

(Un)Plugging Smart City Transformations & Strategies in Europe

Dr Igor Calzada, MBA

Lecturer & Senior Research Fellow, Future of Cities & Urban Transformations, University of Oxford

Lecturer, Institute for Future Cities, University of Strathclyde

Associate Fellow, Brussels Centre for Urban Studies, Vrije Universiteit

@icalzada

www.igorcalzada.com

igor.calzada@compas.ox.ac.uk

2016 Strategic Innovation Summit: Smart Cities Europe

Dublin (Ireland), 13th October 2016



DUBLIN

*I can't change the world,
but I can change the world in me.*

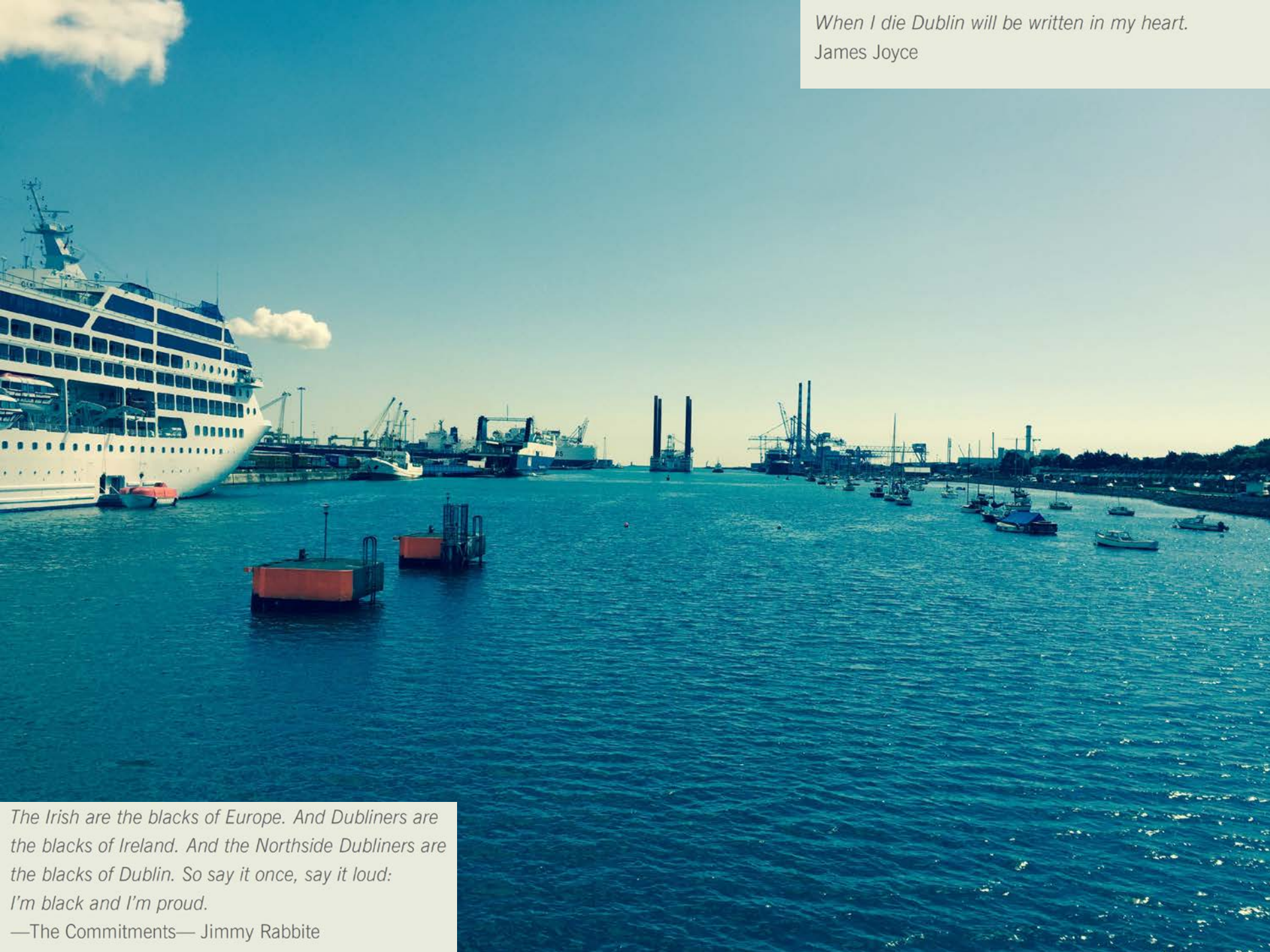
(‘Rejoice’ Bono – U2)

PhD 2000-2008 (2011)





DUBLIN CITY COUNCIL
an chomhairle cathrach



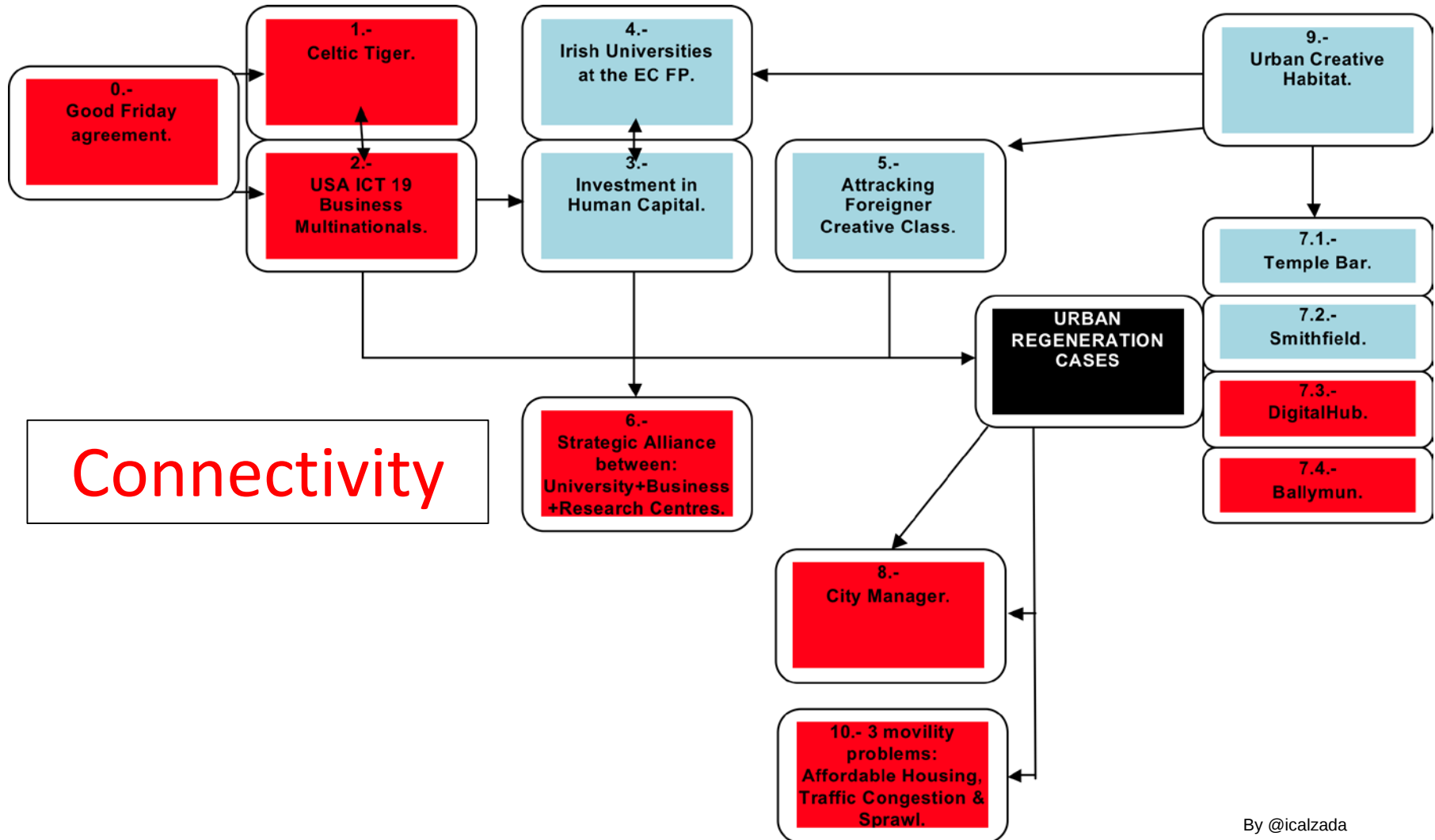
When I die Dublin will be written in my heart.
James Joyce

*The Irish are the blacks of Europe. And Dubliners are
the blacks of Ireland. And the Northside Dubliners are
the blacks of Dublin. So say it once, say it loud:
I'm black and I'm proud.*
—The Commitments— Jimmy Rabbite

Benchmarking DUBLIN (IRELAND).

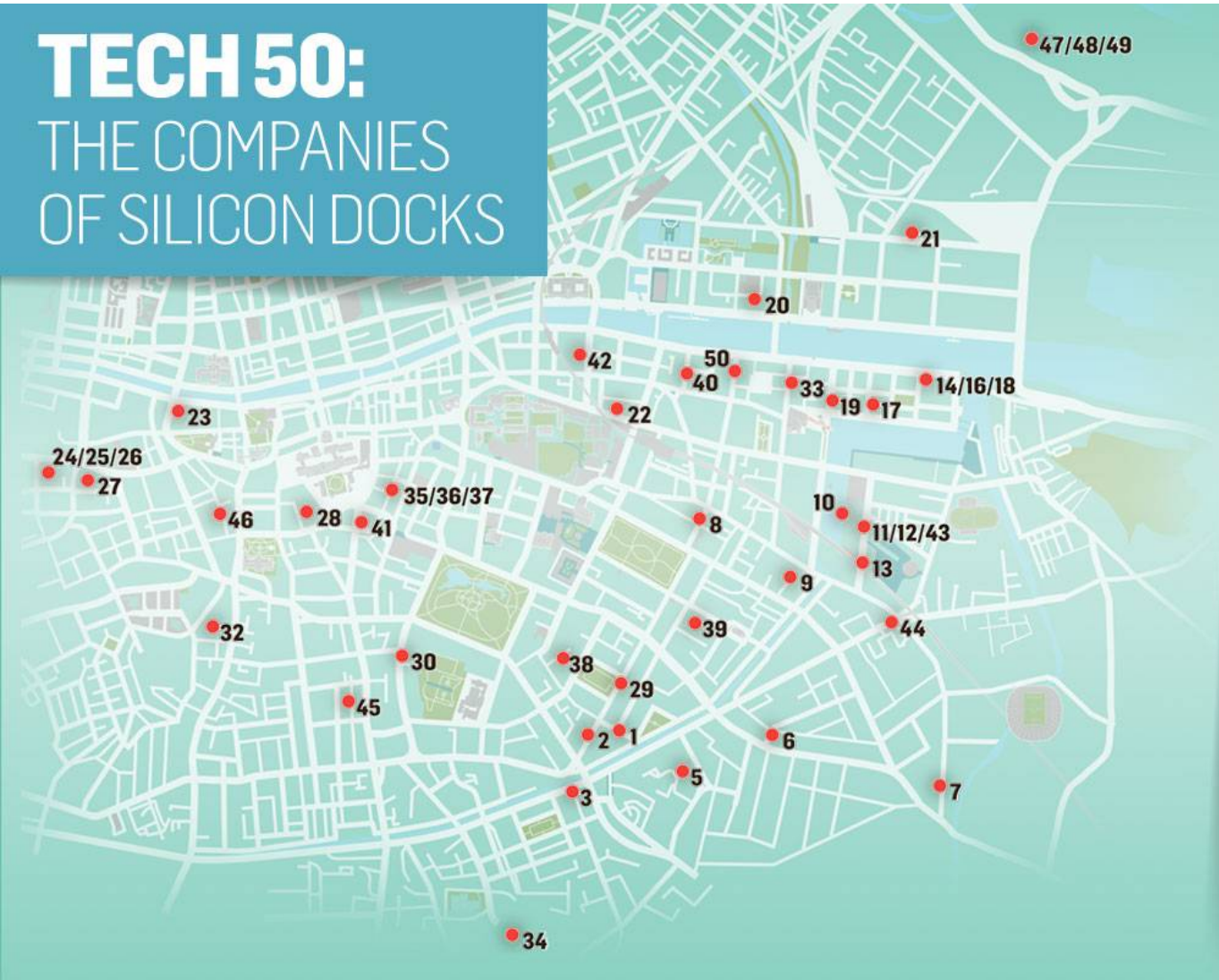
(Fieldwork PhD research: 2002-2008)

Creativity



Dot-com bubble effect in the urban transformations of Dublin (2000-2008)

TECH 50: THE COMPANIES OF SILICON DOCKS



1. LinkedIn (450 employees): professional social networking
2. Nitro (20): online PDF and document sharing
3. Dropbox (45): online storage for PCs and phones
4. Airbnb (120): online accommodation rental
5. Amazon (300): world's biggest online retailer
6. IBM (3,000): business software and IT services
7. Zynga (50): online casual gaming
8. Populis (~50): online publishing for companies
9. Pearl Street Enterprises (25): Amazon.com marketplace business
10. Dogpatch Labs (n/a): incubator/accelerator centre
11. Engine Yard (c100): cloud application management service
12. Logentries (20): IT system data analytics
13. Google (2,500): search, advertising, online software
14. SquareSpace: (20) DIY website creation services
15. Facebook (550): world's biggest social media firm
16. Zendesk (25): customer service and helpdesk software
17. LogMeIn (50): sharing PC, phone, tablet access
18. Indeed.com (100): online jobs and CV service
19. Ancestry.com (70): online ancestry search services
20. Hubspot (75): online sales and marketing software
21. TripAdvisor (35): online travel advice service
22. Twitter (170): online social media service
23. Culture Translate (10): IT translation and localisation
24. The Digital Hub: tech office space for startups
25. Etsy (25): online fashion and craft marketplace
26. eMaint Enterprises (25): computerised maintenance management software
27. Jaspersoft (20): business intelligence and analytics software
28. MongoDB (30): online database services
29. Adara (15): online loyalty shopping services
30. Adroll (20): online advertising 'retargeting' service
31. Qualtrics (32): online survey software
32. Workday (80): business database software
33. Wayra Academy: incubator centre for startups
34. CurrencyFair (<10): online money transfer service
35. Boxfish (<10): television and video data analytics
36. Tribalvc: incubator centre for startups
37. PageFair (<10): counter-adblocking online advertising service
38. Datahug (10): customer information analytics service
39. Storyful (20): online news verification service
40. RealEx (120): online payments processing services
41. Riot Game (35): online video games
42. Mandiant (60): IT and online security
43. Viddyad (<10): online video ad creation
44. Soundwave (<10): music social media service
45. Intercom (25): online customer relationship services
46. Newswhip (15): online news popularity measurement tools
47. Yahoo (275): email, news and online services
48. Oracle (900): online IT database services
49. Cisco (200): IT telecoms infrastructure
50. Gilt Groupe (10): discount shopping website

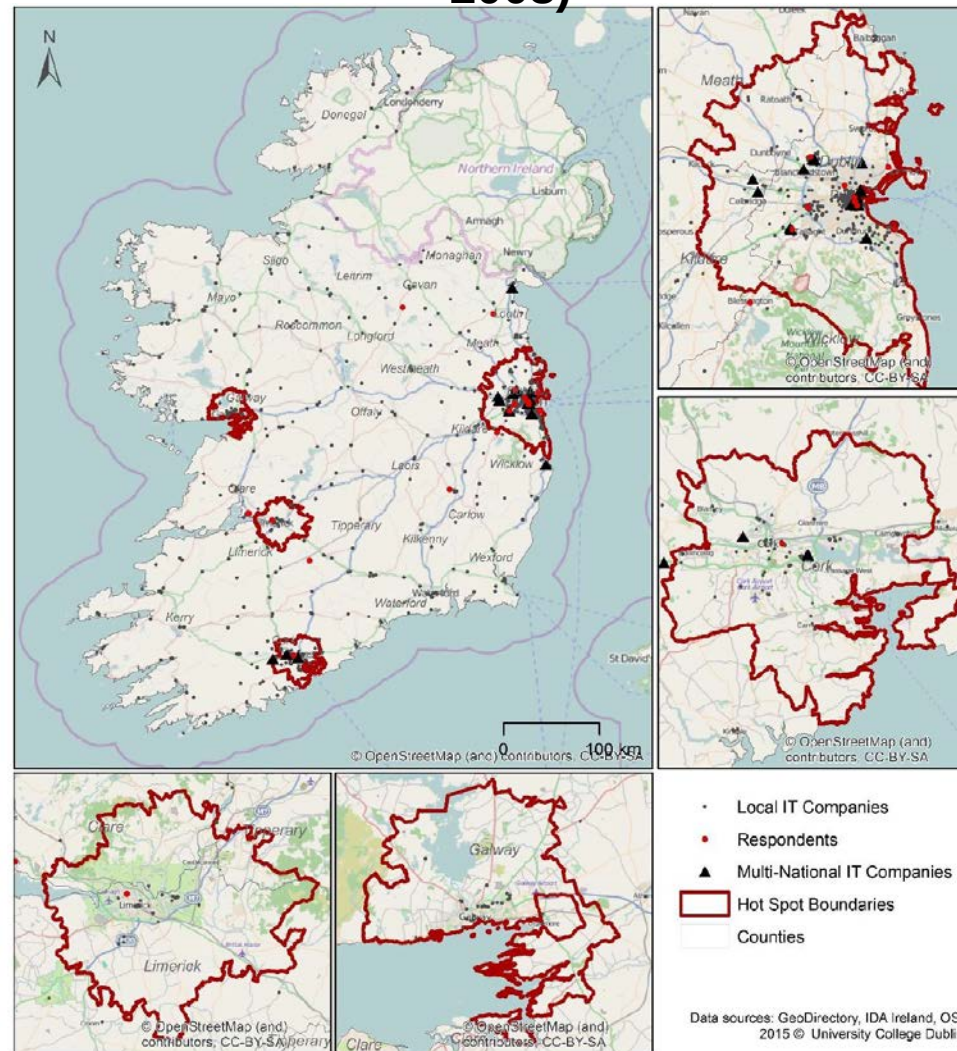
Employee figures do not include pledged future jobs. Some figures are estimates based on recent interviews and company data.

Connectivity



Smart City?

IT companies' geolocalisation within the diverse city-regions in Ireland (2000-2008)



Connectivity



Smart City-(Region)?

Fellowships: Ikerbasque (2012-2014) & RSA (2015)



#DEEP

#LEARNING

By @icalzada

#DEEP

#LEARNING

By @icalzada

#DEEP

By @icalzada

#LEARNING

Outline

0. Introduction: Dublin

1. Two pervasive metropolitan processes:

Indirectly linked to the Smart Cities:

- ***Beyond Nation-States***
 - Smart City-Regional Governance

Directly linked to the Smart Cities:

- ***Beyond Hyper Connected Societies***
 - Deconstructing Smart Cities: (Un)Plugging & *Dataism*

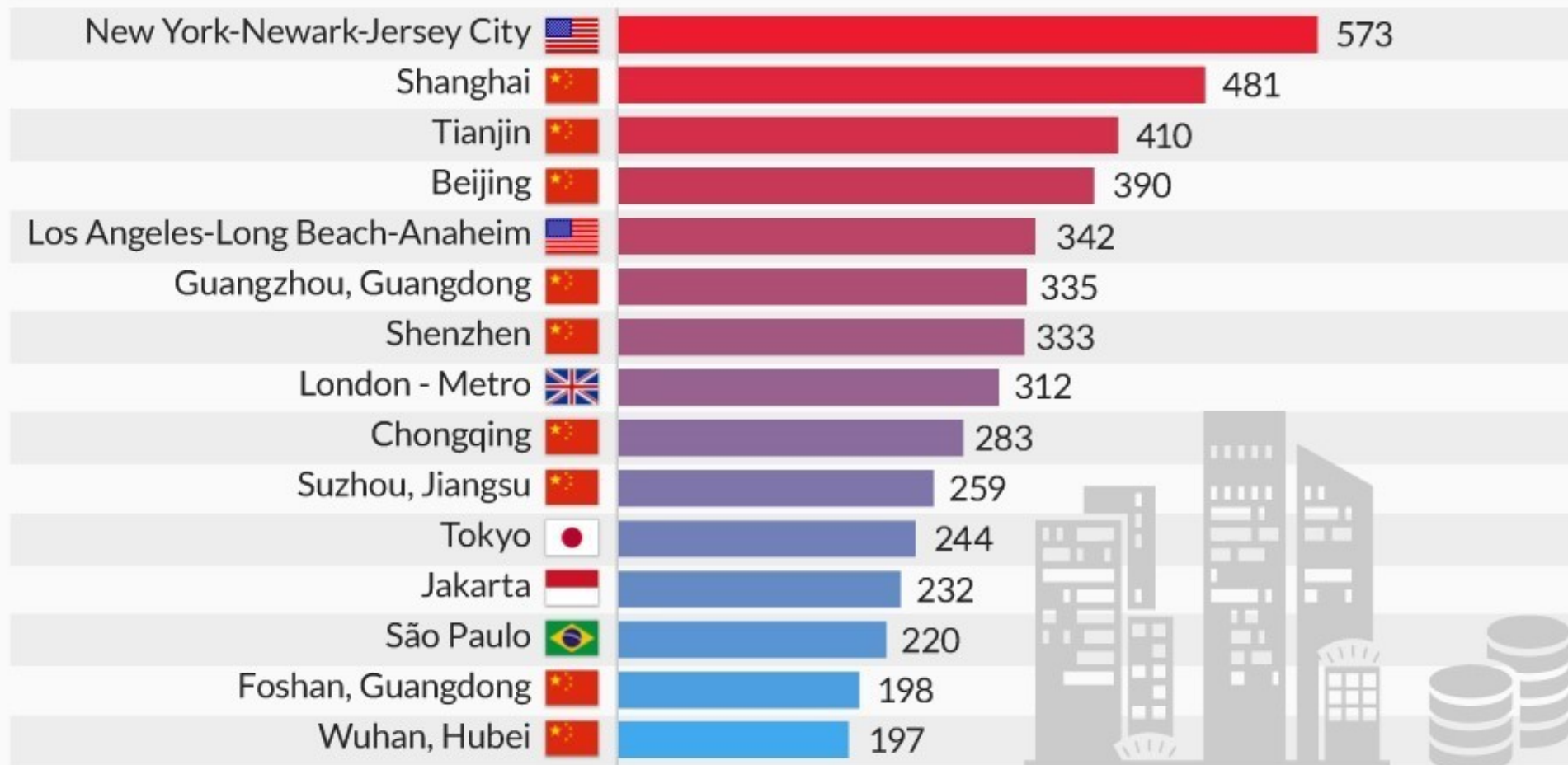
3. EU Smart City Projects

4. Final Remarks:

- 5 research/policy challenges
- 2 announcements

The cities contributing most to global GDP by 2030

Top 15 cities worldwide by GDP in 2030 (in billion GBP)



<https://www.weforum.org/agenda/2016/10/forget-the-nation-state-cities-will-transform-the-way-we-conduct-foreign-affairs>

The World's Top 100 Economies

Country/City/Company	GDP/Revenues	Country/City/Company	GDP/Revenues	Country/City/Company	GDP/Revenues
1 United States	14,204	35 ExxonMobil	426	69 Chevron	255
2 China	7,903	36 Osaka/Kobe, Japan	417	70 Toronto, Canada	253
3 Japan	4,354	37 Wal-Mart Stores	406	71 Detroit, USA	253
4 India	3,388	38 Colombia	395	72 Peru	245
5 Germany	2,925	39 Mexico City, Mexico	390	73 Portugal	245
6 Russian Federation	2,288	40 Philadelphia, USA	388	74 Chile	242
7 United Kingdom	2,176	41 Sao Paulo, Brazil	388	75 Vietnam	240
8 France	2,112	42 Malaysia	383	76 Seattle, USA	235
9 Brazil	1,976	43 Washington, DC, USA	375	77 Shanghai, China	233
10 Italy	1,840	44 Belgium	369	78 Madrid, Spain	230
11 Mexico	1,541	45 Boston, USA	363	79 Total	223
12 Tokyo, Japan	1,479	46 Buenos Aires, Argentina	362	80 Singapore, Singapore	215
13 Spain	1,456	47 BP	361	81 Sydney, Australia	213
14 New York, USA	1,406	48 Venezuela	357	82 Bangladesh	213
15 Korea, Republic of	1,358	49 Sweden	344	83 Mumbai, India	209
16 Canada	1,213	50 Dallas/Forth Worth, USA	338	84 Rio de Janeiro, Brazil	201
17 Turkey	1,028	51 Ukraine	336	85 Denmark	201
18 Indonesia	907	52 Greece	329	86 Israel	201
19 Iran, Islamic Rep	839	53 Switzerland	324	87 Ireland	197
20 Los Angeles, USA	792	54 Moscow, Russian Federation	321	88 Hungary	194
21 Australia	762	55 Hong Kong, China	320	89 Finland	188
22 Taiwan	710	56 Austria	318	90 General Electric	183
23 Netherlands	671	57 Philippines	317	91 Kazakhstan	177
24 Poland	671	58 Nigeria	315	92 Volkswagen Group	158
25 Saudi Arabia	589	59 Atlanta, USA	304	93 ENI	158
26 Chicago, USA	574	60 Romania	302	94 AXA Group	157
27 Argentina	571	61 San Francisco/Oakland, USA	301	95 Phoenix, USA	156
28 London, UK	565	62 Houston, USA	297	96 Minneapolis, USA	155
29 Paris, France	564	63 Miami, USA	292	97 Sinopec-China Petroleum	154
30 Thailand	519	64 Seoul, South Korea	291	98 San Diego, USA	153
31 South Africa	492	65 Norway	277	99 HSBC Holdings	142
32 Royal Dutch Shell	458	66 Algeria	276	100 Barcelona, Spain	140
33 Egypt, Arab Rep	441	67 Toyota Motor	263		
34 Pakistan	439	68 Czech Republic	257		

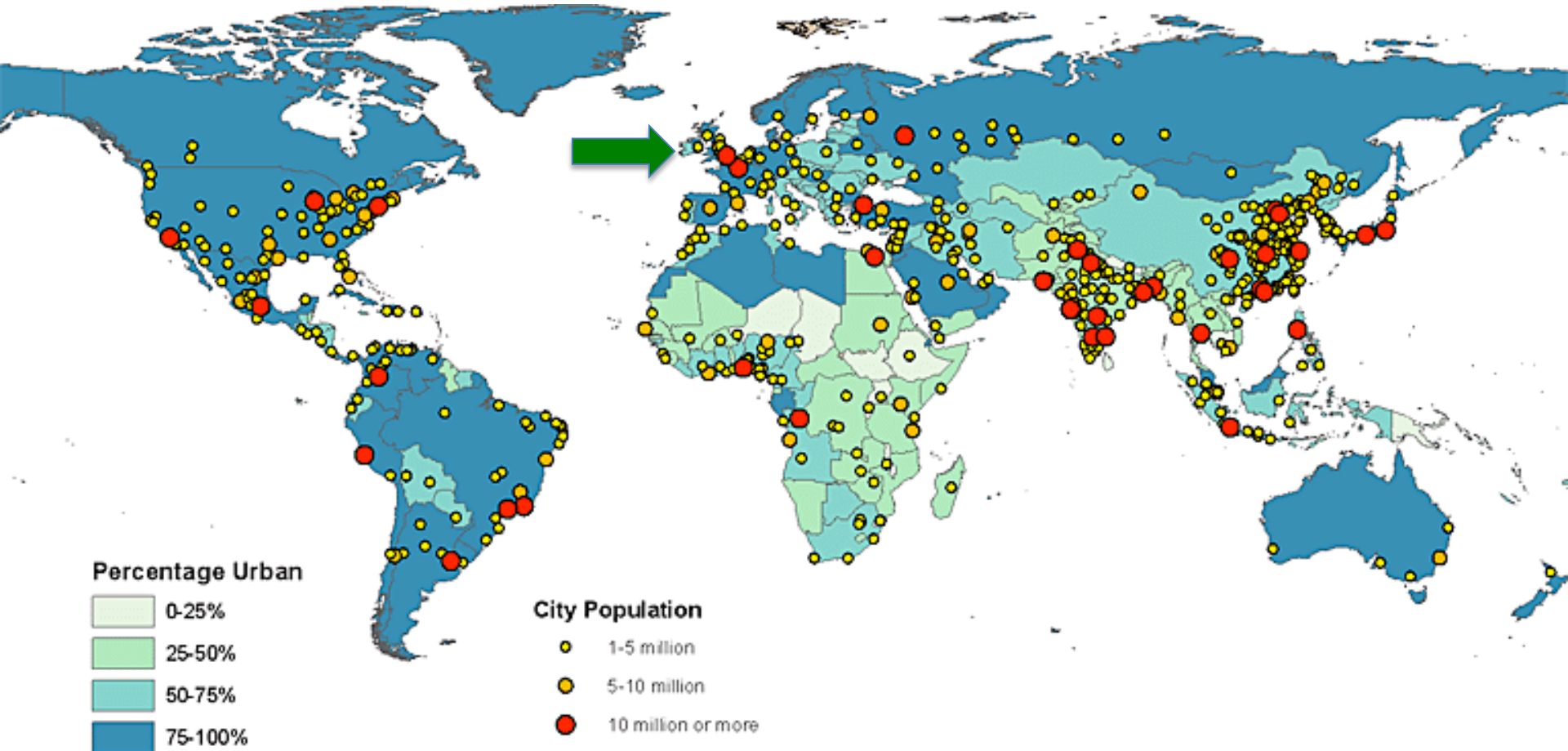
Country
 City
 Company

GDP/Revenues in \$ billions PPP, 2008

Data sources: Country data: GDP-PPP from the Development Data Platform time series, World Bank; City data: PricewaterhouseCoopers (PwC), 2009. Which are the largest city economies in the world and how might this change by 2025? Economic Outlook; Companies: Data retrieved from http://www.forbes.com/lists/2008/18/biz_2000global08_The-Global-2000_Rank.html (accessed November, 2009)

Cite as: Hoonweg, D., P. Bhada, M. Freire, C.L. Trejos Gómez, R. Dave. 2010. *Cities and Climate Change: An Urgent Agenda*. World Bank.

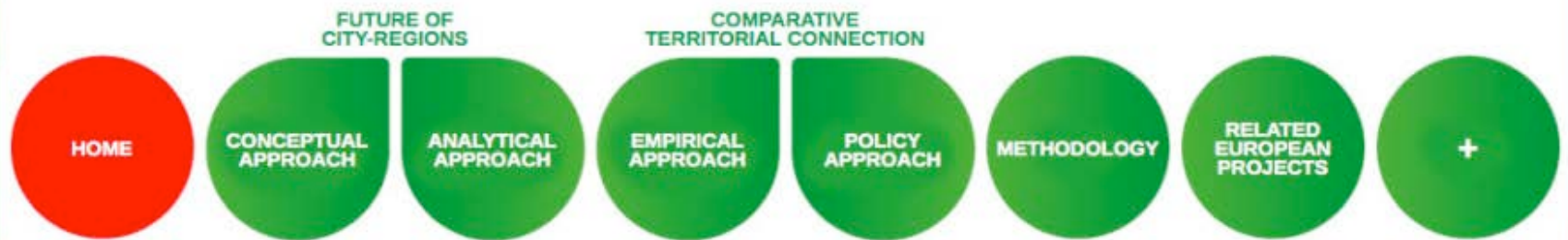
2025





BENCHMARKING FUTURE CITY-REGIONS

"It is a ecological fallacy to suppose that is true of *some* city-regions is true of *all* city regions" MORGAN. K





<http://www.tandfonline.com/doi/full/10.1080/21681376.2015.1046908>

Benchmarking future city-regions beyond nation-states

Igor Calzada* 

Future of Cities – COMPAS, University of Oxford, Oxford, UK

(Received 26 September 2014; accepted 28 April 2015)

This paper argues that new city-regional configurations are emerging and establishing a regional order beyond nation-states, both as a consequence of certain nationalistic political devolution claims and due to the economic renewal and nation-state re-scaling trend advocated by the ‘new regionalism’. Based on the author’s findings, which elucidate the distinction between four nationalistic (Scotland, Catalonia, Basque Country and Iceland) and four non-nationalistic city-region cases (Oresund, Liverpool/Manchester, Dublin and Portland), this paper highlights that there is no single model for city-regions and emphasizes that this trend has become increasingly complex due to its wide range of causes: political devolution and nation-state rescaling processes (Scotland, Catalonia, Basque Country, Liverpool and Manchester), flow of commuters (Oresund), democratic regeneration (Iceland), and economic renewal (Dublin and Portland).

This paper benchmarks eight city-regions by systemically investigating their social innovation processes to understand better their dynamics beyond their respective nation-states.

Keywords: City-regions; nation-states; social innovation; devolution

2708 views

7th

Most

Read Article

Beyond **Hyper Connected Societies** >



Need to Deconstruct the **Smart City**



E·S·R·C
ECONOMIC
& SOCIAL
RESEARCH
COUNCIL



UNIVERSITY OF
OXFORD

If you experience
something
—record it.

If you record
something
—upload it.

If you upload
something
—share it.

'You have to be
somebody before you
can share yourself'

(J. Lanier)



#dataism

1. Ecosystem of Citizens > System of Systems



Beyond Hyper Connected Societies >

By @Independent



THE
INDEPENDENT

Social media is making us depressed: let's learn to turn it off



E·S·R·C
ECONOMIC
& SOCIAL
RESEARCH
COUNCIL

<http://www.independent.co.uk/voices/social-media-is-making-us-depressed-lets-learn-to-turn-it-off-a6974526.html>

Above all

we need

Smart Mayors and Smart Citizens,

not

Smart Cities

http://www.economist.com/news/special-report/21695194-better-use-data-could-make-cities-more-efficient-and-more-democratic-how-cities-score?fsrc=scn/tw_ec/how_cities_score

The
Economist



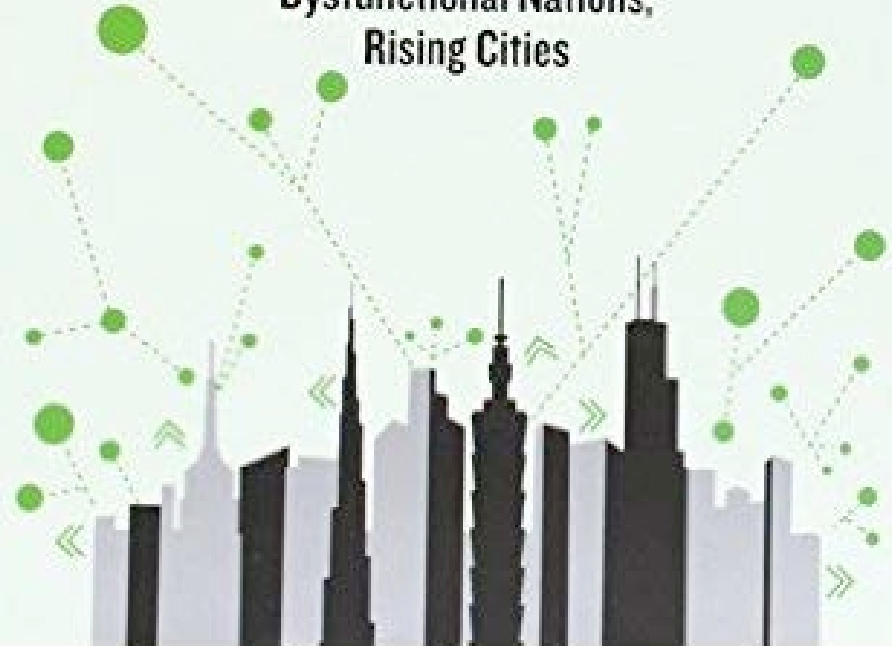
UNIVERSITY OF
OXFORD

BENJAMIN R. BARBER

author of *Jihad vs. McWorld*

IF MAYORS RULED THE WORLD

Dysfunctional Nations,
Rising Cities





GOVERNMENT IN THIS KIND OF INITIATIVES:

The smart cities market size is estimated to grow from \$312.03 billion in 2015 to \$757.74 billion by 2020. Most of the projects in this sphere are brought forth using the so-called PPP (public-private partnerships) approach.

It is fair to ask, as Oxford academic Igor Calzada (also present at the conference) did in a recent [article](#) “are Smart City solutions currently based more on vendor push than on city government pull? What are the politics of big data in various Smart Cities?”

<http://www.forbes.com/sites/federicoguerrini/2016/09/19/engaging-citizens-or-just-managing-them-smart-city-lessons-from-china/#4ab852b92dda>





Beyond Hyper Connected Societies >



Need to Deconstruct the Smart City

<http://edition.cnn.com/2016/10/10/asia/yinchuan-smart-city-future/index.html>



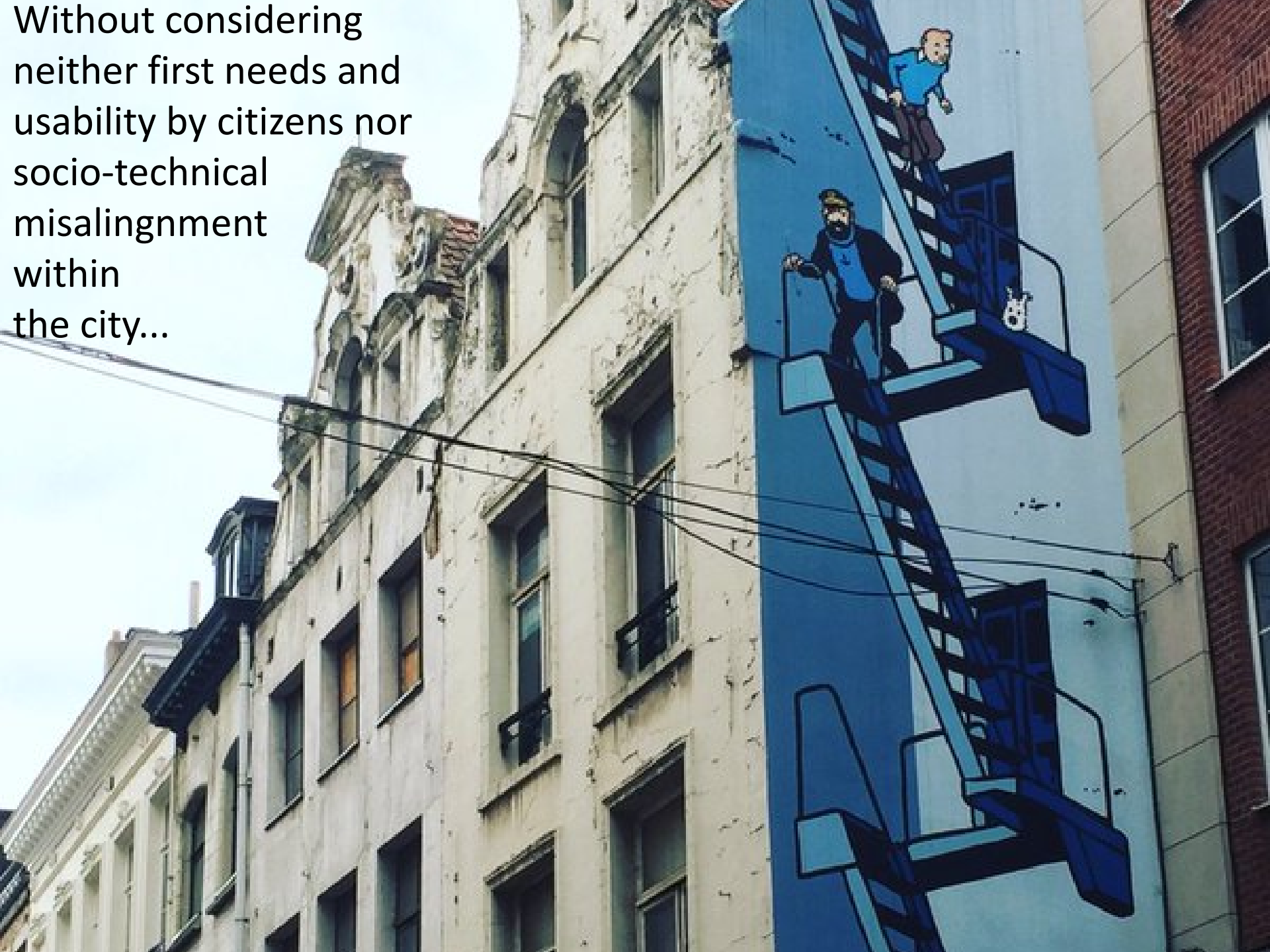
E·S·R·C
ECONOMIC
& SOCIAL
RESEARCH
COUNCIL

SMART CITIES

Generally encompass three domains (Kitchin *et al.*, 2016):

- **Regulation and Efficiency:**
 - Cities composed of 'everyware': ICT infrastructure, devices, sensors, meters, software, big data.
 - Cities become networked, programmable, data-driven and thus knowable and controllable in new, dynamic, reactive ways.
- **Economic development:**
 - Advances in ICT used to reconfigure the economy, human capital, creativity, innovation, education, sustainability, governance.
 - Cities as competitive, entrepreneurial, knowledge-driven
- **Social innovation and civic engagement:**
 - ICT as a means for accountable governance, new forms of civic participation, new ways to solve local issues, citizen-centric tools.
 - Cities as shared, open, transparent, enabling, empowering.

Without considering
neither first needs and
usability by citizens nor
socio-technical
misalignment
within
the city...



The contemporary smart city cannot be JUST reduced...





Smartness

cannot be more technocratic

than democratic

(Habermas, 2015)

1. What prospects are there for alternative funding and business models for smart cities?

2. What are the practical/political interventions needed (within business, local government, communities,...)?

3. Is another Smart City possible?

***A third-way* between State and Market (PPP)?**



Favourable conditions exist...



For detecting emerging processes and observing spontaneous urban transformations.



An aerial night photograph of a city, likely New York City, showing a dense grid of buildings and streets. The image is characterized by vibrant, multi-colored light trails from moving vehicles, primarily in shades of red, orange, yellow, and green, which contrast sharply with the dark night sky and the blue and white lights of the city's infrastructure. The perspective is from a high altitude, looking down on the urban landscape.

Technology-oriented pathways of smart cities offer still
unexplored opportunities for experimenting.

7-10

0-16 m





**To get out from the
'smart city-in-the-box'
approach**

TRANSITIONS





@perjovschi

UNPLUGGING 2 notions

- ① Being digitally connected/*plugged in* is no guarantee of being smart (Evans 2002: 34)
- ② Technology is never neutral, and it has the potential and capacity to be used socially and politically for quite different purpose (Williams 1983: 128)

Unplugging: Deconstructing the Smart City

Igor Calzada and Cristobal Cobo



ABSTRACT *This paper explores the subtle notion of unplugging to critically analyze the technological determinism of the Smart City. This exploration suggests that being digitally connected should not be perceived as gaining social capital. This article critiques the assumptions of the Smart City and proposes a 10-dimension conceptual framework. The first section of this article explores hyper-connected societies and how unplugging could be beneficial. The main subjects, Digital Natives, are discussed in the second section of this article. The third section is a decalogue on deconstructing the Smart City, and the final section presents key ideas and questions for future analysis.*

KEYWORDS *unplugging; social innovation; smart city; hyper-connected societies; digital & social divide*

1,870 views

6th Most Read Article



 Calzada, I. & Cobo, C. (2015), *Unplugging: Deconstructing the Smart City*, Journal of Urban Technology. DOI: 10.1080/10630732.2014.971535

<http://www.tandfonline.com/doi/full/10.1080/10630732.2014.971535#abstract>

	1 WHO	2 HOW	3 SYSTEMS	4 GOVERNANCE	5 INFORMATION	6 FOCUS	7 SPACE	8 DESIGN	9 SOCIO- POLITICAL PROCESSES	10 POLITICAL ECONOMY
UNPLUGGING the SMART CITY 	Social & Digital Divide	Individualism vs Collectivism	Socio- Technical Systems	Master Planning vs. Emergent Plan and Top Down vs. Bottom Up	Overload vs Scarcity	Social Netking vs Social Capital	Context Collapse	Ambient Commons	Control & Normative vs Free & Emergent	Profitable vs Non- Profitable

Also in Open Access via @ResearchGate:

https://www.researchgate.net/publication/289522452_AOM_Unplugging_Deconstructing_the_Smart_City



Smart City(-Regional) Governance

For Whom and What Purpose are Smart Cities Being Developed

Are Smart Cities primarily about – or should be about:

- creating new markets and profit?
- facilitating state control and regulation?
- improving the quality of life of citizens?

EU Projects:

Smart City-Regional Comparative International Research

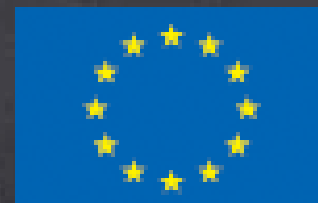
EU Project	Cities involved	Timeframe & Title	Funding Institution
EU-H2020-SCC-1st Lighthouse: REPLICATE	• Bristol (UK) • St Sebastian (ES) • Florence (IT) • Laussane (CH) • Essen (DE) • Nilüfer (TR) • Bogotá (CO) • Guangzhou (CN)	< 2016-2021 > REinassance of PLaces with Innovative Citizenship And TEchnology	EU-H2020-SCC-Lighthouse www.replicate-project.eu
EU-Marie Curie Actions-Cofund-Regional Programmes: SMART CITY-REGIONS	• Bristol (UK) • Glasgow (UK) • Bilbao (ES) • Barcelona (ES)	< 2015-2016 > Comparing Smart City-Regional Governance Strategies: Bilbao, Barcelona, Bristol & Glasgow	EU-FP7 Marie Curie Actions- Cofund BilbaoMetropoli-30/Bizkaia Province Council
EU-FP7-314679 STEP UP Smart City Plan	• Glasgow (UK) • Riga (LT) • Gothenburg (SE) • Ghent (BE)	< 2014-2015 > Energy Planning for Cities *MSc Master in Global Sustainable Cities	EU-FP7 www.stepupsmartcities.eu
EU-FP7-314277- STEEP Smart City Plan	• Bristol (UK) • St Sebastian (ES) • Florence (IT)	< 2014-2015 > Systems Thinking for comprehensive city Efficient Energy Planning	EU-FP7 http://www.smartsteep.eu/

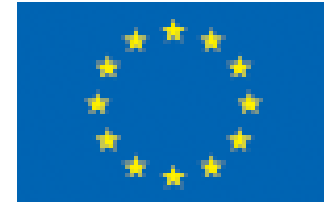


STEEP EU-FP7-314277

Systems Thinking for comprehensive city Efficient Energy Planning
Smart City Master Plan for three EU Cities:

St Sebastian (Spain)
Bristol (UK)
Florence (Italy)





STEP UP

EU-FP7-314679

Energy Planning for Cities

Smart City Master Plan for four EU Cities:

Glasgow (UK)

Riga (Latvia)

Gothenburg (Sweden)

Ghent (Belgium)

<http://www.stepupsmartcities.eu/>

[MSc Global Sustainable Cities Master Lecturer](#)

<http://ifuturecities.com/>



E·S·R·C
ECONOMIC
& SOCIAL
RESEARCH
COUNCIL

H2020-SCC-EU-Lighthouse REPLICATE



REnaissance of PLaces with Innovative Citizenship And TEchnology

Acronym: REPLICATE

INNOVATION ACTIONS



UNIVERSITY OF
OXFORD

www.replicate-project.eu



E·S·R·C
ECONOMIC
& SOCIAL
RESEARCH
COUNCIL

H2020-SCC-EU-1st Lighthouse REPLICATE



By @icalzada

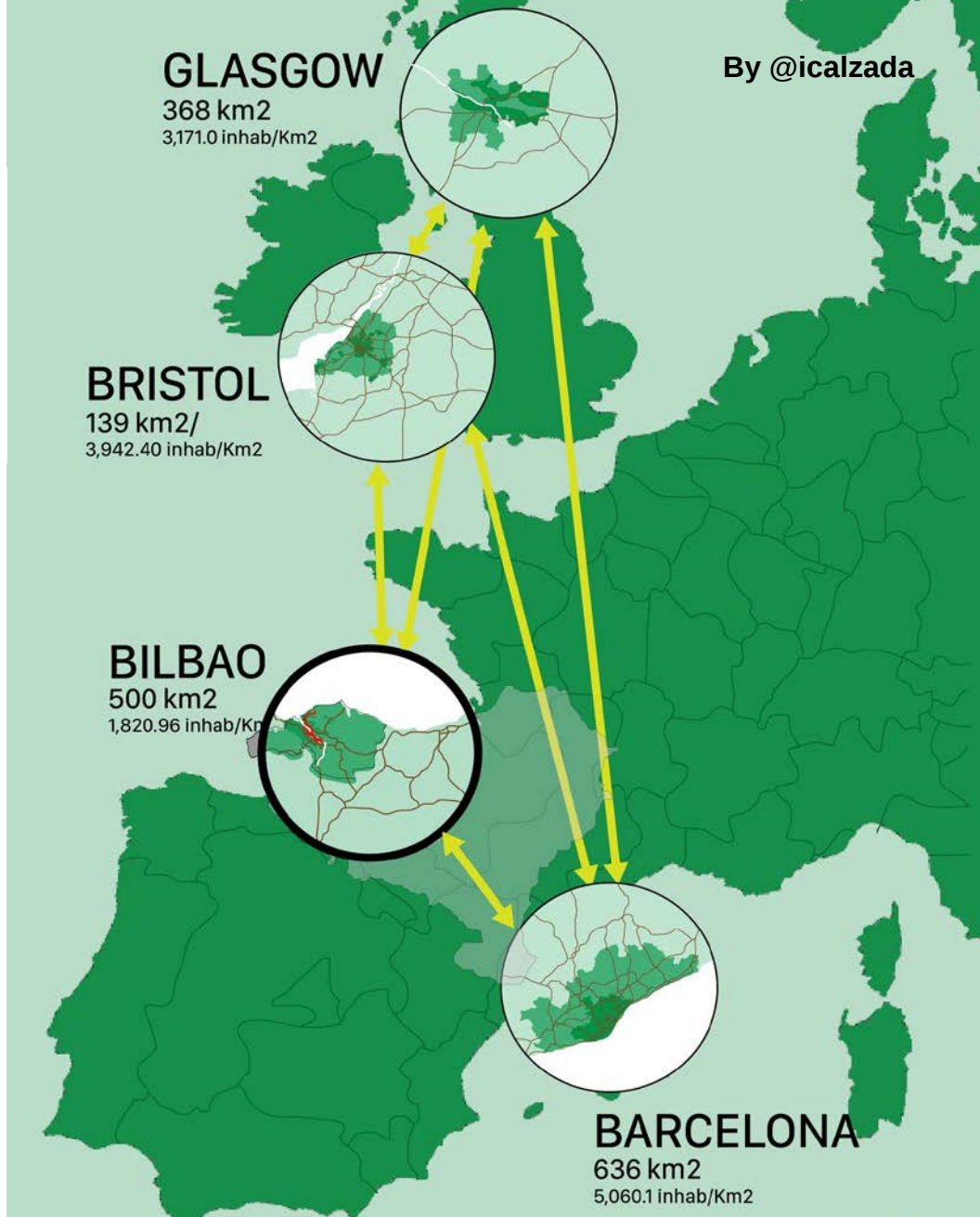


To unplug the smart city approach?





B I L B A O
Metropoli-30



By @icalzada

bizkaia
::talent



Marie Curie COFUND - reaching further
bridging the gap between European, regional,
national

mied Un lugar para la ciencia y la tecnología

ACTIONS
MARIE CURIE



COMPARING/BENCHMARKING

Bristol & Glasgow (UK)

Barcelona & Bilbao (Spain)

Smart City-Regional	Bilbao	Barcelona	Bristol	Glasgow
Municipalities	35	31	4	5
Surface (km2)	500	636	139	368
Density (Inhabit/km2)	1,820	5,060	3,942	3,171
Population (Inhabit)	910,480	3,218,223	547,993	1,166,928
GDP per capita (\$)	38,708	36,157	42,326	37,753
City-region	Basque	Catalonia	Bristol	Scotland
City-constelations	Bilbao, San Sebastian, Vitoria, Pamplona & BAB*	Barcelona, Tarragona, Lleida & Girona	Bristol, Bath & NESomerset, SGloucester & NSomerset	Glasgow, Aberdeen, Dundee, Edinburgh, Inverness, Perth & Stirling
Nation-states	ES		UK	
Devolution	Fiscal autonomy	Trade autonomy	LEP	Devo-max/Smith
Taxonomy	Small nation with tax autonomy	Small nation without tax autonomy	City-regional satellite hub	Tax devolutionist small-nation
Smart City-Regional Governance	Fragmented but very active institutional network	On-going transition	Open Innovation	Urban Governance
Smart City Strategy	Not a single one	iBarcelona	Bristol is Open	Glasgow Future City
Urban solutions	Energy	ICT	ICT/Energy	ICT/Mobility
Key Stakeholders	www.bm30.es www.smartcities.es	www.bitbarcelonamodel.com www.smartcity.bcn.cat	www.bristolisopen.com www.connectingbristol.org www.bristolenergynetwork.org	www.futurecity.glasgow.gov.uk www.open.glasgow.gov.uk www.scottishcities.org



UNIVERSITY OF
OXFORD

Calzada, I. (2016), *Comparing Smart City-Regional Governance Strategies in Bristol, Glasgow, Bilbao & Barcelona*, paper was given at the Oxford Programme for the Future of Cities conference on 'Urban Governance and its Discontents' Panel 2 – Governing the city: where do infrastructure, democracy and social justice meet? on 18th February 2016 at the University of Oxford (UK). DOI: 10.13140/RG.2.1.2091.9448.

<http://www.oxfordcitydebates.com/programme.html>

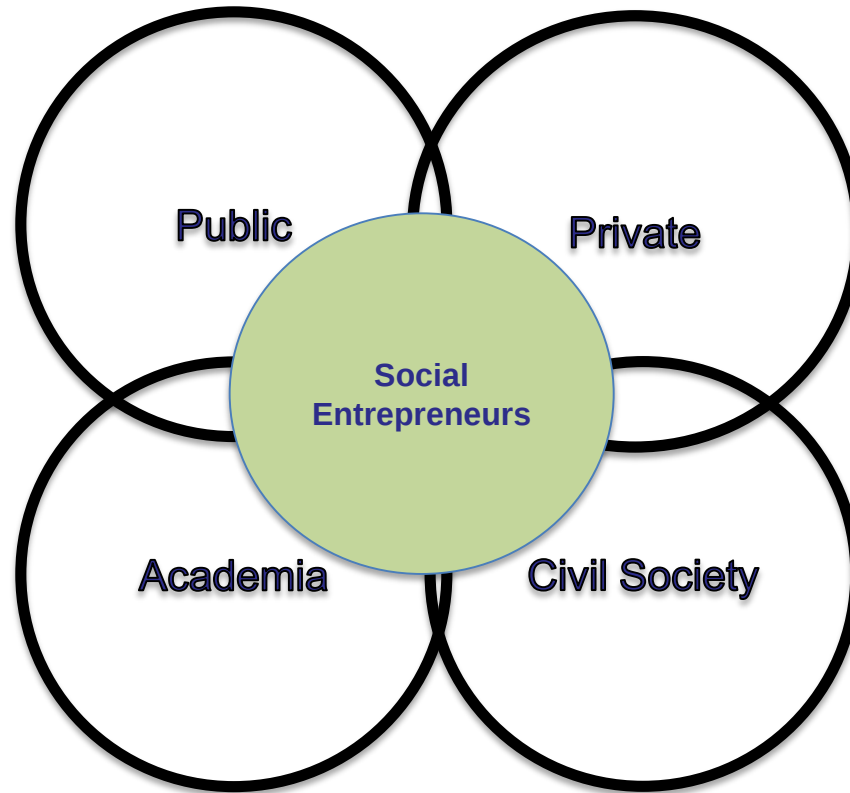


E·S·R·C
ECONOMIC
& SOCIAL
RESEARCH
COUNCIL



FINAL REMARKS

1. PENTA HELIX



By @icalzada

Multi-Stakeholders



UNIVERSITY OF
OXFORD

Calzada, I. (2013), Critical Social Innovation in the Smart City era for a City-Regional European Horizon 2020. Journal of Public Policies & Territory P3T. Vol 2, Nº 6 (2013): Social Innovation & Territory. Winter. pp. 1-20.



E·S·R·C
ECONOMIC
& SOCIAL
RESEARCH
COUNCIL

2. URBAN DATA TO DECIDE



3. SCALABILITY: METROPOLITAN & CITY-REGIONAL SCALES

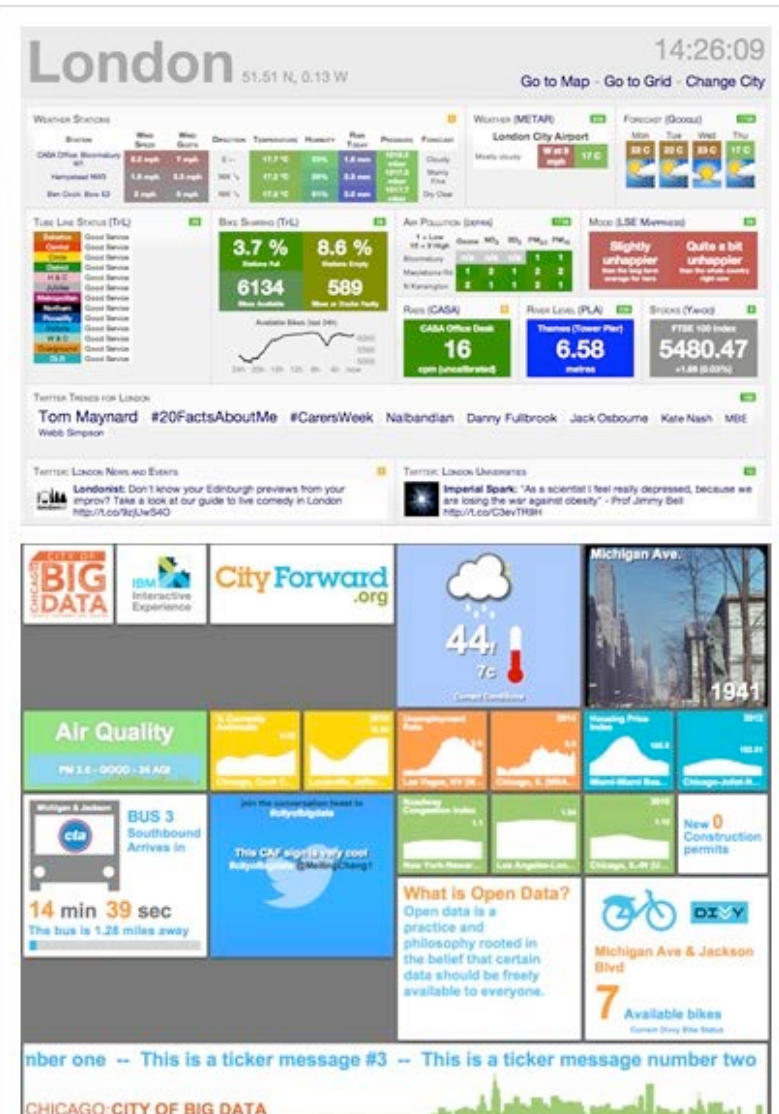
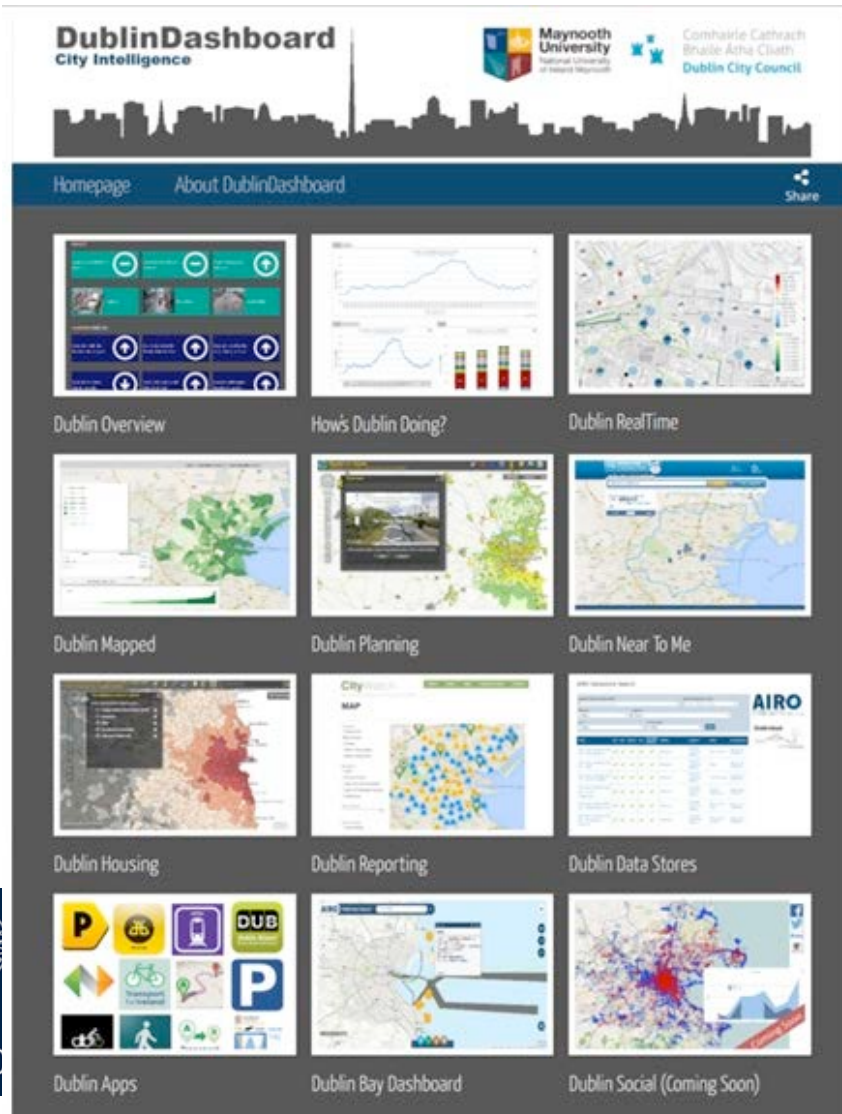
www.cityregions.org

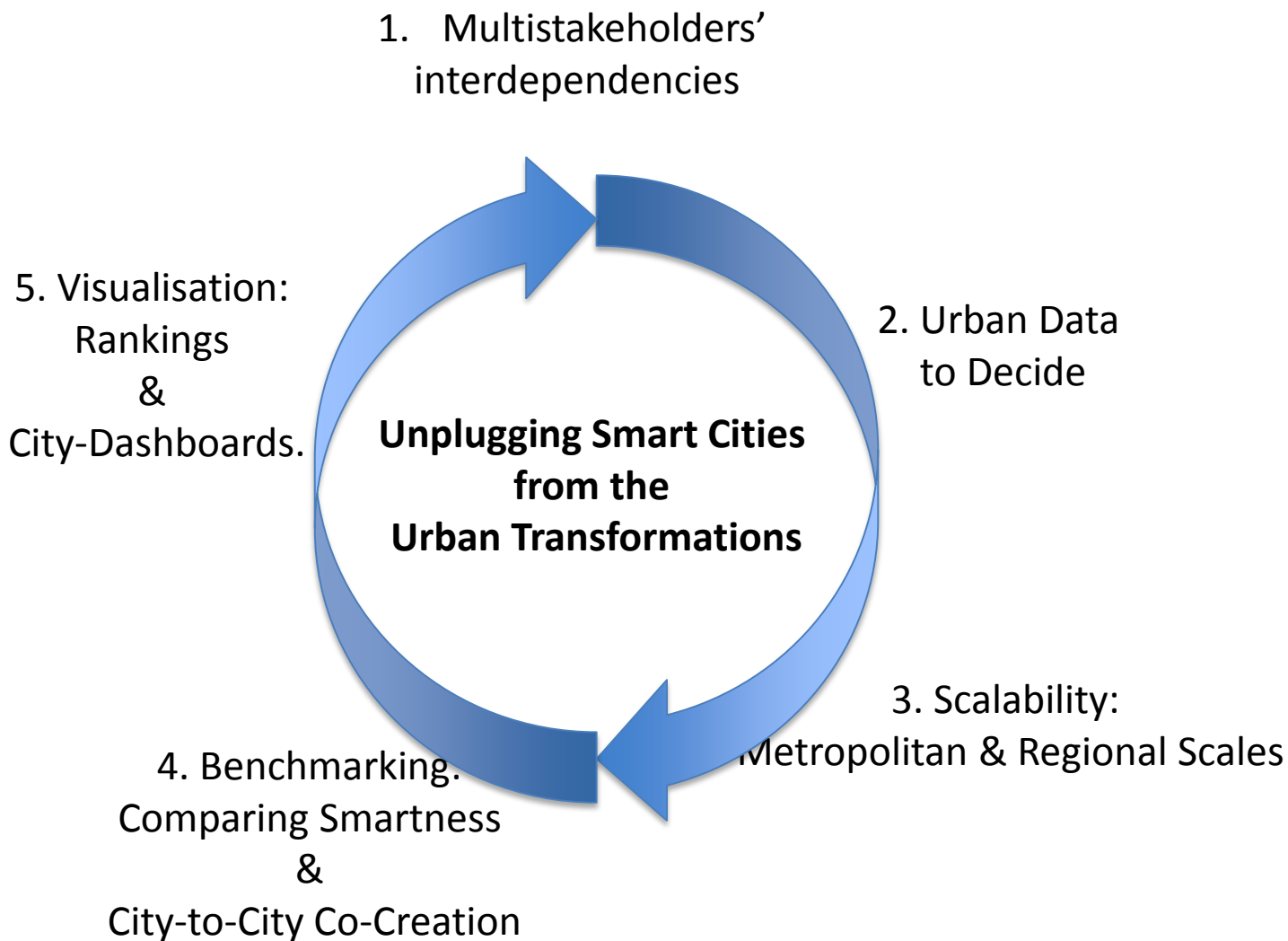


4. BENCHMARKING: COMPARING SMARTNESS & CITY-TO-CITY CO-CREATION



5. DATA VISUALISATION: RANKINGS & CITY-DASHBOARDS





AMITABH SATYAM | IGOR CALZADA



THE SMART CITY TRANSFORMATIONS

The revolution of the 21st century

BLOOMSBURY

Satyam, A. & Calzada, I.
(2016),

*The Smart City
Transformations. The
Revolution of the 21st
Century.*

Bloomsbury Academic
and Professional
Publishing. [In Print]



UNIVERSITY OF
OXFORD



E·S·R·C
ECONOMIC
& SOCIAL
RESEARCH
COUNCIL



Bridging European Urban Transformations
Workshop Series in Brussels 2016-2017
funded by the ESRC

(Un)Plugging Data in Smart City-Regions
First Workshop

Co-organised in partnership by the
University of Oxford – Urban Transformations

www.urbantransformations.ox.ac.uk

&

VUB – Brussels Centre for Urban Studies

www.urbanstudies.brussels

Date: 14th November 2016

Venue: SMIT (www.smit.vub.ac.be) – Vrije Universiteit Brussel, Belgium

Topic

Attention to the application of new information flows and the development of the so-called 'smart cities' paradigm is increasing; however, there is still limited understanding of the interconnections between 'hard,' 'smart' infrastructures and

Thanks a million

Dr Igor Calzada, MBA
Urban Transformations & Future of Cities
University of Oxford

@icalzada

www.igorcalzada.com

igor.calzada@compas.ox.ac.uk

Skype: icalzada

(0) 1865 274687

