Can Europe innovate its way out of the recession?

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This Viewpoint discusses how European policy could enable innovation to lead us out of the economic crisis. It begins with the lessons to be learnt from the history of the relationship between innovation and economic growth, moving on to suggest that today's crisis may be as much to do with the maturation of key technologies as it has to do with unconstrained financial engineering. Georghiou then suggests a broad European policy response that emphasises the value of stimulating socially led innovation. He warns that a lack of risk capital could leave Europe trapped in a vicious circle in which worthwhile innovations which could also stimulate further innovation go unfunded. Georghiou concludes by arguing that Europe needs to increase both the supply of, and demand for innovative products and services to overcome the current crisis and prime the economy for another cycle of growth.

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We have moved from a long period of consumer-driven innovation to an era in which innovation is likely to be most strongly driven by social issues. There is a sense that the consumer debt and fear currently depressing global markets are accompanied by a subtle shift in values and behaviour away from consumption for its own sake.

Do the causes and the effects of the present crisis also contain clues about how we might find a way out of it? There are lessons to be learned from both history and foresight. Europe can find a positive route out of the economic crisis if it builds on its successful history in bringing innovative public goods and services to its population. Achieving this means large-scale partnerships between government, business and society focused upon the grand challenges that face us – climate change; energy and food security; meeting the needs of an ageing society. These sources of societal demand need to be matched with coordinated action to accelerate the supply of new technologies and innovations.

The lessons of history

As the economic crisis unfolds, the debate between those who advocate large fiscal and monetary stimuli and those who favour caution is mirrored in arguments about history. Some see the Keynesian legacy and Roosevelt's New Deal as the lesson to be learnt, while others argue that the real stimulus that ended the depression of the 1930s was provided by rearmament and World War II. Is there another explanation? Each major economic downturn in the past century has brought a rekindling of interest in the phenomenon of 'long waves', or business cycles.

It is possible to associate each wave of economic activity with a group of innovations

Although the observation of long waves began in the 19th century, Kondratiev Cycles were named after a Russian academic who, in 1925, proposed that a range of economic indicators moved in 50-year cycles. The theory was strengthened when the Austrian economist Joseph Schumpeter associated these cycles with groups of innovations that drove rapid growth until their innovative potential and entrepreneurial drive was exhausted. An examination of the evidence didn't find causal links between Kondratiev Cycles and innovation, but it is possible to associate each wave of economic activity with a group of innovations. Thus the 1870s saw the start of the rise of water power, textiles and iron; the 1840s steam, rail and steel; 1900, electricity, chemicals and the internal combustion engine; and 1950 petrochemicals, electronics and aviation. Few of these are now unimportant, but their pivotal position in advanced economies has declined since their emergence.

So what significance do these disruptive shifts in the industrial and technological base have for the current crisis? Most significantly, 1990 saw the start of an innovation cycle based on software, digital networks and consumer electronics. The rise of Microsoft and Google and the strong performance of firms such as Nokia and Philips in Europe were at the heart of what was once called the New Economy. These technologies, when combined with deregulation, enabled the transformation of the service sector. Despite the damage done by excessive "innovation" in financial products, few, for example, would wish to return to the age of paper-based trading.

The end of a cycle?

Could the slowdown of this current wave be an underlying feature of our crisis? Certainly these technologies have more to offer, but they will soon retreat from the leading edge as economic drivers. What will replace them? One answer comes from looking for basic technologies which have the same pervasive quality as microelectronics and software. Many countries have already placed bets on biotechnology and nanotechnology as future pervasive technologies.

There is often a long gap between the discovery of such technologies and their rise to economic significance. Steam engines, electric motors, cameras, lasers and computers all took decades to become economically important. The reason for this gap usually lies in the interaction of supply and demand. A long but gradual sequence of improvements first creates, then increases, the competitive advantage of a technology over the established offerings. Adaptations to new niches increase the market potential: mobile communication, for example, was initially only affordable by the military, before technical improvements and price reductions made it available to civilians. Sometimes the delay is because an innovation needs an accompanying infrastructure before its value can be fully realised (mobile communications needs cell towers, hydrogen-fuelled cars need a network of refuelling stations). Sometimes there aren't enough suitably trained people to take things forward.

Policy responses

What does this mean for current innovation policies? When confidence is low and resources scarce, where is the drive for socially driven innovations to come from? Europe's leaders need to realise that it is their responsibility to initiate large-scale and coordinated responses to our Grand Challenges. Business will also take a key role in bringing the resultant innovations into widespread use, so partnership is fundamental. The public will form the third leg of such a partnership, giving permission for such policies and consuming the results.

Public service innovation is notoriously difficult, in part because governments dislike risk. Citizens often fail to perceive the benefits of such innovations. Rather than struggle with unsatisfactory attempts to improve public acceptance of innovations (such as genetically modified foodstuffs), the public or their representatives need to be part of the process. Put shortly, what Europe needs is to develop a culture that celebrates innovation in general and socially driven innovation in particular.

Europe needs to develop a culture that celebrates innovation

One example of the type of project that could drive a new business cycle is the transition to renewable energies. All of the elements are here. Europe is a lead market for wind energy and some conservation technologies. Another example is Europe's large and well-organised health sector, which provides a different set of opportunities.

A vicious circle

However, the present economic situation may mean we face a vicious circle, in which young companies with high growth potential are severely constrained by a shortage of credit and fearful investors. Venture-capital firms are struggling to attract funds. Entrepreneurs who rely on these funds are finding themselves with their backs to the wall, even when their businesses have excellent prospects. While this part of the private equity sector is considered to be high risk, competent investors know how to manage that risk. Careful support is needed from governments, in the form of additional backing for earlier stage funds, applied in such a way as to avoid driving out the sectoral and risk-management expertise of the private sector.

Important as the supply side is, the most important actions governments can take are on the neglected demand side. Governments have powerful tools at their disposal. Public procurement can be used to help bring innovations to market, if governments will only relax their attitude to risk and strengthen their enthusiasm for innovation. They can do this by specifying the performance they want from a product or service, rather than buying off-the-shelf options. Regulations and standards can also help, especially to drive the introduction of green technologies. This governmental 'pull' will be far more powerful if public authorities with similar needs across Europe can combine their requirements to provide really big orders, although these orders should be broken down into components of a size that gives innovative small firms the chance to bid for them. For young companies, a commercial order is worth far more than any government grant as it gives it the credibility to serve future customers.

By creating lead markets in Europe for these socially driven innovations, governments can start the transition to a new economic cycle and equip Europe's businesses to move on to global market success. Waiting for consumer demand to recover is not a viable answer. Adapting the words of the great economist Alfred Marshall, we must use both blades of the scissors of supply and demand to cut through the problems we face.

The actions needed are an extension of the core business of the European Union - creating a single market – with the added requirement that it is a market friendly to innovation. The new wave of innovations that could result does not offer a shortcut out of the crisis, but history suggests it is the only path that leads to future prosperity.

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Links

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eIQ Action Points – Social innovation as a response to the current economic crisis

- Prepare your business for a move from consumer-driven innovation to socially driven innovation
- Consider the lessons of history: are the technologies that underpin your business still at the cutting edge of economic growth? If not, consider finding new drivers – but expect it to take a long time before they have a large economic impact
- Check that the enablers of a new technology, such as markets, infrastructure and the people to manipulate it, are being developed in step with the technology
- Expect partnerships between business, government and consumer to become more important
- Do what you can to help develop a culture that celebrates social innovation, by including end users and the public in the innovation process
- Support policies that bridge the current funding gap for innovative young companies without driving out private-sector funding and expertise
- Press governments to use procurement and regulation to create demand for social innovation