

Innovation Is Necessary, But at Least a Half of Money You Spend on It Is Wasted



Graham Thomas — Senior Lecturer in Innovation Studies, University of East London

What is the history of innovations in the UK?

Obviously the UK was one of the first industrial nations – very strong in manufacturing – and in the XIX century we were called the workshop of the world. Since that time there has been a considerable decline. Some people argue the decline actually started quite early when countries such as the United States began to outperform Britain because of the scale they could offer, while others like Germany developed a strong science-led innovation base. Quite recently we have been witnessing the phenomenon of globalisation with manufacturing in particular moving overseas. Of course this affects not only Britain but all other industrial powers as well; however, Britain was affected perhaps a little bit more because it has not had a coherent national system of innovation. Also, the decline in British manufacturing has been faster than in other comparable countries like France or Germany. Partially it came as a result of politics – the political orientation and ideology of particular governments. I also think some more general cultural factors have played their role. While Britain still has some areas of strength, it has also shown some considerable weaknesses.

When did the decline that you've mentioned start?

The decline in British manufacturing started well before the Conservative government of the 1980s, but some political decisions taken by that government accelerated it. The government at that time was very worried that Britain was not competitive enough, not entrepreneurial enough, and not responsive enough to the changing world economic environment. It also felt that there was too much government intervention. So, the ideology of Margaret Thatcher's government was to get rid of inefficient industries, to open up Britain to investment from other places, and to provide a more friendly environment to business, entrepreneurialism and capitalism in general. Undoubtedly some things did need to be changed, but the ruthlessness of that government and the speed of the changes didn't help, and several industries have been almost done away with without there being enough new industries to take their place. There was an even sharper decline in terms of British ownership of industries. The one

which comes to mind first is the automobile industry where back in the 1960s we used to have a number of major British-owned firms. Now we don't have any significantly large British-owned automobile company. We still have a few niche firms, including those which produce racing cars, but most of the ownership of automobile firms has gone abroad. Nowadays cars produced in this country are owned by companies like Nissan, Toyota, BMW, etc. This was not necessarily seen as something negative by everyone at that time, especially by people in government, and the impact of foreign ownership is still disputed, but it does mean that key investment decisions are taken by people outside the country.

The idea behind the 1980s reforms was that Britain should re-orient itself in a world where there were different economic conditions and cheap labour in other countries. Britain should then become a more educated, more highly skilled economy instead, creating and designing rather than producing, and concentrating more on services.

The government wanted to promote these kinds of skills and entrepreneurship in the country but they did it by decreasing the role of the government and letting market forces have free rein. However in the long run the result was not the one the government was hoping for, though in the short term it didn't look so bad. There was indeed a big change from manufacturing towards service-led industries, in particular financial services which were deregulated in the late 1980s by the Conservative government, although subsequent governments, whether Conservative or Labour, didn't change that policy significantly. Britain's economy did actually grow, and I remember in the early 1990s, when trade unions were bargaining for better conditions and pay for their members they always referred to OECD statistics which claimed that Britain had the fourth strongest economy in the world. That was a dubious statistic though, I think, which didn't reflect real economic strength.

So, the idea at the time was to free industry from the shackles of government intervention and consequently to allow entrepreneurial culture to flourish. The problem is that if it refuses to flourish the "hands-off" government then doesn't have instruments to intervene in order to correct the course of the economy. I think that is to some extent the problem of today.

What are the latest trends in innovation policy in the UK?

There has been a recent change of government and it's perhaps not completely clear yet what the new coalition government's attitude to innovation is going to be. This government is trying to do so many things very quickly. Many of their initiatives have been prompted by financial crisis and the deficit in government spending making it necessary to borrow a huge amount of money, and that is the issue this government is always focusing on. However it is a coalition government, with two parties involved, and at times they argue with each other of course. We haven't quite had a chance to see how it will all settle down in terms of support for innovation.

Overall this Conservative-led government is doing a lot of things that – somewhat surprisingly, perhaps – are broadly in line with what the Conservatives were doing under Margaret

Thatcher in the 1980s. In an attempt to reduce the deficit a lot of government and quasi-government agencies are being reduced in size or shut down. Sometimes this is justified, but sometimes the government makes us worry about what's going to happen. For instance, the Food Standards Agency was set up in the 1990s after the outbreak of mad cow disease. It was set up as an independent regulatory body outside the Ministry of Agriculture, Fisheries and Foods because it was felt that the ministry was struggling with the dual role of promoter and regulator of the industry, so the idea was to separate those functions. Now this government has decided that it's too expensive to have a separate agency and so control will go back to the ministry. We will have to see how it works – I'm not optimistic.

Every organisation, be it part of the government or set up as an independent agency by the government, is currently under scrutiny and either they will find their funding cut or they will be closed down completely. It is not a time when we would expect major government initiatives to support innovation, although a few measures were announced in the recent 2011 budget statement. Mostly these related to support for entrepreneurial activity in general – relaxation of planning controls, creation of enterprise zones and some deregulatory changes – but there were a couple of things explicitly targeted at innovation, e.g. increased tax relief for R&D in small and medium-sized enterprises and greater investment in publicly-funded research centres.

How does legislation regulate the innovation process?

In general terms I see a problem there because the government ideology is still to try to minimize the extent of intervention in the economy. The means by which government typically intervenes are limited to fiscal policy, monetary policy, etc.; there are not really any comprehensive policies to promote innovation. It doesn't mean that there is no policy at all, because there is: we have a department in government called Business, Innovation and Skills which is responsible, amongst other things, for promoting innovation. However in terms of what other countries have done in the past in terms of directing their economies, explicitly promoting

innovation, creating new organisations to bring together government, education and industry, and having explicit policies to promote R&D – we don't have anything very coherent.

There are attempts to improve the situation from time to time. The last Labour government, which ended its term in 2010, produced a major report, a so-called white paper entitled "Innovation Nation" which came out in 2008. The ideas in that paper included the promotion of knowledge transfer partnerships and the creation of an "Innovation Research Centre" in order to bring together all the various actors in innovation system. That government also commissioned a report by one of the leading UK entrepreneurs of the last 30 years, Hermann Hauser. He has been involved in many companies, notably in Acorn which was an important firm during the "microcomputer revolution" in Britain in the 1980s. He produced a report for the previous Labour government which advocated so called Technology and Innovation Centres to bridge the gap between research and the commercialisation of technologies. So, there is clearly some recognition of the need for technical change and innovation. What I would question though is whether any government in the recent past has put effort into this consistently over a period of time. What tends to characterise the previous Labour government as well as others are stops and starts, swift changes of policy. There is a long tradition in British politics of what is called "muddling through", coping with situations and reacting in the very short term to changes in environment and policy, instead of having a consistent long-term direction of policy. I think that's a problem.

Is there an "innovation culture" in the UK?

I think that in our culture there is a general lack of appreciation for technological labour, including engineering, though this is to some extent disguised by an abstract respect for innovation. This cultural problem with science and technology isn't totally new; if you go back to the period of the industrial revolution you will find many novels reflecting an aristocratic disrespect for so called "trade" and industrial occupations. I think that this attitude continued to some extent throughout the XX

INNONEWS

The 10 Most Innovative Companies in Russia According to Fast Company

Fast Company is the world's leading progressive business media brand, with a unique editorial focus on innovation in technology, ethnomics (ethical economics), leadership, and design. Written for, by, and about the most progressive business leaders.

The 10 Most Innovative Companies in Russia according to Fast Company are:

- 1. Yandex – for mastering search*
 - 2. Kaspersky Lab – for turning hackers into an army of virus fighters*
 - 3. ABBYY – for pioneering optical text recognition technology*
 - 4. Rosnano – for establishing a clearinghouse for innovation in nanotechnology*
 - 5. Rosatom – for expanding from nuclear power plants and warheads into medicine*
 - 6. M2M Telematics – for positioning itself to dominate the chip market for Glonass, Russia's answer to the US Global Positioning System*
 - 7. Optogan – for building a full-scale manufacturing facility in St. Petersburg that will be able to produce 360 million of its patented high-brightness light emitting diodes (LEDs) every year*
 - 8. Mikron – for fine-tuning smart cards*
 - 9. NPO Saturn – for advancing military aviation*
 - 10. Lukoil – for investing in R&D*
- www.fastcompany.com

International Forum Transport Infrastructure, Russia 2011

International Forum Transport Infrastructure, Russia 2011 will take place April 21, 2011 at Lotte Hotel, Moscow. This is a specialized Congress and Exhibition for promotion of innovation-based technologies and services for modern transport systems. Forum highlights are:

- Plenary session*
 - The second international conference "Intelligent transport 2011"*
 - Conference "How the Russian regions will benefit from hosting the 2018 World Cup"*
 - Conference "The Railway Transport. Infrastructure Development"*
- www.pibd.ru

century as well and was reinforced by the “deindustrialization” of Britain in the 1980s. And now it is blended with a view, prominent in various media, that the main goal in life is to become famous, to be a celebrity, have your name in the papers and on TV without having to do the hard work that brings you the reward of real achievement. Britain’s cultural problem is reflected in its education system; we have an ongoing crisis in the teaching of mathematics, science and technology. There is a significant shortage of qualified science teachers in schools, and this means that not so many children get enthusiastic about science and engineering. Not many of them take those subjects when they have a choice after reaching the age of 14-16, which is when they start to specialise in our education system, and this aversion to science and engineering is reflected in the number and quality of students seeking places in these subjects at university and further on also in their choices of employment.

Are kids taught entrepreneurial skills?

That’s a good question. I suspect some are, but many are not. I don’t want to say the education system in the UK is dreadful; it isn’t, it’s very good – in parts. And I’m sure some schools will be building in those kinds of skills, or at least they are attempting to create links to local businesses and public sector organizations. However I suspect it is still a relatively minor part of most children’s education.

Are there special classes in the universities for students to learn not only how to create but also how to commercialise?

Again, it depends on the university and on the subjects studied by students. There is certainly a need to connect universities to the outside world as long as it’s done in the right way: universities need to remain places of critical inquiry and not only be the servants of industry. In my own university, for instance, we have a building just across the square called the Knowledge Dock. The “dock” is because it is located in one of the places where ships used to load and unload their cargo. The position of the campus where I work is itself a graphic illustration of the effects of technical and industrial change in Britain – the

London docks used to employ many workers, but the container revolution in shipping both reduced the need for their labour and relocated it to the new container ports outside the city. The Knowledge Dock contains some companies based here – mostly small start-up companies – and the idea is to promote interaction between those companies and researchers within this university to give teaching and research a practical grounding and to provide firms with access to research expertise. So, there is recognition of a need to connect universities with commercial activities, but the question is always whether we do it as well as other countries. And I guess the answer once again is partially “yes” and partially – perhaps a greater part – “no”.

To your mind how important is the role of government compared to that of market forces?

I think they both have a part to play. There is a danger in over-governing when government procedures and processes become entrenched, rigid and inflexible. There is a danger that companies which depend on too much guidance and support from the government may become inefficient and less innovative. But on the other hand market forces alone, I think, are probably not enough. I would say in this country the balance is perhaps too much in favour of market forces.

This “deformation” of the UK, as one of my former teachers put it, can be perhaps mitigated by the fact that we are embedded in the European Union and the EU has its own innovation policy as well as commissioners to oversee it. The EU also tries to bring together universities and research within industries via its Framework Programmes and other measures. Of course the most progressive companies will take advantage of those programmes. But in the UK we have overall a sceptical attitude to the European Union. Although in practice Britain does play a big part in European programmes, the political attitude toward the EU here is that it’s against us, it’s just a big bureaucracy in Brussels trying to defeat the United Kingdom in various ways. Often people don’t see the bigger European picture. I should say I’m personally a big supporter of a European integration and that puts me in a minority in this country.

INNONEWS

Petersburg International Pharmacy Engineering and Biotechnology Forum IPhEB

April 26–28, 2011, supported by St. Petersburg Government, RESTEC® Exhibition Company holds the first International Pharmacy Engineering and Biotechnology Forum IPhEB that is aimed at establishment of a pharmaceutical cluster in St. Petersburg.

The IPhEB Forum is an integral link in the chain aimed at basic solutions, recommendations and measures development to establish a new generation pharmaceutical cluster in special economic zones in St. Petersburg. It is organised to demonstrate the latest achievements in the pharmaceutical industry, innovative medicine, nano- and biotechnology, chemical analysis, instrumentation, metrology, radiology and related sciences.

www.ipheb.ru

12th International Forum “High Technology of XXI” – “High-Tech XXI –2011”

April 18–21, 2011 12th International Forum “High Technology of XXI” – “High-Tech XXI – 2011” will take place at the Central Exhibition Complex “Expocentre” (Expocentre Fairgrounds), Pavilion №7.

“High Technology of XXI – 2011” is the unique exhibition & congress innovative event that promotes facilities of the enterprises in creating and producing high technology production and technology. The Forum is held in compliance with direction No 58-RP by Moscow Government dated January 20, 2010. The Forum has received a wide recognition for eight years of carrying out and is one of the largest forums in Russia.

One of leading directions of a forthcoming Forum are problems of introduction of development of a high-tech complex, “commercialization” of scientific and technical potential, marketing of high-tech production, and also questions of assistance of realization of priority National projects and programs. Diversified character of the exhibition program of the Forum promotes development of the new technologies arising on a joint various scientific branches.

www.engl.vt21.ru

How big is the amount of co-operation between the UK and other member states of the European Union?

To begin with the UK is one of the largest contributors to the European budget. Although we also take money out for regional and social initiatives we still are a net payer toward the EU. The UK has influence within a large number of European programmes, but Britain is not a part of the European monetary union and there is still a “small island” mentality that is sceptical about the need for further European integration. Sometimes there is a justified worry about losing too much sovereignty to a larger block which may not be inclined to go in the direction your country would want to. But other countries have managed to work within a European framework and still retain both their independence and their unique cultures, so I don’t see any reason why the UK cannot go the same way as well.

What then would help to develop the innovation system in Britain?

The most important thing would be to have a coherent, long-term policy: this would include a closer collaboration between government, industry and academia, more money to support innovation in terms of creating centres that could help transfer knowledge, and some selective direct support for research and development. There are already agencies that do support R&D; for instance in the academic world we have the Research Councils. In my area it is the Economic and Social Research Council, while other councils are responsible for physics, biology, medicine, engineering, etc. In Research Council programmes there is a lot of focus on the impact of research, on connecting with research users and on the usefulness of research in terms of aiding the economy. Of course a lot of that is phrased in terms of helping innovation. But overall, according to recent data, the UK is no better than the European average for funding research and development, and this level of funding is lower than that in the United States or Japan.

Support for innovation is a little bit like what people say about advertising: you know it’s necessary, you know it’s useful, but at least 50 per cent of money you spend on it is wasted. And the problem is that you cannot know in advance which 50 per cent will be wasted. The point about innovation is that it is uncertain. In any individual case no one can guarantee success even if apparently all conditions for success seem to be satisfied. Even if you have good connections between business and universities, if you have firms open to external influences and if they collaborate with other firms where it’s in their interests, even if firms practice open innovation and have a large “absorptive capacity” in terms of acquiring knowledge, and know what to do with that knowledge when they get it – even then a lot of innovation projects fail. So, as a government all you can do is to try to work out how much money you can afford and how many initiatives you want to start, and then have some faith that in the medium or long term your policies are going to be a success.

The problem for any government is that by definition they are elected for a relatively short period of office; they don’t know whether they are going to remain in power ten years down the line and benefit from any good policies they put into being. And of course in the present conditions, with a real problem of having to reduce the deficit in our country’s finances, I suspect any government would be averse to risk and therefore would not be eager to put too much money into initiatives that may or may not work. There is a mismatch

between the horizons of a party in power and the horizons necessary for a better innovation policy.

Which were the areas where the results of innovation have been most impressive in the UK?

We have a few sectors where we are still quite strong. The one which immediately comes to mind would be pharmaceuticals – we have a couple of world class companies there. We have one success in microelectronics too, a company called ARM, Advanced RISC Machines, which some time ago was spun off from Acorn Computers. This was the development of a microcomputer revolution. The UK made quite a few interesting and innovative microcomputers back in the early 1980s, and most of them later were closed down after larger companies began to control the market, but Acorn diversified into chip design, and ARM chip designs are used in most mobile phones throughout the world today. That’s a success. Financial services are also considered UK strength – though this is a mixed blessing in these times. I guess telecoms can still be considered a success to some extent, though not so much in manufacturing; BT still has a large R&D capacity, although their big Martlesham Heath research centre has been downsized in recent decades. In the defence sector, I think, there is still quite a big capacity, though not in every area of defence, and perhaps some of that spills over to things like civilian aerospace – Britain is a partner in the Airbus, some parts of these planes are being made here; the Airbus sites at Filton, near Bristol, and Broughton, North Wales, are part of the Centre of Excellence working together with Airbus sites in Bremen, Germany and in Toulouse.

A niche area where we have some expertise is in space science, for instance in the design of satellites – partly through collaboration with Europe via the European Space Agency. And also there are a few other interesting areas: for instance James Dyson produced an innovative bagless vacuum cleaner some years ago, and his firm has on to produce other successful things such as hand-dryers. He employs a good number of designers and engineers in the UK, but sadly he has moved his manufacturing plant to Malaysia. He is a strong advocate of manufacturing culture, government support for R&D and scientific education.

What is your forecast of the development of an innovation system in Britain?

I think we’ll carry on muddling through. Some sectors will develop, both in Britain and elsewhere: there are clearly some interesting things going on in nanotechnology, for instance. I believe that this century will be the age of biotechnology: all the things that will follow from breakthroughs such as the cracking of the code of the human genome. Innovation studies researchers sometimes talk about “long waves” in the world economy. One of the most important recent waves has been based on information technology; my bet for the next wave is, as I said, biotechnology. Also, there is clearly a lot of scope for low-carbon and other “green” technologies that might lead to a more sustainable mode of development, although I am not convinced that Britain will become a leader in this field.