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REPORT

The Economics of Television in a Digital World

What Economics Tells Us for Future Policy Debates

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Contents

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Executive Summary

This report is about the economic factors underlying television and the policy arguments that emanate from them as we move into a world in which all television will be digital. The report reveals the different perspectives among economists and policy analysts and the roots and implications of these differences. It shows how technology and policy changes have altered the television market over time; the different economic bases of licence-fee-funded, advertising-funded, and subscription television and how these compete and coexist; and how the current changes in television distribution are and are not altering the industry's economics and structure.
It distinguishes between two categorically different digital television domains: digital switchover and digital convergence.

Digital switchover (from analogue to digital broadcast TV) is almost complete in the UK: the last analogue signal will be switched off in October 2012. This represents the culmination of a long-term evolution towards more and more channels, combined with conditional access technology (essential for pay TV) and increasingly powerful and easy-to-use offline time-shift technology (from VCRs to digital video recorders).

Although the changes that have led to digital switchover are evolutionary, it creates technological and economic conditions that could allow a radical change to a free market in television, with viewers choosing which programmes, channels, and platforms they wish to buy and with no more need for a large publicly owned broadcaster such as the BBC, funded by a licence fee or general taxation. Some analysts, politicians, and industry players favour such a free market, similar to the current structure of television in the USA. Others support continued large-scale public intervention because of the specific economics of television as well as its wider social, cultural, and political importance. This report explores some of the economic arguments underlying these opposing viewpoints.

Digital convergence involves a potentially even more revolutionary change to a world where all, or almost all, homes have a broadband connection fast enough to deliver television programmes in real time. Many analysts believe that, in this world, most media content, including television, will be consumed online, on-demand, on multiple devices inside and outside the home, and in a more interactive way than in the past, and that the distinctions between different audio-visual media will disappear.
These wholesale radical changes in distribution and consumption would further impact the economics of television and related policy issues, beyond any changes resulting from digital switchover. At this point, there is great uncertainty about the long-term future scale, speed, and impact of digital convergence, although the initial rate of change has been less than many predicted. Policy-makers will need to monitor these developments closely, but for now, it is digital switchover that raises the most immediate policy issues.

1. Introduction

For nearly a century, broadcasting policy in many countries, including the UK, has been based on the understanding that technological and economic factors make it impossible to have a fully competitive broadcasting market without significant consumer and social detriment. Changes in technologies and market structures, however, have created an increasingly workable competitive market that coexists with large-scale public service broadcasters such as the BBC. An important feature of this 'broadcasting ecology' has been that the different submarkets (funded by licence fee, advertising, and subscriptions) rely on different revenue sources and, to a lesser extent, technologies, and operate under somewhat different regulatory regimes. They are therefore influenced by different economic incentives, helping them to coexist successfully.[1]

With digital switchover, some argue that the earlier technical constraints on the market have disappeared and that the historical basis for broadcasting policy and regulation no longer exists. They assert that broadcast markets should therefore be deregulated and state-supported public broadcasting ended or sharply restricted. Others argue that fundamental social and economic issues still provide a basis for public intervention. Both arguments are articulately and powerfully presented, but often based on rudimentary or incomplete economic analysis. This produces uncertainty in the public, regulators, and parliamentarians about how broadcasting policy should develop in the digital age.

This report seeks to clarify this debate, focusing on the economic issues. It lays out the economic characteristics of television and its submarkets and explores what is changing. It aims to give the reader an informed basis for evaluating economic arguments about the future of television policy.

1.1. What's changed and why does it matter?

On 24 October 2012, the last part of the UK's five-channel analogue television system will be switched off, 80 years after the first single-channel experimental TV broadcasts in 1932. In Britain and elsewhere, we are entering a world in which all television is digital. In this new world, previous technical constraints on the number of channels – due to shortage of spectrum – will be largely eliminated. After 24 October, all UK viewers will have access to several dozen channels through digital terrestrial TV or several hundred through digital satellite or cable – both free-to-air channels funded by advertising or the BBC licence fee and subscription channels for those willing and able to pay more. Further, in an all-digital world, every home can acquire a digital video recorder (DVR) giving viewers unprecedented control over when and how they watch programmes they have recorded. At the time of writing, about 50% of homes have DVRs.[2]

The continuing increases in the number of channels, the availability of conditional access technology, and the adoption of DVRs are not the only changes in the new digital world. A majority of viewers now have fixed or mobile broadband. They can therefore watch broadcast programmes and a wide range of other audio-visual material online on their TV sets and other screens inside and outside the home via a growing range of catch-up and

[1] Public service broadcasters are also influenced by non-economic incentives, further helping them to coexist with purely commercial broadcasters. This report, however, mainly focuses on economic issues.
[2] Ofcom, *Communications Market Report* (July 2012), 124 (fig. 2.10): 47% DVR penetration in Q1 2012. DVR households tend to be bigger, so we estimate that they already account for almost 60% of the UK population.

video-on-demand (VoD) services. There is dramatic growth in the availability and take-up of technologies such as superfast broadband, connected TV sets, social media, smartphones, the mobile internet and related, often bundled, communication services. These developments, summarised under the heading 'digital convergence', have the potential to create radical changes in what and how people watch television – a long-heralded part of the wider digital revolution.

Television in a digital world therefore differs from television in the old free-to-air analogue world in two sets of ways, one evolutionary (digital switchover) and the other potentially revolutionary (digital convergence).

EVOLUTIONARY CHANGES LINKED TO DIGITAL SWITCHOVER The evolutionary set of changes combines three medium-term technology trends: the growth of *conditional access technology* (allowing subscription channels); the steady increase in the *number of channels* culminating in the end of spectrum scarcity with digital switchover (allowing a large increase in the number of terrestrial channels, making multichannel TV universal); and the dramatic improvement in *time-shift technology* provided by digital video recorders (DVRs, also known as personal video recorders or PVRs).

These evolutionary changes all use offline technologies (i.e. not the internet) and are within a world in which TV is still (a) largely distributed through 'linear' broadcast channels and (b) largely watched live, despite the improved time-shift technologies. It first began to emerge well before the advent of digital TV: from the late 1970s, a growing proportion of consumers had access first to video cassette recorders (VCRs) and then to (analogue) multichannel TV, including early subscription channels. The differences now are, first, that today's digital technologies offer much more choice, convenience, capacity, and flexibility than those earlier technologies and, secondly, that with digital switchover, *all* TV homes will be digital, multichannel, and, at relatively low cost, able to acquire a DVR and conditional access technology.

Although these changes are evolutionary, their potential policy implications are dramatic. The removal of spectrum scarcity allows not only many more *channels* but also many more *broadcasters*, increasing competition and facilitating new providers of content. Further, with potentially universal conditional access technology, it is now possible to organise television as an ordinary competitive market with different channel and platform suppliers competing on price, the range and quality of content, and service.

This raises the question of whether the state should cease regulating television in the same ways as in the past – since the rationale of the market's non-competitive nature no longer applies – or whether there is something about the economics and the social, cultural, and political importance of television that continues to warrant intervention beyond normal market regulation. Within this broader question, there is a specific issue for the UK around the future of the BBC: is the continuation of a large, publicly owned player funded by a compulsory licence fee still appropriate under these new market conditions?

As different countries switch to all-digital TV, these issues will become central to public debates on the future of broadcasting in coming years, especially in those countries with large public broadcasters funded through a licence fee or general taxation. The debates will need to be based on a firm understanding of the historical economics of television, how they have and

have not changed during the past 80 years, and how digital switchover will and will not further alter them.

DIGITAL CONVERGENCE: REVOLUTION AT LAST? In the context of television, digital convergence refers to the adoption and usage of new online digital technologies such as superfast broadband, video-on-demand (VoD), smart and internet-enabled TVs, social media, and mobile TV. In a fully converged world, television could – in terms of technology – become just another internet application, albeit a very 'bandwidth-hungry' one, which would no longer need to be distributed using broadcast spectrum. TV programmes and other AV content can be packaged using the internet protocol and distributed through the same fixed and mobile networks as other internet traffic such as email, internet telephony, online shopping, banking, music, games, books, newspapers, and so on. This is already happening in many homes with video-on-demand and catch-up television services.

As with other online activities, the internet gives viewers much greater ability to watch what they want, when they want, and increasingly wherever they happen to be at the time. It also allows them to interact with content, find additional content, create their own content, combine different types of content, share content, comments, and recommendations with others, and benefit from smart navigation software to help them find what they want and suggest other content they might like, based on their previous viewing patterns and expressed preferences.

For over 20 years, the 'digerati' have been predicting that these technologies will lead to revolutionary change in the production, distribution, and consumption of TV and other audio-visual content.[3] So far, as discussed later, the scale and speed of change in consumption have been much less than predicted and it is far from clear that the long-heralded dramatic changes in audience behaviour will occur in the next few years. Nevertheless, the report discusses the possible implications of these more revolutionary changes, if and when they happen, as well as those of the more evolutionary changes, culminating in digital switchover, that are already happening.

1.2. The scope and structure of this report

Against this background, the question addressed in this report is: what can one say about the economics of television in this new digital world? The report focuses on television[4] rather than all broadcasting because it will be many years before radio becomes all-digital, and its content and distribution costs, revenue models, consumption patterns, and technology are all significantly different from those for television, despite some common features.

Although many countries are wrestling with these issues, the data and policy options discussed here are for the UK. The technologies and fundamental economics of television are the same everywhere but the

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[3] E.g. George Gilder, *Life after Television* (Norton, 1990); Nicholas Negroponte, *Being Digital* (Knopf, 1995); Bill Gates, *The Road Ahead* (Viking Penguin, 1995).

[4] According to some, we should no longer even use the term 'television', arguing that TV programmes are becoming indistinguishable from other audio-visual content on the internet. We still use the word television, however, because it is shorter and more familiar than 'audio-visual content' and also because, as we discuss in Ch. 5, the great majority of time spent consuming AV content, even in homes with 'converged' technology, is still devoted to watching broadcast television programmes on traditional so-called 'linear' channels, mostly live and on the main TV screen in the living room. Even when people watch AV content on a desktop, laptop or tablet computer, much of the time they are watching professionally produced, long-form, TV-type content, either previously broadcast programmes or movies.

specifics vary greatly because of differences in scale, institutions, income levels, language, culture, and even climate. Anyone wishing to apply this analysis beyond the UK would need to adapt it accordingly.

The report's main policy focus is on the implications of UK digital switchover, that is, the move to an all-digital world of 'linear' TV channels after analogue switch off in October 2012. Most of the UK has already made the switch, as have several other countries, and there is already a substantial body of evidence to allow a robust analysis, as discussed later. The report also, more tentatively, discusses the economics and possible implications of digital convergence, although the uncertainties are much greater than for digital switchover. The economic effects of digital convergence will become clearer over the next few years.

ECONOMICS, ECONOMISTS, AND UK BROADCASTING POLICY This report is about the *economics* of television in a digital world and the implications for policy. This is partly because the economics are important but also because of the unrivalled direct and indirect influence of *economists* – who naturally tend to take an economics perspective – on UK broadcasting policy.

The direct influence of economists is obvious. Most of the main broadcasting policy reviews in the last 30 years have been led by eminent academic economists, such as Sir Alan Peacock, Sir Alan Budd, and Lord Burns.[5] Both of Ofcom's chairmen to date (Lord Currie and Colette Bowe) and its current chief executive (Ed Richards) are economists, as was the chairman of the BBC when Ofcom was launched in 2003 (Gavyn Davies). The current chairman of C4 is, again, Lord Burns.

None of these is a specialist media economist by background and most are macroeconomists; that is, their main initial expertise was in the economics of nation-states rather than markets for products and services, never mind the specifics of the broadcasting market. Nevertheless, their understanding of economics and its application to television have clearly had a substantial influence on broadcasting policy, in some cases reinforced by links with the Treasury, a much more powerful department than the Department for Culture, Media and Sport, which has formal responsibility for broadcasting.

The indirect influence of economists on broadcasting policy is less obvious but equally important. Politicians, journalists, and leaders of media businesses routinely refer to the idea that, in a digital world, people can pay for the channels and programmes they want and that we should therefore no longer 'distort' the market by continuing to have a licence-fee-funded BBC making popular programmes as well as those with narrower, public service objectives. This argument is based on – usually implicit – assumptions about the economics of television.

Therefore, this report focuses on economics partly because broadcasting policy should clearly take economic issues into account but also because economic arguments are extremely – and perhaps disproportionately – influential. The authors do not believe that economics should be the only factor – or even the most important factor – in determining policy. But, given the dominant direct and indirect influence of economic thinking on broadcasting policy, it is crucial that the economic analysis is valid and evidence-based, reflecting the particular characteristics of the television

[5] For instance the 1986 Peacock Committee on the financing of the BBC, which also included economists Samuel Brittan and Jeremy Hardie; the 1999 Independent Review Panel on the Future Funding of the BBC, chaired by Gavyn Davies and including economists Alan Budd and David Lipsey; and the 2004 BBC Charter Renewal panel, chaired by Burns and including Budd and Sir Howard Davies, not an economist but ex-Treasury. Budd also wrote a report on the impartiality of the BBC's business coverage (2007).

market: costs, revenues, competition, and consumption patterns. Our aim in this report is to provide the foundation for such an analysis.

NON-FINANCIAL ISSUES The report also touches on non-financial issues, from a welfare economics perspective. Given the huge role of television in people's lives – an average of over 28 hours' viewing per week, actually increasing in the last few years, despite the growth in internet usage – and its social, cultural, and political importance, these non-financial issues are arguably at least as important as the business economic issues: television is a substantial industry (annual revenue £12.3 billion in 2011[6]) but its role in people's lives and our society is proportionately much greater than its share of consumer expenditure or GDP.

A complete analysis of the social, cultural, and political aspects of public service broadcasting would require a much longer report, going beyond the authors' areas of expertise and involving both highly contested interpretation of the evidence and a large number of value judgements. This report leaves those arguments to others while noting that such effects are, at least in part, recognised in welfare economics: the real issue is what importance they are given in policy-making.

REPORT STRUCTURE The rest of this report is structured as follows.
In Chapter 2 ('How Did We Get Here?') we review how the current UK television market has evolved: why it was set up based on the BBC monopoly rather than as a free market; how the different types of broadcaster and funding were introduced over time; and how the current mixed economy emerged. Chapter 3 discusses the economics of the three main types of funding in the same order as their introduction in the UK: licence fee (section 3.1), advertising (section 3.2), and subscriptions (section 3.3). Section 3.4 then briefly discusses how licence-fee-, advertising-, and subscription-funded TV broadcasters compete and coexist. Finally, we discuss the current and, more tentatively, likely future impact and implications for television economics of digital switchover (section 4) and digital convergence (section 5).

[6] Ofcom, *Communications Market Report* (July 2012), 137, fig. 2.23.

2. How Did We Get Here?

The fundamental questions in broadcasting policy, first in radio and then in television, have always been about the allocation of spectrum and the ownership, funding, and regulation of channels and content. The answers to those questions emerged from the social and economic rationales guiding choices about broadcasting structures, always within a technological, financial, and political context.

2.1. Why was the BBC monopoly created?

Today's UK broadcasting ecology is strongly influenced by the past, including government decisions going back more than a century: the Telegraph Act 1869 and the Wireless Telegraph Act 1904 led to radio broadcasting being interpreted as the operation of an 'electrical post office' and therefore requiring a licence from the General Post Office (GPO), a branch of the UK government.

In 1922, the GPO licensed a consortium of radio set manufacturers, the British Broadcasting Company Ltd, to create a nationwide transmitter network and to start radio broadcasts.[7] The dominant shareholders in this first incarnation of the BBC were associate companies of the US giants General Electric, AT&T, and Westinghouse. The BBC's commercial aim was to create demand for radio sets, although it also received a share of the GPO's radio licence revenue. Its shareholders benefited from its purchases from them of transmitters and studio equipment. Unlike radio broadcasters in the USA, it was not licensed to carry advertising.[8]

The BBC Ltd Board appointed as its General Manager John Reith, a young Presbyterian Scot with no broadcasting background but some experience of engineering management and huge self-confidence. Reith believed that the BBC's mission should be to inform, educate, and entertain the public, while setting high standards in all its activities (engineering, morals, and language use, as well as programmes) and reporting events as neutrally and as independently of government control as possible. During the 1926 General Strike, the company was almost taken over by the government (at the particular urging of the Chancellor of the Exchequer, Winston Churchill) because it insisted on reporting, without comment, both sides of the dispute.

Later that year, the BBC did become a public broadcaster, the British Broadcasting Corporation, as recommended in the March 1926 report of the Parliamentary Crawford Committee. However, crucially, it was not a directly controlled arm of government: its independence was safeguarded by a board of governors and by appointing the formidable Reith as its first Director General.

The BBC is not, and has never been, a state broadcaster in the sense of a communication channel directly controlled by the government.[9]

The BBC was set up as a monopoly radio broadcaster. When television became technically feasible – John Logie Baird's first experimental transmission was in August 1929, less than three years after the launch of the BBC as a public corporation – it too was organised as a BBC monopoly after little, if any, debate.

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[7] For the history of the BBC, see Asa Briggs, *The BBC: The First Fifty Years* (OUP, 1985).
[8] In 1925, however, it did broadcast eight concerts sponsored by various UK print media.
[9] A notable exception occurred during the Second World War, when the BBC's links to government were strengthened and it was used to support the war effort domestically and internationally.

THE RATIONALE FOR THE BBC'S TELEVISION MONOPOLY The main roots of the BBC's television monopoly, and its 100% licence-fee funding with no revenue from advertising or subscriptions, were historical, ideological, and political. But there were also economic and technical factors underpinning this approach. TV, like radio, relied on scarce radio spectrum, a valuable public asset, and there were no available conditional access technologies to prevent those who had not paid for the service from receiving it – hence the establishment of a compulsory licence fee for radio and then television. Because spectrum is a public resource with multiple uses, governments have to decide how it is allocated and used. Today this is done at the global level, the European level, and the national level. In the initial development of radio and television, the spectrum available for broadcasting was highly constrained due to the limitations of early analogue transmission systems. Although technological advances throughout the twentieth century expanded the spectrum available and allowed it to be used more efficiently, demand for spectrum always exceeded supply and constrained the development of a fully competitive broadcast market.

Another factor was the absence of conditional access technology. The ability to exclude those who have not paid from consuming a product or service is fundamental to the existence of any economically efficient market. Because (a) those who would not pay could not be excluded from receiving broadcasts and (b) everyone could receive broadcasts without reducing its availability to others, broadcasting before the advent of conditional access technology was what economists call a *public good*, that is, a good which is both 'non-excludable' and 'non-rivalrous'.[10] This meant that the development and effective operation of a commercial broadcast marketplace would be constrained by 'free-riding', with those who did not pay enjoying the benefits of others' expenditure, like someone riding a bus or train without paying.[11]

The fact that broadcasting was a public good was a significant factor underlying the BBC monopoly, along with uncertain demand and the lack of a viable existing commercial market.[12] Because radio was a completely new medium, neither companies nor government were confident that it would be successful: the underlying demand was uncertain and success in a free market would require the alignment of several independent interests. Electrical appliance manufacturers were unsure whether consumers would pay for receivers and were therefore reluctant to invest heavily in production capacity for radio and, then, TV sets; consumers had no incentive to invest in receivers unless there were broadcasts to receive; and potential broadcasters were reluctant to invest in content and distribution because there was neither an audience nor an established business model for them.[13]

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[10] Bruce M. Owen, Jack H. Beebe, and Willard G. Manning Jr. *Television Economics* (D. C. Heath, 1974); Samuel A. Wolpert and Joyce Friedman Wolpert, *Economics of Information* (Van Nostrand Reinhold, 1986); Benjamin Bates, 'Information as an Economic Good: Sources of Individual and Social Value', in V. Moscow and Janet Wasko (eds), *The Political Economy of Information* (University of Wisconsin Press, 1988), 76–94; Bruce M. Owen and Steven S. Wildman, *Video Economics* (Harvard University Press, 1992); Andreu Mas-Colell, Michael D. Whinston, and Jerry R. Green, *Microeconomic Theory* (OUP, 1995).

[11] The term originated in analysis of the unpaid use of public transport services, but is now applied in many analogous circumstances.

[12] See R. H. Coase, 'The Origin of the Monopoly on Broadcasting in Great Britain', *Economica*, 14/55 (1947), 189–210; Eric Barnouw, *A History of Broadcasting in the United States*, vol. 1, *A Tower of Babel: To 1933* (OUP, 1966); Briggs, *The BBC*; Robert G. Picard, 'Business and Market Challenges and their Effects on the Foundations and Trajectory of U.S. Broadcast Policy', *Journal of Media Business Studies*, 8/2 (2011), 45–62.

[13] See Coase, 'Origin of the Monopoly', 194–5, and Briggs, *The BBC*, 27–33.

The UK government broke this stalemate in 1926 by turning the BBC Ltd into the British Broadcasting Corporation, the world's first large-scale public service broadcaster. Three further policy issues were important in this decision:

- The desire to provide a *universal service* available to all UK citizens, including those living in smaller, remote, or poorer areas that would not be attractive to commercial operators;
- The challenge of *free-riding*, seen as a justification for compulsory collective financing; and
- The desire to retain broadcasting as a means of *social control*, particularly in the political context of the 1920s and 1930s.

Reinforcing these specific factors was a widespread belief in the early twentieth century that – especially for industries with strong economies of scale and expensive distribution networks – a regulated monopoly was the most efficient way of serving the market without wastefully duplicated infrastructure and excessive marketing costs.[14]

Most other countries in Europe and many beyond also took the public ownership route, creating some form of public or state broadcasting funded by licence fees or general taxation, with varying degrees of independence from government control. The US took a purely commercial route, mainly for cultural and constitutional reasons but also because of financial constraints on the government.

Although the possibility of establishing *advertising-supported broadcasting* was recognised in the UK, there was great uncertainty over whether advertisers would provide enough funding – and newspaper and magazine publishers were, with good reason, worried about competition for advertising revenue. Their opposition was joined by those with concerns that advertising would promote materialism and that advertisers would distort programme choices to appeal only to those audiences they wanted to reach. The BBC licence fee was seen as an egalitarian way for citizens to fund public service broadcasting that was beholden to themselves, rather than to commercial or government interests.[15]

These factors led to the choice to create public service broadcasting, giving the BBC a monopoly that helped it become one of the world's largest and most trusted and respected providers of radio and television programming.

ECONOMIC EFFECTS OF THE BBC'S MONOPOLY The BBC monopoly had both positive and negative economic effects. The stable and substantial licence-fee funding provided income that allowed the BBC to invest in studios, distribution, and original content production, hire the best talent, and create an enviable international operation, the BBC World Service.[16] It enabled the BBC to provide the highest-quality programming of all types, albeit with a strongly paternalist flavour.

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[14] Tim Wu, *The Master Switch* (Knopf & Atlantic, 2010), 8–9.

[15] See Robert G. Picard, 'Financing Public Media: The Future of Collective Funding', in Christian S. Nissen (ed.), *Making a Difference: Public Service Broadcasting in European Media Landscape* (John Libbey Publishing, 2006), 183–96; and Robert G. Picard, 'Audience Relations in the Changing Culture of Media Use: Why Should I Pay the Licence Fee?', in Gregory F. Lowe and Per Jauert (eds), *Cultural Dilemmas in Public Service Broadcasting* (NORDICOM, 2006), 277–92.

[16] The World Service is currently funded by the Foreign Office but responsibility is being transferred to the BBC (i.e. the licence fee) under the Nov. 2010 settlement.

But it also created conditions in which there were no competitive pressures and with limited incentives for efficiency. As the BBC's portfolio of radio and television channels grew, so did the organisation. It established multiple divisions, each with its own layers of supervisors and managers, and it hired more corporate executives and staff to coordinate the entire organisation.[17]

Other organisations were excluded from radio and, then, television broadcasting, thus limiting the range and choice of programmes. Although the public remained highly supportive of the BBC and its offerings, discontent over limitations on choice began to grow.

Some economists and critics argued that broadcasting limited to the BBC did not contribute to national economic growth because it was not in the business of creating economic value through profits and thus contributing to gross domestic product. (This argument, of course, ignored the BBC's own contributions to employment and the effects of expenditures for equipment, supplies, services, and the construction of facilities on the economy and economic growth.) It was further argued that, because of the monopoly and the BBC's ability to produce all its own programming, Britain was not developing significant independent content production capacity that could innovate and also contribute to economic growth, including the development of the motion picture and advertising industries. Finally, advertisers were frustrated by their inability to advertise on either radio or television in the UK.

2.2. Breaking the BBC monopoly

Starting in the late 1940s, some citizens, politicians, and commercial interests began to challenge the arguments for the BBC monopoly. Their views received support from the leading economist Ronald Coase (later, the winner of the 1991 Nobel Prize in Economics). Coase argued that allowing commercial free-to-air television could increase programme choice by creating a new, additional source of funding, while TV advertising would also make competitive markets work better, promote economic growth, and increase tax revenues.[18]

By the early 1950s, television was sufficiently well established in Britain to persuade entrepreneurs to invest in commercial TV. Although they still could not exclude viewers (because of the continuing lack of conditional access technology, making subscription TV non-viable), the explosive growth of television advertising in the US showed that commercial broadcasters could avoid the free-rider problem by offering their signals free to audiences and selling access to those audiences to advertisers.[19] After significant debate, changes in government policy led to the establishment of ITV (1955) and later to Channel 4 (1982) and Five (1997) as spectrum became available. The BBC's second channel BBC2 was added in 1967, further increasing content choice.

The development of ITV as a national network of separately owned regional franchisees was complete by 1960, creating a duopoly in television, with the BBC and ITV competing for audiences but not for revenue. ITV did compete for advertising revenue against newspapers, magazines, and other commercial media such as outdoor (posters) and cinemas. This encouraged it

[17] E.g. BBC personnel doubled between 1930 and 1936, and jumped from 12,000 in 1950 to 24,000 in 2010.
[18] R. H. Coase, *British Broadcasting* (Longmans Green for the London School of Economics, 1950); R. H. Coase, 'The Economics of Broadcasting and Government Policy', *American Economic Review*, 56 (1 Mar. 1966), 440–7.
[19] Robert G. Picard, *Media Economics* (Sage, 1989); Robert G. Picard, *The Economics and Financing of Media Companies* (2nd edn, Fordham University Press, 2011).

to maximise audiences, although the franchisees were also compelled by the regulator to allocate both budget and airtime to regional and various public service and minority interest programmes – something they would not do on their own as rational-economic actors. Despite these restrictions, the net effect was a sharp increase in popular programmes as well as a shift towards less deferential news and current affairs coverage. Total viewing increased but the viewing of the BBC went down dramatically as ITV built a dominant share of over 70% in 1957.[20]

The BBC responded energetically, with a reduction in programmes seen as paternalist or elitist, tougher news and current affairs, and an increase in popular entertainment programmes. By the 1970s, it had rebuilt its viewing share to roughly 50%, split across its two channels.[21]

ITV's fragmented structure increased costs and created internal tensions. Each franchisee could earn revenue by selling programmes to the network but also had to help pay for programmes bought by the network, which was dominated by the larger companies. The franchisees also competed against each other for their shares of advertisers' TV advertising budgets, with a perverse pattern that those with a below-average share of regional viewing tended to get a *higher* than proportional share of TV advertising revenue, partly for demographic reasons but also because advertisers whose campaign objectives included a specific reach and frequency had to allocate extra resources to those regions.

Even after the launch of Channel 4 in 1982, advertising-supported broadcasters still operated in a less-than-free market because of the spectrum and policy barriers against new broadcasters entering the market.

Nevertheless, the launch of ITV brought significant additional investment and revenue into the UK television market. It led to increased employment in television, rising programme production, and more choices for viewers. Although commercial television and the BBC did not have the same source of funding, they both sought audiences' time and attention. The policy choice thus created a market for *audiences* and rivalry between the BBC and commercial broadcasters for the public's viewing: most people watched both, but they varied widely in how much time they spent watching TV and how they allocated it between ITV and the BBC.

Competition for *personnel* was also introduced into the television labour market because all broadcasters, including BBC, wanted to employ the most talented people. The new market increased demand for their services and their wages began to rise accordingly, especially for the highly unionised technicians at ITV.

Finally, the new market increased competition in *programme acquisition* and led to channels vying to acquire rights to carry sporting events, films, and imported programmes. This drove up prices, with the BBC having to accept this market logic and make increasingly large payments in order to beat out the competitors for rights – sometimes at the expense of investments in original programming. The incentive for the BBC to do so was its need to keep relevant for audiences and to perform well in terms of its share of total viewing, which had been introduced as an indicator in public assessments of its performance.

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[20] http://news.bbc.co.uk/1/hi/entertainment/4241286.stm (accessed July 2012).

[21] In addition to the BBC's competitive response to protect its viewing share, an important factor was the 1960–2 Pilkington Committee on Broadcasting, which criticised ITV's populism (leading it to reduce its emphasis on game shows and US imports) and recommended that the third channel be allocated to the BBC (BBC2).

As in all markets, competition in broadcasting typically increases the pressure for efficiency and lowers many costs. But it also leads to higher costs on much of the supply side as competing broadcasters bid up the price of top talent and acquired content.

2.3. The growth of multichannel cable, satellite, and pay TV

Multichannel television emerged from early efforts using simple cable technology to extend television distribution to areas where broadcast reception was limited – usually by geographic impediments – especially in the US, where broadcasters had no universal service obligations. At first, these local cable systems just carried existing broadcasts; consumers paid only for the costs of the community antenna and local cabling needed to bring the signals to their homes. However, cable companies soon realised that they could provide additional channels not available locally and that doing so added value and allowed them to charge higher prices. Community antennas picking up local terrestrial broadcasts were ultimately replaced by a system of geostationary satellites with nationwide 'footprints', whose signals were received by large satellite dishes for local cable distribution.

Some non-broadcast channels such as HBO (Home Box Office), that were available only on cable systems, emerged as pay TV networks, while others, such as CNN and MTV, began seeking funding through advertising as well or instead. The number of available channels increased from a handful of local stations to several dozen national networks, physically limited only by the capacity of the satellites and cables.

By the 1980s, more powerful satellites made it possible to broadcast direct to any home able to mount a small dish with a direct line of sight to the satellite, avoiding the huge infrastructure costs of laying cable lines to homes. In the UK, BSkyB, using this direct-to-home (DTH) satellite system, soon became the dominant pay TV operator.

Cable and DTH satellite TV services were initially all analogue, with limited channel capacity. Conversion to digital began in the late 1990s, gradually increasing the number of channels from dozens to hundreds and enabling new features, especially digital video recorders (DVRs). In the UK, BSkyB switched off its analogue signal in 2001 and cable was fully digital by 2007.[22]

Cable and DTH satellite operators provided set-top boxes to convert the signals for their subscribers. To avoid the free-rider problem, they added conditional access technologies that scrambled the signals so that only those who had paid could watch the programmes. The operators now have legal protection, making efforts to circumvent those technologies a criminal offence.

Unlike the free-to-air (FTA) terrestrial TV services funded by the licence fee or advertising, cable services were not available in all homes, for two reasons:

- First, decisions about where to offer services were based on analysis of demand versus infrastructure costs and the potential for return on investment. Thus cable was typically available only in urban and suburban areas where incentives to invest were strongest. Even today, Virgin Media's cable network passes only about 13 UK million homes (50%).[23]

[22] Ofcom, *Communications Market Report* (July 2012), 119, fig. 2.4. Strictly speaking, cable is still not all-digital since the system in Milton Keynes remains analogue.
[23] Industry source.

- Secondly, even in these areas, only those willing and able to pay received cable TV. Currently, just under 30% of homes passed by Virgin Media subscribe to its TV service.[24]

With DTH satellite services, the first of these constraints was largely removed because the cost per home was relatively low and independent of both population density and (in most cases) location. The number of available channels – in addition to the universally available free-to-air terrestrial channels – no longer depended on where one lived, but only on one's willingness and ability to pay. Because cable TV in Britain had not achieved high penetration before the advent of DTH satellite TV (unlike in many other countries including the USA), within a few years BSkyB, with its near-universal availability[25] and much lower infrastructure cost, was able to build the dominant position which it still enjoys – over 10 million subscribers, giving a market share of almost 70%, about 2.7 times the share of its nearest competitor, Virgin Media.[26]

The arrival of pay TV created a 'purer' market for television by introducing prices and consumer payments. These new services increased the competition for audiences and also for advertising revenue, since many of the new channels carried advertising. In addition, it further ramped up the competition for rights to broadcast sporting events, movies, and imported programmes and for on- and off-screen talent, driving up costs for all broadcasters.

Pay TV operators were able to benefit from both subscription and advertising revenue.[27] Many consumers were willing to pay much more for premium channels than either the level of the licence fee or the revenue per home that could be generated by advertising alone. Despite their lower availability (due to price elasticity and, in the case of cable, lower geographical availability), pay TV operators were therefore able to pay higher prices for rights than free-to-air broadcasters, so many sporting events, most first-run movies, and some other premium content was no longer universally available.

2.4. The current mixed economy and revenue mix

Three main funding models emerged from these developments:

- Free-to-air television wholly or partly funded by licence fees or general taxation;
- Free-to air television funded by advertising;
- Pay TV funded by consumer subscriptions.

Although these submarkets are all part of the wider television market, each operates with a different economic logic. Each individual broadcaster has generally relied on one main funding source, although that is changing somewhat. In Britain:

- The BBC's UK services have always been funded by the licence fee, increasingly supplemented by a contribution from commercial activities (magazines, DVDs, international programme and format

[24] Virgin Media Annual Report 2011: as at 31 Dec. 2011, VM had 3.76 million TV subscribers.
[25] 98%: Ofcom, *Communications Market Report* (July 2012), 25, fig. 1.1.
[26] 58% of UK homes have pay TV (Ofcom Technology Tracker), i.e. about 15m of the UK's 26m homes. BSkyB had 10.29m pay TV homes in June 2012, 2.74 times VM's 3.76m homes in Dec. 2011.
[27] Advertising accounts for only a small proportion of pay TV operator revenue but a rather higher proportion of their gross profit margin, since it has relatively low incremental fixed cost and minimal variable cost.

sales, etc.) but with no advertising on BBC-branded channels in the UK. In many other countries, public broadcasters are funded by a combination of licence fees or taxation and advertising, with the proportion of advertising growing over time as governments seek to hold down the level of the licence fee.

- ITV has always been largely funded by advertising (plus programme sales, merchandising spinoffs, premium phone call charges, etc.) but is now looking to broaden its funding base with some pay TV revenue as well as revenue from online activities. The situation for other FTA commercial networks, including C4 and Five in the UK, is broadly similar.
- Satellite and cable platforms and channels have always been funded by a combination of subscriptions (and some pay-per-view for major sporting events, etc.) and advertising.

Between 2004 and 2011, total industry revenue grew from £10.0 billion to £12.3 billion. Almost all of the £2.3 billion increase came from subscription revenue, which grew from £3.4 billion to £5.2 billion. Nominal growth in advertising, licence fee, and other revenue accounted for the rest of the increase.[28] Subscriptions now account for 43% of industry revenue, advertising for 29%, and the proportion of the BBC licence fee allocated to television 22%.

Although subscription revenue is starting to mature, it is still expected by most analysts to increase further, and advertising to decrease further, as a percentage of total industry revenue. The licence revenue of BBC TV will definitely decrease in both absolute and relative terms over the next five years as the October 2010 settlement reduces the funding of BBC TV by 16%.

CONCLUDING COMMENTS Funding, ownership, and regulation models matter because they determine to whom broadcasters are accountable and who their main customers are. These models significantly influence programming policies, cost structures, competition, and many other aspects of how broadcasters serve the public and deliver value for money and social welfare.

In addition, the sequence in which the different funding models appear has long-term effects on a country's broadcasting ecology. For instance, the US started with advertising-funded FTA commercial television; the state-supported Public Broadcasting Service (PBS) came much later (1970, although its precursor National Educational Television (NET) started in 1952). PBS has never captured more than about 3% of viewing, less than one-tenth the BBC's current viewing share in Britain.

The US television system is therefore almost entirely commercial, with a mixture of pay TV and FTA advertising-funded channels. This is quite different from the revenue and ownership mix in the UK in which the publicly owned BBC and C4 are still major players with total viewing shares of 32.7% and 11.8%, respectively.[29]

[28] All figures here are from Ofcom, *Communications Market Report* (July 2012), 136, fig. 2.22. Other revenue includes TV shopping, sponsorship, premium-rate telephony, digital, programme and format sales, and S4C's grant from DCMS. The total for all these was £777m in 2011, 6% of total industry revenue.
[29] Ofcom, *Communications Market Report* (July 2012), 163, fig. 2.52.

3. The Economics of Licence-Fee, Advertising -, and Subscription- Funded Television

This section discusses the characteristics of television under the three main funding models, and the economic factors that influence them, in the sequence in which they appeared in the UK: licence fee (section 3.1), advertising (section 3.2), and subscriptions (section 3.3). It then shows how these three submarkets compete and coexist (section 3.4).

Before discussing the specifics of the three submarkets, however, we first briefly note two generic, interrelated factors that apply to all television services, regardless of how they are funded: the cost structure of production and distribution, and the nature of the audience's programme preferences.

The underlying cost structure of television is simple: high fixed production cost, zero variable production cost (i.e. the production cost of a programme is unaffected by the number of people who then watch it), and – usually – relatively low physical distribution cost. This is therefore a market with extreme economies of scale, in which the *unit* cost of production for a given programme falls inversely with the number of viewers.

Although household video cameras and editing equipment now mean that anyone can create TV programmes, the cost of long-form video content that audiences will choose to watch on a mainstream channel in competition with professionally produced programmes, far from falling, is generally rising faster than general inflation. Viewers are accustomed to high production values and quality in performance (in the studio, sport arena, and theatre), direction, editing, and technical standards (sound recording, camera work, etc.). The market for talent is increasingly winner-take-all, with the top few performers earning – and costing – much more than others who are either not quite as accomplished or are simply less well known. Digital technology is increasingly used to enhance programme quality through more live feeds from around the world, better graphics, computer-generated images, etc., at least as much as to reduce costs. Increased competition for the best acquired content further drives up costs.

The high fixed cost of programmes able to attract large audiences is one of the fundamentals of TV economics.[30] It applies globally and regardless of the funding method. Internationally, the economics favour countries with large populations and high GDP per capita. An executive from DR, the Danish equivalent of the BBC, told us that there are more Boy Scouts on Earth than Danish speakers. Denmark is a very prosperous country but there simply aren't enough Danes to fund the volume of high-quality original production possible in the UK or Germany – not to mention the USA. DR has addressed this problem by channelling its resources carefully into a limited number of programmes, including high-quality drama, and collaborating with other Nordic broadcasters, but inevitably has to rely on a lot of imported content.

The audience's general preference for high production values (reinforcing the extreme economies of scale of TV) is, however, mitigated by three other factors.

- Where production quality is the same, audiences have a preference for local content, where 'local' mainly means 'national'. Other things being equal, Australian viewers prefer Australian content and British viewers prefer British content. The reason is that national content is in general

[30] The production cost varies greatly between genres and individual programmes and is typically much lower for daytime programmes, children's programmes, etc. These differences do not affect the overall cost structure discussed here.

more personally and culturally relevant. This issue of relevance is reinforced by language: audiences prefer content created in their own language rather than dubbed or subtitled.

- Because of the importance of television in shaping national politics and culture, and supporting national and minority languages, most governments provide some state support for television. Even in the UK, a leading Anglophone country, the BBC licence fee funds Welsh and Gaelic TV services as well as the English-language ones.[31]
- Television is a creative product. Every episode of every programme is new. Big-budget programmes often fail, especially if they are perceived as too derivative, formulaic, or crudely commercial. Conversely, small-budget programmes – or even slow-moving, subtitled ones from small countries, like DR's *The Killing* and *Borgen* – can become surprise hits.

These factors should not be overstated. Television is, in general, a mass medium. As we will discuss, TV audiences are not strongly segmented by their content preferences (compared with those for books, magazines, and even radio stations). The preference for 'local' content overrides the preference for high production values only up to a point. For instance, it will be very difficult to develop a viable network of local TV stations in the UK, as the government is aiming to do, because of the high cost of producing local content of sufficient quality to attract enough viewers to generate advertising revenue to cover the costs of the operation. Even the rightly celebrated Scandinavian detective dramas on BBC4 have come after decades with virtually no Scandinavian content on British screens and have perhaps generated more media coverage than viewing; time will tell how sustainable their success is. The gods of television are still very much on the side of the big battalions.

3.1 Licence-fee-funded television

In Britain, licence-fee funding dates from the time when the only way to hear radio programmes was by buying a radio set and the only UK programmes were from the BBC. The TV licence, introduced in 1946, simply extended the same approach to television when the BBC was the only UK television broadcaster. Licence fee revenue grew in line with TV penetration, further boosted by the introduction of colour TV in 1967, for which the licence fee was higher. Radio licences were abolished in 1971: the TV licence, currently £145.50 annually,[32] now funds BBC Radio – and BBC Online – as well as BBC Television.[33]

With licence-fee funding and public ownership, there is no direct financial incentive to make particular investment and programming decisions. Licence funding frees the broadcaster from paying attention to the needs of investors (as in the case of commercial firms) and advertisers (as in the free-to-air advertising-funded model), or of dealing directly with viewers as consumers (as in the pay TV model).

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[31] Of course, governments' reasons for funding and controlling broadcasting are not always so benign.

[32] Any household which is the principal residence of someone aged 75 or over is entitled to a free TV licence funded by the taxpayer. The licence fee for a black-and-white TV is £49.00. Registered blind people only pay 50% of the full licence fee. Residential care homes pay £7.50 per resident.

[33] Under the Oct. 2010 settlement, the licence fee is frozen until the end of March 2017. In addition to the BBC's UK TV, radio and online services, the licence fee will fund the BBC World Service (from Apr. 2014), BBC Monitoring (an open source publisher that monitors political media coverage around the world), and most of the cost of S4C, while also subsidising the rollout of superfast broadband (£150m/year) and local TV (£25m plus £5m/year).

Licence-funded broadcasters do, however, need to take account of viewers' interests in order to maintain public support, including by attracting enough viewing hours and 'audience reach' (the proportion of homes or individuals watching at least some of the time in a given time period, such as a week) to ensure that the licence fee is seen as good value for money – e.g. as measured by the cost per viewer hour – as well as to meet audience appreciation and overall satisfaction standards set by regulators (in Britain, the BBC Trust).

But, compared with purely commercial broadcasters, they can, and must, also pay attention to broader social interests to justify their continued existence. There is an inherent tension between these two broad aims – maximising viewing, to ensure high reach and good value for money, and increasing the number and quality of less popular programmes that commercial broadcasters will not show.

In principle, it would be possible to combine licence-fee funding with private ownership. The government could, for instance, auction a time-limited licence for monopoly access to the money raised, with some regulation of the level of the licence fee and/or how the money is spent. This would be somewhat similar to the way ITV was historically regulated, including the attempt to introduce auctions for ITV franchises in the Broadcasting Act of 1990.

Alternatively, the funding might be distributed programme by programme or channel by channel through an 'Arts Council of the Air' that allocated resources in response to competitive bids. This approach appeals to free-market enthusiasts such as Sir Alan Peacock[34] because it forces applicants to focus on public service criteria and avoids 'distorting' the market, by making funds available to all who wish to contest for them.

Such a funding programme already exists in Ireland. Since 2005, the Broadcast Authority of Ireland has operated a Sound and Vision Fund, now financed by 7% of the licence fee. It is open to any broadcaster who can bid to produce 'Irish content for Irish audiences': arts, history, literacy, Irish language, global and development affairs, children's programmes, and sports. The fund provides €14 million (£11.2 million) annually. It funded production of 292 programmes from 2005 to mid-2010. About three-quarters of this contestable funding was garnered by the public service broadcasters TVÉ and its Irish-language subsidiary TG4, suggesting that commercial channels were either uninterested in producing and carrying even subsidised public service programming or unable to produce competitive proposals.[35]

BENEFITS OF BBC LICENCE FEE FUNDING AND PUBLIC OWNERSHIP The universal licence fee can be an extremely cost-effective way of funding television because it generates a large programme budget at a low cost per home compared with the price of subscription TV. There are several reasons for this:

- All, rather than some, UK television homes contribute to the programme fund and operational overheads. With subscriptions, these costs have to be covered by a much smaller customer base, i.e. those who choose to pay for the service.

[34] Alan Peacock, *Public Service Broadcasting Without the BBC?* (Institute of Economic Affairs, 2004), 33–53.
[35] Helen Shaw, Robert Picard, and Hessel Abbink Spaink (eds), *Irish Broadcasting Landscape: Economic and Environmental Review for the Broadcasting Authority of Ireland* (Athena Media, Aug. 2010), 28.

- The 'non-rival' aspect of broadcasting as a 'public good': once a programme has been made (and the physical transmission network is in place), it costs nothing to make it available to everyone physically reached by the network. In fact there is a small saving through not having to invest in conditional access technology.
- The licence fee has lower revenue generation costs (£124 million collection cost in 2011[36]) than advertising or subscriptions because it does not require large expenditure on sales or marketing. This enables the BBC to invest a relatively high proportion of revenue directly in content.
- Unlike most public services, since the launch of ITV in 1955 the BBC has operated in a competitive – now extremely competitive – market, forcing it to focus on audience needs as well as on wider public service objectives and to manage its resources tightly.

For these reasons, a well-managed and well-regulated licence-funded broadcaster can provide market-leading value for money in pure consumer terms, i.e. as measured by universal access, high reach, and low cost per viewer hour.

In addition, public ownership, regulation, and licence-fee funding force and enable the BBC to serve public service rather than private objectives.

- It provides a wide range of programmes attractive to all demographic groups including programmes for children, minorities, the nations and regions, lovers of art, serious classical music, and so on. A high proportion of these are original UK programmes, many made by independent producers and in the nations and regions.
- News and current affairs coverage is independent of both commercial and government interests.
- Stable revenue reduces uncertainty, giving the BBC a longer term perspective and enabling it to take creative risks and to invest in training and re-skilling – increasingly important in a fast-changing world – from which the whole industry benefits.
- Virtually every household with a TV set watches the BBC most days (as well as consuming the BBC's other services). Therefore the licence fee, unlike much general taxation, does not involve people paying for a public service they themselves do not use.
- Licence-fee-funded broadcasters are transparent and highly accountable, being regulated by governing boards (currently the BBC Trust), the communications regulator (Ofcom), and, ultimately, Parliament.

Public ownership also allows the BBC to be used for other public purposes supported by the Trust such as encouraging the adoption of new technologies. Digital switchover – the immediate stimulus for this report – has been driven by the success of both the BBC's Freeview (after the failure of ITV Digital) and of Digital UK, within which the BBC is a major player.

[36] http://asp-gb.secure-zone.net/v2/indexPop.jsp?id=584/819/4091&lng=en.

DISAGREEMENTS ABOUT THE SCALE, SCOPE, CONTENT, PRIORITIES OF THE BBC

The downside of the public's ownership of the BBC is that there will always be disagreements about its scale, scope, content, and priorities.

- Its popularity with audiences causes resentment among its commercial competitors, some of whom (notably, News Corporation) also control national newspapers through which they routinely attack the BBC and which also give them significant informal political influence, as revealed in some detail at the Leveson Inquiry.
- The BBC is required to supplement the licence fee by generating income from commercial activities. Much of this income comes from programme sales and other international commercial activities but some comes from UK sales of DVDs, magazines, etc. There is always a question about where to draw the line, especially on these UK activities. The current approach is to say that the BBC's commercial activities should be limited to those closely linked to its programmes.
- Free-market economists and those influenced by them object on ideological grounds to the existence and market impact of such a large publicly owned, licence-fee-funded player.
- Both supporters and critics scrutinise its content for evidence of perceived error or partiality, argue about how much of its budget should be used for different types of programming, and debate the extent to which content reflects the numerous geographical and other interests within the country. This scrutiny and argument are far greater than for commercial broadcasters.

Underlying many detractors' beliefs seems to be an implicit and untested assumption that a publicly owned broadcaster funded by the licence fee is inevitably less efficient – and therefore provides less good value for money in pure consumer terms – than a commercial broadcaster funded by subscriptions. Many economists take this view, although many others do not. Most economists agree that:

- At least some public service objectives have value beyond the cost of achieving them, although reasonable people will always disagree about how to prioritise these and where to draw the line;
- The market will under-provide at least some such content; and therefore
- There is a case for some public intervention to address this 'market failure'.

Economists embracing free-market ideology see the implication as being that a publicly owned broadcaster should provide only those types of programme that the market will not and whose value against some criterion (other than the ability to generate commercial revenue) exceeds their cost, e.g. *'Public service broadcasting should consist of supplying consumer wants where such wants, for some reason, cannot be provided through the market'*.[37]

[37] Philip Booth, 'Introduction', in Peacock, *Public Service Broadcasting Without the BBC?*, 18.

Economists taking a welfare economics approach argue that limiting a publicly owned broadcaster to providing only programming the market is uninterested in does not allow it to make other contributions to social, cultural, and economic well-being.

Regardless of the economic arguments, it is clear that public service broadcasters remain popular with audiences. Licence-fee-funded public service broadcasting continues to play an important role in many parts of the world, not only the UK, and provides much of the most-consumed content even in the age of channel abundance and increasingly well-funded subscription television.[38]

3.2 Advertising-supported television

Advertising-supported television is usually – but not always – operated as a commercial enterprise.[39] In economic terms, FTA (free-to-air, i.e. advertising-funded) commercial TV is accountable to its owners and, like other private enterprises, governed in ways that ensure that their interests are prioritised, subject to the law and industry regulation. Programme quality is judged only on the ability to generate income from the selling of airtime, and programming investments are made only to the point that they are expected to generate a return equal to or exceeding the risk-adjusted opportunity cost of capital, thereby maximising shareholder value. In addition, commercial broadcasters need to divert a portion of profits to compensate investors for their capital, thus reducing the proportion of revenue available to invest in programmes.

FTA COMMERCIAL TV AS A 'TWO-SIDED' MARKET The FTA commercial TV market is not a pure textbook economic market, however, because those who consume the programming – the viewers – do not pay for it and have no direct ability to influence managerial actions through price evaluation and purchase choices. It is a 'two-sided' market in which viewers are attracted by FTA programming and access to them is sold to the advertisers who are the revenue source for the enterprise.[40]

As in all markets, there is a conflict of interest between advertisers and broadcasters over the price of commercial airtime. Advertisers have an incentive to pay only to the extent that they believe that their advertising investment will produce returns by adequately increasing the sales and prices of the advertised products and services. Broadcasters have an incentive to raise the price of airtime to the point that maximises revenue, i.e. beyond which the reduction in the volume of airtime sold would more than offset the higher revenue per unit.[41]

This situation influences FTA commercial broadcasters' programming policies in three ways.

- First, in a free market, there is no incentive to serve broader social interests. The only criterion is whether programmes maximise profits.

[38] Chris Hanretty, *Public Service Broadcasting's Continued Rude Health* (British Academy Policy Centre, 2012); Nissen, *Making a Difference*.

[39] Many publicly owned public service broadcasters are funded by a combination of licence fees or general taxation and advertising and C4 is almost entirely advertising-funded.

[40] Coase, *British Broadcasting*; Coase, 'The Economics of Broadcasting'; Picard, *The Economics and Financing of Media Companies*.

[41] In the UK, the regulations require commercial broadcasters to sell all their permitted inventory rather than holding some back, especially when demand is slack, in order to 'harden the market'. Oversimplifying somewhat, the situation is an auction in which 'everything must go', with the buyers (mostly large media agencies) bidding up the price to clear the market.

Further, unlike licence-fee-funded and pay TV broadcasters, FTA commercial broadcasters have little incentive to show programmes that increase viewers' overall satisfaction but attract insufficient ratings and advertising revenue to cover their costs. Simplifying slightly, every programme has to stand on its own feet.

- Second, as with all media funded by advertising, some viewers are more valuable (to advertisers, and therefore to these broadcasters) than others. In broad terms, the most valuable audiences are upscale young adults, especially men, and light viewers (since they are harder to reach). The incentive is to provide more programmes for these valuable viewers than for the less valuable ones – the old, the poor, minorities, and women. Despite this theoretical economic incentive, however, in practice television programme audiences have always been, and remain, rather weakly segmented,[42] so these less valuable audiences are not seriously excluded from FTA commercial TV, which is a high-reach mass medium.
- Finally, FTA commercial TV broadcasters have limited incentive to invest in innovative, and therefore risky, original programming, since a programme that attracts fewer viewers than expected will lead to the broadcaster having to compensate advertisers, at great cost, with free airtime. The reverse does not apply for programmes that attract more viewers than expected.

What tends to be missing from unregulated FTA commercial television is not certain *audiences* (since almost everyone watches it as part of their viewing) but rather certain minority *programme types*, such as serious drama, scripted comedy, and demanding factual programmes, that cost more to produce and distribute than the advertising revenue they generate.

Advertisers also generally avoid advertising on programmes involving controversial topics or that otherwise provide an unhelpful environment for their products and services. Because of the need to control programme costs while generating large audiences, the main FTA commercial networks tend to produce heavy offerings of low-cost entertainment such as game shows, talent shows, and reality shows. Since TV audiences are only weakly segmented (unlike, say, the readerships of consumer magazines), these networks usually offer a rather similar mix of undemanding 'middle-of-the-road' programmes to those shown by their competitors.[43]

Small FTA channels do tend to specialise in a particular type of programming in order to simplify promotion, but most of what they show is either very low-cost original content or old content bought from the bigger networks; both types of content are rerun repeatedly to reduce the programme cost per hour.

Because the programming is provided free-to-air, advertising-supported television maintains the 'public good' economic characteristics of licence-fee-funded television: no one is excluded and the marginal cost of homes tuning in is zero. A significant difference from licence-fee-funded broadcasters, however, is that revenue for advertising-supported television

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[42] Patrick Barwise and Andrew Ehrenberg, *Television and its Audience* (Sage, 1988), ch. 3. The main patterns of TV viewing observed in the 1970s and 1980s, including the surprisingly weak segmentation of audiences (e.g. by demographics and programme-type preferences), have continued in the age of multichannels, apart from viewing being – very unequally – spread over many more channels. See Patrick Barwise, *Independent Review of the BBC's Digital Television Services* (DCMS, Oct. 2004), section 1.7, and Byron Sharp, Virginia Beal, and Martin Collins, 'Television: Back to the Future', *Journal of Advertising Research,* 49/2 (2009), 211–19.

[43] This results from strategies that produce sameness in products offered to consumers. See Harold Hotelling, 'Stability in Competition', *Economic Journal*, 39 (1929), 41–57, and Owen and Wildman, *Video Economics*.

fluctuates from quarter to quarter and year to year, depending upon the ability of its programmes to attract audiences (a challenge because programming is a good of uncertain quality) and also because advertising expenditure is strongly affected by economic conditions. This reduces mid- and long-term planning of programme expenditures and makes it hard to take a longer term investment perspective.

The primary focus of commercial TV broadcasters funded by advertising is to maximise their channels' share of commercial viewing (relative to the cost of programmes), although the link from viewing share to revenue share also involves other factors, as we now discuss.

VIEWING SHARE, REVENUE SHARE, AND THE COST PER THOUSAND VIEWERS (CPM) As a very rough first approximation, a commercial FTA channel's share of total TV advertising revenue is equal to its share of commercial viewing ('opportunities-to-see' or OTS). This assumes that (a) each channel sells the same number of airtime minutes per hour and (b) the unit price of that airtime (CPM[44]) at a particular time of day is the same for all commercial channels. In practice, neither of these is the case.

- Different channels sell different amounts of airtime. In the UK, the main reason for this is regulatory. Under Ofcom's Code on Scheduling of TV Airtime (COSTA), the commercial multichannels (including the commercial PSBs' portfolio channels ITV2, E4, etc.), are allowed to sell at least 30% more airtime per hour than the three main commercial PSB channels ITV1, C4, and Five.[45] These rules, or earlier versions, go back to the earliest days of multichannel television. The reasons for their introduction are unclear but appear to have reflected a combination of two factors: (a) a desire to help multichannel TV become established and (b) the view of the then regulator that it had a duty to protect the quality of the viewing environment on the PSB channels but not on the non-PSB channels. Neither of these factors will still be relevant after digital switchover. It may now therefore be time to move to a level playing field under which all commercial channels are operating under the same rules for airtime sales.[46]
- In addition to these regulatory restrictions, the other reason why different commercial channels sell different amounts of airtime is that a channel whose main revenue comes from subscriptions may choose to sell less advertising in order not to reduce the quality of the viewing experience and lose subscribers.
- Turning from the minutes per hour to the unit price of airtime: other things being equal, CPMs tend to be higher for channels with audiences that are more valuable to advertisers (higher income, younger, lighter viewers, especially men). However, this demographic effect is weaker than one might expect because, as already noted, television audiences are in reality surprisingly weakly segmented.

[44] The 'cost per thousand viewers': the price of a 30-second spot for every thousand OTS.
[45] The rules are complex, distinguishing between different times of day, etc.
[46] House of Lords Communications Committee, *The Regulation of Television Advertising* (Feb. 2011), ch. 4. In its evidence to the HL committee, the Satellite and Cable Broadcasters Group (which has a clear incentive to encourage the continuation of rules that allow its members to sell more airtime than their PSB competitors) suggested that the PSBs' lower minutage had been introduced as a *quid pro quo* for their privileged access to spectrum (see p. 66 of the HL report). In reality this spectrum was in exchange for a long list of public service *programming* requirements. With digital switchover, the argument in any case becomes irrelevant because every home will be multichannel and spectrum will no longer be a scarce asset allocated by government in the same way as in the past, although it will still have an opportunity cost.

- Other things being equal, CPMs are higher for bigger channels. Advertisers' main aim is usually to maximise 'campaign reach', that is, the percentage of the target market with at least one opportunity to see (OTS) the campaign.[47] By far the most efficient way to maximise reach – especially if the time to achieve the campaign objectives is limited, e.g. for a short-term promotion – is to buy high-rating spots, which are heavily skewed towards the biggest commercial channels.
  A commercial spot in a programme watched by ten million viewers will reach many more unduplicated consumers than ten spots in programmes each watched by a million viewers, which in turn will reach many more than 100 spots in programmes each watched by 100,000 viewers.

The price premium (i.e. higher CPM) on high-rating programmes means that the biggest channels (in the UK, ITV1 and C4) attract the highest CPMs – significantly higher than all, or almost all, of the more 'targeted' smaller channels. This is quite different from the situation with print media, where the CPMs for well-targeted, upmarket newspapers and magazines can be a large multiple (five, ten, or more) of those for mass-market periodicals.

Although ITV1 has by far the highest proportion of high-rating programmes (among commercial channels) and therefore attracts significantly higher CPMs than the market average, C4 now attracts slightly higher average CPMs than even ITV1, because in addition to its high reach (second only to ITV1, if the BBC is excluded) it tends to have rather younger and more upmarket audiences than ITV1. C4's slight price premium is not an anomaly: it was predicted before its launch.[48]

The main point is that both ITV1 and C4 achieve much higher CPMs than the market average, mainly because of their efficiency at delivering campaign reach. The same pattern is seen in other countries: the biggest FTA commercial networks generally attract the lion's share of advertising revenue because their programmes not only have more viewers than those of smaller channels but also generate more revenue from each viewer due to their higher reach.

ADVERTISING: AN IMPORTANT REVENUE SOURCE FOR THE INDUSTRY Advertiser-supported television attracts significant revenue which is complementary to licence-fee and subscription funding, increasing the amount of money available for programming and making it available at no charge to viewers except for the indirect cost of advertising. Revenue generation costs tend to be higher than for licence-fee funding, including media agency fees[49] and substantial selling costs. An additional 10–15% of advertisers' TV investment goes into the cost of producing the commercials rather than to the broadcasters to spend on programmes.

Because of its economic characteristics and advertisers' priorities, advertising-supported television is in itself unable to serve the full range of programme wants and needs of audiences and society and (especially with the end of spectrum scarcity) is given more scope by regulators to narrow its offering and operate in its economic self-interest than licence-fee-supported broadcasters.

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[47] For some advertisers/campaigns, the aim is to maximise the percentage of target consumers with at least three OTS (3+ OTS). In practice, this leads to almost identical media schedules to those from maximising simple reach (1+ OTS).
[48] Patrick Barwise and Andrew Ehrenberg, 'The Revenue Potential of Channel Four', *Admap* (Nov. 1979), 550–6.
[49] A few large advertisers, notably Procter & Gamble, buy airtime direct from the commercial broadcasters or sales houses, but the great majority is bought by large media agencies on behalf of many clients.

Despite the spectacular growth of internet advertising – notably in Britain, which has the highest online percentage of advertising expenditure among the world's major economies[50] – TV advertising continues to defy the doom-sayers. Unlike, say, print classified advertising or direct mail, TV advertising meets marketing needs that the internet (mostly search and online classifieds) meets less well. Further, TV viewing – unlike newspaper circulation and readership – has actually increased in the last few years. Internet advertising has indirectly impacted TV advertising revenue by competing against it for a share of companies' marketing budgets, but it is not a close substitute. The implication is that TV advertising revenues are unlikely to collapse in the foreseeable future, although they are also unlikely to generate significant real growth.[51]

3.3. Subscription television

Subscription TV is closer to a pure market form than either licence-fee- or advertising-funded television.

- It is purely commercial, with no public ownership and no PSB obligations,[52] and
- Platform operators generate their subscription revenue directly from consumers rather than by selling audiences to advertisers.

Many of the economic features of this market are therefore those of standard microeconomic theory and need no further discussion here.

As with all commercial markets, the operators aim to maximise profits by charging what the market will bear. Many homes are unable or unwilling to pay the market price, so subscription television does not provide universal service.[53] In the UK, almost all households have FTA television but, well over 20 years after the launch of both cable and satellite multichannel pay TV, only 58% have subscription TV. Only about one in five homes subscribes to a premium sport channel and rather less than one in five to a premium movie channel.[54]

Although market-based, even pay TV is not a pure textbook market, however.

- The content is bundled with the platform, usually a satellite or cable service: subscribers do not pay content suppliers directly.[55]
- Individual programmes are bundled into channels and paid for almost entirely through monthly subscriptions. In a pure-market textbook world, programmes would be unbundled and bought on a pay-per-view (PPV) basis. This does happen for occasional high-value sport events and, with internet-based on-demand services, some other content, especially movies, but the dominant pay TV model continues to be subscription-based. This seems likely to continue, partly because it avoids the transaction and choice costs of PPV (although these are

[50] Source: IAB.
[51] 'TV+', Deloitte LLP, Aug. 2012.
[52] There is no inherent reason why a subscription-funded broadcaster should not be publicly owned and/or have public service obligations, but as far as we know, none of these non-commercial combinations has ever been tried beyond the imposition of some minor PSB obligations on some early cable and DTH satellite operators.
[53] H. Bloch and M. Wirth, 'The Demand for Pay Services on Cable Television', *Information Economics and Policy*, 1/4 (1984), 311–32; M. Wirth and H. Bloch, 'Household-Level Demand for Cable Television: A Probit Analysis', *Journal of Media Economics*, 2/2 (1989), 21–34, 57.
[54] Author estimates based on Ofcom Technology Tracker.
[55] TV is also increasingly bundled with broadband and mixed/mobile telephony, reinforcing this point.

lower for internet-based services than with earlier technologies) but mainly because consumers seem to prefer the certainty and simplicity of a monthly subscription. This allows them to watch whatever they want on the channels they have bought, possibly topped up with occasional PPV but with few or no nasty surprises when they subsequently see the bill.

- Operators also bundle channels together into packages at different price points. This again simplifies the choice process for consumers but also means that subscribers may be paying for more channels than they wish to buy.

Despite these limitations, subscription TV is highly responsive to viewers' preferences because platform and channel operators have a direct incentive to offer consumers attractive – and if possible exclusive – programming.[56]

MARKET CONCENTRATION The markets for subscription TV platforms and channels (like many information markets) tend to be highly concentrated because of economies of scale in content acquisition, marketing, and distribution.[57] This leads to a small number of dominant platforms offering a few high-priced movie, sports, and other premium channels, and a larger second tier of lower-priced and FTA channels. In the UK, BSkyB is the dominant player with almost 70% of pay TV homes, as already discussed.

BSkyB represented a big, risky gamble for News Corporation when it launched in 1989/90 and it has innovated constantly to improve its offer to consumers.[58] However, it is now so dominant that, given its large customer base and the inertia in this market (BSkyB's annual 'churn' rate[59] is only about 10%), it is hard to see how any competitor could outbid it for any type of premium content and expect to earn an economic return within a timescale acceptable to shareholders.

At the time of writing, BSkyB has exclusive first-run rights to all the output of all six Hollywood major studios and of HBO, the biggest US pay TV drama producer, as well as virtually all the major sports that are not protected under Ofcom's code of listed events that are required to be shown live on FTA television. The two previous attempts to challenge BSkyB's dominance of pay TV soccer (by ONdigital – later, ITV Digital – and more recently Setanta TV) both led to costly failure. BT Vision's recent acquisition of about 25% of the FA Premier League rights for 2013–16 represents the third such attempt.

The introduction of online video-on-demand (VoD) services may eventually lead to a serious challenge to BSkyB's dominance of pay TV. However, as will be discussed in Chapter 5, the evidence to date is that the likely future growth of VoD has been greatly exaggerated. It will certainly be many years before a VoD operator can justify paying over £1 billion per season for FAPL TV rights, as BSkyB and BT have just agreed to do – or presumably even more, in order to outbid BSkyB.

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[56] Thomas F. Baldwin, Connie L. Ono, and Seema Shirkhande, 'Program Exclusivity and Competition in the Cable Television Industry', *Journal of Media Economics*, 4/3 (1991), 29–45.

[57] Wu, *Master Switch*. S. Savage and M. Wirth, 'Price, Programming and Potential Competition in US Cable Television Markets', *Journal of Regulatory Economics*, 27/1 (2005), 25–46.

[58] Sky Television was launched in 1989. BSkyB was formed in 1990 from the merger of Sky and British Satellite Broadcasting, with Sky Movies encrypted to become a subscription service. Sky Digital was launched in 1998, Sky+ in 2001, Sky Mobile in 2005, Sky+ HD in 2006, Sky 3D in 2010, and Sky Go (live TV on the move) in 2011 (http://corporate.sky.com/about_sky/timeline). In July 2012, BSkyB launched Sky Now, an online VoD service aimed at non-subscribers. http://news.sky.com/story/961107/no-dish-no-contract-sky-launches-now-tv.

[59] The percentage of total number of subscribers lost and regained each year.

BSkyB's dominant market position may account for an additional – anomalous – feature of the UK pay TV market. In most countries – including the USA, where Rupert Murdoch's News Corporation is a channel supplier, not a platform operator – it is the platform operators who pay channel suppliers for their content (through a combination of per-subscriber fees and a share of advertising revenue for channels that carry commercials). In the UK, FTA channel suppliers – including the BBC, which carries no advertising – pay the platform operators to carry their channels, even though these account for the clear majority of viewing on the distribution platforms.

SUBSCRIPTION TELEVISION: MORE REVENUE, COMPETITION, AND CHOICE Pay television services differ fundamentally from free services in that they use conditional access technologies (encryption, set-top boxes, smart cards, etc.) to exclude those who do not pay for the services. They are thus normal paid-for services, not public goods. Although they aim to serve large audiences, their main commercial objective is to maximise subscription revenue, not audience size, and overall their audiences tend to be significantly smaller than those of FTA broadcasting. Nevertheless, pay television introduces into the market a third, large and growing, revenue stream and significantly greater competition and choice (for those willing and able to pay for it) by greatly increasing the number of channels and competitors compared with a market with only licence-fee-supported and advertising-supported FTA television.

Excludability is essential for pay TV broadcasters (whether terrestrial, cable, or satellite) because unauthorised use of signals constitutes free-riding. If there is a significant amount of free-riding, pay broadcasters may not generate enough revenue to sustain themselves and commercial failure may result. This challenge has led them to seek signal protection in national and multinational legislation and unauthorised reception has been criminalised in Europe, North America, and many countries worldwide.

Pay TV services have higher marketing, distribution, and customer service costs than FTA broadcasters because they need to:

- Keep attracting new subscribers in order to replace those lost through 'churn' (the monthly or annual loss and replacement of subscriptions);
- Pay the capital and operating costs of physical distribution using (in most cases) satellite or cable technology;
- Pay for conditional access equipment and installation; and
- Support all this with reliable invoicing and customer service.

Pay TV services' relatively high overhead costs reduce the proportion of revenue they can afford to spend on programmes compared with FTA commercial broadcasters and, especially, licence-fee-funded broadcasters.

The dual product, or two-sided market, nature of FTA commercial broadcasting becomes even more complex in the pay television market, where broadcasters must typically maximise a combination of subscription and advertising income.[60] Most of these broadcasters' revenue comes from subscriptions but their advertising revenue generates high gross margins and is also important for profitability.

The consequences of the economic characteristics, consumer demand, and business strategies of subscription television are that it does not provide universal service and is governed by the economic interests of both suppliers

[60] Germa Bel, Joan Calzada, and Raquel Insa, 'Access Pricing to a Digital Television Platform', *Journal of Media Economics*, 20/1 (2007), 29–53.

and consumers. It is given scope by regulators to operate more independently than licence-fee- and advertising-supported free television because the power exercised by consumers over programme choice and price acts as a countervailing power to that of the suppliers.

From a consumer perspective, the ideal market combines a wide range of (a) universally available, high-quality FTA channels funded by licence fee and advertising and (b) high-quality pay TV services (mostly subscription-based, with some PPV/VoD) for those willing and able to pay more for extra choice. We now turn to how, in such a mixed market, these differently funded services compete and coexist.

3.4. How licence-fee-, advertising-, and subscription-funded television compete and coexist

Like other media businesses, all broadcasters compete for talent and acquired content on the supply side. On the demand side, however, they compete in three conceptually distinct submarkets, for audiences, consumer payments, and advertising (Figure 1).

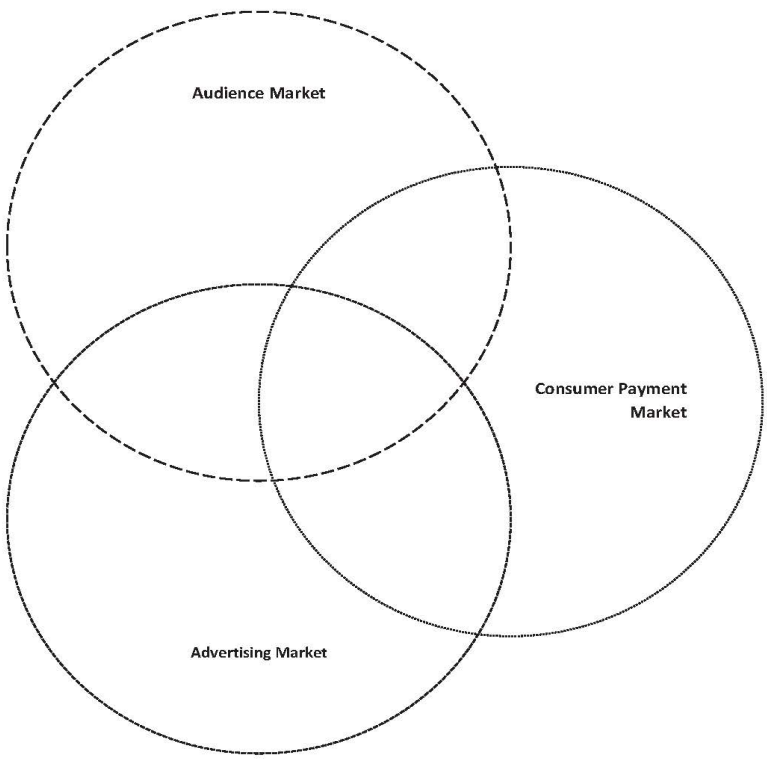

Figure 1. Television's three demand-side markets

In the audience market, TV also competes for viewers' time and attention against other media and leisure activities. In the advertising market, it competes against other ways of spending marketing money, including other advertising media. In the consumer payment market, it ultimately competes against all other consumer products and services, but especially against other leisure activities, including other consumer media that charge for content. In all three submarkets, the big new player is the internet but TV is competing remarkably successfully, especially in comparison with print media.

Where a television provider locates within these markets depends on its funding model (Figure 2). TV broadcasters are in head-to-head competition for revenue only if they have the same business models or mix of business models. Licence-fee-funded, advertising-funded, and subscription-funded TV broadcasters all compete for audience time and attention within the audience market, but that is where their demand-side similarities largely end. Advertising-funded free-to-air television competes within the advertising market, whereas licence-fee-funded TV does not. This difference has helped commercial broadcasters coexist with licence-fee-funded broadcasters. Similarly, subscription TV competes in the consumer payment market, whereas FTA commercial television does not. This difference has allowed the development of commercial enterprises in pay TV to coexist with those in ad-funded free television. Subscription TV, however, is increasingly embracing advertising as a second revenue stream and it competes with advertising-supported TV for that revenue.

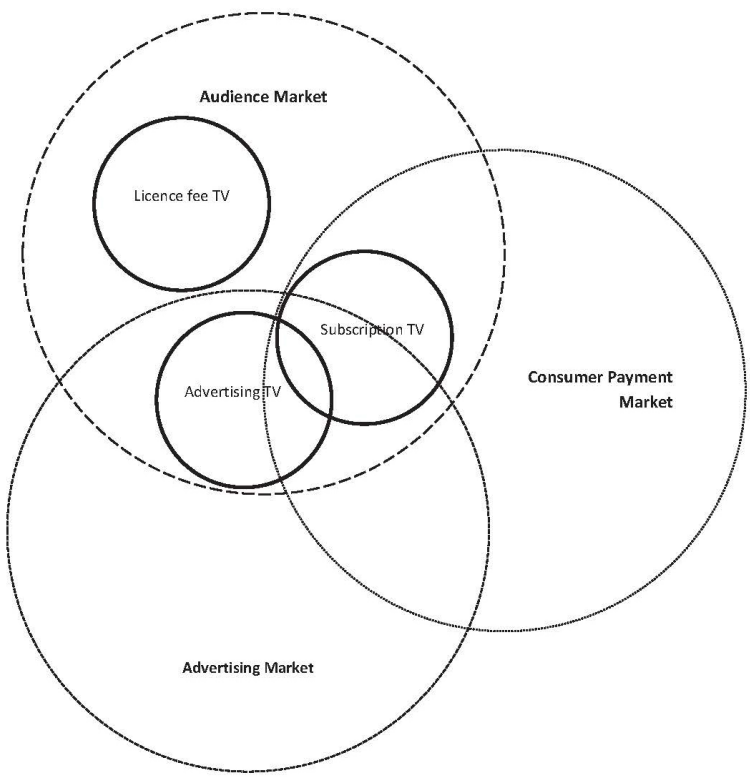

Figure 2. Competition among television providers based on funding

Because some channels on pay TV platforms rely at least partly on advertising revenue as well as on subscriptions, pay TV operates in the advertising as well as in the consumer payment market, competing against FTA players. The decision to operate as a paid broadcaster with advertising is strategic in that the broadcaster is giving up the large mass audience of FTA broadcasting – thus gaining much lower income from advertising – but gaining potentially much more revenue through consumer subscriptions. Because television is still such good value for money (the cost per viewer hour is less than for almost every other leisure activity apart from radio listening), subscriptions – already the biggest revenue source in the UK – are still growing, hence ITV's interest in getting into pay TV.

Although all three types of broadcaster compete for the audience's time and attention, the only type that fully aims to *maximise* audience size (subject to programming costs and, to a lesser extent, viewer demographics, as discussed in section 3.2) is advertiser-funded TV. Licence-fee-funded broadcasters, too, look for large audiences in order to demonstrate value for money but they also measure their performance against a wide range of other public service criteria including audience appreciation.[61] For subscription-funded broadcasters, the aim is to maximise the number of consumers willing to pay a high monthly subscription, which in turn comes down to consumer satisfaction – especially for the content not available on FTA channels – rather than audience size *per se*.

Because subscription TV competes primarily in the consumer payments market, is premium-priced, and attracts smaller audiences than free-to-air television, it has little competitive impact on FTA television on the demand side (its impact on the supply side is much bigger) except insofar as it competes for advertising. In contrast, FTA television – especially high-quality commercial-free licence-fee-funded TV – almost certainly does reduce consumers' willingness to pay for subscription TV. BSkyB's and Virgin Media's revenue would probably be higher if there were no BBC or a much smaller BBC along the lines of PBS in the USA. A later report will explicitly explore this issue.

[61] Other things being equal (channel size, time of day, lead-in, publicity), audience size and audience appreciation are highly correlated for most general entertainment programmes. The main exception is that more demanding programmes tend to have smaller audiences but higher appreciation scores among those who make the effort to watch them. Barwise and Ehrenberg, *Television and its Audience*, ch. 5; T. P. Barwise, A. S. C. Ehrenberg and G. J. Goodhardt, 'Audience Appreciation and Audience Size', *Journal of the Market Research Society*, 21 (1979), 269–89; T. P. Barwise and A. S. C. Ehrenberg, 'The Liking and Viewing of Regular TV Series', *Journal of Consumer Research*, 14 (June 1987), 63–70.

4. How Does Digital Switchover Change Television Economics?

The switch to digital television, about to be completed in the UK, will have several direct economic impacts.

- All homes will be multichannel, further increasing choice and competition for audience attention and time.
- Broadcasters will no longer have to fund the analogue terrestrial network as well as the various digital distribution channels.
- The government will be able to auction spectrum previously used for analogue transmissions, generating several billions of pounds.[62]
- All homes will be able to add DVR capabilities and conditional access technology at relatively low cost.

As discussed in Chapter 1, these changes – particularly increased channel capacity and conditional access technology – will remove some limitations of analogue broadcasting that supported previous choices for state intervention in the broadcasting market. The indirect effects of digital switchover could therefore be much greater than its direct impacts, depending on whether it leads to a radical change in broadcasting policy, as many have argued that it should.

The most significant change is universal excludability (enabled by conditional access technology) because it ends the free-riding problem,[63] thus making universal consumer payment for broadcasting services workable. Historically, pay TV companies have not provided this technology to all viewers but only to their subscribers. Digital switchover means that conditional access technology could be provided, at relatively low cost, to all homes with television.

4.1. The case for radically reduced state intervention

To some economists and other commentators, this changing capability becomes the rationale for radically reducing state intervention in the television market. They believe that:

- The main policy priority should be to maximise the range, quality, and value for money of programmes and services available to individual households (i.e. they see little or no need to incorporate externalities or 'citizenship' objectives into broadcasting policy); and
- The best way of achieving this is through consumer sovereignty via a lightly regulated free market based primarily on pay TV, supplemented by some advertising-funded TV.

The opportunities that the new environment provides for changing broadcasting have been foreseen for over six decades. In 1947, the economist Ronald Coase argued that the BBC monopoly was not primarily created for economic reasons, but rather to solve problems related to government administration of broadcasting.[64] He subsequently argued that this policy

[62] This valuable spectrum in the 800 MHz band, with other higher-frequency spectrum, will be auctioned by Ofcom in late 2012 or early 2013 for next-generation high-speed mobile communications ('Long Term Evolution' – usually referred to as 4G LTE or just 4G). http://crave.cnet.co.uk/mobiles/uk-4g-coming-in-2013-after-ofcom-auction-later-this-year-50008694 (accessed July 2012). £180m of the resulting 'digital dividend' will, however, need to be used to fund equipment in some Freeview homes to eliminate interference from 4G signals. www.culture.gov.uk/news/media_releases/8865.aspx.

[63] Or at least reduces it to tolerable levels in which it is only those willing to violate the law who free-ride.

[64] Coase, 'Origin of the Monopoly'; Coase, *British Broadcasting*.

choice produced negative economic effects because it did not allow the market to allocate resources[65] and that funding with a standard licence fee made it impossible for consumers to influence the BBC by signalling their content preferences.[66]

THE 1986 PEACOCK REPORT The argument came to prominence in the UK with the 1986 report of the committee on financing the BBC chaired by Alan Peacock, who had been Coase's junior colleague many years earlier at the LSE.[67] This recommended market liberalisation through more use of independent producers by the BBC and ITV, competitive auctions for ITV and DTH franchises, and, once the technology allowed, a radical change to a normal, lightly regulated free market based on pay TV. It also argued that the delivery of public service benefits was not inextricably wedded to the BBC and that content providing those benefits could be provided through contestable funding – what has come to be referred to as an 'Arts Council of the Air'.

Understandably, supporters of the BBC derided these proposals. They dismissed the economic arguments as impractical and argued that implementation would wreak wholesale destruction on the UK television environment. Today, however, Peacock's report is widely seen as forward thinking in terms of understanding how the broadcasting environment was changing, that a free market could become possible, and that the market impact of the BBC could be reduced through (a) contestable funding for public service programmes, available to all broadcasters, and (b) reducing the scale and scope of the BBC's operations.

With digital switchover imminent, those who disagree with Peacock can no longer casually dismiss these arguments. The main technological barriers to a free market (limited spectrum and no universally available conditional access technology) are about to be largely removed so the pros and cons need to be examined on their merits.

MORE RECENT SUPPORT FOR THE FREE-MARKET VIEW Professor Peacock and selected other commentators rearticulated the free-market argument eight years ago in a report published by the Institute of Economic Affairs, the leading free-market think-tank.[68] Contributors argued that competition would discipline suppliers and provide value and quality;[69] that the market would protect consumers;[70] that there was some need for the BBC to provide social and cultural content not provided by the market, but this could be done with a much smaller BBC that would have minimal market impact.[71]

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[65] Coase, 'The Economics of Broadcasting and Government Policy'.
[66] Coase, *British Broadcasting*; R. H. Coase, 'Why Not Use the Pricing System in the Broadcasting Industry?', *The Freeman* (July 1961), 52–7.
[67] *Report of the Committee on Financing the BBC,* chairman Alan Peacock (CMND 9824; HMSO, July 1986). The committee was set up by Margaret Thatcher to look at whether the BBC should be wholly or partly funded by advertising. It soon concluded that the answer was no, because the great majority of advertising revenue going to the BBC would come from ITV and C4, rather than being extra industry revenue to fund more or better programmes. Instead of simply reporting this conclusion and packing up, the committee turned its attention to a range of broader, longer term issues. The recommendation with the greatest practical impact to date was one to auction ITV franchises – a somewhat surprising issue for the committee to address, given its brief and title. See Peacock, *Public Service Broadcasting Without the BBC?*, p. 33, for Peacock's acknowledgement of his intellectual debt to Coase.
[68] Peacock, *Public Service Broadcasting Without the BBC?*
[69] David Graham, 'The Importance of Competition', in Peacock, *Public Service Broadcasting Without the BBC?*, 54–7.
[70] Stephen Pratten and Simon Deakin, 'The Scope of Public Service Broadcasting', ibid. 82–96.
[71] Ibid.; Carolyn Fairbairn, 'Why Broadcasting is Still Special', in Peacock, *Public Service Broadcasting Without the BBC?*, 58–70; Ed Richard and Chris Giles, 'The Future of Public Service Broadcasting and the BBC', ibid. 71–81.

At about the same time, the Conservative Party commissioned a media policy review led by David Elstein, an experienced former producer and senior TV executive. This review argued that conditional access technology and digital broadcasting change the environment to the extent that ITV and Channel 5 should be released from public service obligations and required to pay for spectrum; that the BBC should become a paid subscription service; and, again, that public service content should be financed through a production fund available to all broadcasters through contestable funding.[72]

The argument that changes in technology reduced the justification for interventionist policies was repeated in 2005 by economist Mark Armstrong of University College London, who asserted that the economic and social costs of broadcasting policies were outweighing their benefits. He argued that the development of subscription TV overcame market distortions created by advertising in commercial television by increasing the influence of consumers in the market. He further contended that transforming the BBC into a subscription service would overcome the television market distortions created by the BBC licence fee.[73]

The economic and political arguments for a free market were also forcefully expressed by James Murdoch in his 2009 MacTaggart Lecture at the Edinburgh International Film Festival:

> *We have analogue attitudes in a digital age. We have business models and a policy framework based on spectrum scarcity. We have limited choice, and we have central planning. The result is lost opportunities for enterprise, free choice and commercial investment. . . . The right path is all about trusting and empowering consumers. It is about embracing private enterprise and profit as a driver of investment, innovation and independence. And the dramatic reduction of the activities of the state in our sector.*[74]

4.2. The case for continuing large-scale state intervention

Everyone agrees that the removal of spectrum scarcity and the growth of multichannel TV and subscription TV significantly change the economics of broadcasting and allow the possibility of moving to a free market with no, or a much smaller, BBC. But many economists and policy analysts feel that the fundamental reasons for intervention are unchanged and that the correct response is to make limited adjustments to the policies that have produced the current mixed broadcasting ecology, rather than the radical changes favoured by free-market enthusiasts.

A 2008 review by Robin Foster and Kip Meek for the Social Market Foundation argued that the decreasing importance of spectrum limitations, and other changes, are indeed reducing the viability of ITV, C4, and C5 as public service broadcasters because of Ofcom's increasing inability to trade PSB programming requirements for free spectrum. They also argued for significant governance changes for the BBC. However, their overall conclusion was that policy should aim for an optimal balance between the competitive commercial market and intervention, rather than either abolishing or merely perpetuating existing arrangements.[75]

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[72] Broadcasting Policy Group, *Beyond the Charter: The BBC after 2006* (Premium Publishing, 2004).
[73] Mark Armstrong, 'Public Service Broadcasting', *Fiscal Studies*, 26/3 (Sept. 2005), 281–99.
[74] James Murdoch, 'The Absence of Trust', MGEITF MacTaggart Lecture, 28 Aug. 2009: http://corporate.sky.com/documents/pdf/56dfdc78fed540809612db12c1deb5cc/mactaggart(2).
[75] Robin Foster and Kip Meek, *Public Service Broadcasting in the United Kingdom* (Social Market Foundation, 2008).

More generally, arguments for the continuation of a strong, independent, well-funded BBC and other significant interventions beyond normal market regulation (e.g. C4) fall under two broad headings, non-economic and economic. The non-economic arguments are that, for social, cultural, and political reasons, television is simply too important to be left to market forces alone. For instance, reflecting the likely effects of television's pervasiveness, most analysts and policy-makers – and the public – believe in the need for at least some content regulation, especially to ensure balanced news reporting and to protect children, although there is wide disagreement about how extensive this should be. Moreover, the mixed economy in television is already predominantly commercial: as discussed in section 2.4, the licence fee now accounts for only 22% of industry revenue, the main other sources being subscriptions (43%) and advertising (29%).[76] Given the wider importance of broadcasting in society, the broad acceptance that UK television is a success story, and the complexity of the television ecosystem, it can be argued that the licence fee is quite a limited intervention and also that the precautionary principle should apply since the BBC, once lost, would be almost impossible to recreate in today's highly commercial world. However, these arguments are beyond the scope of this report.

Leaving these non-economic arguments to one side, many economists also see broadcasting as a special case even in pure economic terms. They argue that, as well as a 'public good' (see section 2.1), television is also an 'experience good' about which consumers have difficulties making rational choices because of their myopia and the product's uncertain quality and long-term benefits; that altering the current broadcasting market will also produce costs and inefficiencies; that the current structure and funding of television produce positive economic externalities such as its impact on the creative industries and the wider economy through its contribution to employment and the balance of payments; that universally available high-quality public service broadcasting produces welfare benefits by reducing both the cost per viewer and social inequalities; and that licence-fee-funded broadcasting is a 'merit good' that provides many social benefits beyond those provided in the market transactions.[77]

In 2005, the BBC itself commissioned essays on the evolving economics and funding of broadcasting prior to the government's review of the BBC's Royal Charter and Ofcom's review of public service television.[78] Contributors argued that the digital era will not be a utopia of content provision because economies of scale and scope will lead to concentration;[79] that competition regulations are not well suited to handle the content and plurality issues this poses;[80] that the digital world does not reduce the need for content serving the public good; that subscription public service content would reduce access to that content and, therefore, consumer welfare;[81] and that the market failure

[76] C4's advertising revenue was just under 5% of total industry revenue. Combining this with the licence fee revenue of BBC TV, the two publicly owned broadcasters accounted for 27% of industry revenue. To this should be added their and S4C's share of 'other' industry revenue (6% of total industry revenue). Adding all these together, the public–private revenue split is around 30–70 in favour of the private sector. The *viewing* split is about 45–55 – see section 2.4.

[77] Andrew Graham and Gavyn Davies, *Broadcasting, Society and Policy in the Multimedia Age* (University of Luton Press, 1997); Andrew Graham and nine others (eds), *Public Purposes in Broadcasting* (University of Luton Press, 1999).

[78] BBC, 'Can the Market Deliver?', *Funding Public Service Television in the Digital Age* (John Libbey Publishing, 2005).

[79] Dieter Helm, 'Consumers, Citizens and Members: Public Service Broadcasting and the BBC', ibid. 1–21.

[80] Andrew Graham, 'It's the Ecology, Stupid', ibid. 78–100.

[81] Gavyn Davies, 'The BBC and Public Value', ibid. 129–50; Jeremy Mayhew and Luke Bradley-Jones, 'Contestable Funding: Lessons from New Zealand', ibid. 151–69.

argument for a strong public service broadcaster is not the only basis for its existence.[82]

As markets transformed due to digital technologies and continued to be liberalised in the UK and elsewhere, economic public policy scholars reviewed the changes and confirmed that they have reduced the cost of distribution, increased substitutability and complementarity among broadcasters and distribution platforms, and created effective means for charging viewers for use.[83] Observers noted, however, that the growing number of channels made the increasingly fragmented audiences less valuable, lowered income, and forced a reduction in the quality of programming that only concentration could reverse;[84] that pay television reduces the market failures of advertising-funded markets, but creates different ones;[85] and that public service broadcasters were more likely to deliver socially useful content, stimulate quality in competitors, and give audiences more choices of higher quality.[86]

Such arguments move economic discussion from mere market efficiency (to be explored further in a later report) to questions of welfare economics.

4.3. Conclusion

Digital switchover and its effects on broadcasting economics are the focus of research by economists on all sides of the debate on future policy choices. They all recognise that the switch to digital increases opportunities for more channels, that its excludability functions support paid broadcasting, and that the changes create the possibility to alter the current structure and financing of broadcasting.

The primary differences among economists and policy analysts involve the extent to which the changes serve consumer, producer, and social welfare interests and the importance that should be given to the different costs and benefits of making various broadcasting policy choices. These value judgements about the relative importance of the producer, consumer, and citizen aspects of broadcasting are beyond the scope of this project. We do not attempt to resolve them.

Meanwhile, this report now turns from digital switchover to the question of how the more radical technological developments promised by digital convergence might further change the economics of television.

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[82] Helm, 'Consumers, Citizens and Members'; Andrew Graham, 'It's the Ecology, Stupid'; Damian Green, 'The Public Realm in Broadcasting', in BBC, *Funding Public Service Television*, 22–39.
[83] Paul Seabright and Jürgen von Hagen (eds), *The Economic Regulation of Broadcasting Markets: Evolving Technology and Challenges for Policy* (CUP, 2007).
[84] Paul Seabright and Helen Weeds, 'Competition and Market Power: Where are the Rents?', in Seabright and von Hagen, *Economic Regulation of Broadcasting Markets*, 47–80.
[85] Mark Armstrong and Helen Weeds, 'Public Service Broadcasting in the Digital World', in Seabright and von Hagen, *Economic Regulation of Broadcasting Markets*, 81–149.
[86] Ibid.

5. How Might Digital Convergence Further Change Television Economics?

Digital *switchover* – the change from a mixed ecology of analogue and digital television to a world where all TV is digital – is still about television as a separate offline medium. As already discussed, it is the culmination of a long-term evolutionary process involving more channels, increasing subscription TV penetration, and continually improving time-shift technology (VCRs and then DVRs).

The reason why digital switchover has radical potential implications is that the combination of conditional access technology and the end of spectrum scarcity means that, post-switchover, one could in principle move to a 100% free-market broadcasting system funded entirely by subscriptions and advertising, or at least (in Britain) to a system with a much smaller BBC, as proposed by James Murdoch,[87] or even with no BBC but with some public service content financed by licence-fee funding and distributed through contestable funding, as recommended by Alan Peacock.[88]

Digital *convergence* is different from, and technologically much more revolutionary than, digital switchover. If television programmes are converted to Internet Protocol data packets and distributed online, they can share networks and devices with other internet traffic – social media, online shopping, newspapers, user-generated content, etc. In this purely technological sense, all online media are converged. On the internet:

- There is no clear-cut technical distinction between TV content and other video content – YouTube clips, videos embedded in newspaper sites and company websites, etc.
- Content can be sliced and diced, combined with other content, supplemented with additional content at the click of a button, shared between consumers in different places, and bought and sold in any convenient way, including pay-per-view (PPV).
- People can watch whenever and increasingly, with the mobile internet, wherever they want on the platform of their choice.

This chapter discusses how these radical technological changes might impact the economics of television beyond the potential changes already enabled by digital switchover. It first (section 5.1) spells out the long-predicted revolutionary change from so-called 'linear' to 'non-linear' television, which many believe is now finally happening. It then (section 5.2) explains why the speed and scale of change are likely to be less than these predictions, while noting that there is still great uncertainty about the outcome. Finally, section 5.3 briefly discusses possible implications for broadcasting policy.

5.1. The long-predicted 'non-linear' TV revolution

Among all the excitements about how media are changing, one of the most widespread is the supposedly imminent transition from so-called 'linear' to 'non-linear' television.[89] We are not here referring to the idea that people are increasingly watching online video-on-demand (VoD), including some TV programmes: that is obviously true, if often exaggerated. What we are talking about is the suggestion that, in the next few years, *the primary way people watch television* will change from 'linear' to 'non-linear'.

[87] Murdoch, 'Absence of Trust'.
[88] Peacock, *Public Service Broadcasting Without the BBC?*
[89] This and section 5.2 are partly based on Patrick Barwise, 'Waiting for Vodot', *Market Leader* (Mar. 2011), 30–3.

For instance, the previous UK government's 2009 *Digital Britain* report, a centre-piece of its Building Britain's Future plan, referred to the 'not-distant point' when people switch from 'passive [viewing] through the linear schedule' to 'active [consumption] using search and on-demand'. The report predicted that, with universal access to video-quality broadband, 'streamed, downloaded or searched-for content will become the norm'.[90] The coalition government has said nothing that suggests it disagrees with this view: on the contrary, it has repeatedly said that the *Digital Britain* proposals for broadband were insufficiently ambitious.[91] In the same spirit, a senior independent TV producer recently told us that, 'In five years' time, TV channels may no longer exist'.

These visions and pronouncements are nothing new. The predicted TV revolution goes back over 20 years. In 1990, in a book called *Life After Television*, George Gilder wrote: 'Television is a tool of tyrants. Its overthrow is at hand.'[92] Five years later, Nicholas Negroponte, head of the MIT Media Lab, wrote, 'What will happen to broadcast television over the next five years [1995 to 2000] is so phenomenal that it's difficult to comprehend.'[93]

SIX TYPES OF VIEWING IN THE NEW TV ENVIRONMENT In considering the future of television in this context, it is helpful to distinguish between six types of viewing in the new TV environment:[94]

1. Live viewing of regular TV.
2. Time-shifted viewing off the digital video recorder (DVR) or a similar offline device.
3. Online catch-up viewing (e.g. using the BBC iPlayer, the ITV Player, or 4OD) which is also time-shifted but does not require viewers to pre-set the recording.
4. Online preview viewing, e.g. watching next week's episode immediately after the broadcast of this week's.[95]
5. True video-on-demand (VoD) viewing, defined below.
6. Viewing of retail or rental video content distributed via offline, removable storage media such as DVDs and Blue-ray discs.

By 'true video-on-demand' (VoD), we mean the online delivery of any audio-visual content that has not been recently broadcast (e.g. in the last month) and is not about to be broadcast (e.g. in the next week) on a regular TV channel available in the same home. It includes a mixture of:

- Professional and user-created short-form videos (on YouTube, print media sites, online retailers, online games, company websites, etc.) and professionally created long-form content (movies, old TV shows, etc.);

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[90] Dept for Culture, Media and Sport and Dept for Business, Innovation and Skills, *Digital Britain Final Report* (June 2009), 109, 135–6: www.official-documents.gov.uk/document/cm76/7650/7650.pdf.
[91] http://www.mediaweek.co.uk/news/1045079/Jeremy-Hunts-full-speech-Britains-Superfast-Broadband-Future.
[92] Gilder, *Life after Television*, 49. Another of Gilder's predictions was a 'new golden age for newspapers thanks to online'.
[93] Negroponte, *Being Digital*, 54.
[94] All of these can increasingly be done anywhere using mobile devices. In practice, however, mobile viewing still accounts for only a tiny proportion of the total – maybe one-tenth of 1%. If and when mobile viewing increases significantly, its impact on the economics of television is still likely to be much less than that of a large shift to VoD and other types of online viewing. We therefore focus on the distinction between the six types of viewing listed, regardless of whether it takes place in the home (the great majority) or elsewhere.
[95] Previews can be provided without broadband, e.g. by ordering the episode through a narrowband connection to the head end and then broadcasting it (e.g. via DTH satellite) to those homes that have done so, but fast broadband is the ideal platform for this type of service.

- Services that are part of the wider offering of a pay TV operator (BSkyB, Virgin Media, BT Vision) or technology company (Apple, Sony, Google); a stand-alone VoD operator such as Netflix, LoveFilm (Amazon), and Blinkbox (Tesco); or a consortium (YouView in the UK or Hulu in the USA);
- Content that is either streamed and viewed in real time or downloaded and then viewed;
- Funding from advertising, subscriptions (sometimes referred to as SVoD), pay-per-view (PPV), or supplier subsidy as a way of selling other, higher-margin products (e.g. laptops or tablets) or services (e.g. broadband).

5.2. Reasons to be sceptical about the likely speed and scale of change in TV viewing

In considering the credibility of the numerous predictions that viewing behaviour is finally going through, or about to go through, a revolutionary change, the obvious starting point is to consider what is happening today in UK homes with 'converged' technology – hundreds of channels, broadband, a PC, laptop, a connected TV, a DVR, and a DVD/Blue-ray player.

It is still early days, especially for superfast broadband and connected TVs, and there is a lot of individual variation within and between homes. But if one looks at reliable data on typical viewers in these homes (i.e. not at claimed behaviour or data from an unrepresentative sample of techno-enthusiasts), a consistent picture emerges. For people in these 'converged' homes, the first thing most of them do if they want to watch TV is still to see *what's on live on their favourite channels* (typically about 8–12 channels). Live TV (Type 1 in the list above) still accounts for about 80% of viewing in these 'converged' homes and that percentage is falling slowly, if at all.[96]

What about the other 20% of viewing in these 'converged' homes? In the past, if there was nothing currently on that they liked on any of their favourite channels, viewers had four options:

- Watch the 'least bad' programme currently showing on one of those channels;
- Search the other channels for something better;
- Watch a video cassette or disc;
- Switch off the TV.

They usually did the first – watch the least bad programme on one of their favourite channels – partly because it required the least effort. Now, thanks to the DVR, they no longer have to do this. There's *always* something good, which they themselves have chosen, easily available at no cost on the disc. For most viewers in these 'converged' homes, the DVR (Type 2 in the list) is the main backup to live TV, accounting for at least half of the 20% of non-live viewing in these homes. The DVR is a significant competitor to VoD. As DVR penetration continues to grow and as DVRs get bigger and smarter, that threat will increase.

Viewers in these homes now also have catch-up TV (Type 3 in the list) for when they forget to set the DVR or hear about a programme the next day. Catch-up viewing is another type of time-shift viewing. Like live viewing

[96] Note, this is for homes with access to a DVR and VoD. Among *all* UK homes, live TV still accounts for about 90% of total viewing. All figures in this section are author estimates based on a range of sources.

(Type 1) and viewing off the DVR (Type 2), it is either free or bundled into a platform offer. It generates little if any revenue for anyone trying to set up a commercial VoD service.

Online preview viewing (Type 4) can generate incremental revenue from either PPV or as part of a premium subscription bundle but is again a type of time-shift viewing based on people's favourite TV channels. It is still at an early stage of deployment and its potential remains unclear. With serial drama (soap operas, suspenseful detective series, etc. – the most appealing genres for this type of service), broadcasters may be reluctant to allow some viewers to see the next episode, and to know its plotline, before the main broadcast in case they reveal what happens – orally and through social media – and spoil the story for everyone else. With factual series, this is less of an issue – in fact, broadcasters would in most cases love viewers to discuss the show before the main broadcast – but the appeal and usage of a preview service would be small if limited to factual genres.

Type 5 – true VoD viewing – is still small as a proportion of total viewing time**,** even for those living in 'converged' TV homes – maybe 2–3% among the whole of this population and 5% for 15–34s. It will increase over time, but much more slowly, we believe, than the hype suggests, and viewers' *willingness to pay* for it is limited, even assuming that there is little or no piracy. Having VoD on a connected TV in the main living room, instead of only on a laptop or PC, will help. But the initial evidence suggests that the benefit isn't all that dramatic.

Finally, Type 6 viewing – retail and rental of DVDs and Blue-ray discs – accounts for about 2% of total TV viewing. Physical video rental still generates over half the profit of operators such as Netflix and LoveFilm while Redbox in the USA (rentals via automated kiosks) has been one of the greatest recent business successes. Box set sales continue, mainly as gifts. But the evidence is that video retail and, especially, rental of these removable media are likely to decline as VoD grows. Nearly all analysts believe that most of this submarket will be online within ten years.

UNDERLYING REASONS FOR SCEPTICISM ABOUT FUTURE GROWTH RATE In addition to the pattern of viewing in today's 'converged' TV homes, there are other underlying reasons to be sceptical about the likely speed and scale of the long-predicted on-demand revolution in TV viewing.

Research on *why* people watch online TV finds that the main reasons are to watch recent TV programmes which they missed, to watch a TV programme or movie a second time, and to view something for free rather than paying. All of these are still about traditional 'linear' content on traditional channels. Less important reasons are to see content that is not available on TV, to keep informed during a breaking news story, and to see additional content about a programme. Even these are often driven by or derived from traditional TV.[97]

Second, compared with broadcasting, the internet is still a relatively unreliable, poor-quality, and expensive physical distribution channel for video. To replace broadcasting – that's about five hours per home per day of, increasingly, HD-quality video – the technology will need to mature and either viewers or advertisers will have to pay the internet service providers for significant extra bandwidth costs. These are coming down all the time but are still a long way from the point at which it would make economic sense to

[97] Source: Deloitte presentation at 2010 Edinburgh International Television Festival.

replace the digital terrestrial TV network (which has almost universal coverage) with online distribution, the long-term aspiration recently recommended by the House of Lords Communications Committee.[98] That point will be reached sooner if the government starts to put less emphasis on having the fastest broadband in Europe and more on bringing online the 8 million UK adults who have never used the internet.[99]

Also underlying scepticism about a wholesale switch to on-demand viewing is that live and time-shifted 'linear' TV are so compelling, and becoming more so. For over 40 years, viewers have watched an average of over three and a half hours of TV a day – a mixture of drama, comedy, news, sport, documentaries, and general entertainment – mostly to relax, in the evening, in the living room, with other family members. How much, what, when, where, with whom, and even how people watch TV has changed surprisingly little since the 1960s.[100] The only big change is that viewing is now spread over hundreds of channels, although the top five still capture just over half of all viewing in the UK.[101]

Despite the growth of new media, TV viewing has actually increased in the last few years.[102] Some of that is down to people spending less on out-of-home entertainment during the recession. But interestingly, most of the growth in viewing hours over the last five to ten years has been on main sets in living rooms:[103] watching the main set is more compelling than ever because of more channels, bigger and better screens, DVRs, and so on. (The new definition of working class is having a screen too big for the living room.)

Part of the reason for the almost seven hours a day people on average spend watching and listening to TV (4.0 hours/day) and radio (2.9 hours/day) is that broadcasting is such good value for money. According to Ofcom's latest figures, telecoms and the internet still cost UK consumers an average of 84p per consumer hour. On the same basis, television costs less than 11p/hour, radio just 1.3p/hour.[104]

Put simply, this is a very well served market. Despite all the uncertainty, the evidence suggests that VoD will continue growing from its current low base, especially but not only as a superior replacement for video rental and retail, but that it will not revolutionise viewing (e.g. replace TV channels) in the foreseeable future.

Having said that, many would still disagree with this view and things may indeed change faster and more radically than expected. What, then, are the potential policy implications of digital convergence – whether fast or slow – beyond those already discussed for digital switchover?

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[98] www.publications.parliament.uk/pa/ld201213/ldselect/ldcomuni/41/4102.htm.

[99] A more immediate financial payback from bringing these people online is that it will accelerate the transition to 'digital by default' public services, see Patrick Barwise speech to the Westminster Media Forum/e-Forum conference on the Communications Green Paper, 6 Mar. 2012.

[100] Sharp et al., 'Television: Back to the Future'.

[101] Oddly enough, we do not really know *why* people watch so much. Maybe the neuroscientists will explain it. Our hunch is that watching TV takes up enough mental capacity to take one's mind off other things, but not enough to demand serious effort People watch TV to take their minds off what they are *not* doing – work and chores. In contrast, they mostly listen to the radio to take their minds off what they *are* doing – driving, cooking, ironing, and so on.

[102] Most of this increase has been among adults 35+. There has been virtually no change in the average amount of viewing among those aged less than 25 while average viewing among those aged 25–34 has slightly decreased. Ofcom, *Communications Market Report* (July 2012), 155, fig. 2.42.

[103] This refers to the absolute increase, from about 195 minutes/day on the main set in 2003-9 to about 210 minutes/day in 2009–10, an increase of about 15 minutes/day. The equivalent figures for other sets are roughly 26, 32, and +6 minutes/day. In percentage terms, this is a bigger increase (around 23% versus about 8%) but in absolute terms, about 70% of the increase is in viewing on the main set. Ibid. 127, fig. 2.14.

[104] Ibid., fig. 1.6 (p. 28) gives the time spent by UK individuals aged 4+ on communications services (minutes/day). Fig. 1.12 (p. 32) gives average UK household expenditure on communications services (£/month). The figures in the text assume 2.28 individuals aged 4+ per household and 30.4 days/month. The Ofcom data come from multiple sources over the last two years.

5.3. Potential policy implications of digital convergence

In terms of technology, the technological changes linked to digital convergence are potentially much more revolutionary than those stemming from digital switchover. But, as just discussed, there are reasons to be sceptical about the likely speed and scale of change. The evolution in viewing behaviour in homes with 'converged' TV technology has so far, and over many years, been much less than predicted by the digerati. That may of course change, but it is still far from certain that the rate of change in *actual viewing behaviour* (as opposed to the *availability and adoption of technology* that allows such changed behaviour) will dramatically accelerate over the next, say, ten years as the technology improves and becomes more familiar. It may or it may not.

Equally, even if the long-predicted digital revolution in TV viewing (or the consumption of audio-visual content) does happen over this period, it will not necessarily have far-reaching additional policy implications beyond those of digital switchover (i.e. the end of spectrum scarcity and the availability of conditional access technology and DVRs). There are two broad possibilities:

1. Suppose the best policy after digital switchover is a *free market with no BBC or a much smaller BBC*, as some people propose. The extra flexibility provided by the new digital technologies (to the extent that they do, in fact, take off) may further impact the structure and nature of that market, especially if – against our expectations – it leads to a shift to predominantly on-demand (asynchronous/'non-linear') rather than live/'linear' viewing. But it is unlikely to change the arguments for the basic policy of moving to a free market with no, or a much smaller, BBC.
2. Alternatively, suppose the best policy after digital switchover is to *continue with a mixed economy* that still includes a licence-fee-funded BBC on roughly the current scale. The arguments for this – especially the desire to ensure continuing investment in original, high-quality UK production of a wide range of programme types in order to achieve welfare and 'citizenship' objectives – may or may not be affected by the growth of new digital technologies. Whatever the distribution technology, people will still want good programmes to watch, including a significant proportion of original UK programmes. The one proviso is that, if online viewing grows to the extent that a significant number of TV viewers no longer have a TV set (instead relying entirely on other, online, devices), new policies will be needed to ensure that licence fee evasion does not become too great.

We therefore have the following, somewhat paradoxical, situation.

- Digital switchover is the culmination of a long-term evolutionary process, but its potential implications for broadcasting policy are revolutionary: post-switchover, the technology allows the possibility of something close to a free market in television services without a large licence-fee-funded public service broadcaster such as the BBC. The policy question is whether this would be an improvement.
- Conversely, digital convergence represents a revolutionary technology (mainly online VoD) that enables people to watch television in radically different ways, but its incremental impact on television economics and policy – i.e. beyond the implications of digital switchover – seems to be quite limited. This is partly because the extent

and speed of change in actual viewing behaviour (and, relatedly, revenue and profit for companies offering VoD) may be much less than technology enthusiasts have been predicting for the last 20-plus years; and partly because, even if and when the optimistic predictions eventually turn out to be right, the scarce resource will still be good programmes.

Digital switchover means that the UK *could* now move to a free market in television wholly or largely funded by subscriptions and advertising, with either no BBC, a much smaller BBC, or contestable funding for a limited amount of public service content dispensed by an 'Arts Council of the Air'. Whether the UK *should* take that route will be explored in a subsequent report, on what the market would look like if there were no, or a much smaller, BBC.

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