rs. Million)	Balance (Rs. Million)	Percentage Collected	Annual Change % (Demand)	Annual Change %
1998 – 1999	1.081	0.787	0.294	72.80296022	0	0
1999 – 2000	1.147	0.796	0.351	69.39843069	6.105457909	1.143583227
2000 – 2001	1.399	1.306	0.093	93.35239457	21.97035745	64.07035176
2001 – 2002	1.466	1.165	0.301	79.46793997	4.789135096	-10.79632466
2002 – 2003	1.517	1.275	0.242	84.0474621	3.478854025	9.442060086
2003 – 2004	1.576	1.297	0.279	82.29695431	3.889255109	1.725490196
2004 – 2005	1.614	1.427	0.187	88.41387856	2.411167513	10.0231303
2005 – 2006	1.745	1.44	0.305	82.52148997	8.116480793	0.911002102
2006 – 2007	1.866	1.607	0.259	86.12004287	6.934097421	11.59722222
2007 – 2008	2.408	1.891	0.517	78.52990033	29.04608789	17.67268202

Primary Data Set 12: Property Tax Data for Ward No. 15 (source: author analysis; BBMP, 2009)

Tax Year	Demand (Rs. Million)	Collection (Rs. Million)	Balance (Rs. Million)	Percentage Collected	Annual Change % (Demand)	Annual Change %
1998 – 1999	1.631	1.057	0.574	64.80686695	0	0
1999 – 2000	1.784	1.217	0.567	68.21748879	9.380748007	15.1371807
2000 – 2001	1.917	1.451	0.466	75.69118414	7.455156951	19.22760887
2001 – 2002	1.974	1.41	0.564	71.42857143	2.973395931	-2.825637491
2002 – 2003	2.014	1.389	0.625	68.96722939	2.026342452	-1.489361702
2003 – 2004	2.105	1.492	0.613	70.87885986	4.5183714	7.415406767
2004 – 2005	2.216	1.688	0.528	76.1732852	5.273159145	13.13672922
2005 – 2006	2.347	1.674	0.673	71.32509587	5.911552347	-0.829383886
2006 – 2007	2.416	1.815	0.601	75.12417219	2.939923306	8.422939068
2007 – 2008	2.605	1.872	0.733	71.86180422	7.822847682	3.140495868

Primary Data Set 13: Property Tax Data for Ward No. 2 (source: author analysis; BBMP, 2009)

Tax Year	Demand (Rs. Million)	Collection (Rs. Million)	Balance (Rs. Million)	Percentage Collected	Annual Change % (Demand)	Annual Change %
1998 – 1999	0.18	0.147	0.033	81.66666667	0	0
1999 – 2000	0.2	0.17	0.03	85	11.11111111	15.6462585
2000 – 2001	0.21	0.186	0.024	88.57142857	5	9.411764706
2001 – 2002	0.22	0.206	0.014	93.63636364	4.761904762	10.75268817
2002 – 2003	0.24	0.196	0.044	81.66666667	9.090909091	-4.854368932
2003 – 2004	0.26	0.265	-0.005	101.9230769	8.333333333	35.20408163
2004 – 2005	0.3	0.302	-0.002	100.6666667	15.38461538	13.96226415
2005 – 2006	0.32	0.304	0.016	95	6.666666667	0.662251656
2006 – 2007	0.35	0.31	0.04	88.57142857	9.375	1.973684211
2007 – 2008	0.35	0.32	0.03	91.42857143	0	3.225806452

Primary Data Set 14: Property Tax Data for Ward No. 99 (source: author analysis; BBMP, 2009)

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Personal Interview with PP2, conducted August 2006  
Personal Interview with PP3, conducted August 2006  
Personal Interview with PP4, conducted August 2006  
Personal Interview with PP5, conducted August 2006  
Personal Interview with PP6, conducted August 2006

### **b) Assistant Revenue Officers**

Personal Interview with AR1, conducted August 2007  
Personal Interview with AR2, conducted August 2007  
Personal Interview with AR3, conducted August 2007  
Personal Interview with AR4, conducted August 2007  
Personal Interview with AR5, conducted August 2007  
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### **c) Junior Revenue Staff**

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Informal Conversation with Tax Inspector, TI1, conducted March 2008  
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Informal Conversation with Tax Inspector, TI3, conducted March 2008

Informal Conversation with Tax Assessor, TA1, conducted March 2008  
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#### **d) Other Actors**

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