PLAN i

INNOVATION FOR EUROPE

DELIVERING INNOVATION-LED DIGITALLY-POWERED GROWTH

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think tank for the 21st century

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EXECUTIVE SUMMARY

Innovation is by far the most important driver of growth and productivity.[1] As much as 85% of productivity growth in modern, developed economies is the direct result of innovation.[2]

If Europe's burgeoning economic recovery is to be sustainable, innovation must be at its heart. We should aspire to make Europe the best place in the world to innovate, the place where entrepreneurs, visionaries and optimists tackle the challenges of the future.

That's easy to say, but it involves some hard choices that will be even more difficult to make during a time of budget consolidation: choosing to prioritise investment in future products and services over consumption today; choosing to give greater voice and weight to newcomers over incumbents. Some of what needs to be done will involve building on what has gone before, not least the Europe 2020 targets and the European Union's Framework Programmes for Research and Technological Development (now renamed Horizon 2020). But it will also necessitate a new attitude to innovation, and new approaches to making it flourish.

It will require policymakers and agencies to embrace a broader vision of innovation: one that is not only based on expanding research and development (R&D) and patents, but also recognises the role of dynamic high-growth businesses, the importance of "hidden" innovation – including innovation in services and social innovation – as well as the power of the new digital technologies that are transforming the world.

This will involve cooperation among policymakers. The innovation programme that Europe needs will include not just effective research funding, but a renewed focus on the single market, the right investment in infrastructure, good education policy, and a commitment to innovation in public services.

This is not a challenge we can afford to defer to better economic times. Important decisions must be made in the coming years on major European Union (EU) programmes, including Horizon 2020 and the next phase of European Regional Development Funds and European Social Fund programmes. Failure to address the issue of innovation and productivity could cause the fragile recovery to falter.

Europe has great strengths, and both businesses and places that lead the world as innovative powerhouses. It also has the advantages of stable institutions and half a billion consumers in a single market. But Europe as a whole invests less in R&D and other forms of innovation than the United States and has fewer high-growth firms; nor do we enjoy the meteoric economic growth rates of China.

On the following pages we present an innovation plan for Europe, a policy blueprint that holds the prospect of not only reinvigorating the economy but also giving a new vision to the European integration process. After years of stagnation and gloom, we need optimism and confidence that the challenges we face can indeed be surmounted.

Innovation only flourishes when businesses, governments and citizens are prepared to take risks, to think big and to invest in the future. The temptation to hunker down and focus on weathering the storm is an understandable one, but it is misguided. We now need leaders with the courage to take the long view – but we also need better ways to involve Europe's people in the task of shaping the future. ●

1 This study is a follow-up project for *Plan I: The Case for Innovation-Led Growth,* published in 2012 by Nesta to provide a blueprint for a comprehensive innovation plan for the United Kingdom. See Nesta, *Plan I: The Case for Innovation-Led Growth* (London: Nesta, 2012).

2 See Robert M. Solow, "Technical Change and the Aggregate Production Function," *The Review of Economics and Statistics, Vol. 39, No. 3*, August 1957, and Milton Abramovitz, "Resource and Output Trends in the United States Since 1870," *National Bureau of Economic Research, Inc., Nos. 56-1*, September 1956.

SEVEN KEY RECOMMENDATIONS

	Recommendation	Principle
1	**Create a single market where digital businesses and technology-savvy entrepreneurs can thrive**	Digital technologies are changing the world. The EU needs a single market for businesses at the forefront of this revolution
2	**Make public innovation funding bold, experimental and open to all**	Public investments are essential to innovation and technology. Europe should think big. It should also open its funding to new, smaller entities
3	**Invest in the infrastructure of the 21st century**	EU infrastructure funding should focus on what will make the new economy function: superfast broadband and smart grids, world-leading technological standards and smart cities
4	**Educate a technology-savvy workforce**	To make the most of digital technologies, Europe needs a technologically-skilled workforce. Europe should make the most of practical learning and technologies like Massive Open Online Courses (MOOCs) to make this a reality
5	**Embrace social innovation**	Innovation can also address major social challenges and improve public services
6	**Make innovation open to EU citizens and the world**	Innovation flourishes when it is open. Europe must involve its citizens in innovation, and improve links with emerging innovation superpowers
7	**Reform European institutions so they better support innovation**	Innovation policy yields better results when there is high-level ownership, as well as alignment and cross-fertilisation between institutions, departments and stakeholders

Specific actions

a) Harmonise regulations to create a truly single market for services, especially digital ones
b) Create a new, low-regulation corporate structure for EU digital businesses

a) Experiment and embrace new funding methods for Horizon 2020, such as challenge prizes and systemic innovation
b) Back small innovative firms, using the model of the United States Small Business Innovation Research programme
c) Simplify processes to encourage more smaller firms to participate

a) Rebalance infrastructure investment from transport to broadband and energy grids, using the European Investment Fund, the European Investment Bank and European Regional Development Funds and taking advantage of new community-led models
b) Make monitoring of 21st century infrastructure investment plans part of the EU's surveillance powers
c) Develop technological standards that influence the world
d) Introduce a European City of the Future designation

a) Make use of technological innovation to develop and spread EU-based training opportunities, guided by evidence of what really works
b) Drive "digital making" through a Europe-wide initiative to improve practical skills

a) Direct 15% of European Social Fund funding to social innovators
b) Make European Commission data an exemplar of openness
c) Increase opportunities for public service innovation through contestability, accelerators and startup investment

a) Target small- and medium-sized enterprises in a European drive towards internationalisation
b) Make internationalisation a central aspect of Horizon 2020
c) Build a public movement for innovation through practical opportunities to take part – from schools and cities to businesses

a) Underpin policy with a cross-directorate focus on innovation, led by the European Commission president
b) Re-think Council of the European Union formations and interest group representation
c) Harness big data to better understand Europe's innovation performance
d) Set targets for hidden innovation as well as research and development

WHY EUROPE NEEDS INNOVATION NOW

Europe is preparing itself for a long, difficult recovery. The eurozone only emerged from recession in August of 2013. But growth is slow, and fears abound. Will there be a repeat of the Cyprus banking crisis of spring 2013? Will Greece, Italy, Spain and Portugal share in the recovery? And if not, what imbalances will result? With these challenges ahead, it's no wonder that for many policymakers, the watchwords are prudence, caution and lowered expectations.

But this attitude is a profound mistake. The most important question for European policymakers in the coming year is not a matter of short-term fire fighting. It is the deeper issue of how to make growth and innovation flourish in Europe, not just this year but through the next decade and beyond.

The link between innovation and growth is strong and well evidenced. Decades of macroeconomic research show that innovation contributes between two-thirds and four-fifths of economic growth in developed countries and in Europe, it accounted for 62% of all economic growth between 1995 and 2007 (See chart 2 on page 9 for more). It is also the engine of competitiveness and productivity. If growth is what we want, then we need to make Europe a place where innovation can flourish.

Innovation offers not just growth, but good growth. Only by innovating throughout the economy – in transport, retail and agriculture as much as in manufacturing and telecoms – can we hope to generate well-paying jobs to employ the next generation of Europeans. Without innovation, we will be unable to address the societal problems that go alongside growth, such as climate change. Innovation provides us with the best hope we have of fair, sustainable growth.

Cynics might say that thinking about issues like innovation and long-term growth is a luxury at a time like this, a second-order matter than can wait its turn. But nothing could be further from the truth. There are four important reasons we need the right policies to foster innovation now.

First of all, important decisions are being made that will affect innovation in the coming decade. Over the course of 2013 and 2014, we will see the allocation of European structural funds for the next seven years, and the detailed design of the Horizon 2020 research and innovation programme. All told, the next multiannual financial framework, covering the 2014 to 2020 period, amounts to almost €960 billion – a significant sum if spent wisely and to maximum impact.

Second, as the saying goes, one should never let a good crisis go to waste. Some of the changes needed to make innovation flourish may be controversial and will shake up vested interests. Far better to do this when there is widespread acknowledgement that economic reform is necessary than to try to build a case for reform in better, more comfortable times.

Third, the long and the short term are not as separate as innovation sceptics might believe. Some of the most fundamental problems afflicting the European economy are the result of long-standing productivity gaps, especially between northern and southern eurozone members. If we do not address productivity and its main driver, innovation, the recovery may be unsustainable.

The fourth and final reason may be the most important one. A growing number of technologists and economists, including Google's Ray Kurzweil and Erik Brynjolfsson of the Massachusetts Institute of Technology, have speculated that we are approaching a tipping point in the development of digital technologies.[3] The on-going progress of Moore's Law and the connectivity enabled by the

3 See, for example, Ray Kurzweil, *How to Create a Mind: The Secret of Human Thought Revealed* (London: Duckworth, 2013) and Erik Brynjolfsson and Adam Saunders, *Wired for Innovation: How Information Technology is Reshaping the Economy* (Cambridge: MIT, 2013).

‘More joined-up thinking is necessary, as well as a willingness to apply the power of disparate directorates-general to the mission of supercharging innovation.’

Internet is creating unusually useful technologies, from self-driving cars to reliable machine translation.

This is borne out to some extent by economic data. Digital technologies accounted for more than 21% of gross domestic product growth in the world’s most advanced economies in the past five years.[4] Europe’s digital economy is expected to grow seven times faster than overall EU GDP in coming years.[5] The Boston Consulting Group estimates that the digital economy will contribute a total of $4.2 trillion to the G20’s total GDP by 2016, which means that if the Internet were a national economy, it would rank in the world’s top five, behind only the US, China, Japan and India – and ahead of Germany.

But if Prof Brynjolfsson is right, we might expect to see the effects of digital technologies spread much more widely in coming years. Europe has had a good number of digital successes – including Skype, Spotify and SAP – but in the future, the impact of digital technology will be felt beyond the tech sector in fields like transport (with the rise of self-driving cars), education (with the emergence of flipped teaching and Massive Open Online Courses – MOOCs) and professional services (with machines taking the roles of accountants, lawyers and even, in the case of IBM’s Watson, doctors).

In other words, the coming years will be an unusually important time for nations to invest in innovation.

However, Europe needs not only urgent action on innovation, but also new thinking. European innovation policy in the past has been dominated by a focus on research and development (R&D), and an assumption that innovation is about science and technology. The Lisbon Agenda target (now recast in the Europe 2020 programme) to raise European levels of R&D investment to 3% of GDP is perhaps the clearest example of the centralisation of this key policy area. R&D, science and technology are all important, and European governments and businesses would do well to increase investment in these areas, but they are not the be-all-and-end-all of innovation. One study showed that for every euro businesses invested in R&D, they spent eight on other types of innovation investment, from design to market research. Encouraging this wider sort of innovation requires business dynamism, experimentation and a strong dose of can-do spirit from the education system, businesses and governments.

The overemphasis on R&D has been exacerbated by the siloed structure of the European Commission, in which research is overseen separately from the digital agenda, both of which in turn are managed elsewhere than business policy, the single market and other important issues. More joined-up thinking is necessary, as well as a willingness to apply the power of disparate directorates-general to the mission of supercharging innovation.

A renewed focus on innovation gives Europe an opportunity to learn from the new ways of encouraging innovation that have been emerging around the world. Challenge prizes, which played an important role in innovation in centuries past are once again being used to solve problems big and small, from private space flight to diabetes care to the maintenance of long-distance gas pipelines. More broadly, the Internet explosion has expanded the ways in which people can come together to innovate. European policy needs to draw on this collective intelligence.

This report will look at the case for innovation to drive economic growth, and will highlight seven key decisions that need to be taken to make innovation flourish in the EU. ●

4 Matthieu Pélissié du Rausas et al., *Internet Matters: The Net’s Sweeping Impact on Growth, Jobs, and Prosperity* (San Francisco, McKinsey Global Institute, 2011).

5 European Commission, *Copyright: Commission Urges Industry to Deliver Innovative Solutions for Greater Access to Online Content*, IP/12/1394 (Brussels: European Commission, 2012).

INNOVATION IS MORE THAN JUST INVENTION

Ask a person in the street to name an "innovation" and it is likely they will name a technological gadget – such as an iPhone. Policymakers in Brussels and elsewhere often jump to the same conclusion, and see innovation as mainly a matter of research.

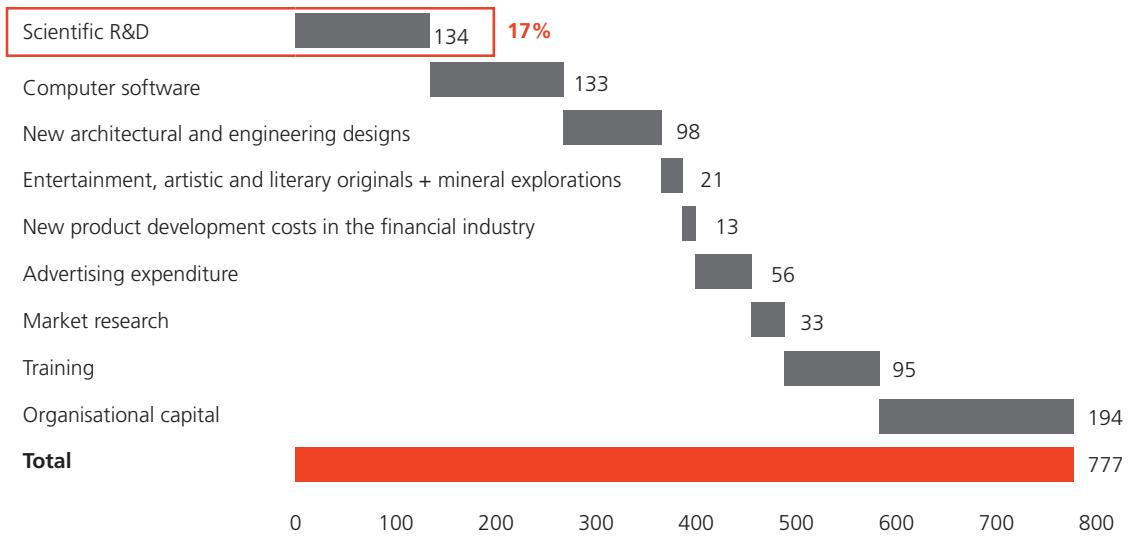
But innovation is about much more than iPhones.

Science and technology are essential factors in an innovative economy. But inventing new technologies does not drive growth on its own. To be useful, R&D needs to go hand-in-hand with smart product design, new skills, effective market insight, good management and entrepreneurial drive at the micro-level – including excellent framework conditions and dynamic, well-functioning markets at the macro-level. Indeed, the iPhone itself is successful not because of its technological novelty (every technology in it had been developed and deployed by someone else before) but because of the way these technologies were integrated, designed and sold, the services that sit alongside them such as the App Store, and the deals Apple struck with telecoms providers and retailers. And, while Apple has its company headquarters in Silicon Valley, arguably the most dynamic and innovative business environment in the world, it has relentlessly pursued an aggressive internationalisation strategy, both for production and sales.

What's more, if innovation is to generate widely distributed economic growth and large numbers of jobs, it is essential that it spreads widely across the economy. We need innovation in sectors like retail, transportation, social care and agriculture that account for large numbers of jobs, as well as in the more obvious technological fields of software development and high-tech manufacturing.

If we look at the investments that businesses in developed countries (in this example in the UK, although similar patterns can be observed elsewhere) make to put new ideas into practice, scientific R&D represents only 17% on average (see chart 1 below). If policymakers focus only on R&D investment, they will overlook most of what businesses do when they innovate.

CHART 1 INVESTMENT IN INNOVATION BY EUROPEAN FIRMS IN BILLIONS OF EUROS (2010)

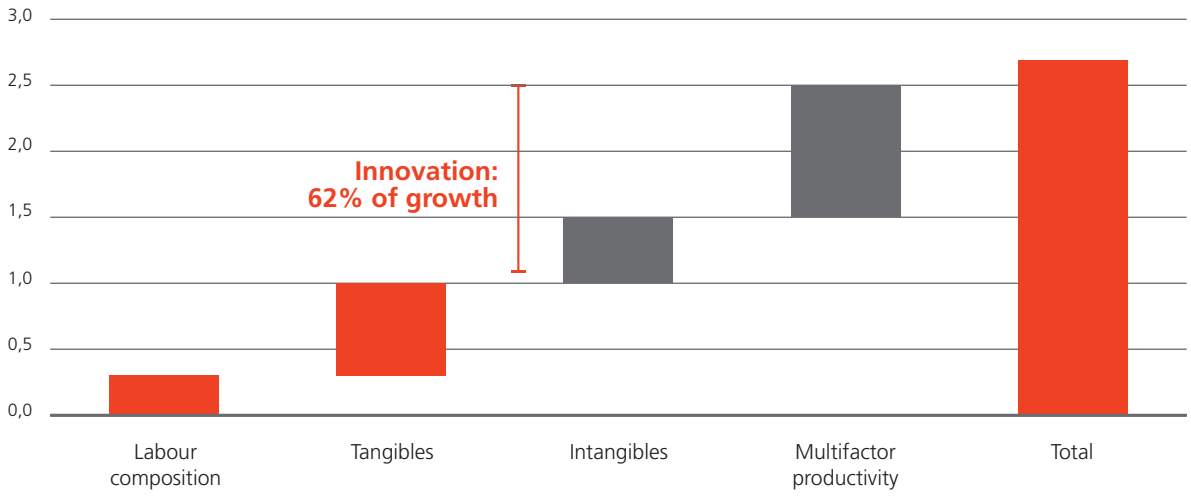


Source: INTAN-Invest

‘Good public funding is experimental and learns from its mistakes.’

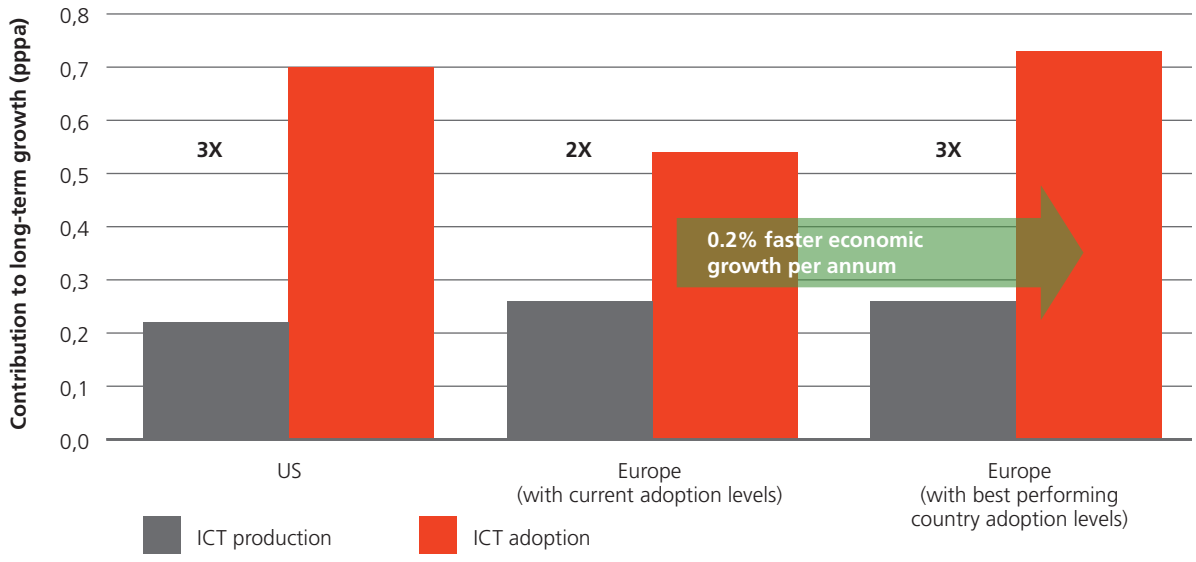
In many parts of the economy, innovation does not involve R&D at all. Retailers, financial services firms, oil and gas companies and creative businesses are often highly innovative, but their innovations generally take the form of new products or offerings rather than patentable discoveries. Neglecting these sectors would be a serious mistake, not least because they are major employers.

CHART 2 MAKE-UP OF EUROPEAN ECONOMIC GROWTH - PERCENTAGE PER ANNUM (1995-2007)



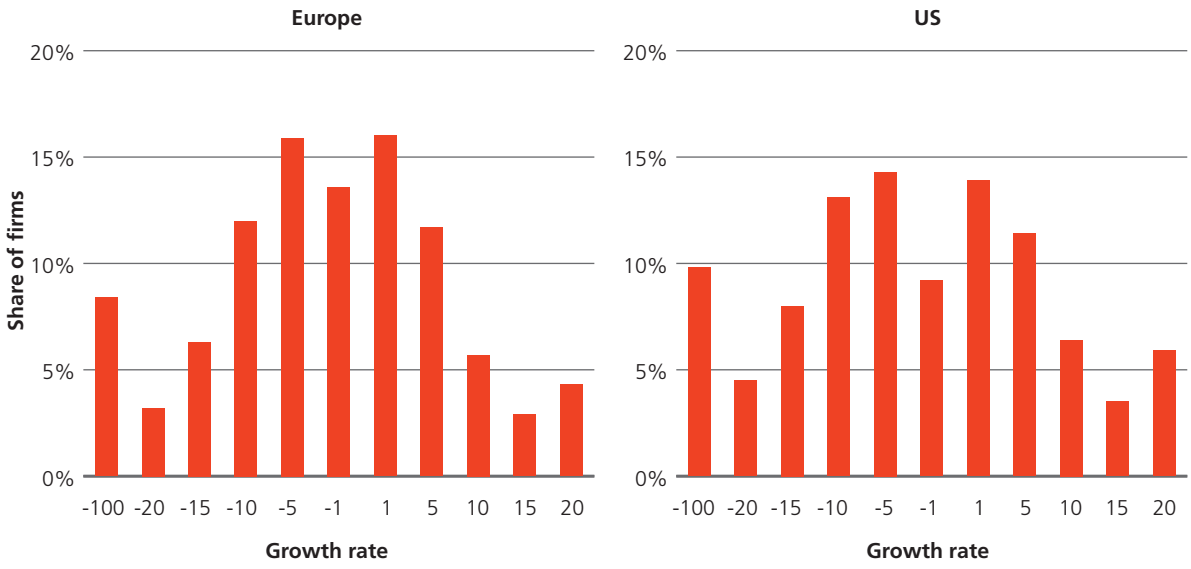
Source: INTAN-Invest

CHART 3 THE IMPACT OF ICT ON LONG RUN GROWTH: PRODUCTION VS. ADOPTION



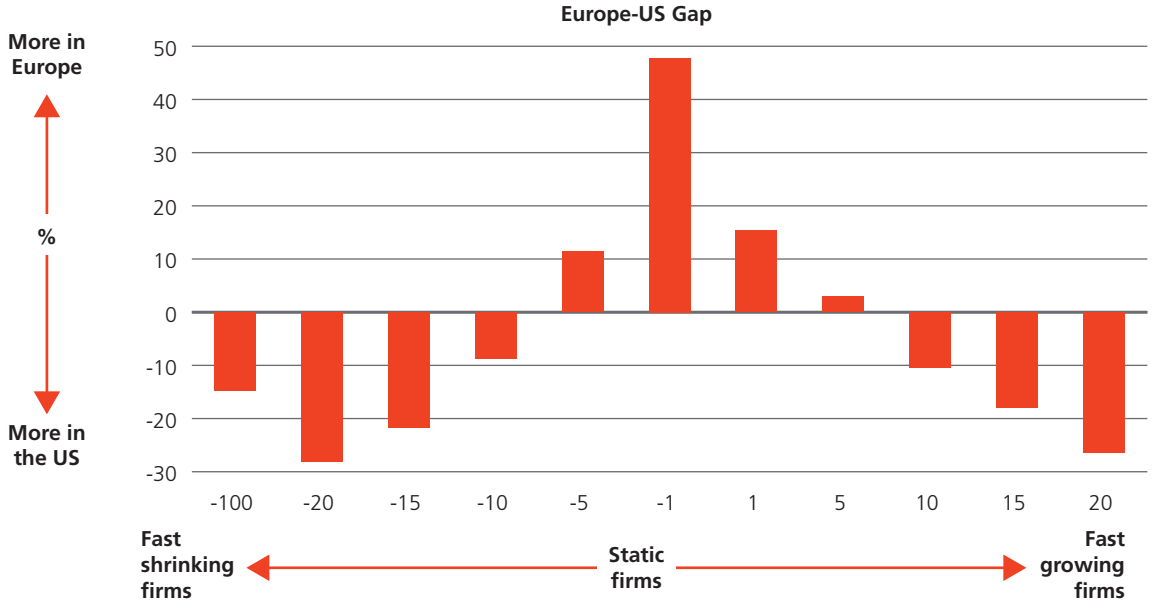
Source: Oulton

CHART 4 BUSINESS GROWTH AND CONTRACTION IN EUROPE AND THE US



Source: Nesta

CHART 5 BUSINESS BUSINESS GROWTH AND CONTRACTION IN EUROPE AND THE US (PART TWO)



Source: Nesta

'System innovation requires a combination of entrepreneurial thinking and the right rules and public support.'

When we look at levels of hidden innovation and information and communication technology adoption, many European countries lag behind the US. In a modern services-based economy, this gap is more important than the well-publicised R&D gap between Europe and other advanced countries.

The other essential driver of innovation is business dynamism. Joseph Schumpeter, the Austrian economist considered to be the grandfather of innovation theory, showed that innovation spread when good businesses started or grew and bad ones declined and failed.[6] One way of measuring the extent of creative destruction in the economy is to look at the proportion of firms that experience fast growth and fast shrinkage in a given time period.

High-growth businesses (defined by the Organisation for Economic Co-operation and Development as those whose workforces increased by 20% per year for three consecutive years) create the lion's share of new jobs (typically 50% or more) and are disproportionately more likely to innovate.[7] Industries and countries with large numbers of high-growth firms also tend to have more negative-growth firms; or to put it another way, some companies will decline as consumer demands are met by faster-shifting companies with better products and business models. Having lots of fast-growing and fast-shrinking firms is good for productivity: research shows that a five percentage point increase in the number of "static" firms (those that neither grow fast nor shrink fast) is associated with a one percentage point fall in productivity.

Here again the data reveal a gap between Europe and the US. In the past decade, European countries had fewer high- and low-growth firms, and more "static" firms (see charts 4 and 5 on page 10).

The importance of hidden innovation, technology adoption and business dynamism holds profound lessons for policymakers. It means that innovation policy must have a much broader focus than just backing research, important though that is. It needs to encompass the wider climate for business and the public sector, the skills, creativity and ambition of workers and management, and the competitive landscape.

The next section will look at specific policies that will help Europe address this wider innovation challenge, including harnessing the full power of the single market, embracing digital technologies and rethinking government support in a more entrepreneurial way. ●

6 Joseph Schumpeter, *Capitalism, Socialism and Democracy* (London: Pober, 2010).
7 Albert Bravo-Biosca and Stian Westlake, *The Vital Six Per Cent: How High-Growth Innovative Businesses Generate Prosperity and Jobs* (London: Nesta, 2009).

POLICIES TO MAKE INNOVATION FLOURISH

1 CREATE A SINGLE MARKET WHERE DIGITAL BUSINESSES AND TECHNOLOGY-SAVVY ENTREPRENEURS CAN THRIVE

Principles

How well and how quickly European businesses adopt digital technologies will be a key determinant of growth in the decade to come. This means Europe needs businesses to be adaptive and entrepreneurial, and to create a climate where those with good ideas can scale them up rapidly.

The European Union has a particularly powerful tool it can bring to bear on this challenge: a market of 500 million consumers. This market has been a valuable asset to the European economy in the past. Big market opportunities and robust competition are the lifeblood of a healthy business sector. It is not without reason that some of Europe's most successful, innovative and productive companies are found in the industrial and manufacturing sectors, where the European single market works well.

The same level of market integration and competition cannot be found in other key parts of the European economy, such as energy, services or the digital marketplace. Despite accounting for over 70% of the economy, the level of integration of services, for example, continues to be significantly lower than in the goods market – with no signs of catching up, nor much reflection among policymakers on what to do about it.[8] The result is not surprising: less productivity, innovation and internationalisation, and fewer globally competitive companies. Equally disturbing, consumer welfare also suffers, with citizens reporting much less satisfaction from products or services delivered from poorly integrated markets.[9]

In general, this market fragmentation is widely recognised and bemoaned. But its negative consequences are hardly ever linked to Europe's poor innovation performance. Completing the single market would be the best possible – not to mention most cost-efficient – innovation and growth strategy at policymakers' disposal. It is time to find the courage and the will to do so.

How can it be that businesses wishing to sell their goods across borders are stuck trying to live within and adapt to 28 different contract laws, a feat which costs on average €10,000 per country of export?[10] The result is hardly surprising, either: 75% of European traders currently do no cross-border trading at all while those who do limit their exports to a few countries. The average European company doing business across borders does so in 1.8 territories.[11]

This is particularly problematic in many of the sectors being rapidly transformed by new technologies such as digital. Consider mobile telephony. EU rules governing mobile communications are set entirely by the member states, resulting in 28 diverging ways with regards to licenses, regulatory conditions or spectrum. As a result, Europe lags behind in high-speed mobile communications, and currently represents only 6% of global 4G subscriptions, with the US, Japan and Korea accounting for over 88%.[12]

8 European Commission, *Report from the Commission to the European Parliament, the Council, the European Central Bank, the European Economic and Social Committee, the Committee of Regions and the European Investment Bank: State of the Single Market Integration 2013* (Brussels: European Commission, 2012).
9 European Commission, *Consumer Markets Scoreboard: Making Markets Work for Consumers* (Brussels: European Commission, 2012).
10 Viviane Reding, "A Common Sales Law for the European Union: Helping Startups to Drive Growth, Jobs and Innovation," keynote address delivered at The 2011 Innovation Summit, hosted by the Lisbon Council, 06 October 2011.
11 Ibid.
12 Neelie Kroes. "Building a Startup Europe," Speech to the Startup Europe Forum, hosted by the Lisbon Council and Telefónica, 02 September 2013.

‘ As much as 85% of productivity growth in modern, developed economies is the direct result of innovation.’

As a result, three-quarters of Europeans have no 4G access at all.[13] Meanwhile, the situation in the so-called digital single market is no better: only 21% of retailers sell their goods in other EU member states (though nearly 50% of retailers are online).[14] Similar problems can be seen in the energy sector, financial services and even retail.

This limits the horizons of many entrepreneurs, even in online industries that ought to scale well. Venture capitalists say that European startups too often see their market as their home country, which is invariably much smaller than the national market available to US startups. As a result, it is harder to raise finance and harder to invest in good ideas.

What makes matters worse is that when it comes to digital technology, developments occur at record speed. This means that legislation that takes years to conclude and implement can already be outdated by the time it comes into effect. For instance, the last copyright directive was negotiated from 1998 and adopted in 2001 – a time when Facebook, Spotify and YouTube did not even exist.

Policy measures

a) Prioritise completing the digital and telecoms single market

The European Commission’s internal market and services directorate-general should work with the communications, networks, content and technology directorate-general and the research and innovation directorate-general to remove the barriers to a harmonised market for digital services and for other sectors that are being transformed by new technologies, such as telecommunications and energy. This includes the development of effective, harmonised EU regulations in fields such as privacy and copyright.

b) Recognise the importance of entrepreneurship in driving innovation and facilitate greater exchange between large and small companies

Digital technologies have dramatically lowered the barriers to entry into entrepreneurship. Given the fast speed of technological development and the need for truly disruptive innovations to get the economy moving again (as opposed to the more incremental changes at which large companies excel), small ventures and agile entrepreneurs are uniquely positioned vis-à-vis more slow-moving economic incumbents. Many of Europe’s largest corporations are struggling with legacy, bureaucracy and top-down management structures. Startups can not only challenge incumbents, forcing them to improve their performance, but also help them to transform. Recognising this trend, more and more large incumbents are now opening up to collaborations with young, tech-savvy entrepreneurs, injecting into the company a much-needed dose of dynamism and organisational disruption, as well as useful intelligence on promising new products and services, and access to scarce and motivated talent.[15]

Startups have an overriding objective to deliver innovation, no institutional legacies and an appetite for experimentation and risk taking, so their contribution needs both greater recognition and more policy support.

13 European Commission, “Connected Continent? Three-quarters have no 4G Access,” Press Release IP/13/742, 25 July 2013.
14 Meglena Kuneva, “A Blueprint for Consumer Policy in Europe: Making Market Work with and for People,” The 2009 Jean Monnet Lecture, delivered at The Lisbon Council, 05 November 2009.
15 Google Campus and Wayra, an accelerator initiated by Telefónica, are two good examples.

c) Create a radically simple EU-wide corporate regime for digital entrepreneurs

Digital businesses have moved to the cloud, but they remain governed by a plethora of national rules. Europe should provide a new option for digital entrepreneurs looking to trade across the EU's 28 countries: a new European business regime, a "29th regime," that digital entrepreneurs could choose to adopt in preference to their own national regimes. This would be a simple, fully-fledged regime, allowing entrepreneurs who opt in to register a business, pay taxes and comply with all rules and regulations through a single EU-wide online platform, with common corporate governance, consumer rights, contract enforcement and bankruptcy legislation.[16]

This would have four benefits. First, it would make scaling new businesses and new ideas across Europe's 28 member states easier. Second, it would facilitate the development of European-wide financial intermediaries and business services providers. Third, it would increase opportunities for entrepreneurship in countries with restrictive national regulations (such as some Southern European countries), directly addressing the productivity gaps within the EU. And fourth, it would provide the opportunity to rethink and innovate in both regulation and enforcement, taking advantage of digital tools to create a new system fit for the 21st century.

2 SMARTER, BOLDER AND MORE ENTREPRENEURIAL INNOVATION FUNDING

Principles

The EU has bold plans to fund innovation in the coming decade. Horizon 2020 has allocated €70 billion to funding new research and innovation from 2014 to 2020. The European Regional Development Fund and the European Social Fund both have streams available for innovation. And the European Investment Fund is a major backer of risk capital in Europe.

This is all good. Most significant technological advances of the last 50 years, from the Internet and the World Wide Web to hydraulic fracturing and cheap solar power, have relied on public sector support, through either research funding, public procurement or public support for risk capital. Europe should not miss out in this respect.

But the way public funds are provided matters as well as the amount. Europe should learn from what has worked here and elsewhere in the world to make sure its public funding of innovation is entrepreneurial, smart and more agile.

There are a number of trends the European Commission would be well-advised to embrace:

The use of challenges and prizes. Some of the boldest innovations of recent years have resulted from challenge prizes. The private X-Prize Foundation kick-started the private spaceflight industry with its first $10 million prize, a prize which crowded in more than 10 times as much money from enthusiastic

16 For a similar appeal, see André Sapir and Guntram B. Wolff, "The Neglected Side of Banking Union: Reshaping Europe's Financial System," note presented at the informal ecofin in Vilnius, 14 September 2013 (Brussels: Bruegel, 2013). Also, Leaders Club, *Manifesto for Entrepreneurship and Innovation to Power Growth in the European Union* (Brussels: Leaders Club, 2013).

'Europe's digital economy is expected to grow seven times faster than overall EU GDP in coming years.'

investors. Self-driving cars were the result of the US Defense Advanced Research Projects Agency (DARPA)'s grand challenges. And at a more modest level, NASA has set up a tournament lab to bring the wisdom of the crowd to bear on small software-related problems it needs solved cheaply.

Systemic innovation. Some of the biggest challenges facing Europe and the world are too big to be tackled by the invention of a single new product or service; they require wholesale system change. Examples of such issues are the transition to low-carbon homes, the introduction of self-driving cars, or the provision of social care to an ageing population. System innovation requires a combination of entrepreneurial thinking and the right rules and public support. Consider self-driving cars. Although the technology to create autonomous roadworthy vehicles has largely been mastered, their widespread adoption will depend on developing the right laws, insurance policies and urban layouts to make the most of them. Europe may have the edge over other parts of the world when it comes to systemic innovation, because of its combination of technical expertise and effective governments.

Harnessing public procurement. For 30 years, the US government has used the Small Business Innovation Research (SBIR) programme to procure innovative solutions to its problems from ambitious small businesses. This programme now represents over $1 billion of funding a year. In the past, SBIR has backed firms like Qualcomm, Amgen and Genzyme that went on to become global businesses. Estimated to account for some 18% of European GDP, public procurement can be a major driver of innovation, as well as a catalyst in identifying excellent, solution-providing businesses, giving them opportunities for growth and scale.[17] The new SME instrument included in Horizon 2020 is an important step in the right direction, but more action across Europe will be needed to harness the full potential of innovative procurement.

An experimental approach. Despite these successes, there is still much uncertainty about which approaches to promoting innovation work best. Good public funding is experimental and learns from its mistakes. From this point of view, the European Commission could draw lessons from the work of the Jameel Poverty Action Lab (J-PAL) and the French government. They have been aggressively using randomised trials to understand which policies work to ensure public funds are used to their best effect.

Policy measures

a) Experiment and embrace new funding methods for Horizon 2020, such as challenge prizes

If Horizon 2020 is to meet its own objectives of encouraging greater business investment in R&D and supporting high-growth firms, it should employ a wider range of funding instruments. These include greater provision of finance and research funding to companies, and greater use of challenge prize competitions.

As a bold first step, Horizon 2020 should establish a challenge prize team to administer and run challenge prizes in its areas of competence, drawing on the lessons of organisations like the NASA Tournament Lab, the X-Prize Foundation and Nesta's Centre for Challenge Prizes and Innocentive. Some of these prizes should focus on the important system innovation challenges that require coordinated effort by business, governments and civil society.

17 European Commission, *Proposal for a Directive on Public Procurement* (Brussels: European Commission, 2011).

b) Put experimentation and flexibility at the heart of funding practice

Since there is still uncertainty about which innovation policies work, Horizon 2020 should include a strong experimental component. The European Commission should not be afraid to try out new innovation policies from cluster funding to voucher schemes to different ways of organising standard grant programmes. But it must be an avid collector of data on its own programmes, and must where possible use randomisation and other rigorous methodologies to assess whether programmes are working, and stop them if they are not.

Alongside this, the EU should invest in a new data platform to better understand the progress of the innovation economy. This will track firm growth (based on national business registries), the build-out of new industries and technologies (using machine learning and web crawling) and how these relate to EU and national funding and IP ownership. This will form a valuable evidence base about whether policies are having an effect.

c) Accelerate the formation of a European market for public procurement

The European Commission should accelerate the pursuit of the proposals put forward on public procurement as part of the 2011 Single Market Act. In addition to the overall legislative programme aimed at modernising public procurement, the European Commission should foster a more rigorous exchange of best practices as well as raise general awareness of the economic and innovation potential of public procurement. With the former, legislative work is – and should be – spearheaded by the internal market and services directorate-general; but the latter calls for greater involvement of other key directorates, such as the research and innovation directorate-general and the enterprise and industry directorate-general.

d) Simplify processes to encourage more small firms to participate

Application processes need to become simpler and quicker to allow SMEs greater access to funding, as well as to respond to the rapid pace of change in technological advances.

Private sector participation in the framework programmes has been steadily declining for 15 years (from 43% on Framework Programme 4 to 31% so far in Framework Programme 7).[18] Although simplification is a key theme of Horizon 2020, the European Commission should be vigilant in ensuring this meets the need. Shorter timescales to receive funding, greater standardisation of some documents and much simpler application procedures are needed to reverse the experience of many SMEs in engaging with previous framework programmes.

18 BusinessEurope, *BusinessEurope Views on Horizon 2020*, 20 February 2012.

'If innovation is to generate widely distributed economic growth and a large number of jobs, it is essential that it spreads widely across the economy.'

3 INVEST IN THE INFRASTRUCTURE OF THE 21ST CENTURY

Principles

Infrastructure matters for innovation. Just as growth in the 19th century depended on railways and the telegraph, and growth in the 20th depended on electrical power, roads and airports, growth in the decade to come will require the right infrastructure.

Transport will of course still matter. But we also need to think about the infrastructure of the future: in particular, superfast broadband and smart electricity grids.

Especially when it comes to broadband, Europe lags behind North America and the rich countries of Asia. South Korea has widespread fibre-to-the-home broadband. In the US, Google Fiber is slowly spreading fibre-to-the-home broadband from city to city, and promises speed of one Gigabit per second.

The Europe 2020 Agenda – the EU's growth blueprint for this decade – includes a target of 100% coverage for high-speed connections (30 Megabits per second) and at least 50% penetration of superfast Internet (NGA), which has a minimal speed of 100 Mbps, by 2020.[19] To help reach that goal, the European Commission tried to earmark €9.2 billion to expand broadband and digital networks in a €50 billion "Connecting Europe Facility," proposed as part of its 2014-2021 budget.

But European heads of government slashed the proposed €9.2 billion to a mere €1 billion in the deal on the EU's long-term budget. This is despite the fact that up to €200 billion is required to meet the 2020 digital broadband targets, according to estimates by the European Commission, and that fibre-to-home connections (offering up to 1 Gbps bandwidth) are now being rolled out in other parts of the world, notably the US (by Google Fiber) and South Korea.

While slashing the broadband budget may seem like an opportune target in these financially strapped times, it exposes short-term thinking. For advanced countries, broadband is a general-purpose technology that powers the entire economy, so Europe urgently needs to identify how the necessary investment can be mustered. In the meantime, it is to be welcomed that other parts of the EU budget – such as the regional funds – are stepping in to fund 21st century infrastructure projects, such as the recent €67 million investment from the European Regional Development Fund in the broadband infrastructure of the Polish region of Wielkopolskie.[20]

Europe could do better, both when it comes to broadband and when it comes to energy. This will require investment. But clever execution can make the money go further. Community-led projects can massively reduce the cost of fibre broadband, especially in hard-to-reach rural areas. Projects like the UK's Broadband for the Rural North (B4RN) or Spain's guifi.net have seen communities deploy their own superfast broadband at much cheaper prices than incumbent telecom providers can deliver.

It is not just physical infrastructure that Europe should be investing in. Innovation also relies on intangible infrastructure in the form of standards and rules. Europe's supremacy over the US in the days of 2G mobile telephony derived in no small part

19 European Commission, *A Digital Agenda for Europe* (Brussels: European Commission, 2010).
20 European Commission, "EU Regional Funds Help to End Poland's Digital Divide with a Major Broadband Project in Wielkopolskie," Press Release, 20 June 2013.

from its enlightened design of the GSM standard, while the US struggled with a number of competing protocols. The development of standards in high-tech fields is already an area of strength for some EU member states. Other countries are increasingly aware of the power of standards: it is said, for example, that Huawei, China's data and communications giant, has over 600 employees (mostly European and American) working on the design of technical standards.

Finally, we should not forget the role of whole cities as the infrastructure of the future. Many important emerging technologies will only achieve their full potential if they can be tested *in situ* allowing effective ways of using them to be discovered. Self-driving cars are a good example: most of the technical breakthroughs to create self-driving cars have already been made, but we will not reap their full economic value without greater experimentation in urban planning, business models, traffic management and regulation. Smart city test beds provide an important way of doing this: they are a type of infrastructure that is not obvious, but vital to economic progress.

Policy measures

a) Rebalance infrastructure investment towards the infrastructure of the 21st century

The European Commission should increase the proportion of infrastructure spending in the various programmes, particularly regional development, on superfast broadband and smart grids. As a working target, at least 25% of infrastructure funding should go to these priorities (instead of 95%+ going to road, rail, airport and similar projects as is typically the case).

The EIF and EIB should be encouraged to support such new infrastructure projects, especially those with innovative characteristics, such as community broadband initiatives or micropower generation schemes.

b) Make 21st century infrastructure investment part of the EU's surveillance powers

Against the backdrop of the financial crisis, the European Commission has received significant new powers in the area of economic surveillance. While the temptation may be for EU member states to forgo critical infrastructure spending in an effort to balance budgets, the European Commission needs to ensure that investment in super-fast broadband and science and technology infrastructure is safeguarded as a key enabler of innovation, productivity and internationalisation.

c) Take a global lead on technology standards

A proportion of Horizon 2020 funding should be made available along with member state contributions for the development of international standards in technologies of the future, and for the development of effective, harmonised EU regulations in fields such as privacy. The priority for this investment should be areas that are likely to be commercially or socially valuable in the future.

d) Create an annual European City of the Future

If the EU is to create the level of technology development and adoption needed to drive growth, then we need both a base level of infrastructure and pockets of support for advanced systems. A European City of the Future, with the same level of support and awareness as the European Capital of Culture, could provide a showcase for new technologies embedded in the lives of citizens.

This type of designation would provide a focus for public and private funding, and ensure commitment from city governments to support the changes needed to pilot new technologies in context.

'High-growth businesses create the lion's share of new jobs and are disproportionately more likely to innovate.'

4 EDUCATE A TECHNOLOGY-SAVVY WORKFORCE

Principles

The digital revolution requires European citizens to develop a new skillset, but it also creates new tools to deliver it. Right now, many parts of Europe are faced with the paradox of high levels of unemployment and employers who complain that they cannot find staff with the right blend of skills.

These skills include technical abilities like coding and experience of working with computers, but also more abstract skills, like problem solving, creativity and the ability to set and achieve goals. Europe has some significant advantages to build on. It has, on the whole, a skilful workforce and a cultural commitment to education. It also has some of the world's best school systems, both from an academic and a vocational point of view.

At the same time, technology is changing what is possible in the field of education. Digital technologies are gradually changing education – in the form of new mobile devices, game-based learning and online tutorial models. They are also opening up university education through Massive Open Online Courses (MOOCs). But many of these developments are being led not in Europe but in the US.

Although most educational issues fall under the remits of national governments, there are a few important opportunities that could best be delivered at a European level. The European Commission plays a more important role in lifelong learning, for instance through instruments such as the European Social Fund (ESF) and the new Opening Up Education initiative. Currently, 27 million Europeans are unemployed, and almost half of them have been out of work for over a year. Distressingly, a very large share of them are not participating in any significant training programme. Just a decade ago, it would have been extremely difficult to develop an infrastructure to change this. Yet digital technologies now make it possible.

Policy measures

a) Make use of technological innovation to develop and spread EU-based training opportunities guided by evidence of what really works

The EU should set up a new target to provide skills training to all unemployed Europeans by the end of 2014, taking advantage of digital tools to make it happen. ESF and Erasmus+ funding should be used to support both national and EU-wide initiatives which develop and test a variety of open educational platforms and resources. Digital tools allow for new ways of delivering skills development that should be exploited.

To improve the delivery of industry-relevant training and ensure its widest possible reach, the EU should support experimentation of new digital tools, platforms and models – for example, by kick-starting a generation of European MOOCs.

b) Drive "digital-making" through a Europe-wide initiative to improve practical skills

The EU should include in Erasmus+ and other training initiatives an EU-wide programme for "digital making" – that is, using coding skills to build real things that work, from computer games to robots. Making is an effective way to learn, which will help Europeans develop digital skills by applying their efforts to real challenges and outputs. By creating and linking dedicated spaces, resources and initiatives for digital making across Europe, young Europeans would have the opportunity to become digital makers themselves, which could lead to entrepreneurial and civic benefits. This should build on cost-effective, open-source European technology like the Italian Arduino microcontroller and the UK's Raspberry Pi computer.

5 ENCOURAGE THE SPREAD AND ADOPTION OF SOCIAL INNOVATION AS A KEY TOOL FOR ADDRESSING SOCIAL PROBLEMS AND IMPROVING PUBLIC SERVICES

Principles

If we want fair, sustainable growth, we need innovation in the public and social sectors of the economy as well as in the private sector.

This is partly a matter of simple arithmetic: the public sector represents on average a third of the European economy.[21] Without innovation, its productivity will stagnate and drag down overall growth rates. It is also a matter of the quality of growth. The public and social sectors have an important role to play in addressing crucial social challenges, such as how to help an ageing population or deal with long-term health conditions. Europe needs new thinking in these areas if it is to have a prosperous future.

Social innovation is a powerful force in this respect. Social innovation refers to new ways of organising and mobilising communities to tackle public challenges. Many services on which we now depend started off as social innovations, from cooperatives to hospices to kindergartens. Social innovation can deliver new and better ways to provide public goods, often from outside traditional public sector systems.

Social innovation is enjoying something of a renaissance in Europe and beyond. The contribution of long-established social enterprises such as the Basque Country's Mondragon cooperative are receiving global recognition, while digital technologies are offering new ways to bring people together to tackle public problems from improving public services (for example, the UK's PatientOpinion) to car-sharing (for example, France's BlaBlaCar).

Some of these services are built on public data sets that have recently been made open. Examples include Estonia's Meiraha and Austria's Open Data Wien. Making government information about public services open is a helpful and relatively low-cost way to encourage digital social innovation.

Europe needs to make the most of the social innovation renaissance, and to use it to radically improve its public services. There are a number of factors that could help:

- **Include social innovators in major social funding decisions** – don't simply fund large incumbent organisations.
- **Make public service data open where possible**. This is a mission in which the European Commission can show a positive example.
- **Support innovative new social enterprises**, including incubators and accelerators; finance social ventures and above all show a willingness to accept new innovative social enterprises as providers of public services.

21 The figure for public sector spending excludes social benefits and social transfers in kind. With those figures included, public-sector spending is above 50% of the economy in some countries.

'How well and how quickly European businesses adopt digital technologies will be a key determinant of growth in the decade to come.'

Policy measures

a) Earmark at least 15% of European Social Fund money for innovative social ventures, projects and enterprises

The expectation of this funding will provide a huge boost to the social sector and to the innovators within it over the next seven years. It will create a pipeline of valuable social innovations that will invigorate Europe's public services.

b) Be a powerful advocate for open public data, and start with the European Commission's own information

c) Provide support for innovative social enterprises to scale up, especially through the public sector

EU and EIF funding should be made available for seeding social venture funds and social accelerators. The European Commission should continue its work into developing "What Works" evidence centres for public service innovations, which help good social innovations to get taken up, and should consider the establishment of dedicated innovation teams along the lines of those seen in Singapore, Finland and New York. And above all, where possible, the European Commission should encourage member states to open their public services to innovative new social enterprises.

6 MAKE INNOVATION OPEN TO EU CITIZENS AND THE WORLD

Principles

Once upon a time, innovation was seen as the preserve of a scientific and business elite. Moreover, it was something that happened primarily within national boundaries, with international cooperation mainly between rich-world nations. Today neither of these is true (if, indeed, either ever was). On the contrary: openness, both to other countries and to the ideas of customers and citizens, is becoming a watchword for innovators.

An international perspective on innovation is indispensable in the 21st century. Countries like China, India and Brazil have established themselves as science and technology giants, and are making genuine breakthroughs in fields from green energy to microelectronics. If Europe is to be an innovation superpower, it must engage constructively with these emerging giants.

Entrepreneurs matter in this international context as much as big firms. Global trade is no longer the domain of large multinationals. The rise in numbers of micro-multinationals using technology to increase their productivity indicates the extent of the opportunity given by ready access to a global market.[22] SMEs that use the Internet for trade report that their share of total revenue for export is twice as large as others, and they create double the number of jobs.[23] The Internet has allowed firms low-cost access to web-based services that

22 Ann Mettler and Anthony D. Williams, *The Rise of the Micro-multinational: How Freelancers and Technology-Savvy Startups are Driving Growth, Jobs and Innovation* (Brussels: Lisbon Council, 2011).
23 Pélissié du Rausas et al., *op. cit.*

traditionally were undertaken in-house, meaning that they can stay smaller and more agile while also experiencing rapid revenue growth.[24] Supply chains and customer bases that traditionally have taken businesses time to build are now accessible from day one, allowing creators to turn ideas into reality at less cost and risk than ever before.

Businesses will need support to take full advantage of this rapidly changing business environment. A recent European Commission report – produced by the industry and enterprise directorate-general – highlighted some actions the EU could take to help companies conquer international markets.[25] The EU has an important strategic role to play here, adding value and increasing coordination to ensure that European firms, particularly small ones, are not left behind in the increasing internationalisation of trade. Indeed, internationalisation has been a boon for crisis-ridden countries such as Spain and Portugal, which are in the process of exporting themselves out of their economic malaise. With European markets in the doldrums, it has been an advantage that they have been able to tap into third-country destinations for their products and services.

But internationalisation is only one side of the coin. Domestic support for innovation is equally important, particularly from citizens and users who are open to new experiences and novel inventions. In many cases, laypeople are themselves active in the innovation field: research in the UK suggested that 6% of adults had actively adapted a product to create a "user innovation."[26]

What's more, public involvement and consent is essential to effective innovation policy. Technologies like self-driving cars, biotechnology and hydraulic fracturing are all politically controversial under some circumstances. They will only be effectively adopted if the public is involved in decision making about when it is appropriate to use them, and what laws and regulations govern their use.

For this, policymakers need to engage actively with the population as a whole (and not just the small subset directly involved in R&D), and build a wider movement in support of innovation. Mark Henderson's recent bestseller, *The Geek Manifesto*, revealed the existence of large sections of the population with a strong interest in science and innovation, and argued that policymakers should reach out to them.[27] New technologies are offering new ways of doing this. One example is petridish.org, which offers a platform for citizens to fund scientific research projects of their choosing. Harnessing these kinds of mass movements is a relatively cost-effective way to build support for and participation in an innovative economy.

The EU has an important role to play in both these respects.

24 Mettler and Williams, *op. cit.*
25 European Commission, *Opportunities for the Internationalisation of European SMEs* (Brussels: European Commission, 2011).
26 Stephen Flowers, Eric von Hippel, Jeroen de Jong and Tanja Sinozic, *Measuring User Innovation in the UK: The Importance of Product Creation by Users* (London: Nesta, 2010).
27 Mark Henderson, *The Geek Manifesto: Why Science Matters* (Brussels: Transworld, 2013).

‘ Completing the single market would be the best possible – not to mention the most cost-efficient – innovation and growth strategy at policymakers’ disposal.’

Policy measures

a) Target SMEs in a drive towards internationalisation

Usually, large companies have already conquered international markets and don’t need much assistance from the European Commission. That is why the work that the European Commission’s enterprise and industry directorate has undertaken to help SMEs to internationalise is very welcome and timely. It is important that this work be continued in the next European Commission, including an awareness-raising campaign targeted at SMEs, explaining that international markets are just a click away thanks to the Internet and the global reach it makes possible.

b) Make internationalisation a central aspect of Horizon 2020

Horizon 2020 should earmark sizable sums to cultivate relationships between European researchers and technologists and centres of excellence in emerging innovation superpowers such as China, India or Brazil.

These relationships should focus not just on academic research or technology design, but also on how European firms can help deploy innovations and provide the services necessary to make the most of them, thus providing opportunities for export-led growth.

c) Build a public movement for innovation

The European Commission’s research and innovation directorate-general and communications networks, content and technology directorate-general should consider allocating funding to sponsor civil society projects and research centres that can help broaden the discourse on innovation and make the themes accessible to a wider public.

Innovation is an all-encompassing, societal mission and it is crucial that new ideas and novel projects can happen, are sustained and are recognised as valuable contributions to policy and economic decision making. Innovation is no longer about “white coats in laboratories.” It is about societies that can generate the demand for new products and services and supply the ingredients necessary, be they future-oriented funding, educating talent or creating world-class businesses.

7 PUT INNOVATION AND GROWTH AT THE CENTRE OF EU GOVERNANCE

The breadth of this list of recommendations makes it clear that innovation cannot be dealt with by a single directorate, or as a single programme (such as Horizon 2020). Instead, the EU needs a different approach. This approach must be more coordinated, and must help align the powers and efforts of different European competencies, including research, competition policy, procurement, digital policy, regional funding, trade and economic surveillance.

Because Europe's economic prospects depend to a very great extent on how well it internalises the need for greater renewal and modernisation, innovation should become an overarching priority for the next European Commission. Among the goals and targets that the next European Commission president sets, innovation should sit alongside growth and jobs as a primary objective.

This will require the European Commission to take a broad view of what constitutes innovation, looking beyond R&D investments at a wider range of metrics, including Europe's ability to create high-growth businesses, and levels of investment in all intangibles, not just R&D.[28]

But the biggest changes called for are those related to leadership and organisation. Taking innovation seriously would call for the European Commission president to personally assume responsibility by making innovation and the digital agenda overarching priorities for the entire college, as the body of 28 commissioners is known. While it is of course necessary to have departments, there needs to be more fluidity and fewer turf battles. Making the "innovation agenda" the priority of one commissioner almost by definition turns off others from engaging in this space. This could be overcome by making it the responsibility of the top job, the European Commission president, with the respective vice-presidents and commissioners reporting directly to him or her. What needs to be avoided at all costs is the current system, where digital or innovation policies are treated like sectoral issues, pertaining to primarily one commissioner and one department.

To be sure, the Barroso II Commission tried to address this issue by appointing an innovation commissioner and establishing an innovation group within the college reporting to this commissioner.[29] While this organisational change was an improvement, it has not gone far enough in raising the priority of innovation across the European Commission. To the contrary, Europe's on-going economic woes seem to have resulted in innovation becoming less of a pressing issue at precisely the moment when the EU needed to raise its game. To be effective, the innovation commissioner must have real capabilities, powers and budgets assigned to her, and the ability to coordinate across directorates to create the best environment for innovation.

Equally important, we need to make the voices of innovators heard. By definition, innovation has the potential to be controversial – it often challenges vested interests and economic incumbents; it empowers outsiders and newcomers, groups that

28 A recent innovation metric proposed by the European Commission included patent applications, high-growth firms, people employed in knowledge-intensive activities as a proportion of the total number of employees, as well as international competitiveness of knowledge-intensive goods and services. This is a major step in the right direction.

29 The Barroso II Commission established an Innovation Group that is led by Máire Geoghegan-Quinn, commissioner for research, innovation and science, and includes Joaquin Almunia (competition), Siim Kallas (transport), Neelie Kroes (digital agenda), Antonio Tajani (industry and entrepreneurship) and Günther Oettinger (energy). On occasion, Michel Barnier (internal market and services), Johannes Hahn (regional policy), Androulla Vassiliou (education, culture, multilingualism and youth) and László Andor (employment, social affairs and inclusion) have been associated with its work.

'Startups can not only challenge incumbents, forcing them to improve their performance, but also help them to transform.'

tend not to have much political clout; and it necessitates shifting resources from old to new priorities. Making the proposals in Plan I(nnovation) a reality will therefore require a more effective policy coalition, from investors to entrepreneurs and social innovators. At present, their voice is largely missing from key economic debates. One of the formidable obstacles in making the voices of innovators heard is that they do not tend to organically organise in familiar ways, meaning that web entrepreneurs are unlikely to start a traditional trade association with a permanent presence in Brussels, or that knowledge workers will naturally flock to trade unions to represent their interests. This posts a significant challenge for policymakers who are dependent on organised interests to drive forward their respective initiatives.

In the absence of full-blown, traditional stakeholder organisations, new ways of bringing innovative voices to the fore are needed. A good example, for instance, is the Leaders Club, an informal group of European web entrepreneurs, which lends advice to European Commission Vice-President Neelie Kroes, in charge of the digital agenda.[30] They recently produced a *Manifesto for Entrepreneurship and Innovation* that other innovators can sign up to and visibly support.

In addition to encouraging the formation of new and unconventional stakeholder groups, it also appears necessary to bring more disruptive thinking into the European institutions themselves. This could be done by appointing a chief innovation adviser to the European Commission president, following the precedent that was set by José Manuel Barroso in 2011 when he appointed a chief science adviser, Anne Glover, a former chief scientific adviser for Scotland and a professor of molecular biology.

In general, greater effort should be made to bring professionals who have some hands-on experience with entrepreneurship, risk-taking and innovation into the European institutions. By the same token, Council of the European Union formations (where many key decisions are taken) have to be re-thought and reconfigured. In view of the evidence presented in this paper, we believe the innovation and digital-policy space should be high on the agenda of heads of state and government – it is too important to be left exclusively to telecommunications, culture and research ministers. And finally, funding priorities need to be re-thought and brought in line with the policy areas that hold the greatest promise to drive growth, innovation and employment.

In the longer run, building a stronger coalition for change and adjusting institutional governance structures to reflect the importance of innovation and digital advancement will be as important as detailed policy recommendations. It is here where Europe is arguably weak, as countless reports and analyses have been produced but they have been unable to deliver the necessary action, to a large extent because the vocal, on-going support and necessary coalition building have been missing. ●

30 For more, visit https://ec.europa.eu/digital-agenda/en/leaders-club.

‘The creation of a dynamic, innovative digital single market as the cornerstone of the next phase of European integration is the right answer.’

CONCLUSION: FROM COAL AND STEEL TO WIRED AND DIGITAL

Global best practices in innovation suggest that incremental change will not lead to watershed changes. That is why a forceful vision – and an appealing new narrative – for the EU is clearly needed to counter rising euroscepticism, which has only been fuelled by years of economic woes. The creation of a dynamic, innovative digital single market as the cornerstone of the next phase of European integration is the right answer, in much the same vein as the “Europe 1992” blueprint once helped overcome “eurosclerosis” by spearheading the creation of the single market. In addition to the obvious economic benefits of pursuing these policies, it would be a unique and effective way of connecting to the next generation, too often described as a “lost” generation, and providing the jobs and opportunities they need and deserve, while demonstrating that Europe is serious about their desire for more and better connectivity and their call for policymakers who understand the dynamics of the digital age. ●

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s1ngle market **entrepreneurs**

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