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NESTA Making Innovation Flourish

Attacking the Recession

How Innovation Can Fight the Downturn

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Executive summary

NESTA is publishing this paper to contribute to and stimulate the wider discussion of what the recession means for the UK and how we should respond.

This is just the first of NESTA's planned contributions to this debate. Our aim is to focus on the short term measures we can take to combat the recession which will feed our longer-term strength as an economy and society. The more we can use the short term crisis to address and accelerate our adjustment to longer-term challenges, the better.

That means we need a strategy to attack the recession, not just to respond to it. Innovation – in business, communities and public services – needs to be at the heart of that attack. The UK should aim to emerge as a more innovative, greener, more sustainable and diversified economy.

The UK will need new growth sectors to make up for the dynamism that has been lost from financial services. The development of those growth sectors will require a mix of intelligent public investment, partnership with business and entrepreneurship.

Decisive government leadership and public investment will be critical to innovation in many fields, from scientific research to cultural funding. A clear lead from government across its range of functions, in a policy context supportive of innovation, has enabled other economies to develop new, high-growth sectors and meet social challenges.

The biggest gains for society will be found in those sectors that both offer the most immediate growth potential, drawing on the UK's existing strengths, and help meet long-term challenges: green energy, environmental services, biotechnology, and services for an ageing society. These need to form part of a national economic strategy able to set long-term goals, and with the political credibility to help deliver them.

But this approach needs to be combined with a mass of decentralised, entrepreneurial activity, searching for new markets and opportunities.

It follows that the UK needs a Total Innovation strategy that draws together public and private, social and commercial innovation and entrepreneurship. The recession will create a new platform of growth if business entrepreneurs emerge to take opportunities in new growth industries and social entrepreneurs address emerging social challenges.

Key to this we believe will be the ability to share and mobilise resources through networks. These divide into five key areas:

- Networks will be critical to the way that companies respond, creating more open approaches to innovation which draw on ideas from customers and suppliers.
- Networks will be critical to the way regions respond, drawing together public and private actors, and even more importantly stretching out internationally to find new markets and investors. Successful regions will have outward looking, entrepreneurial networks.
- Networks will be critical to new business creation: we envisage the role of business clubs and networks to help entrepreneurs create new businesses, especially in new growth areas such as environmental services.
- Networks will be critical to how people keep in touch with work and job opportunities.
- Networks will be vital to make better use of shared resources, promote collaboration and creativity.

It is because networks are so vital that one of our central recommendations is that the government should commit to deliver universal, ultra-fast broadband access to all parts of the country. That will help job search, business efficiency, community cohesion and international links. It will also send a bold message that the UK intends to invest in the future through the recession to emerge stronger.

NESTA's aim is to use this document to start a debate about how the UK should attack the recession by using innovation. We make some initial recommendations in each of the broad thematic areas it covers – firms, places, people, and public services. In the first three months of 2009 we will develop many of the themes and ideas already in this report and others prompted by it to present a coherent, costed package in the run up to the Budget.

NESTA will do more than that, however. It is uniquely placed to make ideas and money work together, for business and social innovation. In the next year we will be putting NESTA money to work to help turn these ideas into reality.

This recession may prove to be a critical, creative turning point for the country. Attacking it with an ambitious and far-sighted programme of action will enable the UK economy to emerge both stronger and better able to meet pressing social challenges. Failure to respond effectively will create social and economic costs for decades to come.

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NESTA is the National Endowment for Science, Technology and the Arts.

Our aim is to transform the UK's capacity for innovation. We invest in early-stage companies, inform innovation policy and encourage a culture that helps innovation to flourish.

Chapter 1: Introduction

Recessions are never purely economic events. As businesses shed jobs, profits fall and investment is cut back so families find their main breadwinner looking for a job, communities see industries they have depended on contract and even disappear.

Recessions are social and so political challenges as much as economic ones – a challenge of collective and collaborative adaptation to radically changed circumstances.

This paper maps out a way to understand the underlying causes of the recession that has just begun, and to chart a way through.

At its heart is a simple idea: this is a recession brought on by the ultra-networked character of the modern economy and the solutions will be more effective if they work with and reshape those networks. Networks are the key. Responses to the recession that work through networks are more likely to be effective than either purely state or purely market based-remedies. The causes of the recession lie in malfunctioning and poorly regulated financial networks. The remedies will lie not in retreating from global networks but in reforming and managing them more effectively.

Government responses to recessions determine their outcomes. Immediate crisis management is essential. But effective policy responses go deeper and last longer, they can shape the future course of entire economies for a generation or more. Deep recessions deliver more than just an economic shock: they can shock an entire social system into new ways of thinking and organising.

The US Depression in the 1930s spawned the New Deal and in Europe policies which led to the creation of the modern welfare state. In the UK the recession of the late 1970s and early 1980s paved the way for the restructuring of many manufacturing industries, the creation of much more flexible labour and capital markets and in time the privatisation of state-owned businesses.

How societies respond to recession depends on how the challenge is framed by policymakers and politicians. In the response to the Depression of the 1930s the state eventually took on a much greater role in economic management through Keynesian policies. The recession of the late 1970s paved the way for free market policies to guide the UK's response.

The biggest difference with the last serious recession in the UK is that the world is much more connected, and not just in finance. The containerisation of our transport systems, alongside other efficiency improvements, has helped reduce the price of transporting freight to a fraction of its previous level.[1] The dot.com boom, and subsequent bust, left behind a new, open, global network of electronic communications that is transforming society.

The UK is deeply enmeshed in these international networks. It has a tradition of openness, flexibility and free trade and some of the world's lowest barriers to competition.[2] It is also the most lightly regulated economy in the European Union.[3] Consequently, it is little surprise that the UK is the world's second largest exporter of services,[4] the world's largest exporter of visual arts,[5] the fifth most attractive location for foreign-funded R&D,[6] and the fourth most attractive destination for foreign direct investment.[7]

1. Levinson, M. (2006) 'The Box: how the shipping container made the world smaller and the world economy bigger.' Princeton: Princeton University Press.
2. OECD (2005) 'The Benefits of Liberalising Product Markets and Reducing Barriers to International Trade and Investment: The Case of the United States and the European Union.' Paris: OECD.
3. OECD (2006) 'Going for growth 2006.' Paris: OECD.
4. BERR (2007) 'UK Trade and Investment.' Available at: http://www.berr.gov.uk/whatwedo/europeandtrade/trade-policy/page10188.html/trade-policy/page10188.html
5. UN Conference on Trade and Development (2008) 'Creative Economy Report 2008: The challenge of assessing the creative economy.' Geneva: UNCTAD. Available at: http://www.unctad.org/en/docs/ditc20082cer_en.pdf
6. OECD (2007) 'Moving up the value chain: staying competitive in the global economy.' Paris: OECD.
7. A.T. Kearney (2005) 'FDI confidence index.' Chicago: A.T. Kearney.

The UK also acts as a magnet for talented people. Aside from conducting world-leading research, the UK's universities have proven a compelling destination for international students.[8]

In the ultra connected, dense, high-speed networks of the modern financial system – like densely packed cars moving at high speed along a freeway – a small disturbance – the collapse of sub-prime loans in the US – can ultimately cause a pile up which in turn creates a long tail-back of stationary traffic.

The impact of that financial pile up has been felt with great speed in the rest of the economy as banks have restricted lending, property prices have fallen, indebted consumers have cut back their spending, retail sales have slowed and manufacturers have retrenched. Already weaker retailers are being driven out of business.

It would be too easy to blame the recession on this connectedness.[9] The demands to retreat from our connected world are growing.

But the withdrawal of nations from the global economy during the 1930s helped prolong the Great Depression. Following the Wall Street crash in October 1929, world trade declined by about 30 per cent to 1932,[10] in part due to the imposition of import controls and tariff barriers.[11] Global governance suffered a near-total collapse, with no international agreement on the best route to stabilisation until after WWII.[12]

The lesson of the financial crisis is that networks need effective governance. The task is to manage the networked economy in ways that makes it less prone to crisis and more able to sustain growth.[13]

- Economic and financial policymaking has already had to become more networked and coordinated in response to the recession. Effective responses to the recession will depend on more effective global coordination of financial regulation.

- Businesses are likely to respond to the recession by developing more intelligently networked forms of organisation, accelerating shifts towards more open, networked approaches to corporate innovation.

- The regions and cities that respond to the recession most effectively will have strong regional alliances that pull together the public and private sectors, social innovators and universities. To succeed regions will need outward looking, internationally connected and entrepreneurial networks, to spot new opportunities, investors and partners.

- Networks will also matter for individuals. The people most likely to be able to find work again after a period of unemployment will have social networks that keep them in touch with employment opportunities. People will be more likely to search for work and to start their own micro businesses if they have mutual support from peers and mentors.

- Recession creates an innovation challenge for public services that will require more devolved, networked approaches to deliver services more effectively at lower cost. Many of the most effective social responses to recession will come from networks of social and civic entrepreneurs.

Effective responses to this networked recession will depend on how we manage and rebuild those networks in the financial sector; and how firms, regions and individuals use networks to advantage. In virtually every field policy will be more effective if it works through networks in which actors pool resources and share risks. Networks will be critical to our ability to innovate our way out of recession.

8. Universities UK (2007) 'Patterns of higher education institutions in the UK: Seventh report.' London: Universities UK.
9. Eichengreen, B., Rose, A. and Wyplosz, C. (1996) 'Contagious currency crises.' NBER Working Paper 5681. Cambridge, MA: NBER.
10. Marsden, J.B (2001) Trade barriers and the collapse of world trade during the Great Depression. 'Southern Economic Journal.' 67:4.
11. Jakob Marsden estimates that the cumulative impact of trade restrictions from 1929 to 1932 was responsible for over half (by value) of the decline in world trade. See Ibid.
12. Kindelberger, C.P. (1986) 'The World in Depression 1929-1939.' Berkeley: University of California Press.
13. Homer-Dixon, T. (2006) 'The Upside of Down.' London: Souvenir Press. Chapter 11.

Chapter 2: Recession, crisis and innovation

Crisis is often critical to innovation. A crisis provides an urgent sense of focus to mobilise resources and break down barriers which normally stand in the way of innovation. The economic crisis in the US following the 1907 San Francisco earthquake and fire led to the creation of the Federal Reserve System.[14] The Second World War was the spur to the creation of new technologies and manufacturing techniques, advancing mass production and knowledge management. The internet was created in part in response to the threat of a nuclear attack on the US. The crisis in IBM's traditional market of mainframe computers created the conditions for it to mutate into the software and services company it is today. Biology offers innumerable examples of how complex and interconnected systems can generate and then recover from crises. Adaptive and resilient organisations find the upside in downturns.

Joseph Schumpeter argued recessions could provide a platform for innovation and economic growth by unleashing a process of 'creative destruction'.[15] Periods of economic turbulence have been associated with the development of new technologies and ways of working – like the spread of mass production between the wars.[16] A different metaphor is to see recessions as a 'pit-stop': a pause in the race which allows firms to make smaller adjustments and to rethink their strategy.[17]

The challenge for government policy beyond the immediate fiscal and monetary measures to stimulate the economy is to create opportunity out of adversity.

Can the crisis be used to spur innovation so that the economy emerges resilient and adaptive, inclusive and sustainable?

Policymakers face an unfolding set of challenges. The primary focus, so far, has been to avert a wholesale meltdown of the world financial system. Preventing the financial crisis from reigniting will remain a pressing concern, even as attention turns to ameliorating the impact of the recession on the real economy. This report's main focus is not on crisis management, nor on the fiscal and monetary measures needed to counter recession. Our concern is how can we respond to the crisis – and even use it – to promote innovation that will help create a more productive and sustainable long-term economy.

That matters because the recession arrives with the UK already facing strategic and structural challenges which will require sustained innovation from many sources:

- The rise of Asian economies which offer new markets, competitors and partners.
- The continued rapid spread of new technologies, most obviously the mass participatory web, but also biotech.
- The need to shift the economy onto a much more sustainable growth path, with significantly lower carbon emissions.
- The social challenges of meeting the needs and aspirations of quality of life for an ageing population.

These challenges meant it was already clear that the UK needed a more comprehensive approach to innovation – drawing from the public and private sectors, manufacturing and services, social and commercial sources.[18] The particular features of the current recession, such as the deflation now occurring in many

14. Homer-Dixon, T. (2007) 'The Upside of Down.' London: Souvenir Press.
15. Schumpeter, J.R. (1943) 'Capitalism, Socialism and Democracy.' New York: Harper & Row.
16. For example, Bernstein, M (1989) 'The Great Depression: delayed recovery and economic change in America, 1929-1933.' Cambridge: Cambridge University Press; Beaudreau, B.C. (1998) 'Mass Production, the Stock Market Crash, and the Great Depression: the macroeconomics of electrification.' Westport: Greenwood Press. For a somewhat contrary view, see Szostak, R. (1995) 'Technological Change and the Great Depression.' Jackson, TN: Westview Press.
17. Geroski, P.A. and Gregg, P. (1997) 'Coping with Recession: UK company performance in adversity.' London: NESTA.
18. Department for Innovation, Universities and Skills (2008) 'Innovation Nation.' White Paper. London: DIUS; NESTA (2008) 'Total Innovation: why harnessing the hidden innovation in high-technology sectors is crucial to maintaining the UK's innovation edge.' London: NESTA.

product markets and the creeping pensions crisis, are compounding many of these longer-term, structural problems. Our response to the recession must strengthen our capacity to deal with these long-term challenges. It would be all too easy for innovation to be sidelined by the recession. Investment in new technologies is likely to be reduced. R&D spending is usually pared back by cash-strapped firms. Start-ups will have to compete more fiercely for venture capital that will be in shorter supply.[19]

Innovation must be central to our response to the recession, across the board. Investment in innovation may be in shorter supply but there will be a premium on making more effective and creative use of the resources that are available. Innovation on the job – not in the lab – will become more important.

As David Smith, the chief executive of Jaguar Land Rover, put it:

> *"If we are investing to stimulate the economy, we must focus a good part of that spending on preparing for the future."*[20]

The best way to kick-start the economy is to accelerate investment in measures that promote long-term economic growth and competitiveness. We should use the recession to accelerate the UK's shift to become an innovation-driven, green economy.

That means more than responding to the recession as it unfolds. We need an aggressive, proactive strategy to use the downturn as an opportunity. Motor racing drivers call it attacking the corner. We need to attack the recession.

That is one of the key lessons from past recessions in the UK and elsewhere: crisis can be used as the catalyst for structural innovation. If that opportunity is not taken, the long-term costs are even greater.

The UK: Early 1980s

The recession of the early 1980s in the UK lead to the elimination of the least productive manufacturing firms, a reduction in trade union power, the creation of more flexible markets for labour and capital that in part helped to foster a more entrepreneurial, business-oriented culture, and the privatisation of state-run businesses. This very deep and painful recession, in which unemployment rose to more than three million, paved the way for the productivity gains that propelled the economy to growth in the rest of the decade.[21] The crisis of recession brought about painful structural and cultural changes which in turn delivered a deeper transformation.

But economic restructuring came at a heavy social price, not just in terms of higher unemployment, but the lasting impact on communities that lost the large-scale manufacturing industries they had depended on for their work and focus. The lack of adequate social and public innovation during the recession and in its aftermath amplified the recession's social costs. Many of these communities went into a spiral of economic and social disinvestment from which they are yet to recover. Effective responses to recession require social and public innovation to work in tandem with economic and business innovation.

Japan: After the bubble

After wartime defeat in Japan, with the country devastated and under occupation, a combination of export-led growth, industrial protection, and close co-operation between central government and the major industrial conglomerates – the keiretsu – created an economy that averaged growth in the 1950s of more than 8 per cent per annum, rising to nearly 10 per cent over the following decade.[22]

In the 1980s, however, direct financial factors came to play a much more significant role in the economy. Interest rates were kept low to stimulate domestic demand, in an attempt to redress the appreciation of the yen caused by the 1985 Plaza Accord, intended originally to address the yawning trade imbalance between Japan and the US.[23] Looser monetary policy, however, translated into an asset price bubble. At one point in the late 1980s the ground of the Imperial Palace in the centre of Tokyo was worth more than the whole of California.

When interest rates rose in 1990 the asset bubble collapsed and the banking system was saddled with a mountain of bad debts. By the end of 1990 the stock market had fallen by 40 per cent, and by 1993, economic growth had virtually ground to a halt. The Ministry of Finance set up a system for banks to declare and write off bad debts, but full disclosure of the scale of the crisis took many years. By 1995, overwhelmed by bad debts, regional banks were failing across the country, threatening the entire banking system and pulling down the economy. Interest rates were slashed and government borrowing and spending increased massively: Japan's national debt rose from around 30 per cent of GDP in

19. In 2007, only 4 per cent of total UK private equity by value was invested in early-stage companies. See NESTA (2008) 'Stimulating Venture Capital.' London: NESTA.
20. Smith, D. (2008) 'Keynes Magic Can Work for Sunrise Industries.' Financial Times, 21 November 2008.
21. Geroski, P.A. and Gregg, P. (1997) 'Coping with Recession: UK company performance in adversity.' London: NESTA.
22. United Nations (1968) 'UN Yearbook of National Account Statistics (1968) Vol. II.' Geneva: United Nations. p.101; Johnson, C (1982) 'MITI and the Japanese Miracle: the birth of industrial policy.' Stanford, CA: Stanford University Press.
23. Brenner, R (2002) 'The Boom and the Bubble: the US in the world economy.' London: Verso.

1989 to 144 per cent by 2004, the highest in the developed world at that time.

Despite all these efforts, the economy limped along for the next ten years – 'the lost decade'. One explanation offered by Japanese policymakers is that the need to maintain social cohesion in a highly consensual society limited the pace at which economic restructuring, including bankruptcies, could proceed. Japan kept its social cohesion but at the price of a decade of low growth. Recession and crisis were not the catalyst for fundamental social and economic change.

Finland: Collapse and renewal

Finland entered the worst post-war recession ever experienced by a Western democracy between 1990 and 1993. The collapse of the USSR, Finland's major trading partner, pulled the Finnish economy down with it. Deregulation of financial markets led to interest rate increases, weakening businesses further. Finland's largely primary goods and heavy industry economy was not well-placed to withstand the emerging cost pressures of globalisation.[24] Unemployment topped 20 per cent in 1990, and the state budget deficit grew to around 70 per cent of GDP.[25] Several of Helsinki's top hotels simply shut for lack of custom.

Building on Finland's strong engineering inheritance, the Finnish government developed a new economic strategy, heavily geared towards technological innovation and centred on the growth of the country's telecommunications cluster.[26]

The cross-party Science and Technology Policy Council (STPC), which had been created in the 1960s, and chaired by the Prime Minister, played the leading role in driving through the new strategy. The STPC established a shared vision of the transformation needed, played a co-ordinating role across other bodies in the economy and crucially delivered the high-level political leadership needed to make the new strategy function.[27]

The Council created a vision of Finland as the premier 'knowledge economy'. Rooted in an appreciation of the networked society, and drawing on Finland's existing strengths, this vision created a powerful narrative. Finland's annual productivity growth rate rose by nearly 30 per cent over the decade as Nokia took a leading position in the development of the mobile phone industry. Business and technological innovation was combined with social measures, primarily education and training, to support the transition to a more knowledge-based economy. By 1996 the Finnish economy was as prolific as Silicon Valley in using new technology to drive economic growth, while also being far more socially inclusive.[28]

Finland used recession to accelerate long-term structural change and emerged in a stronger position to exploit long-term trends. The state orchestrated the response of the public and private sectors in a collaborative effort at innovation.

The lessons from UK recession of the early 1980s may not apply today. There are limits to how easily lessons can be transferred from other countries. Yet these three earlier recessions yield two conclusions.

- First, to avoid the long-term social and economic costs of the UK recession of the 1980s we need a total innovation strategy embracing economic, social and public services innovation.

- Second, to avoid a UK version of Japan's 'lost decade' we need to learn from Finland's approach which was concerted, unsentimental, focused on the future – and yet socially cohesive. Finland did not just respond to the economic crisis of the early 1990s; it attacked the crisis to accelerate long-term restructuring.[29]

The UK needs a strategy to attack the recession to spur innovation. That attack will depend on how we mobilise networks.

24. Sheinstock, G. and Hämäläinen, T. (2001) 'Transformation of the Finnish Innovation System: a network approach.' Helsinki: SITRA.
25. OECD (1996) 'Economic Surveys: Finland.' Paris: OECD.
26. Ministry of Trade and Industry (1993) 'National Industrial Strategy for Finland.' Helsinki: Ministry of Trade and Industry Publications.
27. Sheinstock, G. and Hämäläinen, T. (2001) 'Transformation of the Finnish Innovation System: a network approach.' Helsinki: SITRA. p.44.
28. Castells, M. and Himanen, P. (2002) 'The Information Society and The Welfare State: the Finnish model.' Oxford: Oxford University Press.
29. Finland's finance minister recently came top of a Financial Times assessment of the performance of European finance ministries in the face of recession.

Chapter 3: Networked recession, networked response

The UK's 'innovation ecosystem', the set of relationships between the institutions, agents and contexts of innovation, faces the recession with considerable strengths.[30] The science and research base is solid and produces over 13 per cent of scientific papers cited worldwide, on a fraction of global research spending.[31] The service sector, now accounting for over 70 per cent of Gross Value Added, has a strong record of hidden innovation.[32] UK manufacturers are consistently high-performers, with world-leading companies in areas such as pharmaceuticals and aerospace able to consistently innovate throughout their operations.[33] The UK's creative industries make up a greater share of the economy than any other country in the world.[34]

Yet many weaknesses remain. The UK has a 'long tail' of underperforming firms.[35] Management is too often ill-equipped to cope with economic change.[36] Employers report deficiencies in essential skills.[37] Economic growth, and the potential for growth, is unevenly distributed between regions.[38] The transport infrastructure is underdeveloped across too much of the country, damaging productivity.[39]

The lesson of previous recessions is that spending on R&D and innovation is often one of the first investments to be cut. Business expenditure on R&D across the industrialized world was scaled back in the recession of the 1990s, falling as a proportion of GDP from 1990 to 1995.[40]

Strengthening collaboration and networks will be integral to an effective innovation strategy in the downturn. The UK must build on its strengths as a networked economy, using these to pull up weaker areas, firms, communities and people. Policymakers' responses to the recession should focus on working through networks.

With private investment likely to fall, public expenditure on R&D and innovation will become more important. Setting clear priorities for that investment, linked to strategic challenges for UK society such as global warming and ageing, will be critical, as is increasing the efficiency of public investment in innovation. Central to that will be the networks which link users, firms and the knowledge base.

3.1 Firms

The downturn will push firms to adopt more networked approaches to innovation.[41] Most innovation policy, however, still supports a traditional focus on a linear, pipeline model of innovation based on research and development. The recession will accelerate the shift away from pipeline models of innovation towards more open, networked approaches[42] as firms increasingly learn to share resources and collaborate, with universities and consumers as well as other firms, to innovate.

Firms will need to focus ever more tightly on innovation that creates value for customers. That does not necessarily come from new inventions or technology. Henry Chesbrough, in his work on open innovation, has emphasised the importance of business models in creating value from technology. The rise of the pre-paid mobile phone is a case in point, or the emergence of low-cost airlines: both used existing technologies in new business models, ways of making money from technology. The

30. Lord Sainsbury (2007) 'The Race to the Top: a review of government's science and innovation policies.' London: HM Treasury.
31. HM Treasury and DIUS (2007) 'Science and Innovation Investment Framework, 2004-2014: annual report 2007.' London: HM Treasury.
32. NESTA (2006) 'Hidden Innovation.' London: NESTA.
33. NESTA (2008) 'Total Innovation: why harnessing the hidden innovation in high-technology sectors is crucial to retaining the UK's competitive edge.' London: NESTA.
34. Gordon, J. and Beilby-Orrin, H. (2006) 'International measurement of the economic and social importance of culture', Paris: OECD. Available at: http://www.oecd.org/dataoecd/26/51/37257281.pdf
35. Bloom, N. and van Reenan, J. (2006) 'Measuring and explaining management practices across firms and countries.' Centre for Economic Performance discussion paper No.176. London: LSE.
36. Ibid.
37. NESTA (2007) 'Education for Innovation.' London: NESTA.
38. Simmie, J., Carpenter, J., Chadwick, A. and Martin, R. (2008) 'History Matters: path dependence and innovation in British city-regions.' London: NESTA.
39. Brown, H. (2008) 'UK Cities in the Global Economy.' London: Centre for Cities; Sir Rod Eddington (2006) 'The Eddington Transport Study: the case for action.' London: Department for Transport. p.32.
40. OECD figures, cited in Lord Sainsbury (2007) 'The Race to the Top: a review of government's science and innovation policies.' London: HM Treasury. Chart 2.1.
41. This section is based on a draft by Dr Michael Harris.
42. NESTA (2008) 'Total Innovation.' London: NESTA.

downturn will be a test of business models: those that deliver clear value to consumers with less to spend will prove the most successful. The emphasis will be on business innovation, rather than technological innovation. There will be a sharper focus on exploiting technologies and innovations that have already been invented.[43]

Pressure on budgets – customers' and suppliers' – will mean that cost will become the primary driver of innovation. In the long period of global economic growth, cost was just one of the factors that stimulated innovation, alongside performance, quality, durability, and design. Lower cost, disruptive business models, which rely, for example, on supply chain innovation or customer self-service, are likely to prosper. This will create opportunities for firms that can combine existing technologies with new business models to create disruptive low cost products. Disruptive innovations are typically cheaper, easier-to-use versions of, or alternatives to, existing products or services that target 'low-end' or new (previously ignored) customers. They upset, supersede and transform established business models and user expectations, and often come from new entrants rather than incumbents.

New-to-the-world, invention-based innovation is likely to be the first casualty. Corporate R&D budgets will be cut and the development of new products may be put on hold. Yet this is only one source of innovation. Most business innovation, especially in services, emerges from hidden forms of innovation which often turn on creative interaction with customers.

New markets (or market niches) will emerge and be created: low-cost airlines emerged from the recession of the early to mid-1990s. One lesson for policymakers is the importance of open and competitive markets to encourage this kind of disruptive new entry.[44]

The downturn will reward firms who can find more effective ways to innovate that are more agile, incremental, customer-focussed and open.

- Firms will need to harness innovation from many more sources which apply to different aspects of their business. Leading firms – including Rolls-Royce, BT, Toyota and GlaxoSmithKline – are taking a broader approach to innovation. By seeking to integrate innovation in new technologies, products and processes with innovation in business models, organisational forms and market positioning, they create greater profits and protect their market position. This is 'total innovation'.[45]

- There will be pressure to speed development cycles. Agile innovation systems eschew lengthy up-front planning and reward constant feedback, adaptation and learning in action. This approach is already used in software development, web services and in many Japanese and Korean manufacturing firms. Many of the UK's creative industries, such as video games development, are trailblazers in this regard.[46]

- With less investment in big innovation projects there will be a premium on smaller but effective solutions to real-world problems which can have a large cumulative impact on productivity and quality. This will reward firms dedicated to quality that are close to their customers and with strong cultures of learning.

- Firms will need to open up their innovation processes to make them more cost effective. The downturn could stimulate a new wave of networked innovation. This will mean firms establishing new alliances, partnerships and collaborative approaches to shared problem solving. These will cross markets, cross disciplines, sectors and national borders.

- User-led innovation will become even more important to harness user ideas in innovation and to help firms select innovations to meet customer needs.[47] Some of the UK's creative businesses – such as web content and video games – are potential role models.[48]

The downturn will put more pressure on closed and centralised innovation processes. Open and networked innovation strategies will be forced to mature. Facilitating this shift should be one of the chief aims of policy towards corporate innovation.

Sectors and innovation

The strategies that firms adopt will depend on the sectors they operate in. One feature of this recession is the impact of extensive network effects, evident in the food and clothing industries as much as in finance.

In the retail sector, budget retailers such as Lidl and Aldi are growing, while mid-market firms such as M&S are struggling. In the travel sector, many mid-market airlines and travel operators are under severe pressure. Some have already collapsed. Budget airlines such as

43. Harvard academic Andrew Hargadon has referred to this kind of innovation – the recombination and re-use of known practices – as 'recombinant innovation' in his 2003 book 'How Breakthroughs Happen: The Surprising Truth about How Companies Innovate.'
44. Clayton Christensen first coined the term 'disruptive technologies' in his 1997 book 'The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail.'
45. NESTA (2008) 'Total Innovation: why harnessing the hidden innovation in high-technology sectors is crucial to retaining the UK's competitive edge.' London: NESTA.
46. Miles, I. and Green, L. (2008) 'Hidden Innovation in the Creative Industries.' London: NESTA.
47. NESTA (2008) 'The New Inventors: how users are changing the rules of innovation.' London: NESTA.
48. Ibid.

Ryanair and easyJet have had to reduce their expansion plans, but the strongest operators in the low-cost sub-sector are likely to emerge from the downturn stronger – at least in the sense of having fewer rivals. Further, some niche markets, such as travel for the over-50s, may continue to grow.

Business-facing creative sectors such as advertising, architecture and software, will also feel the brunt of the downturn.[49] For commercial broadcasters and publishers (including newspapers and periodicals), the economic conditions are likely to be very difficult, in particular because of the decline in advertising rates. Mass, middle-market media firms are likely to be particularly badly affected, with niche or specialised sub-sectors (for example, some trade publishers) hit less. The prospects for some consumer-facing creative sectors, like film and performing arts, are more uncertain: the negative effects of weaker consumer spending may be offset if households spend more of their money on affordable entertainment forms.[50] In all sectors, lower cost, open source, collaborative models of creative production are likely to continue to grow quickly, at the expense of higher cost, proprietary models.

Many manufacturing sectors will struggle, if the experience of previous recessions holds true. Relatively low-technology manufacturing is likely to fare especially badly; highly internationalised, high-technology manufacturing is far better-positioned. Firms in the latter sectors, such as aerospace, will be able to continue to develop customers in still-growing markets, such as parts of Asia. The downturn will further accelerate the shift of UK manufacturing towards higher value-added, internationally oriented sectors.

The consequences of the downturn are likely to reshape the financial services sector which has been critical to UK economic growth over the past two decades. Even if trust in the financial system recovers, there will be more consolidation and tighter regulation, slowing innovation and growth. This has significant implications for UK growth as a whole, especially given the size and role of financial services in London and the south east. While the City of London will continue as a major financial centre, stability and security are likely to predominate over innovation and expansion.

The sudden decline of this previously leading sector reinforces the need to diversify into alternative sources of prosperity. The opportunity exists to broaden the bases of future UK growth. Green energy, environmental services, biotechnology, services for an ageing society, and creative and cultural industries will all become more important.

3.2 Places

Networks will be central to the capacity of regions to respond to the recession innovatively.[51] Those regions with real and resilient networks, mobilising regional coalitions across the public and private sectors, will do better than those that have 'paper' networks that lack real clout. The breadth of a region's external and international networks will be decisive in determining future economic outcomes.

Over the past ten years, regions and nations have developed strategies to stimulate innovation at the local level by investing in the knowledge base, developing collaborations between the different social and economic actors and across regional and national boundaries. These strategies will now be subject to a severe test.

The recession will challenge local and regional policymakers to develop creative innovation policies in the face of scarcer resources. Most regions have increased their investment in R&D and given more important roles to universities to act as a magnet for talent.[52]

But mobilising and making better use of resources will depend on agile and entrepreneurial networks. Silicon Valley has ridden repeated waves of innovation and crisis because its flexible – but cooperative – industrial structure has allowed continual learning and adaptation. By contrast, Route 128, the high-tech corridor outside Boston struggled during the 1980s because its industrial structure and business networks were focussed on a smaller set of large and relatively inflexible corporations.

The economic crisis will have consequences for all regions in the UK. The recession of the early 1980s had a disproportionate impact on manufacturing areas in Scotland, the North and Midlands, widening the North-South divide.

This recession, driven by the decline of financial services, could have a disproportionate impact on London and the South East, where property prices have been most inflated and

49. Bakhshi, H., McVittie E. and Simmie, J. (2008) 'Creating Innovation: Do the creative industries support innovation in the wider economy?' London: NESTA.
50. UK Film Council (2007) 'A short note on UK cinema admissions during recessions, 1970 to 2007.' Available at: http://tinyurl.com/56rwba
51. This section is based on a draft by Sami Mahroum, NESTA Research Director.
52. Lord Sainsbury (2007) 'The Race to the Top: a review of government's science and innovation policies.' London: HM Treasury. Chapter 7.

Lessons from the US Rustbelt

Twenty years ago the US steel towns of Allentown, Pennsylvania and Youngstown, Ohio went into steep decline. Facing a collapse of its steel-making firms, Allentown has rebounded, reinventing itself by transforming existing companies, building an entrepreneurial sector and attracting inward investment. Youngstown was similar to Allentown in virtually every way: its size, industrial history, the composition of its labour force. Yet instead of adapting in the face of acute economic crisis, it fell into a mean race to the bottom.

The explanation of these two towns' very different experiences lies in their social and business networks. Youngstown's strong business networks, organised around its Garden Club, tended to reward and connect insiders and incumbents. Challenging new thinking from outsiders was hard to come by. Allentown by contrast had much more diverse, dynamic and – crucially – outward-facing business networks that connected the town to new opportunities.

Allentown recovered because its social networks were open to opportunity and collaboration. Youngstown struggled because its social networks were inward-looking and conservative.[53]

around one million London jobs are directly dependent on the sector.[54] But the growth of financial services has affected all regions, and many other cities – Edinburgh, Leeds, Manchester, Newcastle – are liable to suffer adversely. The resilience of their networks will determine the ability of depressed regions to cope with the decline of leading sectors.

Successful regions will combine:

- Strong internal, regional networks that pull together key players to share ideas, resources and maintain strategic investments.

- Outward-looking, international and entrepreneurial networks, to connect to new sources of knowledge and market opportunities.

Regional coalitions

Regions that have successfully implemented innovation strategies tend to have followed a 'regional innovation journey': a way to create major change through a series of small, achievable steps that have a visible and significant impact on the innovative capacity of a region.[55]

The crisis will be a test of these regional coalitions. Only those built on a deep regional knowledge and strong leadership will succeed. The regions that thought through and analysed their real strengths to design place-specific innovation policies are likely to resist better the economic crisis. The crisis will expose the rickety structure of coalitions for innovation established simply in response to central government pressure, or due to circumstances and temporary opportunities.

No UK region has the networked resilience to withstand the crisis alone. Regions will need to collaborate more, drawing on each others' strengths and compensating for their weaknesses.

Outward-looking networks are crucial

Most innovation does not come from a region's ability to create new knowledge. Instead, it arises from a region's ability to access and absorb external knowledge, turning this into new innovations.[56] International flows of knowledge can be tapped into by successful regions, which then 'domesticate' and diffuse this externally-generated knowledge. Cross-border links and alliances help scale knowledge down from the global to the local, where it has a direct impact on the economy.[57] Places, regions and nations able to utilise their international networks for this task will be better-placed to resist a recession.

The extent to which local actors successfully draw on such networks depends on their ability to identify, interact, assimilate and exploit new sources of knowledge – what has been labelled their 'absorptive capacity'.[58] The more connected a place is, the greater its ability to attract global ideas; and the greater its absorptive capacity, the greater its ability to reap the benefits at home.[59]

As NESTA's new research report reveals,[60] London and South East England have developed closer links with cities overseas than

53. Safford, S. (2009) 'Why the Garden Club Couldn't Save Youngstown: the transformation of the rust belt.' Cambridge, MA: Harvard University Press.
54. Poynter, G. (July 2008) 'The 'Credit Crunch' and London's economy.' London: University of East London.
55. Benneworth, P. (2007) 'Regional leadership for innovation.' London: NESTA.
56. NESTA (2008) 'UK global innovation – Engaging with new countries, regions and people.' London: NESTA.
57. Levinson, N. S. and Asahi, M. (1995) Cross-national alliances and interorganizational learning. 'Organizational Dynamics.' Volume 24, Number 2, pp.50-63.
58. Dunning, J. (2000) 'Regions, Globalization, and the Knowledge-Based Economy.' Oxford: Oxford University Press.
59. NESTA (2008) 'UK global innovation – Engaging with new countries, regions and people.' London: NESTA.
60. NESTA (2008) 'Innovation by Adoption: Measuring and mapping absorptive capacity in UK nations and regions.' London: NESTA.

with other UK cities, with more researchers, for example, leading in collaborative global networking – helped by average broadband access speed twice as fast as in some other UK regions.[61] London, Edinburgh, Bristol and, to a lesser extent, Manchester appear as the UK metropolitan areas with the greatest potential to withstand the pressures of the economic crisis.[62]

Collaboration across international borders will help regions find common solutions, but also allow them to draw from a deeper external pool of ideas, absorbing them and turning them into new innovations at the local level.

3.3 People

The UK needs a comprehensive people strategy for the recession with two main aims.[63]

First, we need to limit the long-term economic and social damage caused by a sharp rise in unemployment in the next year. In previous steep recessions a short-term rise in unemployment has left behind lasting costs as people become disconnected from the world of work, trapped in workless households and communities. We need an innovative strategy to prevent that disconnection.

Second, the recession should promote the shift in skills to push the economy towards higher-skilled, higher value-added jobs in growing industries such as environmental technologies and knowledge-based services.

There has already been a dramatic shedding of jobs from the financial sector, and the ripples from that shock are becoming evident across the rest of the UK economy. By September 2008, unemployment had risen to 1.72 million, 5.7 per cent of the workforce.[64] Vacancies dropped by 40,000 over three months[65] and the number of people in employment slumped by 122,000 in the three months to August, the largest drop since the early 1990s.[66] Forecasters only differ in the scale of their predictions for how steeply unemployment will rise.[67]

Time is of the essence. The newly unemployed are not usually a focus of government policy because most will find work quickly. The same is not true in a recession, when whole sectors slump and there is little call for previously valuable skills. Decisive government action now will prevent a temporary slide in employment becoming a permanent slump.

Keeping the low-skilled connected to work
Those hit hardest will be the low-skilled, whose employment is fragile and marginal even in a buoyant economy. Among this group, short spells of unemployment can cause the greatest long-term social damage. The downturn will accelerate the shift away from low-skilled jobs – even if pressure on this end of the labour market is relieved by a dramatic fall in immigration.[68]

The principal danger is that short-term unemployment will turn into long-term economic inactivity. The unemployment rate among the lower-skilled fell from 19 per cent in the early 1980s to about 12 per cent in the late 1990s, while at the same time the inactivity rate among those of working age claiming Invalidity Benefit and its successor Incapacity Benefit rose threefold.[69] Once accepted for Incapacity Benefit, there has been little pressure for claimants to seek work.[70] Many of those who lost their jobs in the 1980s remained unemployed in localities where unemployment has become the way of life of three generations.

The Employment and Support Allowance, launched to replace Incapacity Benefit in October 2008, was designed to get people off benefits and into work – at exactly the moment jobs are disappearing. This is unlikely to be an effective strategy for boosting the economy unless it also includes a serious investment in skills.

Social networks will be a vital part of an effective solution. Job search has always been a matter not just of what, but of whom you know. In a networked world, where Facebook and other social networking sites have become an everyday tool, that concept takes on a new meaning. LinkedIn, the market-leading business-focused social networking site founded in 2002 by serial entrepreneur Reid Hoffman recently secured US$53 million funding and has reported a surge among its 29 million members in updating their career profiles and making themselves 'market ready'.[71]

Jobcentre Plus and BusinessLinks both now facilitate job search through the internet. All vacancies are searchable online at www.direct.gov.uk and business start up information is available through a single portal, www.businesslink.gov.uk.

But making effective use of mass social networking tools and the connectivity the

61. Ibid. Chapter 5.
62. Due to lack of data, less is known about the capacity of individual cities and city-regions. But the data we have suggests these cities are well-positioned. See NESTA, Ibid.
63. This section is based on work by Dr. Theresa Crowley.
64. ONS Labour Force Survey.
65. ONS figures.
66. ONS figures.
67. The CBI's forecasts of 2.12 million by the end of 2009 seems conservative when set against that of Vicky Redwood of Capital Economics' figures of 3 million by the end of the 2010; The Times (2008) 'Unemployment rises at fastest rate in 17 years.' 15 October 2008.
68. The number of Poles and other east Europeans coming to the UK has fallen by 36 per cent since 2007. The Guardian (2008) 'Immigration Falls and Set to Decline Further in Recession.' 20 November 2008.
69. Nickell, S. (2003) 'Poverty and Worklessness in Britain.' Royal Economic Society Presidential Address at the RES Conference at Warwick University. Accessed 17 October 2008 at: http://www.bankofengland.co.uk/publications/speeches/2003/speech195.pdf.
70. Ritchie, J., Ward, K. and Duldig, W. (1993) 'GPs and IVB.' DSS Research Report No.18. London: HMSO; Beatty, C. and Fothergill, S. (1999) 'Incapacity Benefit and Unemployment.' Sheffield: Centre for Regional Economic and Social Research, Sheffield Hallam University.
71. The Economist (2008) 'Facebook for suits.' 25 September 2008.

internet provides will require more creative thinking on the part of policymakers. Public policy should help deliver broadband access among the newly unemployed and the low-skilled, and ensure that they have the skills needed to effectively search for work. Policymakers should work with social networking firms to explore how they might create new forms of online job search and support networks. In the early 1980s this mutual support was provided by Job Clubs which often met face-to-face in Job Centres. This time around we should create much larger, more dispersed online communities of job seekers.

Many techniques used in the private sector could be borrowed by the public sector to bring together job seekers and employers, training providers and would-be trainees, from peer-to-peer networking to speed-dating. Underpinning this is a need for the public sector to provide easy access to the local market intelligence that can help people make informed decisions about where to search.

Social networks could also facilitate business creation among the newly unemployed. Business support services usually only kick in when there is a definite proposal and a business plan. NESTA's work[72] with innovative and talented people demonstrates that a group workshop approach, with a large peer-networking element is a more effective way of facilitating business start-up when developing completely new products and services than more traditional business support approaches.[73] It allows potential entrepreneurs to learn more quickly from one another, accelerating the process of trial-and-error and learning-by-doing that is a vital part of early-stage entrepreneurship. A network of new business creation clubs should be established around the country, explicitly designed to help the newly unemployed help one another create new businesses.

We also need to keep people connected to economic activity when they cannot immediately find a job. A massive programme of green and social volunteering, promoted by social enterprises, could become necessary, in which the newly unemployed could work, while claiming benefits and build up their work credentials. Creating such a programme with social enterprises should be a priority.

Upskilling in the recession

Developed economies with expensive labour like the UK's can only compete by becoming more entrepreneurial and more skilled. The Leitch Review of Skills[74] was only the most recent in a long line of high-profile reports on the UK's skills deficiencies. The recession only threatens to set us back further.[75]

Using the downturn to promote training for those still in employment is one option. Government has pumped £350 million into its 'Train to Gain' programme to fund training for SMEs in skills that can help increase productivity, such as business process improvement, team-working, customer service, risk management, leadership and management.[76] The calls to improve the skills of those still in employment may however fall on deaf ears, unless they are framed in a way that can appeal to beleaguered SMEs. Larger companies should take the opportunity of temporarily lower production to provide training for their own workforces, and pave the way for new working practices and technologies.

Encouraging more young people leaving schools and college to pursue entrepreneurship programmes, rather than enter a depressed jobs market, may be another option. One positive outcome from previous recessions has been the creation, out of necessity, of a more entrepreneurial culture. The crash that followed the dot.com boom of the late 1990s, for example, battle-hardened a lot of online entrepreneurs who subsequently created successful businesses. Short entrepreneurship programmes for young job seekers may better prepare them for economic conditions in which finding a job will be hard.

Some of the newly unemployed with qualifications are already responding by reskilling. There has been a surge of applications to business schools in the UK and worldwide.[77] But those with few skills, and without the cushion of redundancy packages, will need financial help to reskill. Bureaucratic, top-down policies – designating skills shortage areas and specifying eligible training courses – are not the ideal response when people need to find their own niches in local markets. Policymakers should instead emulate the top end of the jobs market, and encourage individuals to identify the training that best meets their needs and the market opportunities available. One of the most effective training programmes in the recession of the early 90s was the provision of Open Learning Credits that encouraged people to use their local knowledge to spot opportunities in the market – covering everything from self-employed

72. See http://www.nesta.org.uk/starter-for-6/
73. See http://www.nesta.org.uk/creative-start-ups-guide/
74. Leitch Review of Skills (2006) 'Prosperity for All in the Global Economy – world class skills. Final report.' London: HM Treasury.
75. Crowley, T. (1998) 'United Kingdom: Encouraging employer investment.' Geneva: ILO. Available at: http://www.ilo.org/public/english/employment/skills/training/publ/uk.htm
76. Department for Innovation, Universities and Skills (2008) 'Denham announces £350m to support small businesses.' 21 October 2008. London: DIUS.
77. BusinessWeek (2008) 'MBA applications surge again.' 27 August 2008.

dog-grooming in Cardiff, to forestry in Fort William.[78] The programme allowed unemployed people to identify certificated training that would provide them with the skills needed to get a job, and for this training to be paid for by a 'credit' while the individual continued to claim benefits. Personal training budgets, linked to agreed personal development plans for the newly unemployed should be rapidly trialled and evaluated.

Rigid tax and benefit rules can inhibit individuals from creating the best mix of work, employment and self-employment, and training to meet their needs. These should be reviewed and, where possible, eliminated or flexibly reformed. As people innovate their way around the downturn, ready ways of making money will abound and so too will the incentive to make small amounts of money, cash in hand. It is essential the benefit system should not penalise people for being entrepreneurial.

The downturn may have hidden benefits in other ways. The reform, restructuring and re-regulation of the financial services industry will restrain its growth. The City of London attracted the lion's share of graduate talent in the UK, including a majority of British science post-graduates. The office blocks of Canary Wharf house mathematicians and physicists as well as traders, drawn not just by the financial rewards on offer but by the challenges of complex problems, a cosmopolitan, meritocratic culture, and state of the art computer systems.

With financial services growing far less strongly over the next few years, some of this high quality scientific talent will find its way into other sectors which offer exciting challenges. Skills shortage areas, such as STEM teaching, are already experiencing the recruitment advantages of the financial sector shake out.[79] London's world-beating cultural offer will remain a significant draw for skilled and talented workers.[80] The British economy will need other dynamic and internationally oriented sectors to emerge, meeting long-term demand. Public policy should play a role in helping the talent displaced from the financial services to develop these new high-growth sectors.

3.4 Public service innovation

The public sector will play a far more important role in the economy and society during a recession. The response to the still unfolding financial crisis – the bail-out and restructuring of many banks, intensive management of credit markets – has underlined the vital importance of the state's reserve powers to stabilise a highly connected, fluid economy.

The state is likely to play an even more important role in regulating the economy, from finance to energy, transport and food. Government will also play the leading role in efforts to soften the blow of recession, by keeping interest rates low and providing fiscal stimulus to offset declines in private sector investment and consumer spending.

Yet analysis of the government's new spending plans by the Institute for Fiscal Studies (IFS) suggests that public spending will be cut by £37 billion, compared with previous expenditure plans to meet the borrowing costs of the stimulus package announced in this year's Pre-Budget Report.[81] This is equivalent to 2.5 per cent of national income.

This sharp reduction in overall expenditure will come just as demands on welfare services will rise. Welfare spending was 35 per cent of all public spending in the recession of the early 1980s, but now stands at about 15 per cent. If welfare spending were to rise and spending on health remain constant, other services would have to be either cut back – or delivered far more effectively. Innovation in public services, delivering the same or better services at a lower cost, will become a necessity. Networks, especially those linking public services to community development and social enterprise, will be vital to this response.

Promoting public service innovation however has proven difficult. Few discrete budgets are earmarked for innovation or new business development. Public services are organised into silos that often do not cooperate. Public servants are often hidebound by regulations that inhibit local initiative, discretion and risk taking. There are few explicit rewards for risk-taking and many obvious downsides to experimentation that goes wrong. Feedback loops between consumers and producers are often elongated and complex, limiting the scope for user-led innovation which plays such a critical role in the private sector.[82] Service innovations often come from frontline workers creatively responding to the needs of consumers. In public services this raises the challenge of motivating often poorly paid and unskilled staff who often complain they have little latitude for discretion. The public sector

78. Crowley, T. (1995) 'Evaluation of the Open Learning Pilot Programme: Summary Report.' Research Series No. 45. London: The Stationery Office.
79. The Guardian (2008) 'Are sacked bankers considering teaching?' 18 September 2008; this article reports the Training and Development Agency's figures of a 34 per cent increase in teacher training enquiries.
80. Freeman, A. (2008) 'London: A cultural audit.' London: GLA Economics. Available at: http://www.london.gov.uk/mayor/economic_unit/docs/wp_22_creative.pdf
81. Financial Times (2008) 'IFS points to risk of public services cuts.' 26 November 2008.
82. NESTA (2008) 'We're all innovators now: how users are changing the rules of innovation.' London: NESTA.

is frustratingly slow to learn from its own innovations.[83]

The government has just launched a concerted attempt to promote public services innovation.[84] The recession may also create the context for attacking many of the obstacles that hold back public services innovation.

Innovation in mainstream services
Mainstream public services – health, education, welfare and social care – will need to innovate to create lower cost ways to deliver personalised, high quality services. With more public spending being diverted to tackle the recession there will be greater pressure on mainstream services. To avoid accusations of 'cuts' to jobs and services the government will have to push even harder for public service innovation to deliver high quality services at significantly lower cost.

Investment in public services innovation should be maintained. Ministers should use the recession to insist on the removal of obstacles to collaboration between departments – for example between social care and long-term health care. The public sector needs to emerge from the recession with simpler, more integrated processes, and better able to pool spending creatively, thus eliminating wasteful duplication.

The recession may create the context for attacking many of the obstacles that hold back public services innovation. NESTA's Public Services Innovation Laboratory is providing a testing ground for ways in which innovation in public services can respond to major social issues. Leading global companies such as Cisco have already set ambitious goals to cut costs by $1 billion through the adoption of new working practices. The government should have similarly ambitious plans.

The role of communities
The government should explicitly license more radical innovation as communities seek to respond to the recession: social innovation zones. Social innovation zones would devolve budgets to localities to devise integrated and creative responses to the downturn bringing together employment, training, education, business creation, social enterprise, culture and community regeneration. One possibility would be to sponsor two-year Local Development Initiatives (LDI) – building on the success of Local Area Agreements – to allow to combine different strands of public spending, married to the activities by community and social enterprises. One route to devise these LDIs would be to launch a series of social innovation camps around the country so that communities can creatively address their local needs in the context of recession.

Speedier learning
We can no longer afford a public sector that does not systematically and quickly learn from its own leading practices: we need a deliberate strategy for cities and regions to learn from one another about how best to combat the recession, connect the unemployed to training and jobs, to create businesses. Spreading this learning fast should be made a priority for bodies such as the Improvement and Development Agency for local government.

These measures – integrating mainstream services, licensing local experimentation and speeding learning – will pay dividends once the recession is over. The aim should be for the public sector to emerge with an improved capacity for innovation. It will not be enough, however, just to improve existing services.

Transformational innovation
Public services face emerging challenges for which traditional service delivery models are poorly equipped, from shifting communities toward a low-carbon economy to preparing for a society with a far higher proportion of older people. Many of these emerging challenges cannot be solved by service solutions however personalised; they require widespread, mass changes in behaviour. A prime example is ageing.

The growth in the elderly population requires changes to public services, for example social care and long-term health care and the provision of pensions. But helping people to live more successful lives in older age means more-than-better public services. Even more important will be the promotion of economic and social development, for example to provide new forms of work and participation, new kinds of social and leisure activities, new kinds of social housing and shared transport.

To tackle these social challenges public services will have to work by changing people's behaviour and building their own capacity to act, mobilising external solutions, rather than trying to deliver a service solution. After a long period in which public service transformation was driven mainly through a mixture of centralised target-setting and private sector competition, the next wave of public service innovation is likely to be more localised and

83. Mulgan, G. (2007) 'Ready or Not? Taking innovation in the public sector seriously.' London: NESTA.
84. NESTA has been charged by DIUS with establishing a Public Services Innovation Laboratory, which will work with appropriate partners to 'trial new methods for uncovering, stimulating, incubating and evaluating the most radical and compelling innovations in public services'. DIUS (2008) 'Innovation Nation.' White Paper. London: DIUS, Chapter 8.

personalised, based on the redistribution of power and control to local communities and individuals to directly commission public services. The next generation of public services are likely to be more distributed and collaborative, to mobilise the contributions of consumers.[85]

Public service responses to the recession, wherever possible should favour localised solutions, which engage communities and social enterprise, with budgets devolved directly to people to commission services, either in communities or as individuals.[86]

Innovation networks in civil society
Much of the public and social innovation we will need will come from communities and social enterprises, which are often quicker to respond to emerging needs, resources and solutions than the public sector. Public service programmes will be far more effective if they work in partnership with civil society, supporting a process in which communities explore ways forward out of the downturn. The state will play a much larger role in the economy in the next two years, but it cannot go it alone.

The danger is that without effective, intensive community based initiatives the UK will lose another swathe of communities that become disinvested economically and socially, increasingly cut off from work and opportunity.

The principle behind the government's response to the recession should be: short-term measures that promote long-term innovation and structural adjustment. Social capital should be a critical component of the overall goal: to make sure the recession does not lead to a further erosion of bonding and bridging social capital.[87]

Geoff Mulgan, the former director of the Prime Minister's Strategy Unit, put the likely effects of the recession on public services innovation this way:

> *"The more profound longer-term effects may be to revive interest in the role of the civil economy and turn away from public services as the main focus for the third sector."*

If the UK emerges from recession with its economy growing again but its social capital further reduced and a reduced capacity for social innovation, then the upturn will come with heavy hidden costs.

85. Leadbeater, C. and Cottam, H. (2007) 'The User-Generated State: public services 2.0.' Available at: http://www.charlesleadbeater.net/archive/public-services-20.aspx
86. Demos (2008) 'Making It Personal.' London: Demos.
87. Puttnam, R.D. (2000) 'Bowling Alone: the collapse and revival of American community.' New York: Schuster and Schuster; Harper, R. (2002) 'Trends in social capital.' London: Cabinet Office; Halpern, D. (April 2002) 'Why does social capital matter?' London: Cabinet Office. Last two available at: http://www.cabinetoffice.gov.uk/strategy/seminars/social_capital.aspx

Chapter 4: Conclusion – Attacking the recession

The UK needs a strategy to attack the recession, not just to respond to it. Short-term measures to stimulate the economy should, wherever possible, promote long-term innovation for sustainable growth.

That will be possible only if the government sets out clear goals so that crisis management can pave the way for restructuring and regeneration.

Recession is a time when hard choices can no longer be put off. We suggest these big themes should frame our response to the recession.

First, we should use the recession to develop new dynamic growth sectors of the economy. Growth in financial services will be more muted. Government should orchestrate public and private investment and entrepreneurship around a limited number of high-growth potential sectors that it expects will help drive the UK out of the downturn, and develop special incentives and support for these sectors, on both the supply and demand sides. Some of these will be existing sectors, but which are potentially well-positioned for future growth – particularly because they are highly globally-networked sectors that could earn significant revenues from foreign markets.

These could include digital industries (such as videogames, digital effects, specialist simulations); knowledge based services; low-carbon technologies and environmental services; the healthcare products and services needed by an ageing society. There is the possibility of achieving a double win – tackling the recession through effective support for high-potential sectors, and using those sectors to meet long-term social challenges. This is not a question so much of 'picking winners' but focusing investment, entrepreneurship and innovation in the areas where public investment will have the biggest potential multiplier effects in terms of economic and social benefits.

High-potential, innovative new firms, established in emerging sectors, can drive economic growth and social transformation for the rest of the economy. NESTA is calling for the establishment of a £1 billion venture capital fund to support early-stage innovative firms that are already suffering from the retreat of private venture capital from the sector.[88]

The UK will need more entrepreneurship in micro businesses to create jobs; in growth sectors and in social enterprises. While better regulation of financial services is essential, over-regulation of the rest of the economy would be a mistake if it diminished entrepreneurship. On the contrary we will be led out of recession by entrepreneurs creating new low-cost business models and finding new markets.

This focus on future growth sectors should be part of a wider national economic strategy, with a strong innovation narrative at its heart. Finland shows how such a strategy can be effective in leading the transformation of an economy through a period of crisis, encompassing business and civil society groups and mobilising resources and initiative on a national scale. The scope of the government's National Economic Council should be broadened to drive forward an economy-wide response to the crisis.

Second, the UK should emerge from recession with everyone better able to make creative use of the communications revolution in business and culture, as well as for learning and public services. Ofcom in its consultation

88. NESTA (2008) 'Stimulating venture capital.' London: NESTA.

on broadband access has already advocated such a policy.[89] Now is the time to take action. Accelerating the connection of the entire country to universal, ultra-fast broadband networks should be a major public works programme for the recession, providing 100Mb or more connection speeds far in excess of the 8Mb common today. This investment, estimated as totalling £15 billion, could be pump-primed by public lending to technology companies. That borrowing could be repaid in later years by a universal broadband levy on the communications and media industries.[90]

Third, we need a human capital strategy for the recession which would encompass: young people staying on at school and college, with a focus on entrepreneurship and business skills; new approaches to use online social networks and clubs to keep people connected to work; a network of peer-to-peer business creation clubs in which micro entrepreneurs help one another to start businesses; shifting the focus of welfare spending from benefits to training and education; creating new volunteering programmes to allow more people to remain connected to work even if they are not employed. We must, at all costs, prevent a short-term rise in unemployment turning into a longer-term social and fiscal burden of incapacity benefit.

Fourth, cities and regions need effective innovation strategies, based on the regional equivalents of the National Economic Council. Regions will need effective cross sector coalitions to mobilise resources and an outward-looking, entrepreneurial culture. These regional strategies should help firms to develop more open and networked approaches to innovation. The recession is a crucial test of the quality of regional and city leadership.

Fifth, social capital should be as important a measure of success as economic growth and productivity. It is vital that the recession does not lead to a further round of economic and social disinvestment in dislocated and disconnected communities where social exclusion and worklessness go hand-in-hand. Social innovation to adapt rapidly to the recession will be vital to this. The UK needs a new wave of community and social entrepreneurs. A concerted strategy to promote social innovation and enterprise in vulnerable communities is essential. The government should adopt a measure of social capital as one of its yardsticks for policymaking. More radical public service innovation to find new more effective models for existing services and to create new generations of services will be vital. Public services innovation will be essential if the public sector is to maintain services while we pay down the borrowing needed to stimulate the economy. The state's response to the recession will be far more effective if it works through networks of social entrepreneurs and local community responses.

If the UK can attack the recession with an aggressive and ambitious approach that strengthens our ability to cope with longer term economic and social challenges then the UK will emerge stronger in the years to come. The recession may prove a critical, creative turning point for the country. If we fail, we will be paying the social and economic costs for many years to come.

4.1 What next?

This is a discussion document to contribute to a wider debate about the way the UK needs to attack the recession with innovation across the board, from social entrepreneurs, to high-growth sectors, to public services.

NESTA plans to develop and back ideas that emerge from this discussion. Most of all it wants to hear from entrepreneurs and innovators from across all sectors and in all parts of the country to contribute to that agenda.

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NESTA Making Innovation Flourish

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