

Rise of the Gigabit City

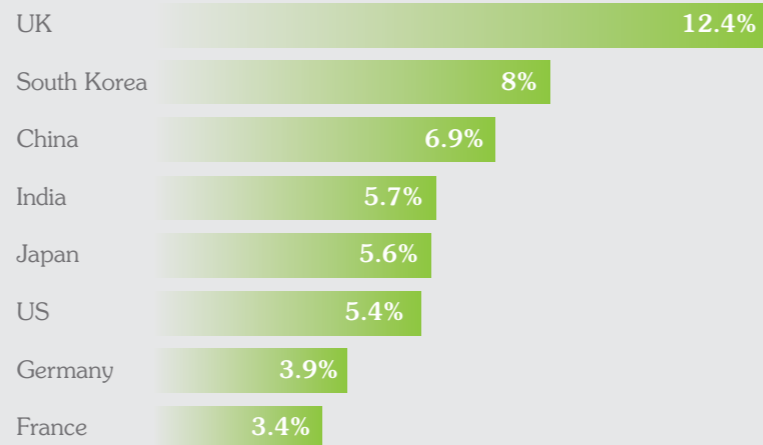
Driving Economic Development



Unstable Foundations

Poor digital connectivity is a hugely significant issue when we consider the role of the internet in the overall UK economy. A 2012 study by the Boston Consulting Group found that internet-related economic activity in the UK in 2010 accounted for fully 8.3% of GDP, more than twice the average of the G-20 group of advanced economies, and nearly three times the level of Germany, the largest European economy. This reliance on the internet economy is further forecast to grow to 12.4% of UK GDP by 2016, with the country extending its lead over the rest of the G-20.

Internet Economy as a Percentage of 2016 GDP



THE BOSTON CONSULTING GROUP

The Internet Economy will account for 12.4% of the UK economy by 2016

Interestingly, the UK's level of economic dependence on the internet is matched only by countries such as South Korea, The Netherlands, Denmark and Sweden – all of which have benefited from widespread deployment of fibre optic network connections over the past decade. However, such connections have remained practically non-existent in the UK for all but large business customers and a handful of fortunate consumers.

As a result, despite its leadership in the internet economy, internet connection speeds in the UK have remained lamentably slow. The latest instalment of Akamai's authoritative "State of the Internet" report shows that the UK ranks 11th globally in terms of average internet connection speeds, with only 30% registering an average of 10Mbps or more. In contrast, 21% register average connection speeds of 4Mbps or less.



Only 30% of the UK averages more than 10Mbps speeds

A National Digital Divide

Cities across the UK are in competition - with one another, with the national economic powerhouse which is London, and with cities in Europe and around the world with similar economies and aspirations. They compete for investment, business formation, public funding and other government resources, tourists, and even residents.

Compared to many other European countries, the UK's economy is unusually centralised in the London megalopolis, which generates 22% of total UK economic output. During the economic recovery, the vast majority of new jobs created have been in the Greater London area, and the city seems to go from strength to strength.

One key area of economic activity which London has been very successful in developing is in the area of what might be termed "connected, knowledge-based industries." Activities captured within this designation would include financial services and investment,

legal and professional consulting and support services, media and creative businesses, research and information services, and technology businesses of every stripe.

Despite the variety of industry verticals covered by the term "connected, knowledge-based industries," what they all share in common is a highly intensive use of data in their business models. This data has to be collected, stored, analysed and transmitted, around the clock (and the country/world), every day.

What they also share, in many cases, is a lack of requirement for a specific physical location in order to function. A software development company can be productive anywhere where there is access to sufficient computing resources and connectivity, as can a games developer, a lawyer, a business consultant, or a call centre operator. As such, these types of business represent a huge opportunity for Gigabit Cities to attract.

London generates **22%** of total UK economic output



Gigabit Cities: Driving Economic Development

Currently, many cities struggle to attract businesses to either form in, or relocate to, their community, in part because of poor digital infrastructure. This is not the case however for the growing number of Gigabit Cities whose ultrafast, city-wide, pure fibre connectivity acts as a magnet and catalyst for businesses. By helping businesses to operate more efficiently and improve their productivity, they are able to drive the bottom line and in doing so, create jobs and bolster the city's economic development.

Due to increasing reliance on the Internet for so many aspects of modern business, high-speed connectivity is now considered to be critical to economic success. This puts the Gigabit City at a great advantage. The pure fibre infrastructure available to businesses will transform the way they work, bringing a host of productivity benefits and enabling them to innovate, creating new products and services.

Ways that a Gigabit City Benefits Economic Development

- Attract & retain businesses
- Attract inward investment
- Encourage innovation
- Enhance educational opportunities
- Attract high skills
- Support new development schemes
- Increase property values
- Increase city profile



Chattanooga Tennessee was one of the first cities in the world to roll out a pure fibre network offering gigabit connection speeds to homes and businesses. This has attracted a swell of economic investment, including the expansion of Volkswagen's Chattanooga plant and the establishment of Amazon.com facilities.

A Gigabit City business can:

- Easily send and receive large files at 1000 Mbps, (10-100 times faster than most business connections).
- Access cost and time-saving benefits from the new generation of cloud-based services and online collaboration tools.
- Remove the roadblock of crippling slow upload speeds with ultra-fast uploading only possible over a pure fibre network.
- Transform the way a business can communicate, substituting landlines for cheaper, smarter VoIP telephony and HD video conferencing tools.
- Storing data remotely using cloud applications like Dropbox, Google Drive or Box becomes a practical solution with a pure fibre connection.
- Use a single connection to support even large teams using bandwidth-hungry applications at the same time with no drop in performance.

Gig Up Peterborough

In less than 12 weeks of an announcement that Peterborough businesses could register for gigabit, pure fibre services, over 450 had done so, representing more than 10% of all the businesses in the city.



Within a month of the first 'Fiberhoods' of Kansas City being connected with gigabit speed Google Fiber, the Kansas City StartUp Village was founded. Less than a year later, over 30 tech start-ups were launched, creating more than 60 jobs and attracting over \$6m of investment.

76%

of businesses state that broadband is critical to their economic success.

69%

believe broadband is restricting their business today.

60%

are concerned about future capacity and quality.

Atkins survey (2011)

Roll-out of fibre broadband infrastructure leads to GVA increase of

0.3-0.5%

per annum.

Regeneris Consulting (2012)



Case Study: The Stockholm Experience

While most cities embarking on Gigabit City strategies are in their early stages, one striking example has 20 years of history from which we can draw some powerful conclusions about the long-term impacts of fibre infrastructure.

The Network

In 1994, the Stockholm municipal government established a private company, called Stokab, to deploy and manage a city-wide fibre network available to all ICT market players on an equal, open-access wholesale basis. Seeing that a new era of network investment was approaching, the government created Stokab to both limit disruption from multiple network deployments, as well as to stimulate investment and competition in ICT services. The network today serves 700 service provider businesses, and connects 90% of residential premises to genuine end-to-end fibre broadband.

The Economic Benefits

Stokab itself is a highly profitable business, but what are the wider economic benefits to the city, and how can these be quantified?

In summary, the experience of Stokab shows that, over the long term, a ubiquitous fibre infrastructure can generate significant positive economic impacts on a city. These include:

- Cost savings for the public sector, businesses and consumers;
- High levels of business formation, retention and inward relocation;
- Increased employment, including the supply chain for the fibre network itself;
- Enhanced property values and rental receipts.

Attracting ICT

Stokab has catalysed IT development in Stockholm.



Kista Science Park-

- 1000 ICT companies
- 24,000 employees
- 6800 students
- 1100 ICT researchers

Local Government

Stockholm's municipal offices are all able to purchase data and Telco services on the open market over the network.

€250m

SAVING 1996-2012

Housing

Housing companies connect all new-builds with FTTH investing

€250m Increase in property value of +100,000 apartments

€200m Increase in rental revenues €3.5m/year

Supplier Industry

Stokab procures deployment, operation, materials, planning from private market. As a whole the process and investments have generated economic activity over

€580m

Employment

High-capacity Broadband leads to growth and job creation well beyond the build stage.

Stokab has created a "job value" of

€900m

Mobile Backhaul

Leasing base station connectivity from Stokab has represented a huge saving versus deployment of dedicated network solution. Stockholm was able to become the world's first 4G/LTE city and now has 4 networks.

Business

Fierce competition at the ISP level has led to lower cost of broadband services.

Annual savings for Stockholm businesses are estimated to be

€8.5m

Stokab Investment

Stokab has invested c.€30m each year of it's profits into development of the network.

€600m

INVESTMENT

Conclusion

It has become clear that with a growing Internet economy, businesses' reliance on broadband connectivity will only increase. This rate of change is both an opportunity and a threat for cities throughout the world as they compete regionally, nationally and even internationally to attract businesses, foster job creation and accelerate their economic development.

With growing, compelling evidence that proactively addressing this changing landscape can provide cities with real economic advantages, the emerging vanguard of Gigabit Cities are ideally positioned to reap the benefits and take the lead.

“Broadband infrastructure, the backbone of the entire Internet ecosystem, is an irreplaceable prerequisite. It creates the platforms upon which users, and organizations experience the Internet, and upon which entrepreneurs and businesses innovate.”

McKinsey Global Institute

CityFibre – Builder of Gigabit Cities

As the UK's largest independent provider of fibre network infrastructure, CityFibre builds and operates networks that bring the benefits of Gigabit connectivity to communities throughout the country.

With network in over 50 towns and cities, we are helping cities to compete globally by unlocking the potential of new services in the public, private and residential sectors.

Our privately funded Gigabit City model is gaining momentum and already transforming cities including York and Peterborough.

If you would like to find out more about becoming a Gigabit City please get in touch.

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