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THE DIGITAL ECONOMY AND TOWN PLANNING

Planning's role in the growth of the new
economy

**RTPI
Practice
Advice**

MAY 2017

Introduction

How town planning creates an environment for the equitable growth of the knowledge economy

The tech sector is at the heart of the UK economy and is driving an economic resurgence in many cities. The sector is growing almost one third faster than the rest of the economy and it had a turnover of £161 billion in 2016.¹ Tech companies are transforming the employment landscape, driving productivity, and reimagining traditional industries.² From a planning point of view, the growth of the tech sector means the spatial footprint of tech companies is increasingly evident across the country, particularly in urban areas.

The aims of this practice note are twofold:

- To demonstrate what planners and policy makers can do to ensure that the conditions are in place to encourage the growth of the tech sector in their area;
- To increase awareness amongst planners of the opportunities new technology is providing to help them in their work.

Our 2016 policy paper '**Planning and Tech**'³ argued that planning has a key role to play in ensuring that the conditions are in place for the tech sector to flourish; and that the benefits of this growth are distributed across the local economy. This work will be developed further with our Better Planning: Smart City Regions project.⁴

The advice is applicable to all of the UK. The principles of good practice apply wherever you work.

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¹ www.techcityuk.com/wp-content/uploads/2016/02/Tech-Nation-2016_FINAL-ONLINE-1.pdf

² *ibid*

³ See www.rtpi.org.uk/knowledge/research/projects/planning-for-the-growth-of-tech-and-advanced-manufacturing/

⁴ <http://rtpi.org.uk/knowledge/better-planning/better-planning-smart-city-regions/>

1. Introducing the tech sector

A sectoral snapshot

A common thread running through the post 2007 economic resurgence of many cities and city regions is a burgeoning technology sector. Indeed, the sector is one of the main drivers of growth in metropolitan areas, and makes a significant contribution to national economic growth.

A snapshot of the tech economy in the UK⁵:

- 1.64m jobs;
- Job creation two times faster than the rest of the economy;
- Average salary 44 percent higher than the national average;
- £161 billion turnover;
- Grew 32 percent faster than the rest of the economy (2010-2014);
- 58,000 active digital tech businesses.

Defining the sector

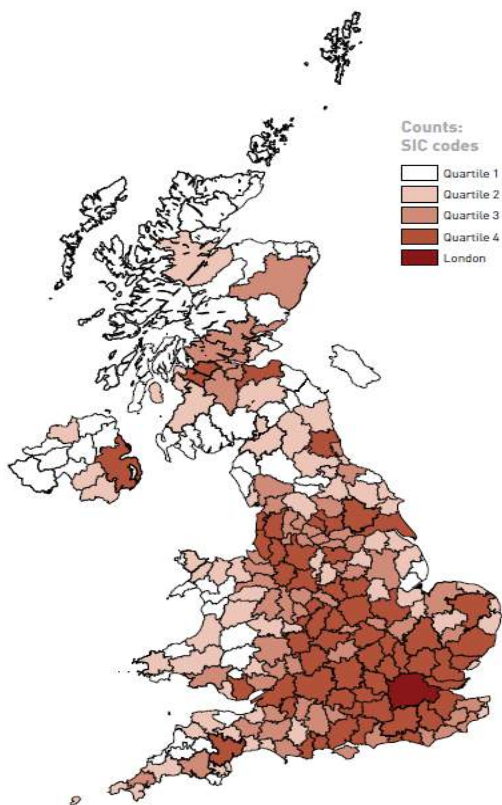
The tech sector is not straightforward to define. Definitions are based on the type of employees, outputs, and production methods of companies; or on industrial categories. This advice note covers the set of companies that develop digital computing technologies and includes firms in information and communications technology (for example, Microsoft, Oracle, IBM, Accenture); digital content industries (Apple, Google, Facebook); biotech (Pfizer, Novartis); ICT manufacturing (Intel); information tech (Amazon); and financial technology companies - fintech (money.net).

Locating the sector

The tech sector in the UK is heavily concentrated in urban areas, with a lot of co-location in London, Manchester and the Greater South East. The 10 Travel to Work Areas (TTWAs) with the most tech companies in 2012 were: London (64,630 firms), Manchester (7,324), Guildford and Aldershot (6,158), Luton and Watford (5,147), Wycombe and Slough (4,979), Birmingham (4,695), Reading and Bracknell (4,914), Bristol (4,714), Crawley (3,867), and Brighton (3,730). Underneath this group is another fifty Travel to Work Areas with over 1,000 digital economy companies, followed by a very long tail: over half the areas on the map have less than 600 companies, and 25 percent have fewer than 200.⁶

⁵ <http://technation.techcityuk.com/>

⁶ www.niesr.ac.uk/sites/default/files/publications/SI024_GI_NIESR_Google_Report12.pdf



Counts of digital economy companies by Travel to Work Area, 2012.

Source: National Institute of Economic and Social Research.

The tech sector and the built environment

From a planning point of view, the striking growth of the sector means that their spatial footprint is increasingly evident - particularly in urban areas, which raises the question of how planners in cities and city regions can respond and guide future development?

The different knowledge bases and ways of working that produce innovation in the tech sector create the kind of built environments that allow them to thrive. Tech firms value face-to-face interaction, creative thinking, large social networks, and inter firm communication. This preference for agglomeration results in firms concentrating in dense, multi-use areas in central urban locations, where exchanges of ideas between individuals and firms are facilitated by proximity to other firms, as well as surrounding supporting activities and amenities. The generation of ideas that results from these interactions is a key factor in the level of innovation and the high rate of productivity and growth currently being experienced by the sector.

Apart from proximity, one of the main reasons for this location shift is access to talent. The kind of people tech firms want to employ like to cluster in dense urban areas because of the access to employment options, and a vibrant social life. The attraction of cities as opposed to corporate campuses or business parks is also based on the changed nature of technology itself. Previously

tech start-ups were focused on hardware, but today's most successful start-ups tend to be in fields like social media and mobile apps. Cities have more designers, musicians, marketers, and copywriters, who are just as important to the delivery of products produced by contemporary tech firms as professions such as engineers have been to successful tech firms in the past.

2. Planning for the growth of the tech sector

The places that allow tech firms to thrive require the co-operation of a range of stakeholders: local authorities, landowners, infrastructure providers, and academic institutions. Planners' skillset means they are well placed to mediate between these groups and add value in order to deliver suitable multi-purpose environments in which tech firms can succeed.

The recent growth of the tech sector has led to a proliferation of clusters, enterprise zones and innovation and business centres, as part of economic policy interventions in local visions, master plans and economic development strategies. In addition to large-scale projects such as innovation districts, there are a range of tools available on a smaller scale to attract and foster tech industry growth. These include de-risking sites by making sure that planning requirements are practical, clear and known in advance of specific proposals coming forward, and using public money for assembling and servicing sites that are more challenging. Local authorities are well placed to carry out these measures thanks to planning and compulsory purchase powers, although at the moment there is arguably a lack of resources to play this more proactive role. Other smaller scale interventions include provision of Wi-Fi in specific locations, and making districts pedestrian and cycling friendly.

Public Private Partnership models can also be leveraged to build digital infrastructure and to ensure that broadband and Wi-Fi connectivity is available across the city. Effective partnerships have the potential to channel the private sector's risk-taking capacity and access to funding, while ensuring that the economics of the arrangement still serves the public good.

Studies⁷ have found that the share of tech jobs is associated with income inequality, with the higher the proportion of tech employment in a city, the more unequal it is. However, high growth cities in general tend to have high levels of economic segregation. Positive planning and interventions can

⁷ www.gov.uk/government/uploads/system/uploads/attachment_data/file/283892/ep18-knowledge-spillover-knowledge-sources-manufacturing.pdf

work to reverse this trend. For example in the East London technology district, which has one of the world's largest technology startup clusters, Hackney Community College has started an apprenticeship scheme⁸ with local tech firms, to both grow the local skills base, and help meet the demands of the sector.

Case study: Dublin's Docklands

Although originally driven by The Finance Act, 1986, which introduced incentives to encourage urban renewal investment by the private sector, Dublin's Docklands is now a Strategic Development Zone (SDZ) and in recent years has been master planned. The regeneration policies of the past twenty-five years have delivered high quality housing and cultural amenities to the area, and have made it an ideal setting for large firms, such as Google, Facebook, and LinkedIn. The local authority's proposal for the next phase in the evolution of the Docklands is to encourage innovative designs for, and successful models of, multiple-unit developments.

In 2013 a new fast-track planning scheme was approved by Dublin City Council to allow for docklands buildings of up to 22 floors in height – 50 percent higher than Dublin's tallest building. The SDZ Planning Scheme⁹ gives planners the power to make decisions that cannot be appealed to An Bord Pleanála, ensuring a minimum delay for developers. The SDZ represents the first major planning initiative since the 2012 decision to wind up the Docklands Authority, but to retain an appropriate fast track planning framework to complete the Docklands project.



⁸ www.techcityapprenticeships.com/

⁹ www.dublindocklands.ie/planning/docklands-sdz/sdz-scheme/north-lotts-and-grand-canal-dock-sdz-planning-scheme

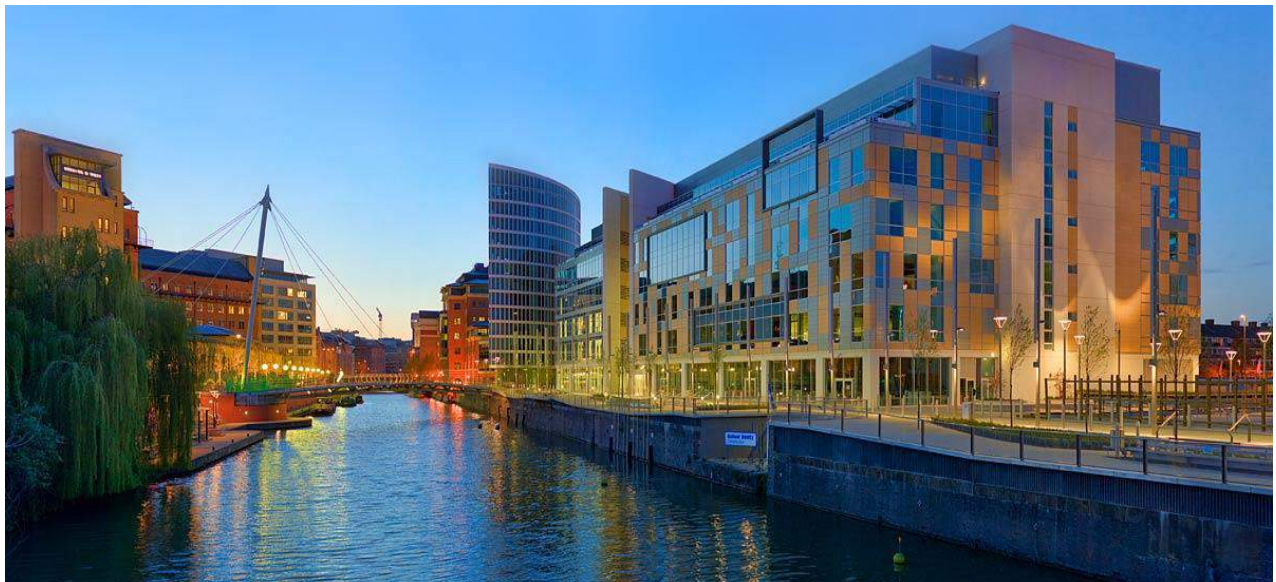
Case study: Temple Quarter Bristol

Bristol Temple Quarter Enterprise Zone¹⁰ is home to rapidly growing clusters of start-up businesses, particularly in the creative, digital and hi-tech sectors.

Alongside incentives for business growth and job creation, the Enterprise Zone is benefitting from significant investment in its infrastructure, including £21 million to improve access in the area, £11 million to provide superfast broadband and £200 million for the citywide MetroBus scheme, which will further connect Temple Quarter to the rest of the city. All of which chimes with tech firms preferences for public transport and technically wired environments.

Planners at Arup put together a delivery plan for this innovation district that has required the cooperation of a range of stakeholders: the local authority, the landowner - the Homes and Communities Agency, infrastructure providers (Network Rail), the West of England Local Enterprise Partnership, and the University of Bristol. Planners have mediated between these different organisations, and facilitated their coming together over the well coordinated plan they designed to deliver a multi-purpose environment.

The Bristol Temple Quarter Spatial Framework^{11 12} by Bristol City Council provides a tool to guide and shape the physical layout of development, whilst allowing for more flexibility than a masterplan. A key function is to engage stakeholders in revealing the potential of key sites.



¹⁰ www.bristoltemplequarter.com/

¹¹ www.bristoltemplequarter.com/about/spatial-framework/

¹² Shortlisted: RTPI Award for Planning Excellence, 2017 <http://rtpi.org.uk/events/awards/awards-for-planning-excellence/>

3. Attracting the tech sector

While planners cannot decide where firms will locate on a macro level, they can use the tools available to them to create an environment that is attractive to firms at the city level. The recommendations set out below and how they are implemented will differ depending on the area in question. For that reason, the employment of a Chief Technology Officer is potentially the most important as they will be able to take the pulse of the local economy and make decisions as to which of these measures would facilitate the growth of the tech sector locally.

- **Recommendation: Monitor the local economy using company registration data.**

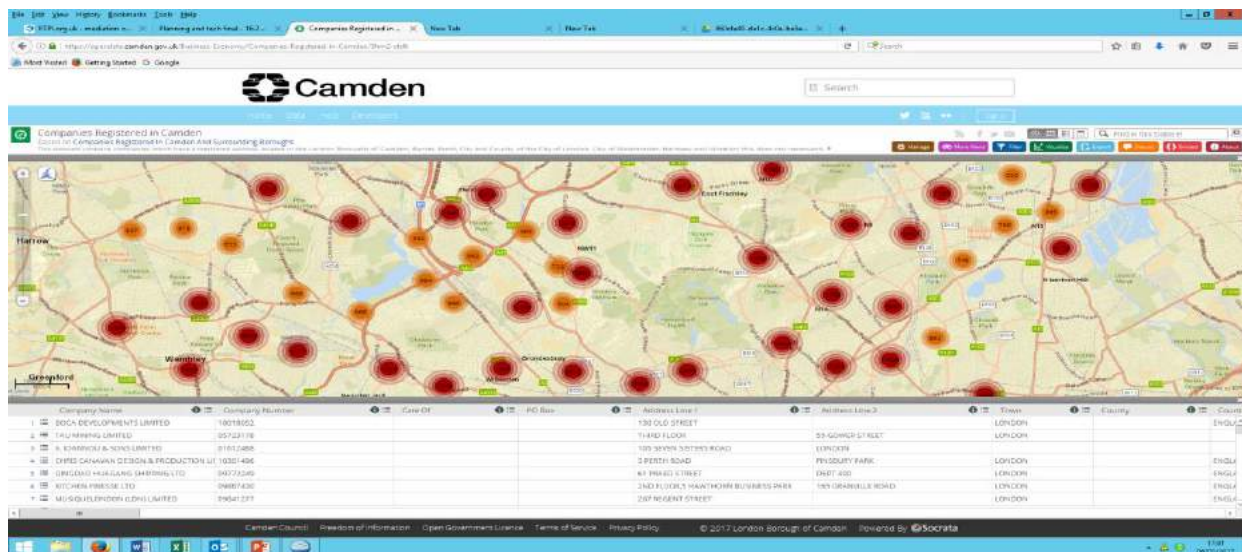
Whether a large scale intervention such as an innovation district or a smaller scale intervention such as de-risking of sites for affordable office space is appropriate will depend on the complexion of the local economy. For that reason, it is essential to monitor local economic drivers in order to have a sense of what the local growth industries are.

A number of local authorities are doing this by using company registration data. This information allows local policies to adapt to and facilitate local economic growth. This recommendation is particularly pertinent in England, where many local authorities are reliant on increasingly ageing, pre National Planning Policy Framework (NPPF) data on employment land. This data is unlikely to reflect commercial demand and business needs in the post-recessionary period. Research shows that in London 60% of local authorities have pre-NPPF evidence bases; the East of England, 60%; Yorkshire and Humber, 57%; the North West, 56%; the South West, 56%; and the West Midlands, 53%.

Case study – Camden Borough Council

Camden collects data on companies registered in Camden and the surrounding boroughs. This informs the Camden Business and Employment Bulletin¹³, which provides a summary analysis of Camden's economy. It covers business size and type, commercial property, unemployment, worklessness and qualifications. This allows Camden to put in place policies that are conducive to the growth of the local economy.

¹³ <https://opendata.camden.gov.uk/Business-Economy/Camden-Business-And-Employment-Bulletin-LATEST/5czu-s2qc>



Source: Camden Borough Council

- **Recommendation: Employ a team to engage with the sector.**

In order to attract and assist the growth of the sector it is crucial to get a sense of firms' spatial preferences, particularly when putting together a local plan. One measure that can be used is to employ someone at local level whose specific remit is to engage with local firms in order to get a sense of what planning policies would facilitate their growth. The Dublin Commissioner for Start-ups¹⁴ and the Amsterdam Chief Technology Officer¹⁵ provide interesting models. In the UK this role could be created and devolved as part of a City Deal.

Case Study - The Dublin Commissioner for Start-ups

The Commissioner works in conjunction with Dublin City Council to maximise the potential of Dublin's existing business sector, which already supports a wide range of tech and innovative start-ups and acts as a base for many global tech companies.

A key responsibility of the position is to develop international recognition of Dublin as an innovation hub where companies will start-up, grow faster and create long-term sustainable jobs and added value to the economy. The role is the first point of contact between the tech sector and the city, and involves identifying office space and funding for tech start-ups.

¹⁴ www.startupdublin.com/

¹⁵ <https://amsterdamsmartcity.com/network/chief-technology-office>

- **Recommendation: Ensure adequate housing and infrastructure capacity.**

The ability of a city to house and transport employees is crucial to any effort to promote substantial economic growth. While the measures outlined above have a role to play in attracting tech companies, a consistent message from local authorities has been that affordability of office space and housing, along with transport infrastructure capacity are the dynamos behind local economic growth in any sector.

If there is a lack of affordable housing and office options and pressure on transport infrastructure no amount of other interventions will attract firms to an area. Therefore, from a planning point of view, if a city is to be attractive to tech companies it is essential that the fundamental ingredients for an economically and socially successful city - housing, transport infrastructure, office space - are present.

Case Study - Mountain View City Council, North Bayshore, California, USA

The North Bayshore precise plan¹⁶ lays out the city's overall strategy for reviewing planning and land use for the area. In order to deal with the increased demand placed on housing by the presence of a large number of tech companies city officials are offering developers (including Google) a sizable density bonus for building residential units. The North Bayshore plan calls for gradually transforming a corporate office park into a mixed-use residential neighbourhood. If fully built out, the North Bayshore area has the potential to be the largest bastion of affordable housing in the city. Normally in Mountain View, new housing projects must devote about eight percent of their total housing to subsidised units, or pay an equivalent in-lieu sum. The city's vision for North Bayshore aims to dramatically increase the number of affordable units to as high as 20 percent for new projects.

¹⁶ www.mountainview.gov/civicax/filebank/blobdload.aspx?BlobID=15050

Lessons

- **Planning has a positive and constructive role to play in job creation and economic growth;**
- **It is imperative that economic interventions are well evidenced in terms of scale and methodology;**
- **Interventions should be chosen wisely to set the bar of aspiration for the local economy;**
- **Branding and place marketing to encourage inward investment has its place, but should be tempered with realism and a contemporary understanding of what the local market needs;**
- **Often small pragmatic locally derived solutions are what SME's are looking for;**
- **The planners' role in collaborative risk management should be appreciated and local commercial developers supported through proactive management of planning risks;**
- **The importance of project management, collaboration and clear communication in the delivery of complex economic growth schemes should be recognised.**

4. Technology and planning

As the technology sector continues to grow, the innovations and new technologies it generates will become embedded into systems of urban infrastructure and governance. This creates opportunities to change ways of working and improve efficiency in a range of sectors, not least planning.

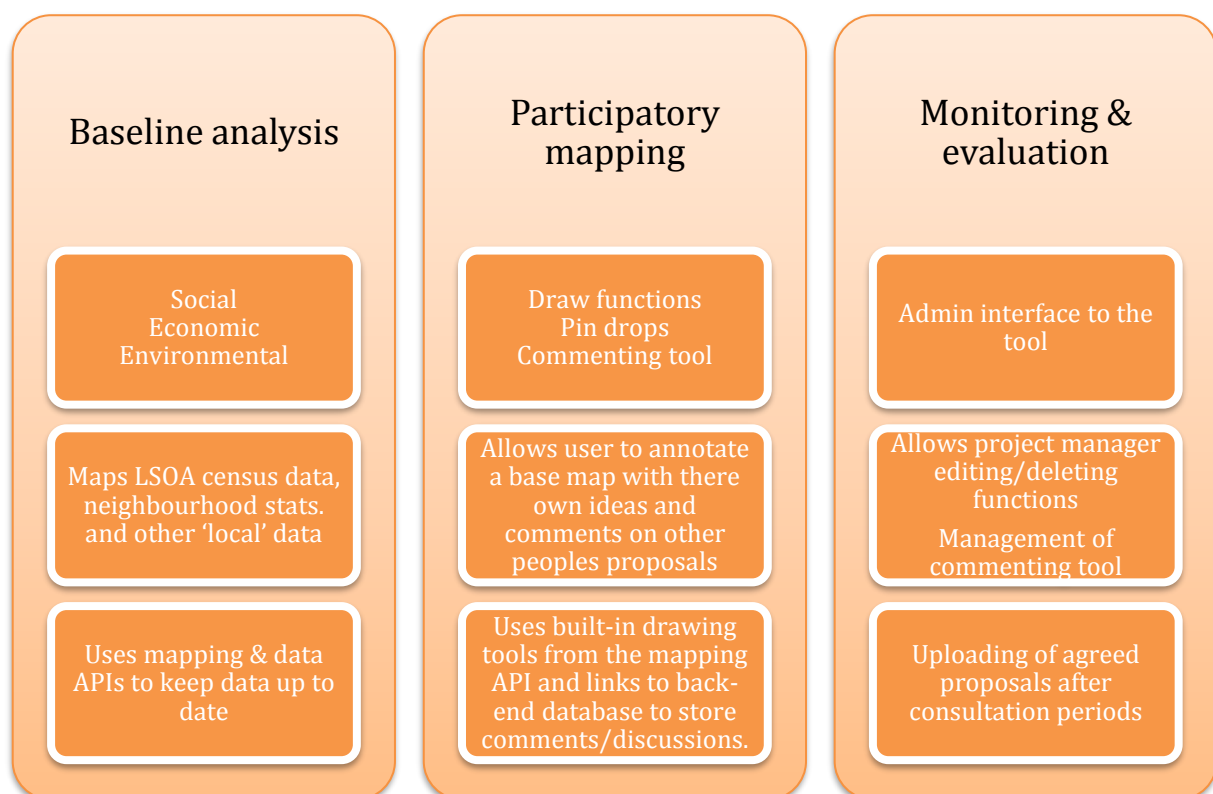
The digitisation of planning has the potential to free up time and resources so that planners, particularly in local authorities, can focus on more strategic issues. This is not a new concept - planning processes have been continuously streamlined and automated as new technology has become available. Obvious examples include the internet, which has transformed communication between planning authorities and local people, and the adoption of GIS software, which enabled massive efficiencies in mapping. Planning departments have also experimented with innovative 3D modelling software and virtual reality to improve plan making and community engagement.¹⁷

¹⁷ <http://rtpi.org.uk/knowledge/better-planning/better-planning-smart-city-regions/>

Case Study: Neighbourhood Planning in the Lake District

A team at the University of Manchester have been digitally enabling Bootle's Neighbourhood Plan in Cumbria. All stakeholders can access the plan and contribute to its creation online. The online map based platform¹⁸ collects and displays a range of baseline conditions, aligned with Bootle 2020 (which is the wider vision for Bootle Parish) to allow for monitoring and evaluation.

Neighbourhood groups should use evidence that is already in the public domain, along with evidence that they collect themselves, to prepare their plans. The process of determining what is needed and how to collect it is an aspect where many neighbourhood groups need greater support and guidance. One of the great challenges of neighbourhood planning for many local communities is the requirement to consider the evidence base for the plan. This has been provided by the toolkit, which pulls in census and other socio-economic and environmental data via web map services. In addition, the platform allows the sharing of existing concepts or plans, which in the case of Bootle includes key development schemes in the area. It is a valuable demonstrator project for other communities in England who are developing neighbourhood plans. The platform comprises three elements:



Source: Department of Planning and Environmental Management, University of Manchester

¹⁸ A demo version of the toolkit can be viewed at www.ppgis.manchester.ac.uk/bootle2020/

What is a Smart City?

A smart city is an urban development vision to integrate information and communication technology (ICT) and Internet of things technology in a secure way to manage a city's assets. These assets include local authority's information systems, schools, libraries, transport systems, hospitals, utilities, waste management, law enforcement, and other community services. A smart city aims to use technology to improve the efficiency of services. ICT allows local authorities to interact directly with the community and the city infrastructure to monitor what is happening in the city, how it is evolving, and how to enable a better quality of life. Through the use of sensors integrated with real-time monitoring systems, data is collected from the public and devices – then processed and analysed. The information and knowledge gathered can be used to tackle inefficiency.¹⁹

On a macro level, smart cities generate high volumes of spatial data. This can help groupings of local authorities and sub-regional bodies to better understand trends and challenges at city-region scale, and to develop better solutions. For example, the Greater London Authority has created the London Infrastructure Map.²⁰ It maps infrastructure plans and investments from different utility companies with planning and development data from individual local authorities. This information would have previously been stored in numerous places online, making it difficult and time-consuming to collect and aggregate. By displaying this spatial data on a single interactive map, it provides a way for politicians, developers, residents and investors with a simple way to understand how urban growth relates to infrastructure capacity and demographic change.

Case Study: City4Age – Birmingham

Birmingham is one of six cities from around the world taking part in a project that aims to create innovative digital technologies and services that 'enhance early detection of risk related to frailty and mild cognitive impairments and provide personalised intervention to improve the quality of life of elderly people and promote positive behaviour changes'.²¹ As the elderly residents journey around Birmingham data will be collected on their personal mobility via mobile phones and a smart watch in order to gather vital information to help locate important services (nearest bus stop, place to sit, food shop, toilets) in order to encourage and support walking, and the use of public transport.

¹⁹ www.academia.edu/21181336/Smart_City_Roadmap

²⁰ www.london.gov.uk/what-we-do/business-and-economy/better-infrastructure/london-infrastructure-map

²¹ www.city4ageproject.eu/#description

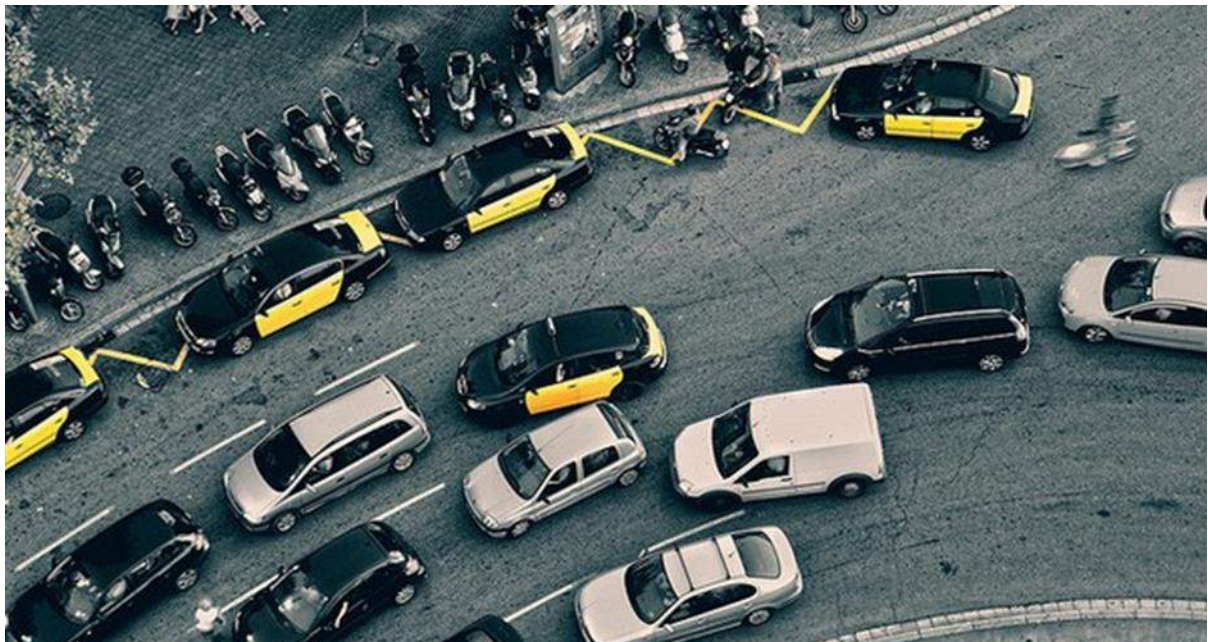
- **Recommendation: Use local firms' skills and resources to address cities' infrastructural challenges.**

Case Study: Los Angeles environmental monitoring

Philips Lighting is embarking on a pilot with the city of Los Angeles to test smart city capabilities. The city already uses existing mobile networks and cloud-based technologies to control streetlights, monitor status, and analyse how much energy each light is consuming. The project will see additional sensor nodes being attached to lighting columns to test a range of new applications, including environmental noise and energy grid monitoring as well as more sophisticated luminaire health data and maintenance monitoring.²²

Case Study: Bitcarrier, Barcelona

Bitcarrier²³ uses Bluetooth and Wi-Fi signals generated by mobile telephones and GPS devices to provide highly intricate, real-time traffic information to cities. Bitcarrier has piloted a network of traffic sensors that helped Barcelona improve traffic flow by using Bluetooth and WiFi-generated data. Bitcarrier is implementing solutions in other cities around the world, such as Buenos Aires and Sydney.



Source: SocialTech

²² <https://smartcitiesworld.net/news/news/a-lighter-and-brighter-los-angeles-952>

²³ www.socialtech.org.uk/projects/bitcarrier/

5. Further information

RTPI policy and research

- Planning and Tech www.rtpi.org.uk/knowledge/research/projects/planning-for-the-growth-of-tech-and-advanced-manufacturing/
- RTPI: Better Planning for Smart City Regions www.rtpi.org.uk/knowledge/better-planning/better-planning-smart-city-regions/

Information and advice

- Tech Nation <http://technation.techcityuk.com/>
- Tech North <https://technorthhq.com/>
- Smart Cities World <https://smartcitiesworld.net/>
- Sidewalk Labs www.sidewalklabs.com/
- Centre for Digital Civics <https://digitalcivics.io/>
- PWC Technology Institute www.pwc.com/gx/en/industries/technology/publications.html
- The Web Summit <https://websummit.com/>
- Creative Industries <http://www.thecreativeindustries.co.uk/>



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