

London and its 'Tech City': Accelerating an Entrepreneurial Ecosystem

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"Why, Sir, you find no man, at all intellectual, who is willing to leave London. No, Sir, when a man is tired of London, he is tired of life; for there is in London all that life can afford."

"The happiness of London is not to be conceived but by those who have been in it. I will venture to say, there is more learning and science within the circumference of ten miles from where we now sit, than in all the rest of the world."

- Samuel Johnson, 1770

In 1770 when Samuel Johnson, the renowned English essayist, sought to convince his friend James Boswell that London was more vibrant and interesting than the rest of the world, he was describing a city on the verge of massive expansion, set to become the world's largest urban center.

At the heart of a British empire spanning from India to the Americas, London in 1770 had become a hub of commerce, science and finance. It was also a city that at many times over the years had been home to entrepreneurs: they drove Britain's scientific revolution – and benefitted from the financial revolution - of the late seventeenth century. They then underpinned the first and second industrial revolutions, drawn to London to access novel innovations, talent, new approaches to finance and a plethora of institutions that supported the creation and growth of trade and industry.

In 2010, the then-new British Prime Minister David Cameron profiled Britain, specifically London, as an entrepreneurial hub, once again restoring its historical tradition of entrepreneurship but updated for the tech opportunities of the twenty-first century. Elected that summer in the midst of the 'great recession', the Prime Minister faced the challenge of re-sparking the British economy but at a time of restricted budgets and constrained corporate growth.

One area of particular interest was a small cluster of entrepreneurial firms that had emerged in the late 1990s in the Shoreditch area of Hackney Borough in East London (just north of the City of London financial district). Focused on the digital media space, entrepreneurs there had self-styled the area as 'Silicon Roundabout', in honour of the gritty Old Street roundabout that served as a landmark for this part of East London, and in obvious deference to 'Silicon Valley' in California, USA. Over the previous decade, dozens of entrepreneurs from around the country and the world - with a shared interest in building businesses that merged software, media and content - had moved into the area, forming a new cluster without any formal government attention or support. Going with the grain of this activity, one of the key pillars of the Prime Minister's speech and subsequent actions was the creation of the Tech City Investment Organization (TCIO) to encourage the development of this critical innovation hub.

Three years on from the Prime Minister's speech, in January 2014, the TCIO welcomed its third CEO - Gerard Grech who was taking over from another private sector appointee, Joanna Shields (who had served stints at Facebook and Google before joining the TCIO). In a press release Grech commented: "London has become a leading centre for digital innovation and entrepreneurship, and my role, together with Joanna and the team, will be to help take things to the next level, delivering on key initiatives, introducing more partnerships and further solidifying Tech City in the international tech scene."¹

Around the world, other emerging innovation hubs were now looking to TCIO as a model for leading entrepreneurial growth. As they sought to understand the lessons (and mistakes) of TCIO, they were asking several questions: what were the foundations of Tech City's rapid growth? Was this growth sustainable enough to give London's 'Silicon Roundabout' (renamed Tech City) the potential to rival Silicon Valley or other newer innovation hubs springing up worldwide? Had TCIO facilitated the local entrepreneurial community effectively without alienating them

¹ <http://startups.co.uk/tech-city-to-appoint-new-ceo/>

with a heavy-handed government approach? How effective had the focused approach been given the risks of alienating other sectors or parts of the country?

A Brief Guide to London

Geography of London

As a political and administrative region, London in 2014 has a population of over 8 million, covers over 600 square miles (1500 km²) and since 1999 has been governed by the Greater London Authority (GLA) with an elected mayor and assembly. As an economic region, London expands much further; it is the largest metropolitan area in the European Union with a population of 14 million. Its geography is probably best illustrated via a map of the City of London and its 32 Boroughs (see Exhibits 1a and 1b). Of course while London had long served as the heart of the country and the seat of the British Government, it was only a fraction of the 64 million in the entirety of the United Kingdom, and elected leaders faced considerable pressure to focus their attention on other, less wealthy and prosperous parts of the country (see Exhibit 2 for a map of Britain).

London – originally a Roman settlement – was historically centered on a walled town known as ‘Londinium’, which is represented by the historic ‘City of London’ (now the core of one of the world’s leading financial centers). Especially after the 1666 Fire of London in that historic heart, London mostly expanded westwards and southwards (across the River Thames). The western parts of London are generally much better known, including Soho and the ‘West End’ (both part of the City of Westminster, home of the British Parliament) which is a hub of economic activity in film and music as well as advertising and other creative media, expanding to include a wealth of retail and theatre, as well as fashion to the west. For visitors to London, the iconic “London Tube” map (see Exhibit 3) captures these better known bits of London.

To the east of London, and just outside the historic City, lie the largely neglected areas of Hackney, Tower Hamlets, and Newham. As part of its successful bid for the 2012 summer Olympics, Britain undertook to host the Games in these neglected areas (See Exhibit 4). It hoped to use the Games and their aftermath as the focal point for a major redevelopment initiative that might allow the site to

serve not only as a sporting venue but also as a business hub, moving London's center of gravity to the East away from the very costly West End. Something similar had been attempted in the 1980s with the redevelopment of the former London Docklands, particularly the West India Docks. These historic docks had been authorized by Parliament in 1799 as the first commercial wet docks in London, created to enable more efficient commerce with the West Indies. With the loss of the empire, London's docks had stagnated and eventually closed in 1980 – leaving Tower Hamlets as one of the most deprived areas in the country.

By 2010, however, Canary Wharf - developed by a Canadian real estate company (and having gone through a series of bankruptcies) - had become the second financial center of London, with over 14 million square feet of commercial real estate and home to major financial institutions including HSBC, Barclays, Royal Bank of Scotland (RBS), Citigroup, etc. Whereas the Canary Wharf project had taken 30 years, several bankruptcies and much investment (e.g. the Jubilee Line extension), the 2010 focus of the Prime Minister on East London was intended to produce results much more quickly. Moreover, with the coming 2012 Olympics, it might be possible to drive East London's regeneration through large investments in infrastructure, including updated transportation links, the Olympic Park itself, massive broadband infrastructure for the world's media coverage of the Games, etc. But as the Canary Wharf project demonstrated, the benefits only came to the region when jobs and economic activity were there. Canary Wharf brought bankers to that part of London, but it did not help Tower Hamlets as much as Government had hoped. In emphasizing the area of Shoreditch, there was a strong belief that entrepreneurs would concentrate in Hackney or the Olympic Park in Stratford at the far end of Hackney where it met Tower Hamlets.

London's Economic Activity

While less concentrated than, for example, France or Italy, Britain's economic activity is highly concentrated in London and the surrounding environs - with London and its greater Metropolitan region contributing 20% and over 30% of Britain's GDP respectively. London ranks among the top 5 largest cities in the

world by GDP, with an estimated nominal GDP of over \$751Billion in 2010.² As a global city, London's prosperity rests on diverse foundations. London is often known in international circles today for being one of the two largest financial hubs (with New York close behind) and certainly the most international hub on the planet. It is also the home of more than half of the UK's top listed companies (in the FTSE 100) while 75% of the Fortune 500 firms have a London presence. More broadly, over 80% of London's jobs are in the service sector.

London's financial center was proudly described by Mayor Johnson in 2006 when he noted that "We are the international finance and business capital of the world, the world's greatest global financial center, without question."³ It generates over GBP40 billion in trade surplus for the UK economy (with professional services adding another GBP6 billion more). Although New York is sometimes regarded as being in the vanguard of financial innovation today, London's origins are in the financial revolution of the 1690s, which included many elements of particular interest to entrepreneurs, investors and major corporations. Today it is home to more than 500 overseas banks and employs over 350,000 people within the City of London, with more than 40% directly employed in finance and the remainder in related professions (e.g. legal and accounting), administration and some retail and services. Notably, it is home to many of the oldest financial institutions: Lloyds of London (founded 1688), the Bank of England (founded 1694), and the London Stock Exchange (1698).⁴ Another 90,000 people work in its second hub out in Canary Wharf in financial services and related ancillary employment.⁵

There has always been more to London, however, than its financial centre. As the opening and closing ceremonies of the 2012 Olympics reminded the world, London was also a capital of fashion, design, culture, film, music, fashion and – of

² http://www.foreignpolicy.com/articles/2012/08/13/the_most_dynamic_cities_of_2025

³ http://www.nytimes.com/2006/10/26/business/worldbusiness/26iht-london.3300721.html?pagewanted=all&_r=0

⁴ <http://www.cityoflondon.gov.uk/about-the-city/key-facts-and-statistics/Pages/key-facts.aspx>. City of London Employment Trends: BRES Employment Data 2010 accessed from(http://www.cityoflondon.gov.uk/services/environment-and-planning/planning/development-and-population-information/employment/Documents/employment%20Trends%20_2010%20BRES_%20Landscape.pdf)

⁵ <http://www.canarywharf.co.uk/aboutus/The-Estate/General-Information/>

course - entrepreneurship. In particular what has come to be known as the creative and cultural industries is a mainstay of the London economy (including advertising, architecture, arts, design, fashion, film, music, publishing and TV). Interestingly, while overall employment growth in Britain in the period from 1994-2001 grew only 17%, the creative industries grew by 45%. Much of this growth was centered in London with 32% of cultural/creative jobs and an additional 26% spread across the South East. As a result, the Greater London Authority, presided over by the Mayor of London, took a special interest in the sector recognizing that almost 1 in 5 of London's jobs were in this part of the economy, second only to finance.

Much like the concentration of the finance sector, these clusters of economic activity each have distinctive origins. The Camden and Islington areas, as well as parts of Westminster (more traditionally associated with government) such as Soho and Covent Garden in particular, are home to creative industries, finance, design, art, fashion, and architecture. Soho in particular is central to London's vibrant music ecosystem with a number of music clubs that have been there since the post-World War II period and many recording studios. Added to this is a thriving independent film and video industry as well as the television and film post-production industry.

Intellectual Life

London has a long intellectual tradition and is home of Royal Academies of Arts, Engineering and Medicine. It also boasts two of the world's top ten universities (according to the QS Rankings) - Imperial and University College London (UCL). Britain's better-known Oxford and Cambridge are both just short (one hour) commutes from London.⁶ Despite the global reputations of 'Oxbridge', it is clear that intellectual life has long been part of London's identity. Back in the sixteenth century, Elizabeth I's top financial adviser - Sir Thomas Gresham -

⁶ <http://www.telegraph.co.uk/education/universityeducation/9535274/Top-100-world-universities-2012-QS-rankings.html>

endowed London with a college of its own, similar to those in Oxford and Cambridge, as well as the first 'Royal Exchange', in his will. As an act of philanthropy, Gresham's bequest gave London its first institution of higher education, to be based in the City of London, and dedicated to providing a more practical, business-focused education than 'Oxbridge'. As such, Gresham College quickly came to play a crucial role in the capital's life, not least when it provided the first home – and much inspiration – for the new 'Royal Society', the scientific academy founded in 1660.

By 2014, London numbered over one hundred institutes for higher education. Some – like University College London (UCL) – cover the traditional gamut of subjects, while others such as Imperial College were more narrowly focused on science, engineering and medicine. London has a particularly dense concentration in medicine, teaching more students in medicine, dentistry and pharmacy than anywhere else in the UK; there are over 23,000 medical students in London (around 27% of the British total) (see Exhibit 5 for a map of London's universities).

The major universities had been in a period of recent expansion particularly related to the translation and commercialization of science: Imperial had a leading role in company formation, a division which it spun out as a separate LLC on the London Stock Exchange. Its campus was also expanding to the West and towards St. Pancras to incorporate facilities for translational research. Likewise, UCL was expanding its Bloomsbury footprint to enable more IT-related translation. London also had several business schools: among them the notable London Business School (LBS), a stand-alone institution (although formally a constituent college of the federal University of London) founded in 1964 and focused on the education of general managers for careers in multinational corporations. University College London, Imperial, London School of Economics and Kings all had burgeoning management education activities.

Beyond traditional education in the arts and sciences, engineering and medicine, London also served as a home to some of the finest training in the creative arts: University of the Arts London (UAL) was established in 1986 with the integration of seven of London's arts colleges including Saint Martin's College of

Arts and Design (established in 1854 and located in Kings Cross): referred to as "one of London's, indeed Britain's, most revered art institutions", its alumni include Sir Terrance Conran, inventor of the iconic cyclone vacuum cleaner James Dyson, designer John Galliano and Stella McCartney. By 2014, UAL boasted over 18,000 students from 114 countries, making it Europe's largest arts and design university (Exhibit 6).

An Entrepreneur's London

Best known for its financial might, and home to the scientific and financial revolutions, London had long been known as a welcome home for entrepreneurs. With Gresham College, a hub in the 'invisible college' network, London provided a centre for entrepreneurial scientists like Isaac Newton during the 'scientific revolution' and afterwards. Close to the City of London, which expanded rapidly after the 'financial revolution' of the late seventeenth century, these London-based entrepreneurs benefited from proximity to the deep pools of capital and liquid markets of the capital city. For inventors and new entrepreneurs, the needed capital often came in the form of philanthropy or patronage from wealthy individuals, just as it had in many other European courts of the Renaissance, as an early form of 'angel' investors. As their enterprises scaled up, the entrepreneurs were able to tap the banking sector and highly liquid secondary markets to expand their businesses.

With the birth of the world's first industrial revolution in Britain, much entrepreneurship was later to be found across the rest of the country, including in rising cities like Manchester and its key port, Liverpool. With the rise of the second British empire (after the loss of the American colonies), London retained its role as a key trading city with its maritime and banking services underpinning a global role, but in the nineteenth century entrepreneurs were often overshadowed by the larger corporate enterprises (except perhaps in fashion) and scientific innovators more likely to be based in formal laboratories or university settings.

After the Second World War (which had seen many research efforts moved deliberately out of the highly-bombed capital), London's association with

entrepreneurship dwindled. Despite London's economic boom in the late 1980s and 1990s, fuelled in large part by the banking sector and property market, the creation of new businesses was largely absent from the capital, with growth instead coming from an expansion in the financial and other service sectors. Entrepreneurs found London to be an expensive place in which to live, rent space or find talent: competing with the City of London financial institutions for managerial talent, the hiring of MBAs or computer programmers was prohibitively expensive. Instead, Cambridge and, to a lesser extent, Oxford as well as Edinburgh were seen as homes to Britain's new entrepreneurial communities, and yet overall competitiveness for established corporations and for entrepreneurs was a challenge.

UK / London Competitiveness

By the 1990's, London along with the rest of the United Kingdom was falling behind other nations in building an economy of innovation and entrepreneurs. Evidence of this can be seen in its public sector spending on R&D (Exhibit 8), company spending on R&D (Exhibit 9), and patents generated (Exhibit 10): all substantially lower per capita than other developed nations during this decade.

In 2003, upon the invitation of the British Government, leading analyst of national competitiveness Professor Michael Porter (together with his colleague at Harvard's Institute for Strategy and Competitiveness, Dr. Christian Ketels) explored the foundations of Britain's competitiveness crisis. They identified a "productivity gap" in their May 2003 report for the UK's Economic and Social Research Council (ESRC) on UK Competitiveness. They explained that past economic successes seen by the UK economy had stemmed from market-based reforms (i.e. deregulation, privatization). However, these were no longer capable of producing the same returns that could be generated from a new strategy "focused on improving skills, stimulating innovation and fostering enterprise" that many other nations were developing. As Porter and Ketels summarized, "The levels of productivity and

prosperity in the UK still lag many other advanced economies”, especially when comparing GDP per capita.⁷

Porter and Ketels agreed that the UK did have a strong base in science which it could use to boost its innovation sector, but the UK was lagging other developed nations in terms of patents filed and commercialization of technologies. At the time of the report’s publication in 2003, the authors claimed that “current levels of UK innovation are insufficient to drive UK productivity growth and close the UK productivity gap versus key competitors.”

They were hopeful, however, that the UK could improve its future competitiveness. Porter suggested that the UK Government shift its thinking in the following way: “We find that the competitiveness agenda facing UK leaders in government and business reflects the challenges of moving from a location competing on relatively low costs of doing business to a location competing on unique value and innovation. This transition requires investments in different elements of the business environment, upgrading of company strategies, and the creation or strengthening of new types of institutions.” More specifically, the report outlined several key priority areas for action:

- Public investment - increasing investment in education, transport, and in scientific and technological capacity;
- A productivity-driven regulatory context - establishing a policy context to raise the pressures and incentives for investment and upgrading, including a reform of the science and technology system, a strategy for training in advanced managerial skills and raising regulatory standards;
- Clusters - creating a more conducive environment through the collective action of companies and other institutions that will encourage the successful use of clusters (a 'critical mass' of linked industries and institutions collaborating for mutual benefit within a region), with particular emphasis on quality, technology, innovation and skill;

⁷ Porter, Michael and Christian Ketels. “UK Competitiveness: Moving to the Next Stage.” UK Economic and Social Research Council. May 2003.

- Regions - strengthening the regional focus of economic policy, including empowering regional and local leaders;
- Roles and institutions - shifting towards private sector-led development, new effective institutions for collaboration to enable stronger private sector collective action and new structures for universities and research institutions to play an active role in regional business environments; and
- Management – re-orientating company strategies towards greater levels of innovation and provision of higher value goods and services, with increased investment in research and development, skills, modern production and technology⁸.

Responding to this challenge, Gordon Brown as Chancellor of the Exchequer announced a number of changes related to innovation in his December 2003 Budget Statement.⁹ He noted that “Britain still lags behind American rates of business creation and success... I want to build in Britain an even deeper-lasting British consensus: a shared national economic purpose that, building on our historic strengths—Britain's scientific genius, British creativity, Britain's global reach and Britain's stability—means that we become, in this era of globalisation, one of the world's most enterprising, flexible and successful economies.” His announcements included: R&D tax credits, a British fund for enterprise capital¹⁰, deregulation with respect to accounting, tax and employment, and the re-location of civil service jobs out to the regions.

Silicon Roundabout

Starting in the late 1990s, a small, self-organizing cluster of digital and creative media start-ups emerged in gritty East London. This arose in the vicinity

⁸ <http://www.eurofound.europa.eu/eiro/2003/12/feature/uk0312103f.htm>

⁹ <http://hansard.millbanksystems.com/commons/2003/dec/10/pre-budget-report>

¹⁰ Enterprise Capital Funds are commercially focused funds that bring together private and public money to make equity investments in high growth businesses. See <http://british-business-bank.co.uk/market-failures-and-how-we-address-them/enterprise-capital-funds/>

of the Old Street roundabout, just north of the City financial district. This group of creative entrepreneurs had followed the creative artists who had moved into the area in the early 1990s in search of warehouse spaces, cheap rent and a more creative vibe than other parts of London. The now famous BritArt Group had had their start in the Hackney Borough. Not the first innovators to move to this part of East London, these creative individuals followed waves of prior entrepreneurial activity: in the later part of the nineteenth century the area had been a hub of the fashion and clothing industry with many small firms and entrepreneurial producers. This had given way to furniture design and production in the early twentieth century.

By the 1950s with the demise of domestic furniture production and its move to Asia, a small but vibrant printing industry had taken root providing printing services for the large and expanding City of London, only a few hundred yards away. (The area also boasted the Royal Mint – an 1,100-year old institution, which had spent most of its time in the grounds of the Tower of London, and whose most famous head was Isaac Newton, also President of the Royal Society – that gave rise to a critical printing press for the British currency, in a bespoke building built in 1809). In another wave of disruption, the 1980s saw the arrival of desktop publishing (driving out traditional printers) and Shoreditch then became home to many of the new graphic design boutiques and early web designers (particularly along Curtain Road). By the mid 1990s, they had been joined by visual artists, musicians and designers looking for a more vibrant artistic community. However with the dot.com bust hitting London in early 2001, many of these emerging entrepreneurial companies vanished, and the area's rents plummeted.¹¹

By 2003, Shoreditch was once again a place for aspiring entrepreneurs. Although official reports noted that the area had only three software businesses, leading lights in the area were aware of many more burgeoning entrepreneurs. However, it was not until 2008 that the media started to pay attention to this area: Dopplr's Matthew Biddulph tweeted the name on 23 July and immediately

¹¹ Thanks to Charles Armstrong of The Trampery (and founder of Trampoline Systems) for sketching out this historical timeline.

popularized it.¹² An article in the Financial Times picked up on the 'silicon roundabout' nickname, but – as well as reflecting the iconic 'Silicon Valley' - it was also clearly a very British cluster (see Economist article). An April 2013 analysis from *Wired Magazine* estimated that there were many more companies clustered around the Old Street Roundabout area of Shoreditch by 2008 than people realized.¹³

The period from 2008 to 2010 saw the emergence of a vibrant, if fragmented, entrepreneurial community around Shoreditch: after the early success of Trampoline Systems, Charlie Armstrong established The Trampery in 2009 as a not-for-profit co-working space in the area. Armstrong wanted "to make lovely things happen for the area" and created a cozy, welcoming space for entrepreneurs hoping to build commitment and community with no other agenda. Around the same time, Mike Butcher, a journalist for *TechCrunch Europe*, started spending more time in Shoreditch and set up TechHub – a co-working space based on an annual membership fee model with an increasingly elaborate set of events, educational activities and engagement with large corporations tapping into the entrepreneurial edge of the hub. With an emphasis on "tech people", as Butcher put it, TechHub was closely linked to the hacker community and provided wifi and coffee (critical to entrepreneurship, according to Butcher!) but also a platform where lone entrepreneurs, small teams or formal accelerators could operate. Another element in the community (in the next door building) was CentralWorking. Founded by Steve Pette and James Layfield, this for-profit organization provided membership-based access to space, community and connections. The two founders built on their service expertise and experience with iconic British entrepreneur Richard Branson, building airline business lounges and other business services for Virgin.

By the end of 2010, the 'Silicon Roundabout' community boasted over 1,000 companies based on an elaborate mapping approach to documenting Silicon Roundabout using twitter feeds from companies in the area. Harnessing lists from

¹²<http://gigaom.com/2012/12/11/how-londons-silicon-roundabout-really-got-started/>).

¹³ <http://www.wired.co.uk/magazine/archive/2013/04/londons-moment/birth-of-a-meme>

Chris Grange (at London and Partners) and from Digital Shoreditch, one report identified more than 1,300 companies. (Estimates varied, however, with others arguing that there were only fifty or so real tech companies in the digital media space that had serious growth aspirations).

Nonetheless the small gritty part of East London already had its success stories. In addition to Trampoline Systems, Last.fm (an online music recommendation service) had been founded in 2002 by Felix Miller, Martin Stiksel, Michael Breidenbruecker and Thomas Willomitzer, all of them from Germany or Austria, working with Richard Jones (from Southampton University) who had created Audioscrobbler. They combined forces in London under the 'Last.fm' name and built their company with angel money in 2004, then VC money in 2006. It was bought 5 years later by CBS from the US for GBP 140 million. Similarly, examples from digital media include UsTwo – a digital 'user experience' design house (including games like 'Whale Trail'), akin to an IDEO online, that had reached 128 employees by the end of 2012, entirely bootstrapped. (Housed in the iconic 'Tea Building', UsTwo was only 250 yards from RBS in Bishopsgate, but a world away from much of the City of London.) Others included Mindcandy (with its 'Moshi Monsters'), Moo.com (founded in 2004 to create professional business cards) and Hailo (the taxi-hailing service, created by three cab drivers and a team of London entrepreneurs).

Financial Crisis: A Turning Point

As London emerged from the 2008 financial crisis (which hit the City hard) and ensuing economic recession (which hit the rest of London), commentators started to notice Shoreditch, and in 2010 'silicon roundabout' came to the attention of one of the Prime Minister's key advisers on entrepreneurship and innovation - Rohan Silva. Soon after the 2010 elections, Silva encouraged the newly elected UK Government to recognize the value in this thinking and decide to support this emerging cluster in East London, given the importance of tech entrepreneurship and its potential for boosting growth and productivity.

The Prime Minister gave a seminal speech in November 2010 – right after setting out the new coalition Government’s approach to national prosperity – on specifically what it would do to help entrepreneurship in London: ie build UK competitiveness by bringing entrepreneurship into sharper focus.

The Prime Minister’s Vision

“We’re not just going to back the big businesses of today, we’re going to back the big businesses of tomorrow. We are firmly on the side of the high-growth, highly innovative companies of the future.”¹⁴ These inspiring words were part of the opening to Prime Minister David Cameron’s memorable speech given on November 4, 2010 in East London as a way of setting forth the new economic and entrepreneurial vision for silicon roundabout (see Appendix A for the full text).

He asked, “Where will [Silicon Valley’s] challengers be?” and proposed that the East London and Shoreditch areas were perfectly situated to compete with other worldwide high tech centers, since entrepreneurs have been growing this hub on their own since the late 1990’s. Over the previous three years though, he explained, the number of truly high-tech companies in the area had expanded from a mere 15 to over 100, and, when combined with “the possibilities of the [2012] Olympic park, ...we have the potential to create one of the most dynamic working environments in the world.”

More than merely inspirational, Prime Minister Cameron set forth a concrete plan in this speech for how he intended Government to play a role in making this vision a reality. Prime Minister Cameron argued that, to build up East London, there must be available a number of skilled workers and entrepreneurs who can easily come to Britain and set up shop. He announced the creation of an “Entrepreneur Visa” which would help to accomplish just that by cutting down on red tape which previously prevented foreigners from considering London as a home base location

¹⁴ <https://www.gov.uk/government/speeches/east-end-tech-city-speech>

for their businesses. "These Entrepreneur Visas will mean that if you have a great business idea, and you receive serious investment from a leading investor, you are welcome to set up your business in our country."

Second, the Prime Minister acted upon feedback from tech giants such as Google which said that the intellectual property laws in other countries, such as the United States, provided more leeway in allowing them to be creative in their business pursuits – a framework which did not exist in Britain. The second proposal then was a re-examination of British intellectual property laws to bring them up to speed and "make them fit for the internet age... We will change laws where necessary so we break down the barriers to innovation."

By the end of his speech, the Prime Minister had also focused his vision and attention more narrowly on the potential for a highly innovative, burgeoning entrepreneurial center in East London, and the framework for Tech City was born but with the recognition that this "can't - and won't - happen overnight." (See Exhibit 11 for a timeline of Tech City)

November 2010 – September 2012: Tech City 1.0

At the core of the proposal was the re-branding of "silicon roundabout" as "Tech City" and the creation of a series of activities and government-led actions to stimulate its growth. But in making this intervention, the Government faced skeptics. For some time after the speech, there was considerable discussion in the press, and amongst entrepreneurs themselves, about why the Government was choosing to invest so many resources in such a small part of the city, how it could link 'silicon roundabout' to the Olympic Park (on the other side of Tower Hamlets), or whether it was the Government's job to get involved at all in an ecosystem which had been self-sustaining for a few decades at this point. As Joe White, chief executive of Moonfruit.com, put it, "Startups sprang up in Shoreditch because it

was cheap and vibrant and cool, and applying that to the Olympic site will be challenging.”¹⁵

In March 2011, as part of the broad support for the Tech City initiative articulated in the speech, McKinsey & Company addressed these existing challenges and identified several opportunities for improvement in East London. They organized their recommendations in a Report along four dimensions: Presence, Connectivity (networks), Capability (talent) and Support (policy). In the area of ‘presence’, Tech City would have to work hard with its media partners to secure high-level endorsements and name recognition in a short period of time. When talent did arrive, they might find that the existing infrastructure (broadband, power, transportation and availability of co-working space) was being pushed to its current limits, making collaboration between firms (i.e. crossover, or spillover) more difficult to achieve. Access to risk capital (angel investments, venture capital) was still difficult to come by, and certain government policies (as Prime Minister Cameron alluded to) were still stifling innovation and entrepreneurship.

To assist with these challenges, a new leadership organization was created under the umbrella of the UK Trade and Investment (UKTI) agency that would “support the growth of the tech cluster in East London”. The resulting ‘Tech City Investment Organization’ (TCIO) was established in April 2011 with the mission to “attract new companies and investors ... and provide support to Tech City companies seeking to expand internationally.”¹⁶ Erik van der Kleij, a successful entrepreneur who had founded Adeptra (a fraud and collections business), was appointed as the first chief executive officer of TCIO. Under his leadership through the remainder of 2011 and 2012, TCIO defined its three main objectives: 1. Secure foreign direct investment, 2. Engage venture capitalists and convince them to set up shop in Tech City, and 3. Raise the international recognition of the Tech City cluster.

¹⁵ <http://www.theguardian.com/technology/pda/2010/nov/04/tech-city-london-facebook-google>

¹⁶ <http://www.scribd.com/doc/92385163/TCIO-Impact-Report>

In its May 2012 Impact Report, the TCIO concluded that it had accomplished several of its goals. TCIO surpassed its initial objective of attracting 26 new companies to the area by in fact helping 37 venture-backed enterprises to secure offices in Tech City. The international name recognition of Tech City was also starting to take hold as evidenced by use of the phrase in social media, newspaper articles and academic papers. And, over 29 venture capitalists in the United States had been 'engaged' to help improve investment into the area. All of these metrics pointed to a growing area of entrepreneurship that was in line with the Prime Minister's 2010 vision, but there was still more that could be done. While VC's were engaged and visiting London, it was still a goal of the TCIO to get overseas VC's to establish investment facilities in Tech City, and there was an ambitious movement to get 50 more international companies to establish offices there.

Tech City 2.0: October 2012 – December 2013

In September 2012, Erik van der Kleij stepped down from his position as CEO of TCIO following the conclusion of his two-year contract.¹⁷ The organization was in need of new leadership that could build upon the foundation started by van der Kleij but also fill in some of the gaps that remained. The Prime Minister appointed Joanna Shields, the former Facebook vice president and managing director for Europe, Middle East and Africa, as CEO of TCIO in Winter 2012.¹⁸ In a statement, Prime Minister Cameron displayed his confidence in Joanna Shields and the entire TCIO operation by saying, "I'm delighted that Joanna is joining the Tech City Investment Organisation. The success of Tech City shows just what can happen when we back some of our most innovative and aspiring companies to grow, helping the UK compete and thrive in the global race. Joanna's experience will be hugely valuable in supporting Tech City as it goes from strength to strength, and as a Business Ambassador promoting the UK around the world."¹⁹

¹⁷ <http://techcrunch.com/2012/06/28/ceo-of-londons-tech-city-project-departs-as-global-tech-race-heats-up/>

¹⁸ <http://www.wired.co.uk/news/archive/2012-10/21/tech-city-joanna-shields>

¹⁹ <http://www.ibtimes.co.uk/joanna-shields-tech-city-ceo-facebook-investment-396729>

Shields' appointment to CEO was considered a large 'win' for TCIO in that it brought credibility and experience to the area where previously Tech City had been trying to find its way to the top. Joanna Shields' significant previous experience also included her role as Managing Director of Google Europe, signaling her understanding of the Corporate landscape of growing the IT industry, her valuable network of connections, and a willingness to engage with larger corporate partners.

When first accepting the appointment and assuming her new role as TCIO CEO, Joanna Shields laid out her vision of growth for East London in the following way: "The seeds have been sown in East London for a dynamic and successful cluster. We have the infrastructure, the technology and the talent, now we need to accelerate the growth. I am looking forward to leading the Tech City Investment Organization in the next phase of its development. With the right boost now, there is no reason why we can't make London the number one location for tech in the world."²⁰

Over the course of her year as TCIO CEO, however, some critics argued that she was a more controversial figure and that Tech City did not always flourish in the ways anticipated. Some claimed that her accomplishments did not go beyond attaching her name to the project: online magazine *The Kernel* went as far as to say she "did nothing in her role", citing the failed million dollar prize competition organized by London Mayor Boris Johnson, and also TCIO's reduced budget and investments.²¹ Nonetheless, many more applauded her activities. One of Shields' more notable programs was the "The Future Fifty," which she established with George Osborne, the Chancellor of the Exchequer.²² The mission of the project was to get 50 of the big-growth companies in Tech City ready to go public because "we want to make London the place where people list".²³

²⁰ <http://www.ibtimes.co.uk/joanna-shields-tech-city-ceo-facebook-investment-396729>

²¹<http://kernelmag.dailydot.com/comment/column/9450/tech-city-i-hate-to-say-i-told-you-so/>

²² <http://www.techcityuk.com/programmes#futurefifty>

²³ <http://www.standard.co.uk/lifestyle/london-life/joanna-shields-on-a-mission-to-transform-london-into-a-digital-supercity-8587959.html>

A second program on which Shields worked - which is now approaching the implementation phase in late 2014 - was the Digital Business Academy (<http://digitalbusinessacademyuk.com/>). Through a series of 8 online video-based courses, burgeoning entrepreneurs across the UK, not just in London, will be able to learn the very basics of digital business to help jumpstart their enterprises. Once finished with the program, participants will have the opportunity to reap 'rewards' from the Academy's sponsors, such as start-up funding and co-working space.

Overall, Tech City under Shields' leadership continued to make an impact on the London economy with the help of the British Government, its TCIO and external partners as evidenced through the number of global corporations establishing headquarters there, the number of start-ups choosing to begin their ventures there, and the success stories which have resulted in the past 4 years. There had also been significant expansion, but less obviously in the initially proposed direction of the Olympic Park: it was instead more towards the West of London, linking the entrepreneurs of Shoreditch to the vibrant publishing, arts and advertising scene in Bloomsbury, as well as the expanding medical activities around Kings Cross. This area - referred to as the "Knowledge Quarter" - would be home to Google's future UK headquarters (under construction in 2014), as well as the Francis Crick institute for medical research and the St. Martin's College of Arts and Design²⁴.

Tech City 3.0?

In January 2014, Joanna Shields announced her resignation as CEO of TCIO, to take on a new role as Chairman in Tech City's development.²⁵ Her move and the subsequent change in TCIO leadership to Gerard Grech (former Blackberry's Global Head of Marketing) signaled another step in the transformation of East London.

For the new CEO, the question was how should TCIO continue to support entrepreneurship in East London and beyond, and what was its role beyond the

²⁴ <http://www.independent.co.uk/voices/comment/media-studies-google-hopes-to-wow-us-with-a-new-hq-but-it-may-take-more-than-that-8919820.html>

²⁵ <http://www.wired.co.uk/news/archive/2014-01/17/joanna-shields>

digital media focus of the original silicon roundabout community? What new ways could the government and stakeholders develop to work together most effectively?

For now, Shields and Grech continue their attempts to meet the vision of the TCIO by implementing new programs, some of which intend to reach entrepreneurs even outside of London. In an April 2014 article for *The Drum* online marketing magazine, Shields talks about one of TCIO's newest initiatives, the Tech City UK Cluster Alliance. "We can realise our ambitions and become the world's leading digital capital but we must act fast. We need to focus on the global opportunities for our businesses all across the country. We have created a new network to align the nation's digital hubs, the UK Cluster Alliance, and this will support and promote local digital hubs in this pursuit."²⁶ The UK Cluster Alliance aims to connect entrepreneurs "to accelerate the growth of digital businesses in cities...share best practices, drive opportunities and link up groups across the UK engaged in digital innovation."²⁷

For outsiders, London's rapid success was an object lesson in how governments might take on and amplify underlying entrepreneurial activity. But with that in mind, what could be learned from TCIO's challenges and successes?

²⁶ <http://www.thedrum.com/news/2014/04/07/tech-city-uks-joanna-shields-says-britain-must-widen-digital-development-outside>

²⁷ <http://www.techcityuk.com/programmes>

FIGURES

The City of London and the 32 London boroughs



Exhibit 1a: London's local geography (Source: Wikipedia)

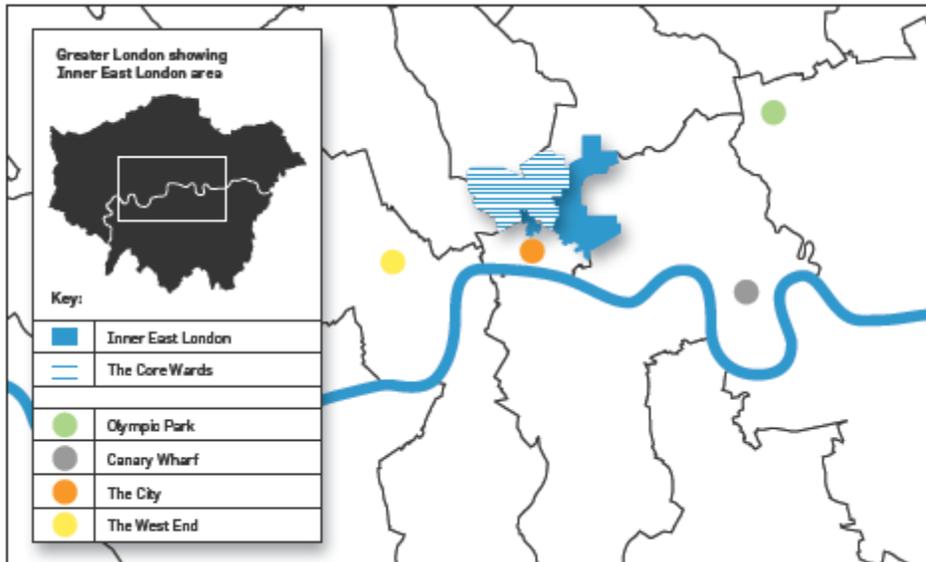


Exhibit 1b: Locating TechCity and InnerEast London within the broader London entrepreneurial ecosystem (source: A Tail of Tech City, 2012).



Exhibit 2: Map of the UK with an emphasis on major cities

(Source: <http://blog.mapsofworld.com/tag/airports-in-united-kingdom/>)



Exhibit 3: Excerpt from London Tube map including the West End, the City, East End and east to Canary Wharf.



Exhibit 4: Olympic Park (2012) in East London (covering Newham, Hackney and Tower Hamlets)



Exhibit 5: Map of Universities in the Greater London Area (from <http://www.varsity-match.co.uk/maps.htm>)



Exhibit 6: University of the Arts London Campuses Around London

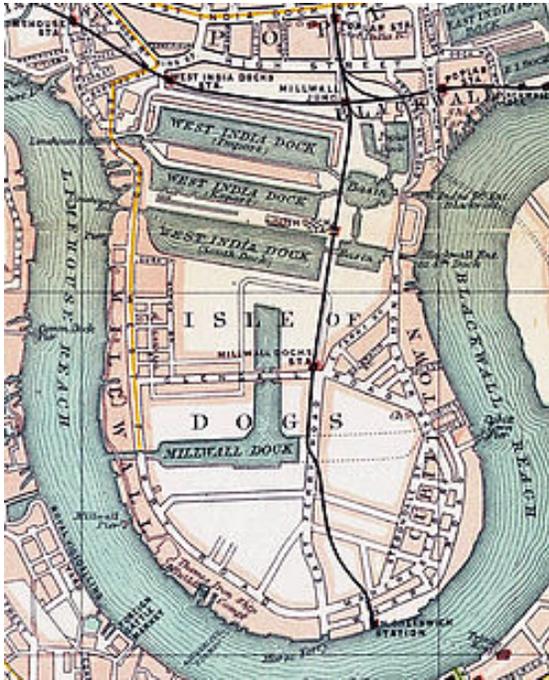


Exhibit 7: Early map of the Isle of Dogs/West India Docks, now the location of Canary Wharf, the second major hub of London’s world leading financial cluster (Source: *The Pocket Atlas and Guide to London 1899*).

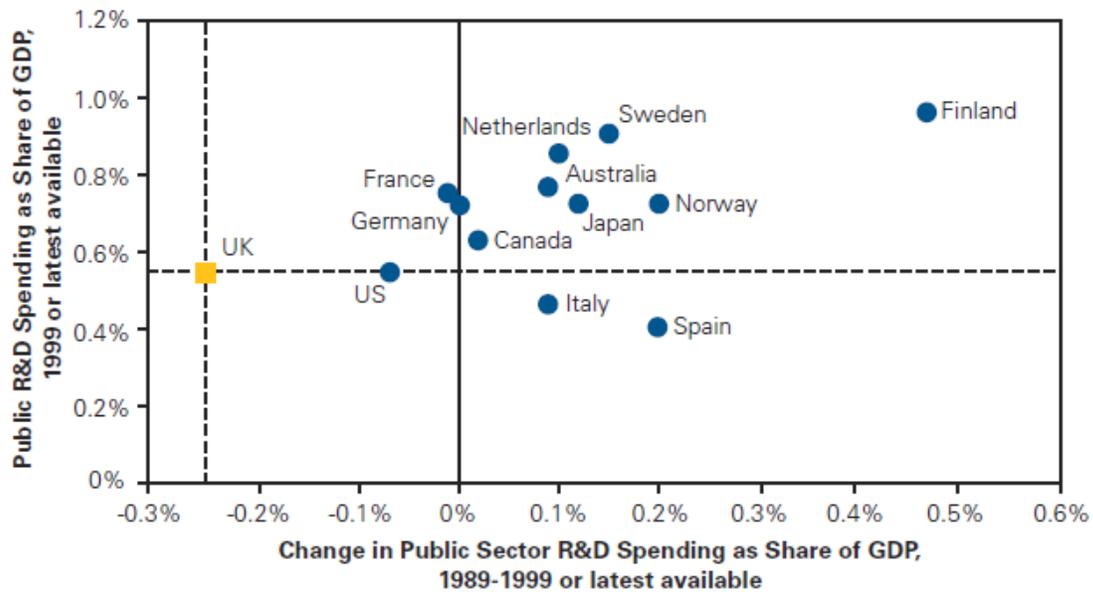


Exhibit 8: UK Public Sector Spending on R&D, including spending by government and institutions of higher education. (Source: Porter, Michael and Christian Ketels. *UK Competitiveness: Moving to the Next Stage*. May 2003.)

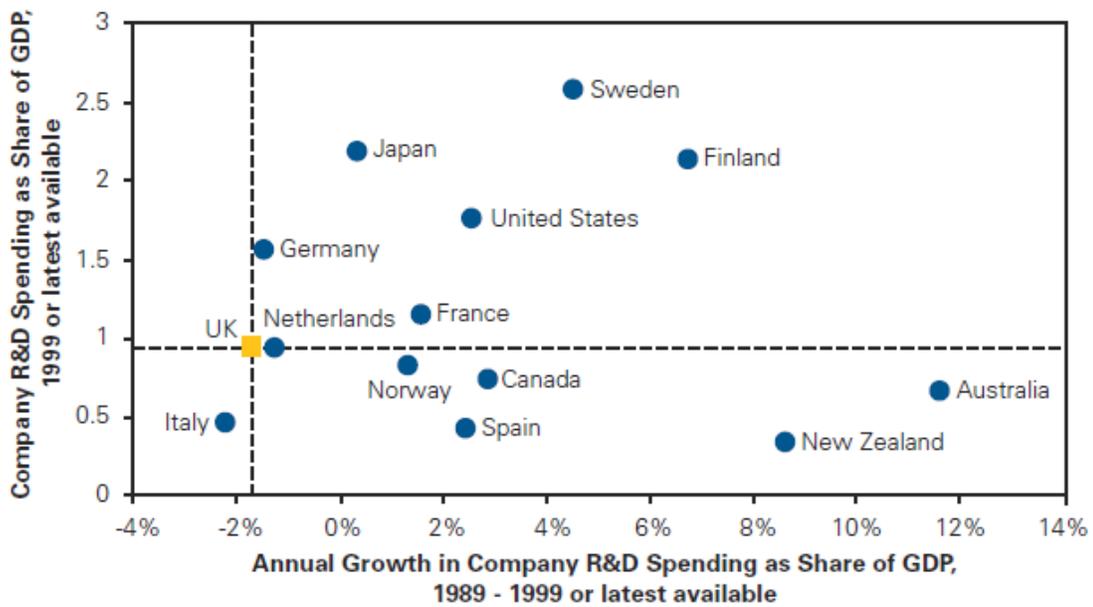


Exhibit 9: UK Company Spending on R&D. (Source: Porter, Michael and Christian Ketels. *UK Competitiveness: Moving to the Next Stage*. May 2003.)

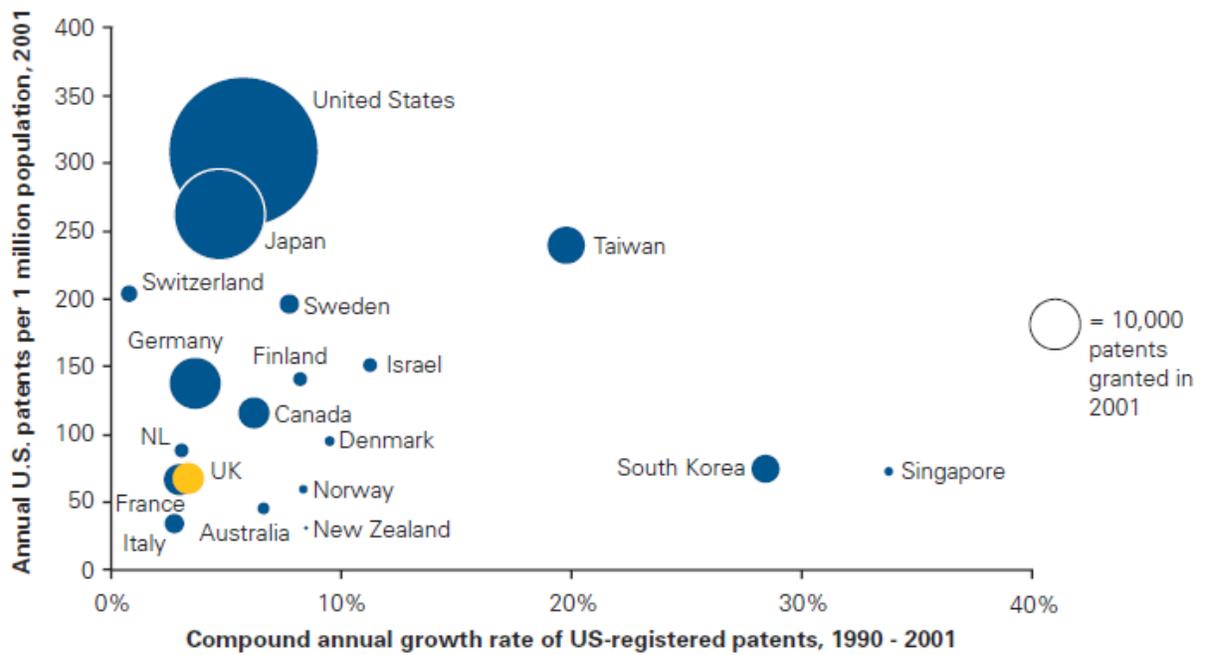


Exhibit 10: International Patenting Output (Source: Porter, Michael and Christian Ketels. *UK Competitiveness: Moving to the Next Stage*. May 2003.)

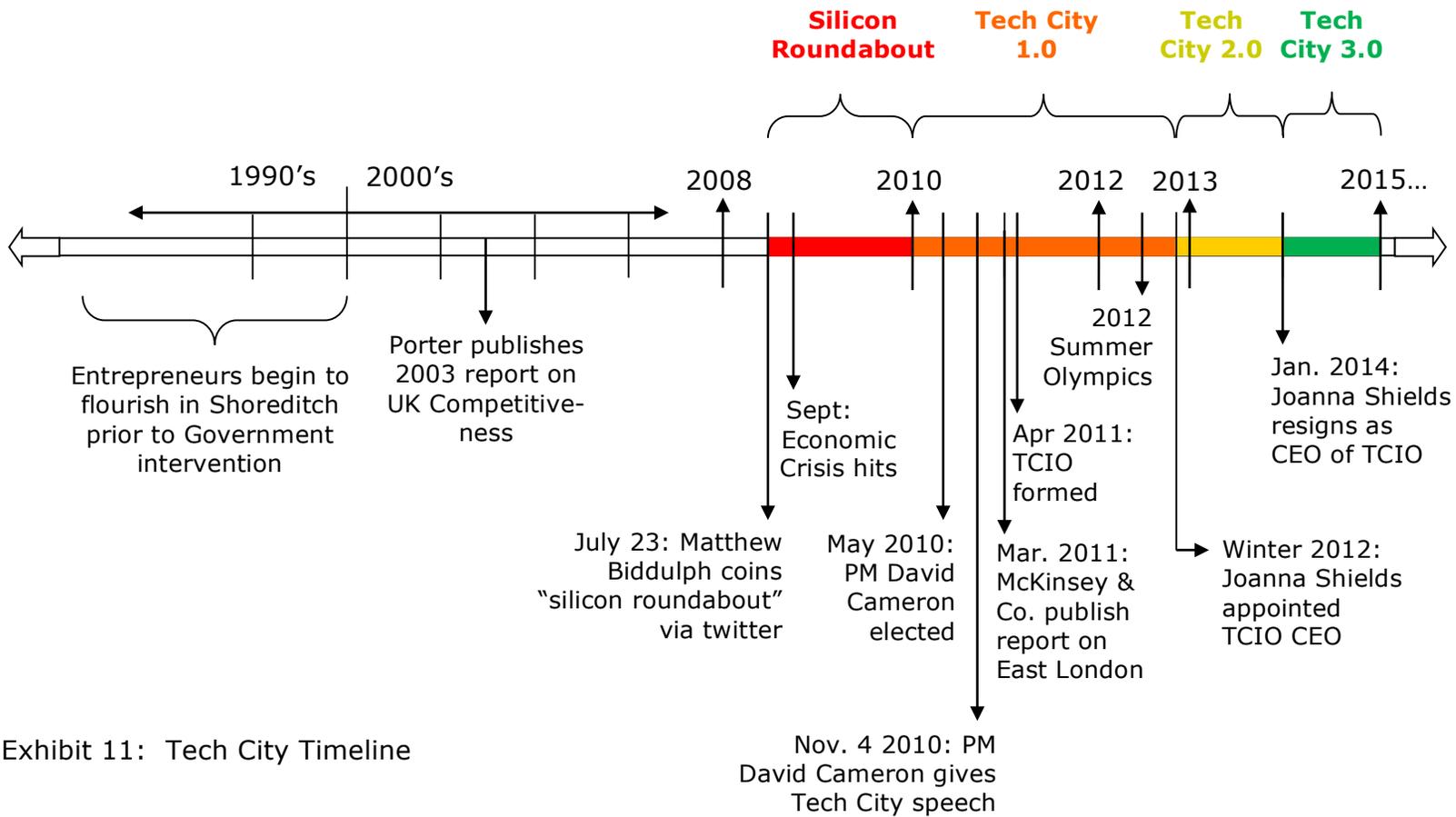


Exhibit 11: Tech City Timeline

APPENDICES

Appendix A: Transcription of Prime Minister David Cameron's November 2010 Tech City Speech (source: <https://www.gov.uk/government/speeches/east-end-tech-city-speech>)

“Ten days ago, when I set out the coalition's strategy for growth at the CBI conference, I announced an important change in government policy towards business and enterprise. For a long time, that policy has been broadly this: Identify the big ticket industries where Britain is strong - and work strategically to strengthen them.

Of course, we will continue to get behind our competitive advantages. And we will focus relentlessly on removing barriers to business success across the economy. But we're combining that with something else.

The world of business is changing at an astonishing rate. Insurgent companies are taking advantage of thousands of new innovations and millions of new consumers to generate billions in revenue within a matter of years.

This is where so much of the promise of new jobs and opportunities lie and that's why, as part of our strategy for growth, we've made a really important decision.

We're not just going to back the big businesses of today, we're going to back the big businesses of tomorrow. We are firmly on the side of the high-growth, highly innovative companies of the future. Don't doubt our ambition.

Right now, Silicon Valley is the leading place in the world for high-tech growth and innovation. But there's no reason why it has to be so predominant. Question is: where will its challengers be? Bangalore? Hefei? Moscow?

My argument today is that if we have the confidence to really go for it and the understanding of what it takes, London could be one of them. All the elements are here.

And our ambition is to bring together the creativity and energy of Shoreditch and the incredible possibilities of the Olympic Park to help make East London one of the world's great technology centres.

I know this can't - and won't - happen overnight. But today, I want to show how we can get there.

I know you've heard this many times before. Governments all over the world have tried to create their own Silicon Valley - but it never seems to happen. So why here in East London and why now with this Government?

Let me start with the 'why here'. Something is stirring in East London. Only three years ago, there were just fifteen technology start-ups around Old Street and Shoreditch.

Companies like the concert service Songkick; Moo, which prints business cards; and Last.fm, an online music community that was sold for £140 million. Fast forward to today, and there are now over one hundred high-tech companies in the area. This on its own is incredibly exciting. But combine that with the possibilities of the Olympic Park.

Just a few tube stops away, there's the potential for nearly one million square feet of flexible office and research space which our technology companies could expand in to.

Add to that the Olympic Park's green spaces, cafes and sports facilities, the quick access to City Airport and St. Pancras International and the fact that London has more outstanding universities than any other city in the world.

And it's clear that in East London, we have the potential to create one of the most dynamic working environments in the world.

And I believe we can really turn this vision into a reality.

We understand where previous governments have gone wrong. They believed that they could design and create a technology cluster from on-high. But the lessons from Silicon Valley are instructive. There was no grand centralised plan.

Yes, the US Government and particularly its investment in defence industries gave it a head-start. And new firms were attracted by the cheap rents, the venture capital and the pool of talent at Stanford University. But so much of Silicon Valley's growth was organic.

As the academic Richard Florida has argued, young and creative people were drawn there by the Bay Area's good quality of life and San Francisco's vibrant cultural scene.

This teaches government some simple things. Go with the grain of what is already there. Don't interfere so much that you smother. But do help out wherever you can.

Help to create the right framework, so it's easier for new companies to start up, for venture capital firms to invest, for innovations to flourish, for businesses to grow.

It's by having that sort of understanding that you arrive at the blueprint we are publishing today.

The policies in this document set Britain on to the path of becoming the most attractive place in the world to start and invest in innovative technology companies. £200 million of equity finance for businesses with high growth potential.

Indeed, we are today setting ourselves the ambition of making Britain the best place in the world for early stage and venture capital investment. £200 million for new Technology and Innovation Centres - one of which could be in the Olympic Park.

Significantly boosting UK Trade and Investment's help for technology companies who are either starting up in the UK or trying to expand into new markets including spending at least £15 million on tech support and creating a presence here in East London.

Opening up government procurement budgets to small and medium-sized firms.

And today, I can announce two further proposals.

The first is to do with visas. Despite net migration reaching hundreds of thousands a year over the past decade, not enough was done to attract the next generation of wealth creators and job makers.

Tier one - the immigration route through which the best and the brightest are supposed to come to Britain - was a total failure.

Indeed, the Home Office recently published research that showed that a third of tier one economic migrants are doing unskilled work. That's wrong and it's got to change.

So as we introduce our limit and reduce non-EU economic migration, we will reform tier one to make sure that it is genuinely a route only for the best.

And as part of that package, I can announce today that we will create a new Entrepreneur Visa. These Entrepreneur Visas will mean that if you have a great business idea, and you receive serious investment from a leading investor, you are welcome to set up your business in our country.

So as we act to bring net migration to Britain down to the tens of thousands, I want this message to be heard loud and clear the whole world over:

In every classroom or laboratory where a bright idea is born, every boardroom where a business case is put together, if you've got an idea, if you want to create jobs, and if you have the ambition to build a world beating company here in the UK,

We want you; we'll make it easy for you; we'll put out the red carpet for you. With our new Entrepreneur Visa we want the whole world to know that Britain wants to become the home of enterprise and the land of opportunity.

The second new announcement I can make today is to do with intellectual property.

The founders of Google have said they could never have started their company in Britain.

The service they provide depends on taking a snapshot of all the content on the internet at any one time and they feel our copyright system is not as friendly to this sort of innovation as it is in the United States.

Over there, they have what are called 'fair-use' provisions, which some people believe gives companies more breathing space to create new products and services.

So I can announce today that we are reviewing our IP laws, to see if we can make them fit for the internet age.

I want to encourage the sort of creative innovation that exists in America.

But the really exciting thing we're announcing today isn't to do with these more traditional government levers.

For the past few weeks and months, we have had dozens of meetings with technology companies and venture capital investors from across the world.

We said to them:

"Here's our vision for East London tech city - a hub that stretches from Shoreditch and Old Street to the Olympic Park. This is what local businesses are saying they need. What part can you play in making it happen?"

I have to say: the response has been overwhelming.

Just listen to what's been agreed for the Olympic Park. The Olympic Legacy Company has agreed to create an "accelerator" space there, providing office space for companies that grow out of East London and beyond.

Imperial Innovations, the venture capital arm of Imperial College London, is going to advise on making sure this accelerator space is attractive to spinout companies from academia and beyond. Indeed, they will be encouraging some of their own brilliant companies to be based here.

We've also spoken to over a dozen leading venture capital investors to encourage them to follow suit. What's more, Cisco will establish an Innovation Centre in the Olympic Park, focusing on technical excellence.

And University College London and Loughborough University have agreed to work with the Olympic Legacy Company to build a bridge between academia and enterprise in the Olympic Park.

But what about here - in the heart of East London where there's already so much to work with? We're working with business to make sure the infrastructure and advice you need is in place.

So McKinsey and Company, one of the world's leading strategic consultancy firms, has agreed to share its expertise in establishing this technology cluster and help start-up companies in the area grow into global giants.

British Telecom has agreed to bring forward the roll-out of superfast broadband in the area, so you have some of the fastest internet speeds in the whole of Europe.

And Qualcomm, one of the world's leading wireless technology companies, will provide expert advice to East London start-ups on intellectual property matters, helping them to protect and commercialise their technologies.

We've also asked some of the world's biggest businesses and banks to help provide the finance that's so urgently needed.

So Vodafone has committed to bring its Vodafone Ventures investment fund to the capital, to hunt out cutting edge British technology.

Silicon Valley Bank, a West Coast institution, is today announcing that it will become a fully fledged bank in the UK, providing financing for technology and life science companies.

And Barclays will create a new facility in East London to provide specialist banking services to high growth technology companies in the area.

And finally, we've persuaded some of America's most dynamic companies to set up research and development spaces right here.

So Intel will establish a new research lab in East London, focusing on performance computing and new energy efficiency technologies.

Google has agreed to create an Innovation Hub in East London too, which will be a creative space for their researchers to come together with developers and academics to create the next generation of applications and services.

And Facebook has agreed to create a permanent home in East London for their successful Developer Garage programme, which brings together and inspires the most talented developers and entrepreneurs here in the UK.

All in all, this is a who's who of some of the world's biggest companies and an extraordinary list of proposals - and we hope many other companies come forward too.

I want to thank each and every one of the companies and investors that has come together to do this. It's like nothing that has happened in our country before. It is a genuine innovation network - bringing together high growth start-ups, universities, investors and global companies.

And thanks to these efforts, we can help make East London one of the world's great technology centres and sow the seeds for sustainable growth throughout the economy.

Let me end by saying this. We're in a world where money is incredibly tight. And we're a government that is one hundred percent committed to giving power away and trusting in the creativity of the British people.

I know those two things raise one big question: What is government for? You've got some of your answers today.

Of course, we will change laws where necessary so we break down the barriers to innovation.

But more than that, we will use our power and influence to agitate for, cajole and inspire the change we want to see.

The incredible response from the private sector has shown just what a powerful tool this can be.

Businesses coming together, using their expertise and applying their resources to making London a centre for innovation for putting Britain on the path to economic dynamism.

That's what I mean when I say we're all in this together.

And that's why I believe Britain can have such a strong, positive and confident future."