

PUBLIC SECTOR

Infrastructure for  
a brighter future

**We are in the thick of the worst economic crisis since the Great Depression. The symptoms are exactly the same: reduced spending, shattered consumer confidence, and falling production. (Incidentally, the causes are the same: poor regulation leading to a culture of overoptimistic loans and astronomical consumer debt. You'd think we'd learn, but banks' desire to make a quick buck prevails...)**

This decreased propensity for spending leaves us in a bit of a jam. Austerity cuts are all well and good, but according to Keynes' 'Paradox of Thrift,' theory, saving will only make a shrinking economy contract faster. Whatever tweaks to monetary policy – manipulating interest rates, quantitative easing – it cares to make, the government must stimulate growth by leading by example and spend, spend, spend on developing infrastructure. And in 2012, that means computers and cables.

Chancellor George Osborne has budgeted for £158m worth of investment in e-infrastructure and high-performance computing, stating that: "This will make the UK a world leader in supercomputing. Improving computing infrastructure is vital to driving growth and giving businesses confidence to invest in the UK."

Science minister David Willetts, quoted in a Department for Business, Innovation and Skills statement, said "[investment] will

ensure we maintain our leading position in research, providing cutting-edge new facilities and vital infrastructure. It also underpins important industrial sectors and will unlock private investment in new products and services, driving growth and creating high-tech, highly-skilled jobs."

The investment includes the £43m ARCHER, a national supercomputer that can number-crunch hundreds of millions of calculations at once, that will support advanced research into complex chemistry and climate science, making it a powerful tool for the likes of modeling of new pharmaceutical products and conducting nuclear energy research.

According to David Willetts, the program of investment "will improve research and manufacturing processes and reduce the time and money it takes to bring a product to market. This will drive growth and innovation across a whole range of sectors and ensure our leading institutions and companies are able to exploit the very latest technology."

So inviting universities and private sector companies to lean on the government's newfound technological wherewithal seems a good plan to drive growth. But sharing an uber-rapid supercomputer isn't much use if your broadband isn't up to scratch.

According to a survey by Akamai, there is no UK presence in the global Top 100 Cities for average broadband connection speed. Asian cities dominate this, including 59 in Japan, and 10 in South Korea. The UK sits in 28th place in Europe for average

connection speed, and that is simply not good enough for a country seeking to stamp an even bigger footprint on the world technology market.

### **Get super connected**

Time to get super connected, at least if you live/ work in London, Edinburgh, Cardiff, Belfast, Birmingham, Bradford, Bristol, Glasgow, Leeds, Liverpool, Manchester, Newcastle, Nottingham or Sheffield. These 14 lucky cities will get improved BT and Virgin fibre infrastructure that will deliver rapid-fire speeds of 80–100 Mbps.

Culture Secretary Jeremy Hunt said: "We must ensure the UK has a broadband network fit for the digital age. Transforming communities into super-connected cities will enable them to compete with the world's top digital cities. It will help them attract new jobs and new investment and make the UK a place where digital businesses look to come."

As well as the residual effects of government investment – job creation, and more people with a few spare pounds to spend – improving broadband speed and consistency should help get tills ringing – with the ever-increasing propensity to conduct transactions over smart phones, improved reliability and faster order processing will develop consumer trust and quite possibly lead to more impulse purchasing...providers of high-tech outsourced solutions such as m-commerce and supply chain management stand to gain massively from super-connected cities.

But it's not just cities that are getting their fibre optic cables souped up: the government is also on a quest to bring superfast broadband to rural areas. BT, Cable & Wireless and Fujitsu have all submitted bids to build networks in various different areas. In areas where there are so few residents, the economic benefit of giving these people superfast broadband is negligible; it is the spending for spending's sake, the stimulation of the economy to get companies like BT and Fujitsu, hiring and procuring that makes rural broadband worthwhile.

Infrastructure spending is a vital part of the government's economic recovery strategy and is equally as important as finding ways to cut costs. But it cannot just cut costs. Recessions are the result of decreased confidence, and if the government isn't spending, no one else will.

The government needs to spend money in ways that creates permanent skilled jobs – actions to offset the requisite redundancies it has made in the process of leaning the civil service. Cutbacks are all well and good, but it takes taxpayers out of the system and swells the number of people relying on government support, in the form of benefit payments. Putting more pressure on the DwP is not the way out of a recession. Creating opportunities for people to support themselves is. That means spending your way out of danger.

For the USA, The Great Depression only truly ended with the advent of World War II, when the need to spend to arm the nation generated business and jobs (and of course, the draft sent men to the front line.) We are at war currently, and the government should support 'Our Boys' with all its financial might. But with increased automation of manufacturing, war is not the domestic job creator it once was.

There are other kinds of war afoot. Wars on drugs and terror are areas where the government should invest heavily – both in technology & specialist manpower, e.g. up-scaling airport security. The proposed PFI – Boris Airport could become a flagship project, a shining beacon in enhanced airport security.

### **Another war being waged is cyber defence**

As a nation, we are under constant attack from international cyber criminals – according to a 2011 report by Detica for the Cabinet Office, cyber-crime costs UK PLC £1000 per second, or a gargantuan 27bn per year. It's not just fraud and theft from individuals either: the head of GCHQ, Ian Lobban wrote in the Times of his awareness of "attempts to steal British ideas and designs – in the IT, technology, defence, engineering and energy sectors, as well as other industries – to gain commercial advantage or to profit from secret knowledge of contractual arrangements."

So, it's a huge problem, this economic terrorism, and effectively grand larceny from UK PLC en masse. Online theft, fraud, the plundering of intellectual property, the unseemly practice of financial insider dealing...all this could be reduced by a investing in generation of software engineering savvy civil servants. Yet according to PwC's Global Economic Crime Survey, of the 3877 respondents, 61% said they "don't have or are not aware of having access to forensic technology investigators."

There is a growing need would be a for a crack squad of forensic technology investigators: a legion of cyber-cops under the command of GCHQ. These guys don't exactly chase cyber criminals; they chase their methods. After a fraud has been committed, a forensic technology investigator finds out exactly how it happened, and locks down the loophole so it can't happen again. The government would be sagacious to invest here – in collaboration with IT outsourcing players – to design and maintain a robust defence to nullify the threat of international cyber criminals.

HMRC hoped to create a team of cyber investigators by the end of November 2011, in response to an recent up-scaling in both the amount and sophistication of cyber-attacks . An HMRC statement describes the objectives of project to is create "teams of cyber crime investigators and launch cyber crime initiatives to counter increased threat of attacks on HMRC systems and customers using [the] internet." This follows on from a previous statement that said: "We believe that the creation of specialist units is the right approach, as it allows for the development of expertise in highly complex areas. This approach allows a flexibility of response, and an ability to understand the key drivers and criminal behaviours as well as the characteristics of victims who may be vulnerable to the crimes." Yet as the team is still not in place. As of the time of writing, the team is yet to be established.

Cutting costs through efficiency gains is important; spending strategies to boost growth are vital. But if the government wants to truly get its house in order, it needs to invest in making sure it is not susceptible to theft, fraud and cyber terrorism.