Growing Beyond

Moving Europe forward

Innovating for a prosperous future

Published in collaboration with The Centre for European Policy Studies

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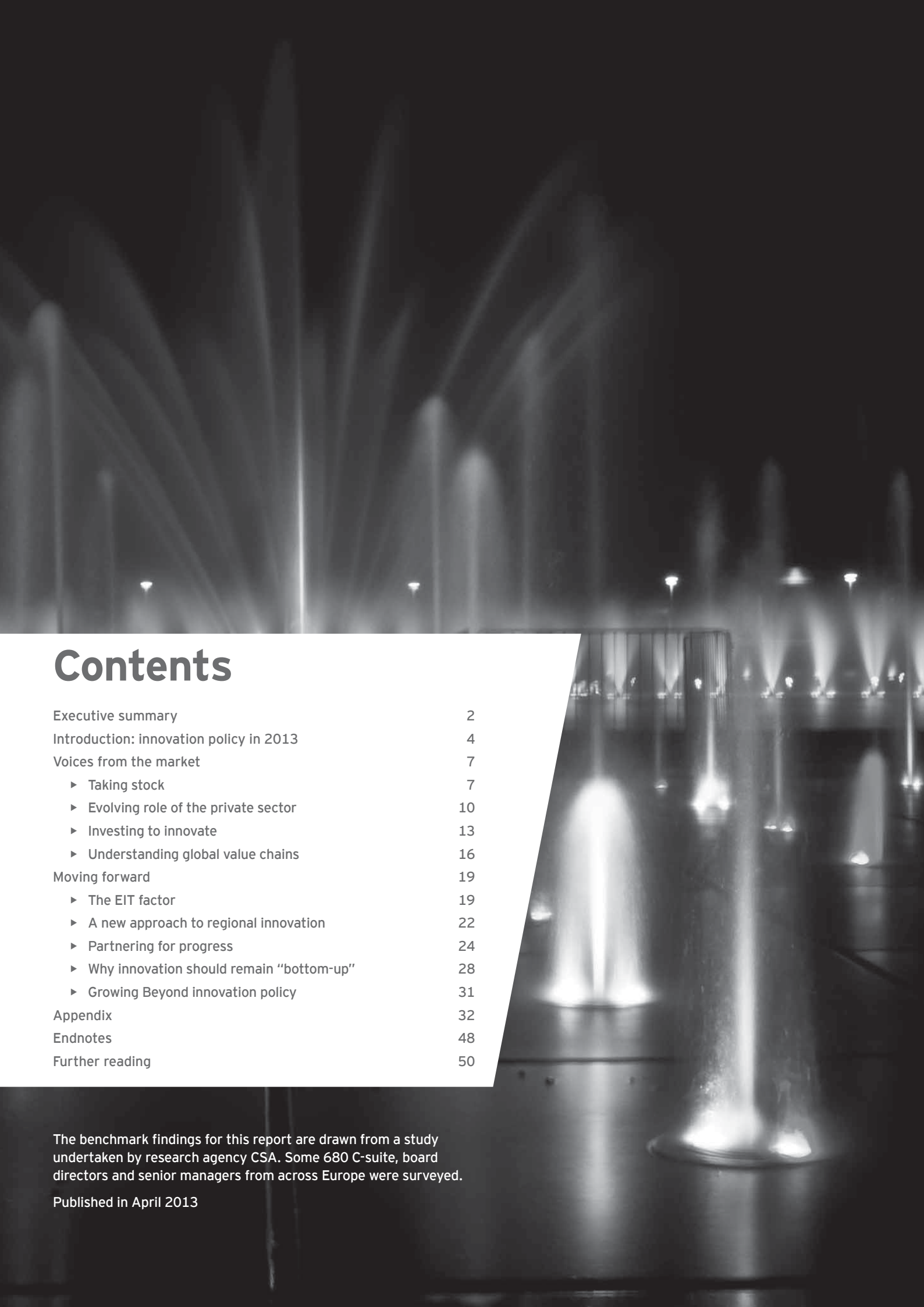

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The benchmark findings for this report are drawn from a study undertaken by research agency CSA. Some 680 C-suite, board directors and senior managers from across Europe were surveyed.

Published in April 2013

Foreword

The pursuit of innovation, and with it the economic growth we all desire, continues to intensify. More than five years after the start of the financial crisis, Europe remains a region in flux. Austerity, contraction and unemployment continue to affect countries large and small. But foreign investment is increasing, a Eurozone break-up has been avoided, and early indications of growth have appeared on the horizon.

Piercing this era of uncertainty and volatility, however, is one indisputable fact; Europe's innovators remain pivotal to the hopes of securing sustainable growth. That Europe's policy-makers understand this is beyond doubt. Strenuous efforts have long been made to strengthen innovation in Europe with a diverse array of programs, projects and funding mechanisms extending out from Brussels to the borders of the EU. But how effective have they been? Does the EU's innovation policy fully reflect the rapidly changing needs of industry and society?

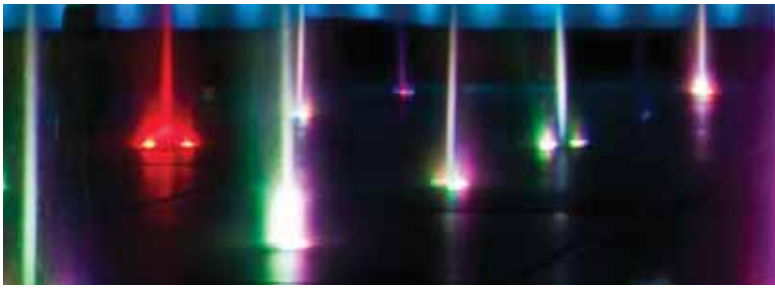
Working with the Brussels-based think tank the Centre for European Policy Studies (CEPS), Ernst & Young has once again undertaken a cross-Europe survey of 680 business leaders to discover their perception of the EU's innovation policy. The results make for intriguing reading. Policy-makers should be energized by the news that business leaders view the EU as a key player in driving forward this agenda, with 76% believing it has the capability to develop a more effective approach to research and innovation. Yet 81% believe EU policy is too fragmented and requires more coordination, and 66% call for more funds to be allocated to foster innovation.

It will not be easy to design an innovation policy that will cater to the fluctuating needs and demands of a region as diverse as Europe. And at a time when money is increasingly tight, some may say it is nearly impossible. But we have to find a way.

At a time when global competition has never been stronger, and when rising incomes and favorable demographics are creating a massive new opportunity in the form of the ever-expanding global middle class, Europe needs to create an innovation policy that rests on a closer collaboration between government and business. This requires not only public investment but also the active participation of businesses, researchers and citizens across Europe, driving innovation from the "bottom-up," rather than just the "top-down." Doing so will help build a better working world for us all.

We hope this report, together with our survey's findings, will help move this process forward. As we present this latest report in our *Growing Beyond* program, we would like to thank all the European business leaders and Ernst & Young professionals who have taken the time to share their insights with us.

Jay Nibbe
Ernst & Young Markets Leader –
Europe, Middle East, India and Africa



Executive summary

With Ernst & Young's latest Eurozone Forecast predicting a contraction of 0.5% in 2013, a figure that repeats the 0.5% fall witnessed in 2012, it is clear that the European economy is not yet out of the woods. Far from it. And it is equally clear that only a revival of the capacity to innovate can bring Europe back on a track of global competitiveness. This is why innovation has become a key policy issue in the past few years, and this is why the EU has dedicated a number of initiatives to innovation, including most notably the Innovation Union strategy within the Europe 2020 agenda.

Over the past year, the EU has devoted significant efforts to advance the Innovation Union agenda, and also in the development of a more top-down industrial policy, one fit for the age of globalization. At the same time, key initiatives such as the Knowledge and Innovation Communities (KICs), coordinated by the European Institute of Innovation and Technology (EIT), have demonstrated a significant potential to mobilize innovation in Europe. However, recent weeks have been dominated by the debate on the EU budget for the 2014–2020 multiannual financial framework. The tension between calls for austerity and the need for growth has produced an undesirable cut in the budget allocated to infrastructure (the Connecting Europe Facility (CEF)) and also a reduction (admittedly, from a very ambitious initial proposal) in the budget allocated to the Horizon 2020 program for research and innovation.

What is beyond doubt is that public funding of research and development has remained the dominant way of funding innovation in the EU, and this — based on available data — seems to be part of Europe's innovation problem. This report will look at ways to improve the value for money of public R&D funding, and at the same time creating a more favorable environment for private funding of innovation.

Voices from the frontline

Mixed perceptions

We asked 680 business leaders whether their perception of innovation policy in the EU had improved or deteriorated. Their responses were mixed: 38% thought it had improved against 18% who thought it had deteriorated. Southern European companies suffering from a lack of private spending are much more enthusiastic about the role of the EU (96% in Greece, 89% in Italy). In northern and western parts of the continent, the national level is deemed more effective to conduct innovation policy (50% and 41%).

US approval

This year's survey found that 68% of business leaders agreed that innovation policy in the US is more effective than in the EU, with only 18% disagreeing. The US also topped the charts as the country that most European business leaders (42%) believe the EU should partner with in order to become more competitive. Next was China at 24% and then Brazil and India tied on 6%.

Private sector importance

According to the respondents to the survey, private spending makes a significant contribution to technological and scientific innovation in their own country, with 74% agreeing compared with 66% last year. Interestingly, the most positive responses came from R&D directors and strategic directors (82% and 90% respectively).

Data confirms that countries where private R&D funding is significant compared to public funding are the best performers in innovation (e.g., Scandinavian countries).

Investment targets

According to our respondents, EU policy has so far focused too much on ensuring competition between businesses within the internal market, if not within national borders, and not enough on investment incentives for innovation, with 76% agreeing with the proposition. There was also broad agreement among the survey participants that the EU should make more funds available for innovation. All the CEOs who responded agreed, and overall so did 94% of respondents.

'Smart specialization'

The European Commission is pushing national and regional authorities across Europe to draw up research and innovation strategies for "smart specialization," to encourage closer collaboration between different EU, national and regional policies, and to ensure that the EU's Structural Funds can be used more effectively. In our survey, respondents were asked whether they knew what smart specialization was and what it entailed. Of those questioned, only 12% were aware of it, which is even less than in the 2012 survey. Furthermore, only 1% were "well aware." Awareness was greater among respondents in Southern Europe (15%), for example, than in Northern Europe (7%), perhaps reflecting a greater awareness of cohesion funding as a whole.

Recommendations

In this, our third annual report on *Government and Innovation*, Ernst & Young, in collaboration with CEPS, have put forward a series of proposals to help make the EU's approach to innovation more effective. We want to help ensure that the EU's programs resonate powerfully across the EU's 27 Member States from the bottom-up, stimulating greater entrepreneurial activity in the market and driving forward economic growth. We recommend:

Increased technology transfer and partnerships to foster innovation and skills

Europe's universities have long enjoyed a worldwide reputation for excellence and they remain well positioned in a number of key sectors of social and natural sciences. Innovation policy should encourage a greater number of university and industry partnerships and technology transfer, a proposition widely supported by our survey respondents, with 95% of participants in agreement. For example, there should be greater development of joint curricula that would help create the skills that Europe needs at an industrial level. Our survey found a strong feeling that EU innovation policy should focus on education and skills, with 88% agreeing and, in Central and Eastern Europe, 97%. In addition, sharing Europe's ideas, skills and strengths is key to unlocking a more innovative culture — a point again echoed by many in our survey, which found that such collaboration finds approval from 87% of respondents.

Priority deployment of a world-class infrastructure

The availability of a robust, advanced, resilient infrastructure is key to innovation especially since innovation is increasingly becoming "open" and distributed around the world. The decision of companies on where to invest in R&D is in part based on the availability of good and affordable network infrastructure (both energy and ICT), growth-friendly legislation, and sound rule of law enforcement. All this is becoming a precondition for innovation that cannot be ignored by policy-makers wishing to boost the innovation potential of the EU. Our survey respondents believe that public-private partnerships (PPPs) should be used to accelerate the deployment of enabling infrastructure technologies such as broadband networks. There was a relatively high level of agreement of 90% of respondents, with 100% of CEOs behind the idea, and significant agreement among high technology companies (98%) and strategic directors (94%).

Empower large companies

Although governments have a key role in creating the right entrepreneurial environment necessary for economic growth, it is important not to neglect the role of the private sector. In many sectors, innovation takes place through cooperation between large companies (acting as coordinators and purchasers of R&D) and the smaller companies that really perform R&D and realize potentially innovative solutions. Today, large companies increasingly understand that they cannot conduct all research and innovation in-house; rather, they have to allocate funds to SMEs, which can be more agile and flexible in responding to new technologies by developing new products. Some 71% of respondents in our survey believe that large companies should act as innovation intermediaries.

Introduction: innovation policy in 2013

Policy-makers in Europe, much like their counterparts around the world, are not without their share of challenges. As demographic compositions shift, the capacities of key sectors such as welfare and health care must grow and change to cope with the public's evolving — and increasing — needs. When considering that they also have to restore order to public finances and address contracting economies and spiraling unemployment rates, it is clear that theirs is hardly an agenda to be envied. But Europe's innovators can help.

Innovation has the potential to steer the EU toward economic growth and higher employment. It can act as a key driver to strengthen supply and stimulate demand in key sectors, thereby stimulating job-friendly growth. With so much depending on its ability to help fuel innovation, understanding what those on Europe's frontline are saying about the impact of the EU's programs and projects is crucial.

During the past year, EU institutions have consolidated their approach to bottom-up, multi-stakeholder innovation processes through the advancement of the KICs coordinated by the EIT. At the same time, the need for a more tailored approach to regional development — one based on smart specialization — has been translated into a clear condition for receiving Cohesion Policy funds under the upcoming 2014–2020 EU financial framework. However, budget negotiations have led to two proposed cuts, on Horizon 2020 funds and on the CEF. The latter cut is, in our view, particularly undesirable as it deprives Europe of a key way to boost infrastructure deployment, which is increasingly a precondition for innovation.

A mixed view from the market

In our survey of business leaders across the EU, conducted for Ernst & Young by CSA, we asked whether the perception of innovation policy in the EU had improved or deteriorated. Their responses were mixed: 38% thought it had improved against 18% who thought it had deteriorated. The most positive responses were from companies in Central and Eastern Europe, with 63% considering it had improved.

There was, however, a near unanimous response to the proposition that EU and national governments can do more to create demand for innovation. Of the respondents, 93% agreed that more should be done. In this report, we explore different ways of creating demand for innovation, what is already being done and what more can be achieved.

Business leaders keep on believing in the EU

Despite the current difficulties the EU is facing, especially in terms of collective decision-making, and in spite of the EU's innovation policy's failure to fully match industry's and society's needs, it is still seen as a key player in the delivery of innovation.

For example, it is considered to be able to develop a more effective approach to research and innovation (76%). Yet, the perception of the role of the EU rather depends on the local context of private spending. Southern companies suffering from a lack of private spending are much more enthusiastic about the role of the EU (96% in Greece, 89% in Italy). On the contrary, in the more innovative northern and western parts of the continent, the national level is deemed more effective to conduct innovation policy (50% and 41%) while Southern and Central European firms have more expectations of the European level (54% and 40%).

However, in spite of their various stances on the EU, business leaders agree on the fact that the EU policy is too fragmented and needs more coordination (81%). Deeper centralization at the EU level raises mixed feelings with Southern European companies (69%) in favor while those in Northern Europe, traditionally less keen on deeper integration, are opposed to the idea (72%). A consensus could be reached, though, on concrete propositions such as the creation of a European agency for innovation (86% in Southern Europe, 66% in Northern Europe) or the implementation of the recently announced "unitary patent" to foster innovation among SMEs (87% to 69%).

The background to innovation policy

There are a number of background issues that are driving, or constraining, innovation policy. EU Member States have suffered from the economic downturn, and face growing competitive pressure from rapid-growth economies. In the Eurozone, the outlook is seen to be improving, with Ernst & Young's latest *Eurozone Forecast* foreseeing "a midyear turning point, with a modest recovery in growth during the second half and then growth of about 1% in 2014."[I] In the same report, there are both positive and negative signs regarding the EU: positive, in the negotiations for a US/EU trade deal and in the capping of the EU budget; negative, in that, in order to achieve the budget cap, the fund to develop cross-border infrastructure is being severely cut. The curtailment of funding naturally affects investment in innovation, as will be argued below.

As a result of the long economic downturn, there has been a growth in the creation of industrial policy in countries such as the US and China; it is true also of the EU, which issued a Communication on industrial policy in October 2012, *"A Stronger European Industry for Growth and Economic Recovery, Industrial Policy Communication Update."*[II] This followed on from the EC's flagship initiative *"Industrial Policy for the Globalization Era."* It is predicated on a new partnership between the EU, Member States and Industry, and focuses on four pillars: investments in innovation, better market conditions, access to finance and capitals, and human capital and skills.

There are changing perceptions, too, of the most fertile areas for innovation. The scientific literature confirms that young, innovative companies make the difference when it comes to the innovation performance of a country. Accordingly, entrepreneurship should be the key word of innovation policy efforts at the EU level, even more than public and private funding of R&D. The EU has responded with a number of initiatives such as the plan to boost European entrepreneurship, issued in January 2013.[III]

There is evidence of continuing globalization of value chains, with many clusters becoming global, supply chains being increasingly distributed and trade involving also tasks, not just goods and services. Our business leaders are clearly aware of the implications of this and other global trends, and are interested in all kinds of cross-sector and cross-border partnerships. The EU has made clear in its Horizon 2020 strategy for research and innovation that international cooperation will be "an important cross-cutting strategy."[IV]

The three-layered approach to innovation

In our 2012 Innovation Report,[v] we presented the model of a three-layered approach to innovation.

Layer 1 – the EU and national governments should focus mainly on tangible and intangible infrastructure, education, and the drafting of simple, innovation-friendly legal rules

Layer 2 – they should merely act as facilitators, by providing platforms where university, research and business can engage in fruitful exchanges

Layer 3 – they should demand innovative products, launch a limited set of partnerships to promote the development of solutions to grand societal challenges for which there is limited market development, or steer and coordinate smart cities, smart regions or cluster projects

The findings in this report focus on the second and third layers of the model.

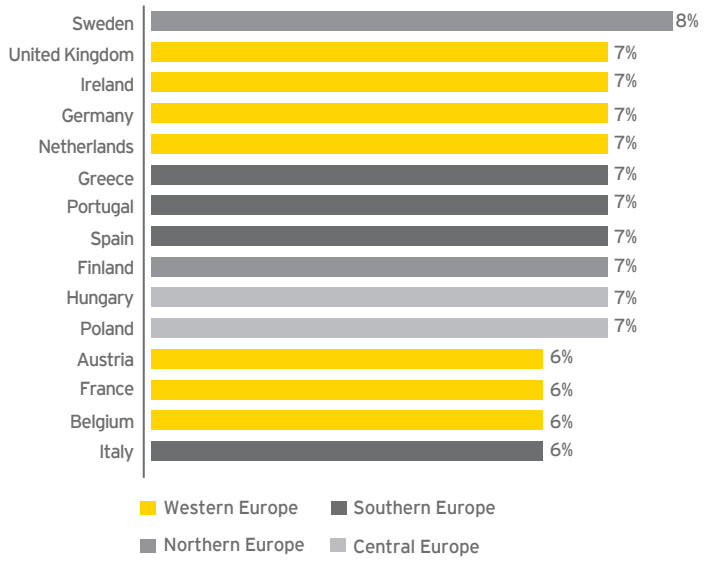
We look first at our respondents' views of sound innovation policy and where it is to be found, and we consider the role of private spending as a means of promoting innovation.

We then focus on the work of the EU – how it measures up to the requirements of our business leaders and where they would like to see it progress to in future. We investigate the institutions operating at the second layer of our model: the funding and investment institutions, such as the European Investment Bank (EIB), and then the innovation-specific institutions, the European Institute of Innovation and Technology (EIT) and its implementation mechanisms, the Knowledge and Innovation Communities (KICs).

This leads us into an examination of an initiative that is placed in all three layers of the model: smart specialization, which forms part of the implementation of the RIS3 approach in the EU Cohesion Policy 2014–2020. We follow this with a series of recommendations that will, we believe, not only move Europe toward a more innovative future but also help build a better working world.

Survey demographics

For this report we conducted a quantitative survey among 680 European business leaders on their view on EU innovation policy and how the business could benefit more efficiently from EU innovation support. In our survey, we targeted the following categories among respondents: president or CEO, managing director or COO, chief financial officer, chief information officer, R&D director, strategic director. The average response rate from each country is 45.



Source: Ernst & Young and CEPS survey 2013.

Taking stock

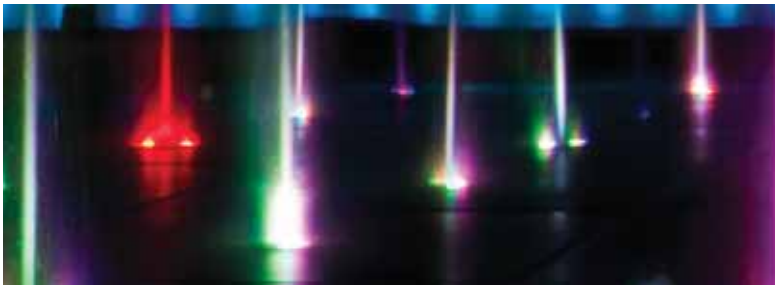
The survey contains both good and bad news for EU policy-makers. For example, most governments' lasting inability to meet the target of spending 3% of GDP in R&D is deeply criticized by business leaders, for a very similar proportion of them (66%) consider that not enough money is invested in R&D in Europe. (As in last year's survey, business leaders would like the EU and national governments to make stronger commitments to foster innovation).

However, it's not all bad news. A number of European countries are perceived as doing well despite the economic crisis, and they also benefit from far better perceptions about their economic policies. Germany is almost solely considered as the country with the strongest innovation policy and climate (60%) with Western Europe as a whole being identified as the strongest region (79%). The country with the second-highest rating, Sweden, only gets 7%, while Northern Europe as a whole gets 13%.

Lessons from the US

One country which receives much acclaim is the US — that is singled out by our respondents as a country that Europeans have much to learn from. As we pointed out in last year's *Government and Innovation* report, innovation and entrepreneurial risk are more widely embraced in the US among individuals and businesses, and innovation policy has long been viewed as simpler than in the EU.

This year's survey found that 68% of business leaders agreed that innovation policy is more effective in the US than in the EU, with only 18% disagreeing. This sentiment was almost universal among CEOs (93%), and most marked in Southern Europe (78%). The US also topped the charts as the country that most European business leaders (42%) believe that the EU should partner with in order to become more competitive. Next was China at 24% and then Brazil and India tied on 6%. A clear victory, then, for the US and proof that innovation policy, when successfully executed, can indeed overcome the challenge of diverse societies: few would disagree that substantial variants exist across the 50 American states. Closer cooperation should therefore become a key aspect of the upcoming Transatlantic Trade and Investment Partnership between the EU and US.



Viewpoint

Maria da Graça Carvalho

Member of the European Parliament; member of the Industry, Research and Energy Committee

European policy should be designed in such a way that it recognizes the difficulties that Europe is faced with and supplies a series of pragmatically conceived solutions. A comprehensive vision is needed, focusing on investment and innovation. To deliver on this ambition involves mobilizing all the levers available at EU level in order to promote the competitiveness of European companies. In particular, efficient and well-funded higher education and scientific systems, the single market, trade policy, competition policy, and environmental and research policy.

There are four main areas in which the EU can play a productive role to assist levels of innovation in the EU. Firstly, we need to improve the competitiveness of European economies as a whole if we are to ensure the sustainability of the European social market economy in the future. Secondly, we require an integrated industrial policy, alongside a concerted drive towards innovation. Thirdly, investment and innovation are not possible without adequate access to finance and greater availability of capital. Public resources must be mobilized to sustain investment in innovation and, in this respect, the nature of the next EU budget (2014-20) will be crucial. Finally, measures to increase investment in human capital and skills are the key drivers for growth, employment and competitiveness.

The main goal of business is to develop new and innovative goods and services that generate economic growth while delivering important benefits to society. The business community can take advantage of the new funding program Horizon 2020, which will be a fundamental instrument in structuring research and innovation in Europe. This program has been designed to cover the whole innovation cycle and will enable SMEs and smaller organizations to play a much more active role in Europe's research and innovation environment. Aiming to support European industry, Horizon 2020 contains a concerted drive to promote excellence in science while meeting today's societal challenges.

Uncovering the secrets of high performers

While governments, markets and people long for a period of stability and recovery, all must face up to a stark possibility: we may not yet have seen the worst. That is the main conclusion of Ernst & Young's latest study of how high performers are surviving — and indeed thriving — in the new economy.

Our objective was to find out what it is that high performers are doing differently, and set out the lessons that other businesses must learn if they are to emulate them. The most innovative companies understand how to capitalize on the opportunities in their environment. Our research has found that those companies that embed innovation into every aspect of the organization are the most successful — innovation is not a tactic but simply what they do.

The report also reveals that the difference between high performers and the rest is becoming more and more pronounced:

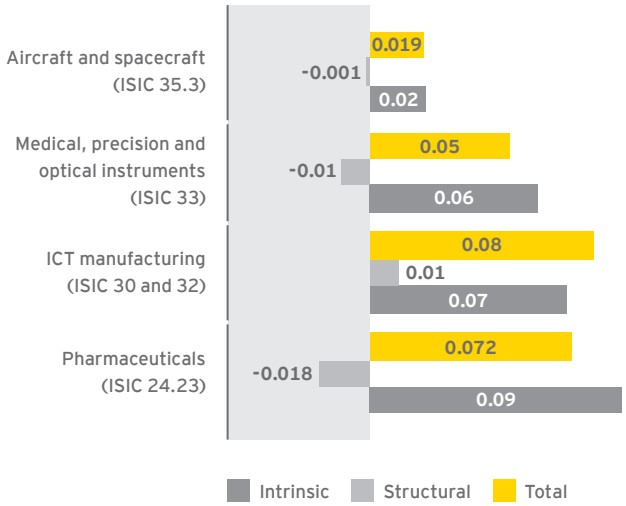
- High performers are more outward-looking and focused on the market
- High performers respond smartly to change but, more importantly, respond speedily
- High performers understand what drives cost and what drives value
- High performers engage more with stakeholders and unleash their talent

Examining how high performers deliver in these four key areas — customer reach, operational agility, cost competitiveness and stakeholder confidence — is an important starting point.

For further information, see Ernst & Young's *Growing Beyond: how high performers are accelerating ahead* at www.ey.com/growingbeyond.

Figure 1 (below) shows that in many of the innovation-intensive sectors of the economy, the EU is still critically behind the US in terms of R&D investment and overall innovation indicators. The US has twice as many companies as the EU in the health sector and three and a half times more companies in Information and Communications Technologies (ICT). The US companies outperform the EU ones in similar proportions (as by number of companies), investing twice as much in R&D in health industries and three and a half times more in ICT. The diagram shows the R&D difference broken down by structural factors (resulting from differences in the sectoral composition of the industry) and intrinsic factors (derived from differences in the R&D intensities, sector by sector).

Figure 1 – Comparison of R&D intensity between the US and the EU



Source: European Commission, R&D Scoreboard 2012.

The strong links that have been established in the US between universities with great technological expertise, such as Stanford and MIT, and their surrounding business communities have clearly contributed to the country's success in innovation. Partnership between business and academic institutions is a key theme in this report.

Viewpoint

Alessandro Cenderello

Ernst & Young Government and Public Service Leader, Brussels

Almost all EU countries have become better at fostering innovation, according to the findings of the 2012 edition of the EU's Innovation Union Scoreboard. But progress is slowing, and the EU has not yet closed the innovation gap that exists with countries such as the US, Japan and South Korea.

In order to boost innovation performance, EU policy-makers should place special emphasis on creating linkages among innovation firms and the public sector, as well as fostering entrepreneurship and the growth of innovative SMEs.

Capitalizing on the potential of ICT to drive business model innovation is particularly crucial in this respect. Support should be given to businesses to embrace digital technologies and transform the way in which they deliver goods and services. In parallel, it is necessary to promote the access to and visibility of opportunities linked to social media, cloud computing and big data analytics. This also needs to be backed by the development of an entrepreneurial education system that focuses on ICT and e-skills, as well as a culture that enhances the image of digital entrepreneurs and promotes their role in society.

In terms of the wider governance framework, ongoing efforts to improve access to finance and harmonize and simplify regulations should continue and evolve to include targeted initiatives directed at those elements that most affect the creation, survival and growth of digital entrepreneurs.

Evolving role of the private sector

The role of the private sector in fostering innovation across the EU is crucial, and poised to grow even more significant. The reality of austerity is hitting home in Brussels and there are no longer the funds to deliver what may have been originally envisaged.

European leaders agreed in February 2013 to limit the EU's spending in 2014–20 to €960 billion, 3% below the current seven-year budget. The deal, which represents the first cut in its budget in the EU's 56-year history, has significant implications for Horizon 2020, the flagship seven-year program for research and innovation. Previously granted an €80 billion budget, the spending deal means a cut of 12% and the likelihood that policy-makers will look to the private sector to play an increasing role in moving the innovation agenda forward.

According to the respondents to the survey, private spending makes a significant contribution to technological and scientific innovation in their own country. There were 74% who thought that this was so, compared with 66% last year. Interestingly, the most positive responses came from R&D directors and strategic directors (82% and 90% respectively).

Yet perceptions differ greatly across Europe. Those of companies located in Northern and Western Europe stand in sharp contrast with those of their Central and Southern European counterparts, with 89% of respondents from Northern Europe and 79% from Western Europe acknowledging the strong impact of private spending on innovation. However, in the rest of the continent, companies are more doubtful (63% in Southern Europe and 64% in Central Europe).

What is more, in countries hardest hit by the economic crisis, such as Portugal, even a majority of local companies consider that private spending does not contribute to innovation (52%). No wonder, then, that a majority of Southern European firms declared that the innovation policy in their country has deteriorated (58%). By contrast, in Northern Europe 61% consider it improved, and more surprisingly so do firms from Central Europe.

A similar majority (72%) felt that private spending contributes to technological and scientific innovation in the EU. There was, however, little differentiation from region to region, although there was some difference from country to country: the companies who agreed least with the proposition were Dutch (51%) and Spanish (71%).

The responses indicate a certain degree of positive thought. It also reflects the growth in R&D spending among 1,500 major companies with bases in Europe. According to the 2012 R&D Scoreboard from the European Commission's Joint Research Centre, they "increased R&D investment by 8.9% in 2011, up from 6.1% in 2010. The increase nearly matches US firms (9%), beats the global average (7.6%) and is far ahead of Japanese companies (1.7%). R&D-intensive sectors tended to show above average employment growth."[vi]

Viewpoint

Eric Everard

CEO and founder of Artexis Group

As the founder of a business in the SME (small and medium-sized enterprises) sector, I would say that the information we receive about EU innovation is insufficient. We are a service company and I think we could do much better in understanding how innovation policy in the EU can help businesses like ours.

The Communication from the European Commission to SMEs about innovation has, in my experience, been too timid. This means it is difficult to say whether the policy is good or bad, fragmented or streamlined, when we know so little about it. It doesn't matter if you're an inventor or an entrepreneur, if you are not in a science or technology-driven sector like medicine or bio-technology – which are also sectors that would naturally expect a level of support from government – then there is a very good chance that you're simply not informed about what assistance is available from the European institutions.

Government doesn't necessarily have to focus on "innovation" only. What I would prefer to see is harmonized and taxation rates throughout Europe, for example. This policy would help all Member States to lower their taxation rates and this, in turn, would help companies grow and prosper. Tax competition between different European countries – which is what occurs now – is something that should be avoided.

Certainly, if I ever took up a position at the Commission and was responsible for innovation policy, this is something I would concentrate on. On the other hand, I would also foster public-private partnerships to reinforce European competitiveness in many sectors where we have undeniable assets. European Commission initiatives like IMI (the Innovative Medicines Initiative), a joint undertaking between the European Union and the pharmaceutical industry association EFPIA, should generalize in many other areas. Innovation is not something that can be decreed or imposed from the center. It has to come from field players supported and – ideally – coordinated at European level.

In Europe, we have so many strengths that we are not leveraging and we are also failing to take advantage of the growth in emerging markets. We have been a little bit naive and let massive imports of low-cost goods into Europe, which destroyed many of our jobs and industries. But with the exception of Germany, Europe is not exporting enough high added-value goods. This should be a really high priority as we are not about to create more public sector jobs – we have to look to the private sector to address the employment challenge in our region.

Artexis Group organizes and manages trade fairs, conferences and exhibitions. It has a turnover of €80 million and employs a full-time workforce of approximately 300 people for operations in 14 countries. www.artexis.com

Global job hunt – the role of entrepreneurs

Despite the uncertain global economic environment, and at a time of high levels of unemployment, many of the world's most successful entrepreneurs continue to grow their business and are expanding their workforce. According to new research from Ernst & Young, more than half of the 600 plus major entrepreneurs across the world surveyed say they expect to increase their work force in 2013 – with the numbers showing remarkable similarity around the world (Americas; Asia Pacific; and Europe, Middle East, India and Africa).

Innovation plays an essential role in helping entrepreneurs create new jobs and beat the competition. Nearly 90% of respondents across a wide numbers of industries agreed that innovation was the one genuine differentiator and advantage they have over the competition. In addition, more than half of those surveyed (54%) said they expect growth to continue in 2013 and nearly half (44%) say they have a structured process in place to drive innovation, while 41% said innovation is an unstructured spontaneous process.

For further information, see Ernst & Young's *Global job creation: a survey of the world's most dynamic entrepreneurs* at www.ey.com/growth.

Viewpoint

Julie Teigland

Ernst & Young Accounts and Business Development Leader, EMEIA

Europe has been going through a period of economic crisis and as a result we have seen a lot of tightening up of regulation – particularly around tax policy. There is growing social recognition that all need to pay a fair share. At the same time we have also seen in some of Europe's developed markets the lowest ever number of new entrants into the entrepreneurial world. So it's clear that there are some diverse trends at play across the region.

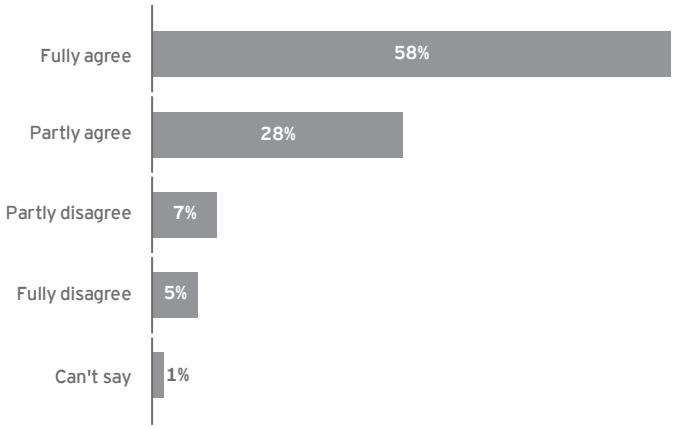
I would encourage policy-makers to balance the need for fiscal austerity with the need to support Europe's pockets of enterprise, and thereby pockets of growth and innovation. This means that there may need to be a degree of flexibility in the budgets and respective legislation in order to better support entrepreneurial activity, in other words a nuanced approach as opposed to blanket budget and subsidy cuts.

Steps that policy-makers could take involve greater intellectual property protection, supporting R&D in terms of tax credits, the recognition of loss carry forward and lightening the burdens of bureaucracy that entrepreneurs often face. Some of these measures, as evidenced in the US market (our survey respondents also identified the US as a key country to learn from), have contributed to an excellent entrepreneurial culture, with a corresponding track record of turning innovation into successful business activity. Starting a new business shouldn't be a cumbersome process. Instead, it should be as easy to navigate as possible – these are the businesses on which so much of our future growth depends.

Investing to innovate

So with money increasingly tight, where should the EU target its remaining funds? According to our respondents, EU policy has so far focused too much on competition and not enough on investment incentives for innovation, with 76% agreeing with the proposition. Agreement is highest, at 87%, among those operating in the high technology sector. When it comes to identifying these incentives, business leaders felt that tax incentives should be used more frequently (see Figure 2 below).

Figure 2 – Tax incentives should be used more frequently to stimulate innovation (e.g., through tax credits)



Source: Ernst & Young and CEPS survey 2013.

Governments can, for example, be more proactive and seek the creation of dedicated areas in which geographical proximity and multi-stakeholder collaboration (coupled with generous tax treatment) can be expected to boost the generation of innovative solutions in basic and applied research. This is the case of the facilitating initiatives, such as Tech City in London, the technology hub of Silicon Allee in the old East Berlin, and Skolkovo near Moscow. Alongside these initiatives are the tax credit regimes to promote R&D that are offered by European governments.

In response to a more specific question, 83% of business leaders felt that fiscal incentives should be used more frequently to stimulate the demand for innovative products (e.g., through tax exemptions or rebates for consumers of new technologies). These feelings were

much stronger in Italy and the UK (94% and 91% respectively) than, for example, in France (53%). Fiscal incentives have been applied in many EU countries to renewable energy products, such as solar panels and wind turbines, although many countries, such as the UK and Italy, are scaling back these incentives.

It was also felt that the EU and national governments could do more to promote demand in general, with 93% of respondents supporting the proposition. Not surprisingly, the response of those engaged in high technology was of universal agreement (100%). On the more specific question of whether public procurement should be used to create demand for innovative products and services, 77% of those surveyed were in agreement, with 94% agreement among high technology companies.

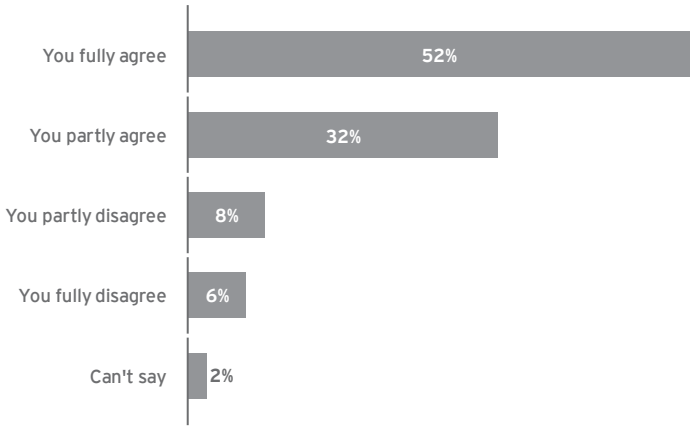
How EU investment institutions are performing

In addition to the investment incentives offered by governments and, to a lesser extent, by the EU, the European institutions play a major role in providing investment funds for innovation. These institutions are part of what was described in the 2012 report as Layer 2 of the innovation model, in which they are active in creating funding and facilitating initiatives for innovation.

Although the EU is a world-leader in terms of public funding of R&D, our respondents were not persuaded by the EU's achievements in this area. There was broad agreement among the survey participants that the EU should make more funds available for innovation. All the CEOs who responded agreed, and overall so did 94% of respondents. In response to the question, "Do you think there is too much, enough or not enough money invested to foster innovation in Europe?" very few (3%) thought that there was too much. The majority (66%) thought that there was not enough, with 24% thinking it was about right. These findings confirm the difficulty of efficiently allocating the huge amount of money available from the EU budget for innovation.

With this in mind, it comes as no surprise either that 84% of those surveyed believe that access to such EU funds as there are currently should be made easier (see Figure 3). This sentiment was strongest in Central Europe, where 93% of participants agreed, 68% of them strongly. The response raises questions about how EU funds should be made more accessible to innovative companies.

Figure 3 — Access to EU funds should be made easier



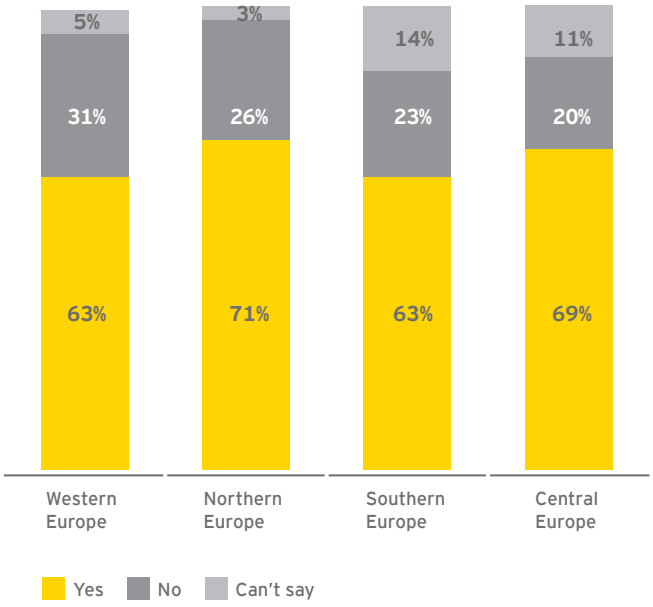
Source: Ernst & Young and CEPS survey 2013.

The European Investment Fund plays an important role ...

One of the main sources of funding is the European Investment Fund (EIF). The EIF sees itself as "playing a crucial role throughout the value chain of enterprise creation, from the earliest stages of IP development to mid and later-stage. Through selected financial intermediaries, we offer SMEs a wide range of financing solutions."[vii] The role of these intermediaries is examined in Figure 4.

The overall response was that 66% thought that the EIF should rely on local intermediaries to identify innovators, rather than giving funds to individual companies. Agreement is more widespread (74%) among the smaller companies, who are the main beneficiaries, than among large companies (58%).

Figure 4 — The EIF should rely on local intermediaries to identify innovators, rather than giving funds to individual companies



Source: Ernst & Young and CEPS survey 2013.

... as does the European Investment Bank

The EIB, which runs the EIF,sees itself as providing finance and expertise for sound and sustainable investment projects that contribute to furthering EU policy objectives.[viii] When asked which was the most effective institution to support innovation, 25% of respondents chose the EIB, ahead of the EIT and European Commission's Joint Research Centre. The most favorably disposed were CFOs, 33% of whom saw the EIB as the most effective option.

Another means of securing funding, one that was attractive to respondents, was IP-backed finance for SMEs, i.e., the financing of innovation that relies on patents as collateral. Of those asked, 84% believed that Europe needs to strengthen IP-backed finance, with the most enthusiastic being Italian companies (98%).

As to where the EU institutions should focus their investment, respondents were heavily in favor of focusing more on education and skills (88%) and on investing more funds in the development of a common broadband infrastructure (77%). The latter investment forms part of the CEF initiative announced in October 2011. At the time, the EC foresaw "almost €9.2 billion to support investment in fast and very fast broadband networks and pan-European digital services."[ix] The CEF has a very low profile among respondents to the survey, with only 1% being very well aware of its existence and 8% fairly well aware. Of those few who knew of it, 85% believed that it would help improve Europe's competitiveness.

Under the budget now agreed by European leaders this fund, much like that allocated to Horizon 2020, has been cut. Under the new arrangements it now has a budget of €29.3 billion, with only €1 billion to go on ICT and digital projects. Neelie Kroes, the Vice President of the European Commission and responsible for the Digital Agenda for Europe, said that she was "disappointed" and, as a result of the reduced funding, the facility cannot now finance broadband projects, which we believe is a potentially disastrous reduction.

Understanding global value chains

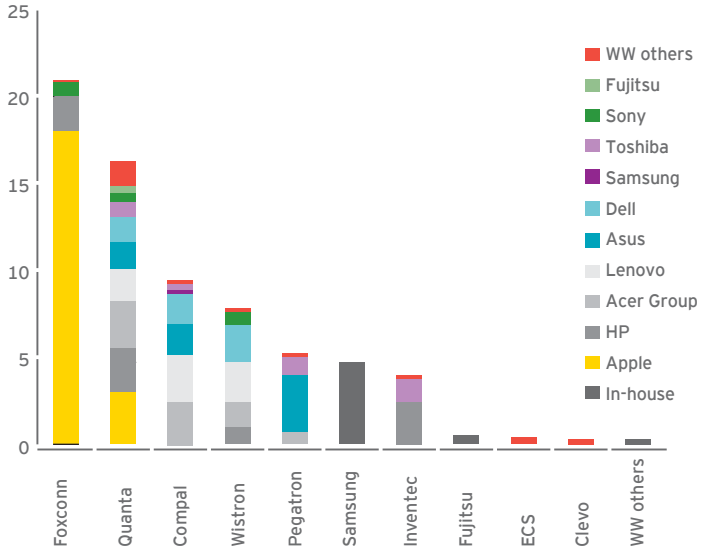
The production of innovative goods increasingly involves the combination of various components (modules), which in turn depend on the inventive activity of different entrepreneurs. For example, recent research has suggested that there are as many as 250,000 active patents that potentially affect the smartphone systems. Given that in the computer and peripherals equipment sector, there are an estimated 277.5 patents per 1,000 jobs, the positive implications for jobs and growth are clear.

In our interconnected global economy, modern corporations often seek to source modules and component goods to integrate in its own production chain from different countries and markets around the world. And since many products are sold across the globe, companies also seek those locations that best fit their needs in terms of infrastructure, availability of skills, labor costs and tax environment.

The complexity of modern production chains also leads companies to increase outsourcing, purchase greater R&D and innovation from smaller, innovative firms, and open up their systems in order to stimulate gradual increases in quality, product upgrades and lower prices. This is what causes PCs and smartphones, for example, to be in a perpetual state of evolution. The result of this combination has been the birth of "global value chains," which are divided among multiple firms and spread across many countries around the world.

For example, the ongoing globalization of production in the IT sector becomes clear when examining the major suppliers of large tablet vendors, as in the chart below:

Figure 5 – Suppliers and vendors of smartphones



Source: NPD Group (2012).

To take one example from the above chart, Lenovo acquired IBM PC division in 2004, after a decade in which it had become the leading PC producer in China. Since that acquisition, Lenovo emerged as a global multinational with headquarters in the United States, a large R&D center in North Carolina; an advanced notebook computer development facility in Japan; three final assembly plants in China and one in India; regional distribution facilities in the Netherlands, Dubai, Florida, Australia and India; and an important corporate planning, finance and business process development group in Singapore. The deal also came with a complex set of ongoing supply relationships, mainly with Korean, Taiwanese and American component producers and contract manufacturers, the largest with global operations, to provide main boards, microprocessors, memory, disk drives, monitors, LCD screens, keyboards and contract manufacturing services.

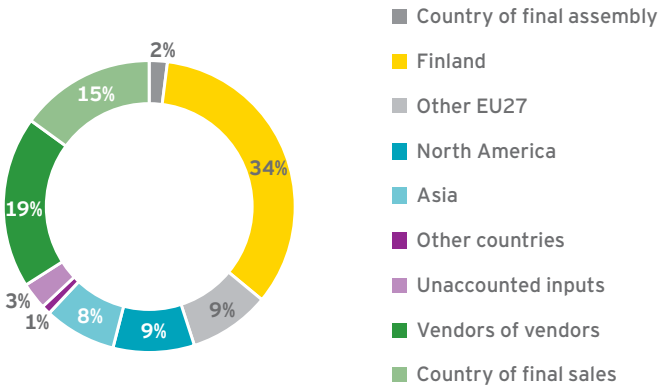
Similarly, it would be incorrect to state that Nokia's phones are entirely made by Nokia, or made in Finland. N95 was only assembled in Finland (Salo) and China (Beijing). The charts below show the bill of materials of the Nokia N95 smartphone in 2007 and its breakdown according to the geographical origin of component suppliers.

Figure 6 – Bill of materials, Nokia N95, 2007

Description	€	%
Processors	34.3	17.3
Display	21.6	10.9
Main camera module (5 million pixels)	16.5	8.3
Memories	14.5	7.3
Battery pack	3.0	1.5
Video conference camera (VGA)	1.2	0.6
Other integrated circuits (excl. processors and memories)	31.5	15.9
Mechanics	18.7	9.4
All other hardware inputs	21.1	10.6
Bill of materials (excl. supporting material, license fees and final assembly)	162.4	81.8
Supporting material	15.5	7.8
Bill of materials (excl. license fees and final assembly)	177.9	89.6
Global System for Mobile Communications (GSM) and Wideband Code Division Multiple Access (WCDMA) license fees	13.5	6.8
Symbian operating system	3.0	1.5
Other license fees	4.2	2.1
Bill of materials (excl. final assembly)	198.6	100

Source: ETLA (Elinkeinoelämän tutkimuslaitos).

Figure 7 – Breakdown of Nokia N95 by origin of components



Source: ETLA (Elinkeinoelämän tutkimuslaitos).

Europe and global value chains

Even before the financial crisis, the emergence of global value chains had already led to increased global competition for businesses across Europe.

The internationalization of industrial production has led to a declining contribution of EU economy in terms of total world output, with an outflow of production from the Eurozone toward first Central and Eastern European countries and then non-EU countries. Such trends are both an opportunity and a challenge for EU companies. On the one hand, the EU is home to many of the world's largest multinationals, which could seek competitive advantage by relocating part of their value chain to countries with cheaper labor and proximity to rapid-growth markets and thus compete aggressively on a worldwide basis. At the same time, it is important that the high value-added phases of the production chains are not moved outside the EU – something that might cause the loss of the EU's leadership in a number of industrial sectors.

The implications of global value chains for innovation policy are remarkable: today, governments wishing to promote innovation do not have the option of closing down their economies, and resort to protectionism. At the same time, they might not want to open their economies fully without introducing incentives for all those companies that decide to keep the most added-value activities at home. The art of innovation policy thus becomes that of facilitating the integration of local firms into global networks and global value chains, without losing domestic firms' intellectual and industrial know-how and patents.

For the EU, the advent of global value chains reinforces the need to ensure that Europe remains an attractive place to invest: this implies that world-class infrastructure, growth-friendly rules and legal certainty are secured through a careful set of reforms in the coming months. Otherwise, R&D investment might flow outside Europe even more than it has already done in the past decade.

At the EU level, the advent of global value chains reinforces the need to ensure that Europe remains an attractive place to invest: this implies that world-class infrastructure, growth-friendly rules and legal certainty are secured through a careful set of reforms in the coming months. Otherwise, R&D investment might flow outside Europe even more than it has already done in the past decade.

The EIT factor

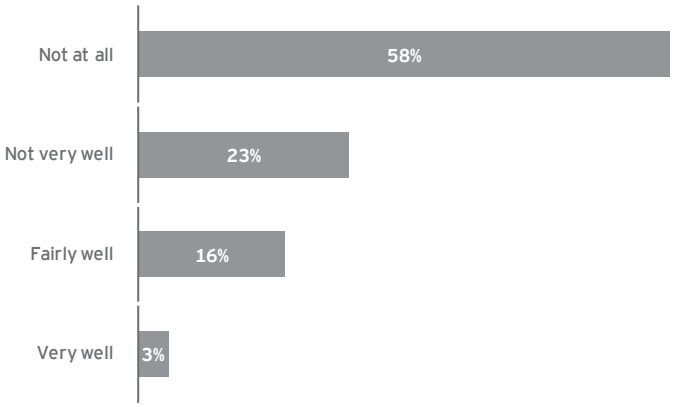
The European Institute of Innovation and Technology (EIT) is the EU's principal agency for innovation, and is based in Budapest. It was founded in 2008, and seeks to "facilitate transitions: from idea to product, from lab to market, from student to entrepreneur."[ix]

The creation of the EIT represented a radical change, often described as a reinvention, of EU innovation policy. It aims to take a holistic approach to innovation by assuming an integrated perspective among the three sides of the "knowledge triangle," which are education, research and innovation. In this respect, the EIT is a unique institution, not only with regard to European policy, but at a worldwide level.

How familiar are business leaders with the work of the EIT?

Our survey indicates, however, that business leaders remain largely unaware of its operations, and the picture is much the same as that of last year (see Figure 8 below).

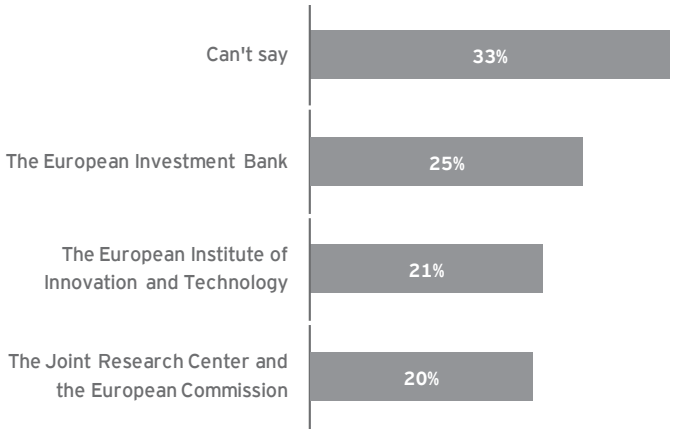
Figure 8 – Do you know the work of the EIT?



Source: Ernst & Young and CEPS survey 2013.

The survey respondents also considered it to be a less effective institution in supporting innovation than the EIB.

Figure 9 — Which of the following is the most effective institutions to support innovation?



Source: Ernst & Young and CEPS survey 2013.

On the other hand, at 44%, almost half of business leaders are aware of the role played by European Research Infrastructures. (These are "facilities, resources and related services used by the scientific community to conduct top-level research in their respective fields, ranging from social sciences to astronomy, genomics to nanotechnologies."[x]) This discrepancy identified last year appears to remain valid, since the figures are very close to what was measured last year, which even more emphasizes the necessity for the EU to clarify its action in innovation.

Putting innovative ideas into practice

The EIT's route for facilitating innovation is to encourage the creation of KICs. The activity of a KIC "must involve at least three independent partner organizations. The partners must be established in at least three different EU Member States and must include at least one higher education partner and one private company."[xi] The various locations at which these partners operate as part of the KIC are known as Co-Location Centers (CLCs).

KICs have been, and will continue to be, selected by the EIT as education, research and business communities that already tackle societal challenges, and will become part of a European ecosystem. Sometimes, CLCs are built around existing clusters with consolidated relations between industry and university relations. The objectives of a KIC are to put innovative ideas into practice. There are currently three KICs: Climate-KIC, for climate change mitigation and adaptation; EIT ICT Labs, for the future information and communications society; and KIC InnoEnergy, for sustainable energy.

Our survey showed that 25% of respondents were familiar with the concept of KICs, indicating that they have a slightly higher profile than the EIT itself. Of those who were familiar with the concept, 38% belonged to at least one KIC, that is, 12 in total. Importantly, because of the involvement of stakeholders in the process of designing future projects, the outcomes are industry-driven, demand-oriented projects that specify at the outset products and business opportunities they are aimed at reaching. And to avoid self-referential choices, the projects are supported by market studies.

To take one of the KICs by way of example, Climate-KIC supports the creation of start-ups by young entrepreneurs, such as the German firm, Carzapp, which has "developed a revolutionary cloud-based hardware solution that enables consumers to securely rent out their cars without the need to exchange keys,"[xii] and the Dutch firm, Solease, which "pledges to change the solar market forever by offering solar panels for a fixed monthly fee."[xiii]

It also promotes projects that seek to mitigate climate change. SMART URBAN ADAPT is a town planning initiative for which the partners "are developing a … 3D geographic map on which factors such as the local climate, the use of transport and land and topographies are plotted."[xiv] Climate-KIC, along with KIC–InnoEnergy, appears to be helping to align Europe with the "third industrial revolution."[xv]

In its proposal and accompanying documents, currently being discussed by the European Parliament, the European Commission announced that, in the period 2014–2020, new KICs will be set up in two waves (in 2014 and 2018). This is to lead to a portfolio of nine KICs in the period 2014–2020, indicating that 40–50 CLCs will be set up across the EU.

The EIT approach is characterized by a number of elements by which it brings true added value at EU level. The support of start-ups is evidence of providing opportunities for "smart funding." The EIT can overcome fragmentation by setting up long-term integrated partnerships (the minimum life span of a KIC is seven years) and achieving critical mass through its European dimension. There is also the potential to enhance the impact of investments on education, research and innovation by acting as a catalyst and adding value to the existing research base. The KICs can also nurture talent across borders and encourage entrepreneurship through knowledge triangle integration.

Viewpoint

Andrea Vogel

Ernst & Young Strategic Growth Markets Leader, EMEIA

Europe is facing up to many pressures — not least its ongoing struggles to recover from the financial crisis, as well as increasing competition from rapid-growth markets around the world. There is no quick fix to these challenges but it is clear that to be more competitive and successful, Europe needs more innovation, more entrepreneurs and more jobs.

European policy-makers, both those in Brussels and in national governments, need to focus on creating an environment in which entrepreneurship and innovation can flourish. This means they need to simplify those policies that are designed to drive innovation and ensure they deliver. How should they do this?

A good starting point would be to improve education and training in new technologies. While excellent universities abound across Europe, the very best are more likely to be in the US. Closer collaboration between policy-makers, business and academia will help ease the journey from innovative idea to product or service. Another option would be to help drive a more innovative culture in Europe — something that already permeates the business community across the US. We want to encourage risk-takers and ensure that a business failure does not mean the end of the world. On the contrary, innovators and entrepreneurs should be always encouraged to launch new ideas into the market.

These two suggestions, together with better tax incentives for innovative companies, would move this agenda forward and help leave Europe better placed to compete in our interconnected global economy.

A new approach to regional innovation

Faced with an apparent lag in innovation performance — something that we defined in past editions of this report as an "innovation emergency" — EU institutions have decided to rely on a more locally specific innovation policy, at least for the allocation of cohesion funds. (Cohesion funding itself is an initiative to reduce disparities of funding between Member States, and promote cohesion across the EU27.) The concept of smart specialization is now being used as a mandatory condition for obtaining funds under the next round of cohesion funding (2014–20).

Smart specialization is defined as "an entrepreneurial process of discovery, identifying where a region can benefit from specializing in a particular area of science and technology."[xvi] In practice, this means "identifying the unique characteristics and assets of each country and region, highlighting each region's competitive advantages, and rallying regional stakeholders and resources around an excellence-driven vision of their future."[xviii]

In our survey, respondents were asked whether they knew what smart specialization was and what it entailed. Of those questioned, only 12% were aware of it, which is even less than in the 2012 survey, when the figure was 15%. Furthermore, only 1% were "well aware" of smart specialization. Awareness was greater among respondents in Southern Europe (15%), for example, than in Northern Europe (7%), perhaps reflecting a greater awareness of cohesion funding as a whole.

Two possible reasons for the low profile of smart specialization are that it definitively excludes large companies from the allocation of funding, and it is targeted at the least developed regions. Of those who were aware of the smart specialization approach, though, 92% believed that it would add value to EU innovation policy. The progress made in regions that have adopted smart specialization, such as Flanders,[xix] Lahti[xx] and the Basque country,[xxi] indicates that those engaged in smart specialization are very enthusiastic about it.

Implementing smart specialization: RIS³

The mechanisms for implementing smart specialization are the Research and Innovation Strategies for Smart Specialization (RIS³). The strategies require that would-be participants follow a number of key steps:

- Analysis of the national or regional context and potential for innovation
- A sound and inclusive governance structure
- A shared vision about the future of the country or region
- A limited number of priorities for development
- Suitable policy mixes
- Monitoring and evaluation mechanisms[xxii]

From this viewpoint, smart specialization is also intimately connected to the "smart regulation" agenda of the EU.[xxiii] The most open wound of the EU Cohesion Policy to date is the lack of sufficient reporting from the national and local level to the EU level on how money is being spent. Currently, the RIS³ correctly strengthens *ex ante* mechanisms and requires that public authorities adopt monitoring and evaluation, but appears weaker in the reporting obligation of local authorities.

The decision of which activities to prioritize at the local level is heavily steered by the public authorities, and this might dilute the emphasis on facilitating innovative activities by the private sector, which animates most of the innovation policy debate in Europe and beyond. It could be argued, especially in the light of the survey findings, that large firms are more able than public institutions to reallocate funds to projects with high market potential, and to young and innovative SMEs.

Some regions simply cannot be as competitive as others due to factors such as education, infrastructure, living standards, and development of the financial and industrial sectors. To put it bluntly, relying on the smart specialization of under-developed regions as a driver of economic recovery would be like imagining that the US counts on the innovation resurgence of Montana or Wyoming to sustain its competitiveness on a global scale. From this perspective, even if the RIS³ approach succeeds within the EU Cohesion Policy, Europe would still lack its Silicon Valley.

The evolution of globalization

Business leaders must anticipate and interpret how globalization is changing, while understanding the opportunities and risks it creates. But they can do very little to change global demographic shifts or capital flows. However, what they can do is react effectively to the forces of globalization or anticipate them to their advantage.

Although globalization continues, its pace has slowed from pre-recession levels and its nature has changed. Capital flows between East and West are more evenly balanced and technology is the driver of globalization, promoting innovation across nations and cultures. By contrast, the globalization of talent is at an early stage. Skilled people are clustered in some locations but scarce in others. Businesses everywhere struggle to match talented professionals with available positions.

Prospering in this globally integrated environment requires constant refinement of global business strategies. The businesses that will ride the next wave of growth will be those that understand the significance of globalization and tailor their strategies based on that understanding.

For further information, see Ernst & Young's *Looking beyond the obvious: globalization and new opportunities for growth* at www.ey.com/globalization.

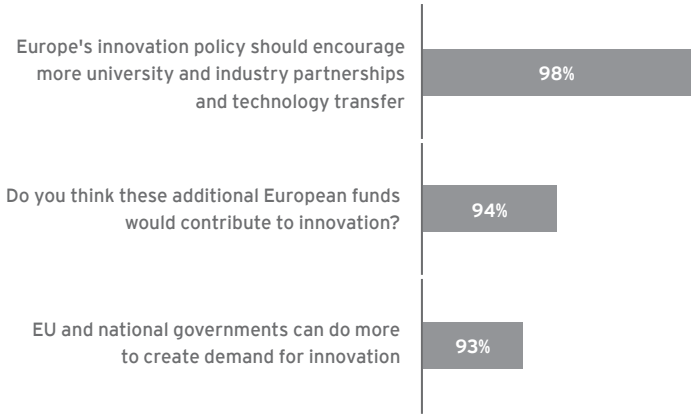
Partnering for progress

A close and productive working relationship between government and business is an imperative hardly confined to the borders of the EU. Indeed, a close collaboration between the public and private sector is something that every country and region, developed and emerging, should aim for.

Our survey sends a number of interesting messages about the relationship between the EU and European business leaders. They recognize that the EU can, through its institutions, policies and initiatives, assist businesses in their search for innovative products and services. They need not benefit them directly, but indirectly through a thriving European economy and marketplace. In summarizing the key findings, we have looked at the strongest responses to our survey, those with over 90% agreement across all respondents. They tell a coherent, though partial, story.

Figure 10 below shows the three questions in the survey, which had a level of agreement of above 90%.

Figure 10 — Selected questions — level of agreement



Source: Ernst & Young and CEPS survey 2013.

The most positive response of all related to the partnership between universities and industry, with 98% support. This recognizes the central role played by universities in creating and transferring new technologies, and the benefits to both parties of a bilateral relationship in the research and development of innovative products.

One of the EU institutions, the EIT, is providing a means of creating more of these much desired university-industry partnerships. Yet only 3% know "very well" of its work, and only 16% "fairly well," making just 19% in all. This response was uniform across small, medium-sized and large companies. The mechanisms for delivering this kind of innovation through partnership, the KICs, fare almost as badly, with an awareness level of 25%. Given that the EU is intending that there will be six more KICs created between 2014 and 2020, their potential for innovation ought to be better known. The EU also has a responsibility to publicize its offerings more clearly and effectively to Europe's business leaders.

In addition, business leaders believe that the EU does have an important role to play in the funding of innovation, and should direct funds into those areas most likely to achieve that end. The enthusiasm for different kinds of partnerships, between all those engaged in innovation, indicates that such collaboration is particularly fruitful, and should be well funded and supported by an efficient infrastructure. The EU should also seek to create and stimulate demand for innovation, as indeed should the national governments of the companies surveyed. A number of practical investment incentives were addressed in the survey, and have been discussed in this report.

Clearly, the filing of patents is an important measure of innovation, but innovative products must find customers in order to survive and prosper.

Above all, it is in actively funding and facilitating these innovation partnerships that the EU will be best able to meet the requirements of European business leaders. The KICs are an example of the innovation partnerships that the EU can help to foster, and that promote a culture of beneficial collaboration.

Toward the third industrial revolution

Taken together, the main trends identified by last year's report and by this report configure the emergence of what prominent authors such as Jeremy Rifkin have already termed the "third industrial revolution."

The five pillars of the third industrial revolution are (1) shifting to renewable energy; (2) transforming the building stock of every continent into micropower plants to collect renewable energies on site; (3) deploying hydrogen and other storage technologies in every building and throughout the infrastructure to store intermittent energies; (4) using internet technology to transform the power grid of every continent into an energy network that acts just like the internet and (5) transitioning the transport fleet to electric plug-in and fuel cell vehicles that can buy and sell electricity on a smart, interactive, continental power grid.

It seems likely that both Rifkin's ideas and the emerging global value chains will play a key role with respect to the type of capitalism that the whole world will experience in the years to come. If the right choices are made at the political level, we will soon be able to progress toward a more balanced and sustainable distribution of resources, competences, skills, jobs and power around the world.

The European Commission and the European Parliament have officially endorsed Rifkin's ideas and translated them into practical policy actions in the Communication on industrial policy adopted in October 2012. However, simply endorsing a strategy does not mean being ready for it. The third industrial revolution, or any of its variants, requires a world-class infrastructure and legal rules that are sufficiently conducive to investment in clean technologies and in knowledge transfer between universities and industry, as well as among industrial firms. It requires investment in education. For example, according to recent research, as many as 1.7 million jobs are not filled today in the cloud computing sector.

Making the right choices means avoiding the temptation to shut down domestic economies and revert to pure protectionism. At the same time, it also implies that governments should be able to catalyze innovation efforts toward a common vision of society, and provide incentives to those entrepreneurs that contribute to it with their ideas.

Viewpoint

Lutz Mehlhorn

Managing Director, mehlhorn.concept, Germany,
Vice President new business UW (detergents) Henkel up to end 2012

I think we sometimes place too much focus on some key technology sectors as "symbols" for innovation and growth. Other sectors, too, even those not focused on technology, can significantly drive innovation. Technology often only builds the enabler for new business models or even does not play an important role as, for example, in many service or marketing driven innovations.

A major trigger for innovation lies in the open innovation capabilities of companies – matching the strengths of different companies and building new collaborative business architectures and models. Some 87% of industry leaders in the latest General Electric Innovation Barometer believe that one key element of future business success lies in "open innovation" – which means developing and driving collaborative business models.

Nevertheless, my personal observation is that cultural and strategic openness, as well as the change management in this direction, are still not moving rapidly enough. There is still a lot of room for acceleration, which can support greater EU competitiveness in innovation, when compared with other fast-growing regions. This is finally a question of leadership – drilled down to single company level.

Innovation has to be orchestrated as a key leadership task, especially big organizations and companies need "injections" from both sides, top-down as well as bottom-up. Both have to meet and build an environment with sufficient freedom of all the actors involved – feeding companies' innovation pipelines not only by "incremental innovations" but also by new business models, collaborative innovations and, in general, more disruptive innovations.

What politicians can do is to develop programs that support an innovation culture, venture capital, start-ups and so on – as they do already. Nevertheless, I believe that innovation programs developed so far need to be more aligned with the demand and individual program needs in companies. Therefore we need "demand-driven" collaboration platforms – bringing together personalized entrepreneurship and ideas, technical as well as business modeling know-how, financial resources and organizational knowledge. We need to foster individualized coaching of collaboration building processes on a single project level. This will support concept building, project pilots, as well as implementation and rollout preparation with the right mix of internal and external competence and expertise.

The biggest bottleneck to surpass is the "open innovation" readiness of companies. It is challenging because of the classic ownership culture of technologies, systems and so on, which have to be reviewed and adapted enabling and accelerating collaborative innovations and business models.

Another open innovation issue is the big collaboration potential of large companies working together with small companies and start-ups – matching complementary strengths. Third-party coaching of finding good working partnering as well as incubator solutions to gain pilot experiences can help to overcome cultural

differences and demonstrate how collaborative concepts can work in practice. Here we have to invest because of the high innovation power of small and medium-sized companies matched with the financial power and resources of large companies.

In general, we need dedicated competence platforms as sounding boards for new business models and open innovation, which currently do not exist. Policy-makers can assist by leveraging practical insights and help get nearer to effective support programs to accelerate. Sufficient focus on individual cases and single company problems and demands finally are key. We have to develop a culture of further development and acceleration of innovation strategies to get new products and services deployed more rapidly on the ground.

That is the reason why Henkel, together with Ernst & Young, is one of the collaborators and initiators of a competence center for business model innovation at Zeppelin University, a privately funded university in Friedrichshafen, Germany. Ten important industry players are already poised to participate.

Why innovation should remain "bottom-up"

There are several reasons to believe that innovation, as a process of transformation of new ideas and concepts into new products, will increasingly require a bottom-up approach, one rooted in the needs and demands of the market, rather than imposed from the center. Today, innovation requires several organizational forms, depending on the sector, the territory, the specific culture and skills that a country can offer. The "knowledge triangle" (research, education, business) spins in different ways and at different speeds in pharmaceuticals, nanotech, and so on. Government plays a different role in each of those sectors, ranging from pure facilitator to direct investor.

Faced with this ever-changing dynamic, governments are unlikely to be able to adapt their policies at the right pace, nor should they revert to past mistakes such as picking winners in industrial policy. Last year's report argued that the key role of governments is to make innovation possible, rather than steering or even leading it. Policy-makers should focus their activities on specific programs:

Infrastructure

- Electricity and telecoms networks, as well as the internet
- Open data platforms, which can act as a background for basic science and information sharing across researchers
- Accessible e-government services that reduce red tape for those that want to create a new company, obtain licenses and interact with public administrations

Global interconnectivity

Governments should work to secure access to global clusters and networks for those entrepreneurs that wish to enter global value chains and globalized product platforms.

Tax policy

R&D policy should not dictate content – rather, it should minimize obstacles and maximize incentives for those entrepreneurs and creative minds that are working on innovative goods and services. Tax breaks or rebates are increasingly being used to ensure that innovation – which produces positive economic effects for society as a whole – is rewarded for its social contribution through reduced tax exposure.

Education

It is particularly important, from a government perspective, to include emerging skills in the curricula of public universities, in a way that leads academia closer to business needs.

Culture

Countries with a culture that does not reward risky ventures are unlikely to survive in the quest for competitiveness and innovation. Public discourse should encourage creativity among younger generations, so that young leading companies are promoted at all levels.

Openness

Countries must remain open to foreign investment and also to the attraction of foreign talent. This finding, of course, contradicts the current tendency toward protectionism at least by some of the developed and emerging economies.

Rule of law

Rules that facilitate innovation are of many types, but technology transfer legislation, patent law, public procurement and competition rules on high-tech joint ventures are integral to building an innovation-friendly environment.

Coordination

In areas where key societal priorities (and evident market failures) emerge, governments can also launch and facilitate the emergence of partnerships, networks and communities aimed at joining forces to achieve a common, socially relevant result.

In addition to these points outlined above, some clear conclusions can be drawn from our survey of business leaders:

Increased technology transfer and partnerships between business and academic institutions

In the opinion of our survey respondents, Europe's innovation policy should encourage more university and industry partnerships and technology transfer. This was one of the least contested propositions: 98% of participants agreed. There was also a strong feeling that EU innovation policy should focus on education and skills, with 88% agreeing and, in Central and Eastern Europe, 95%.

It was felt that one of the important areas of innovative technology was to improve coordination through virtual venues dedicated to open data and networking. In response to the proposition that there should be a common platform of open access information, 88% of business leaders were in favor.

As one might expect, enthusiasm was particularly high among CIOs (97%). There was also a positive response to the proposition that there should be an IPR exchange platform to enable trading of patents, 74% being in favor. This would enable the greater use of existing patents, and mitigate the problem of unexploited patents. These venues would also depend on the development of a common broadband infrastructure to which, as seen above, more funds should be allocated. This only serves to emphasize how unfortunate it is that this infrastructure, as a part of the common European facility, has been delayed, perhaps indefinitely.

More public private partnerships that deliver innovation

Whether or not the EU can fund the delivery of a broadband infrastructure, respondents believe that PPPs should be used to accelerate the deployment of enabling technologies such as broadband networks. There was a relatively high level of agreement of 90% of respondents, with 100% of CEOs behind the idea, and significant agreement among high technology companies (98%) and strategic directors (94%).

Business leaders also generally agreed with the idea that "Europe needs forms of permanent consultation of industry stakeholders to identify industry needs and act accordingly." Of all respondents, 87% were in agreement. Such a collaboration of the private sector with the EU and national governments would help to identify the most fruitful areas for PPPs.

Greater collaboration between business people and academics

Generally, it was felt in this year's survey that anything promoting more collaboration would contribute to innovation, be it business-to-business, business-to-academics or academics-to-academics.

The survey found that such collaboration finds approval from 87% of respondents, with 55% being definitely in favor. German companies were the most supportive of the idea: 68% were definitely in favor. The responses were much the same when applied to cross-border collaboration, with 87% in favor, and 63% of German companies definitely in favor.

Enhanced global collaboration, especially with the US and China

Respondents were clear that the EU should partner with BRICs and other rapid-growth countries in order to foster innovation, with 80% of them in favor. There was particular support from CEOs, CIOs and CFOs, all well above 80%.

There was a related and very interesting question about such global cross-border collaboration: "Which country do you think Europe should partner with in order to become more competitive?" The responses were very detailed and gave a great insight into the thinking of Europe's business leaders. Predictably, perhaps, the two countries chosen by the majority were the USA (42%) and China (24%).

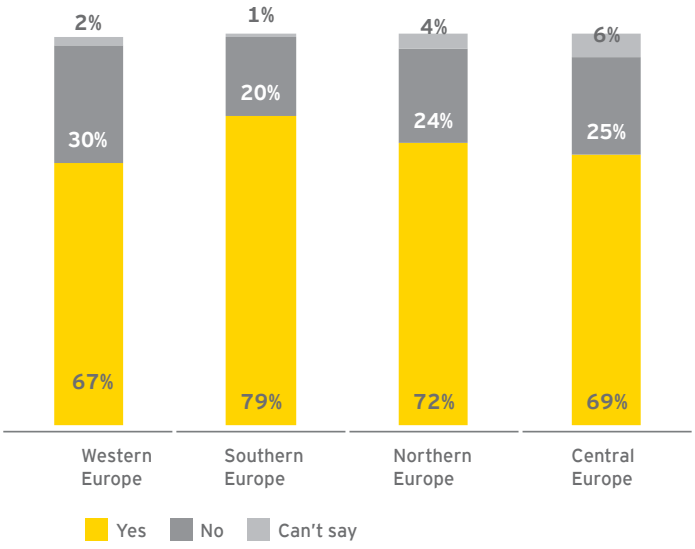
There was also strong support for Brazil and India (6% apiece) among the rapid-growth markets, and for Japan (5%). There were significant fluctuations between different regions, with Southern European companies being most in favor of partnership with the US (53%) and Northern European with China (41%). Another interesting association was the choice of Central European companies of partnership with Turkey (7%), which came ahead of those who chose Russia (5%).

Large companies should be empowered as innovation accel erators and intermediaries

One of the areas of business-to-business collaboration is between large companies and SMEs. William Baumol, an authority on this form of collaboration, "assigns primary roles to two groups: the independent inventors and entrepreneurs; and the large high-tech corporations. He cites suggestive evidence indicating that these two groups play very different and highly complementary roles in the processes of innovation and growth."[xxiv] Large companies can provide funds to SMEs to fund speculative research or to bring their existing ideas or products to market. They know that they cannot conduct all research and innovation in-house; rather, they have to allocate funds to SMEs, which can be more agile and flexible in responding to new technologies by developing new products.

Our survey confirmed these findings (see Figure 10 below). For instance, 71% of respondents in the sample believe that large companies should act as innovation intermediaries, and the percentage becomes greater in Northern and Southern European countries (74% and 79%, respectively). Unsurprisingly, there was greater enthusiasm for the idea (76% agreement) among smaller companies (of less than €150 million turnover) than their larger counterparts.

Figure 10 – Do you think large European companies should act as innovation intermediaries by conveying public and private funds to innovative SMEs?



Source: Ernst & Young and CEPS survey 2013.

Growing Beyond innovation policy

As the legacy of the financial crisis continues to play out across Europe's cities, towns and villages, policy-makers are operating in an environment shaped by less money and where growth and jobs remain elusive. In such circumstances, it is hardly surprising that Europe's innovators have been thrust center-stage. And recent news of the falling rate of start-up businesses in Germany, the long-time engine of European economy, confirms the urgency of this debate.

That there remains no catch-all solution, a point we made in last year's report, is unsurprising. The dynamics of the European economy are ever-changing; the recent Cyprus bailout proves that we should expect the unexpected. But that doesn't mean that a more effective innovation policy is out of reach – anything but.

This report suggests that greater innovation in Europe rests on closer collaboration between stakeholders from business, academia, researchers and policy-makers. The stream of EU-sponsored projects and programs cascading across the 27 Member States have all sought to drive innovation, stimulate entrepreneurial activity and create much-needed growth and jobs for citizens across the region. That much is clear. But this year's survey, confirming a trend we picked up in last year's report, demonstrates that for many businesses, such programs are not having the necessary impact. That only 12% of business leaders are aware of the EU's smart specialization program speaks volumes. So what should be done?

Moving this agenda forward lies not only in greater collaboration between stakeholders but also on the understanding that creating a truly innovative culture in Europe depends largely on Europe's innovators themselves. The chief responsibility of policy-makers is to remove obstacles to innovation by creating the necessary conditions for growth. Funding state-of-the-art broadband networks and generating a regulatory environment that supports start-ups and entrepreneurs are two examples of this type of activity.

The pace of technological change, not just in Europe but worldwide, underlines why predicting the future of innovation is, inherently, a difficult task. Four key technology trends are common all over the world – social media, big data, mobile apps and cloud computing – and these trends are rapidly reshaping the markets in which Europe's businesses are operating. Not only does this demonstrate the enduring value of a robust approach to R&D, but for a body as complex as the EU – where major policy involves three institutions (Commission, Parliament, Council), EU advisory bodies, and implementation by Member States – it shows how policy formulation can easily be overtaken by external events.

The pursuit of economic growth and jobs affects countries large and small, irrespective of their global footprint. But while globalization has had significant impact on governments, creating much greater interconnection between problems, ideas and solutions, it has also demonstrated the potential of a more collaborative approach to innovation, one that is largely driven by the needs and ambitions of the market itself. Policy-makers and business acting in unison on this agenda will help build a better working world and leave Europe better-placed to succeed in its ongoing quest for competitiveness.

Appendix

Country highlights

Growing Beyond innovation survey

For this report, we conducted a quantitative survey among 680 European business leaders on their view on EU innovation policy and how the business more efficiently could benefit from EU innovation support. In our survey, we targeted the following categories among respondents: president or CEO, managing director or COO, chief financial officer, chief information officer, R&D director, strategic director. The average response rate from each country is 45.

In this section, we present the key highlight findings from each of the 15 countries we have surveyed:

Austria
Belgium
Finland
France
Germany
Greece
Hungary
Ireland
Italy
Netherlands
Poland
Portugal
Spain
Sweden
United Kingdom

Austria

A "northern" vision about innovation at the European level

- 23% of Austrian respondents consider that Northern Europe has the strongest innovation policy and the strongest innovation climate (vs. 13% of the whole sample).
- According to 28% of Austrian respondents, innovation policy will neither improve nor deteriorate in their country in the next years (vs. 15%). And 25% of them think it is going to stay stable at the European scale (vs. 15%).

Strong commitments are expected

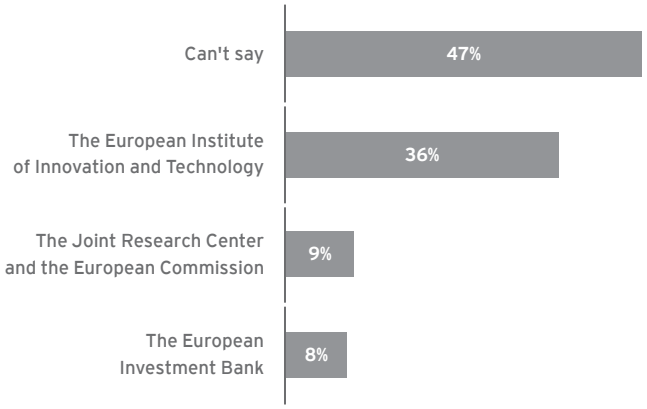
- 28% of them disagree with the fact that access to EU funds should be made easier (vs. 14%).
- 76% consider that a common platform of open access information for all EU researchers is very efficient (vs. 50%). At the same time, only 51% think it is efficient that the EIF relies on local intermediaries to identify innovators, rather than giving funds to individual companies (vs. 66%).
- 70% think more business-to-business, business-to-academics or academics-to-academics collaboration would definitely contribute to innovation in their sector (vs. 55%).
- At the same time, 70% of Austrian respondents think more business-to-business, business-to-academics, academics-to-academics cross-border collaboration would definitely contribute to innovation in their sector (vs. 52%).

The awareness of European infrastructure is unequal in Austria

- 6% are familiar with the concept of KICs (vs. 25%)
- 60% of them know the work of the European Research Infrastructure (vs. 44%)
- To them, the most effective institution to support innovation is the EIT (36% vs. 21%).
- The less effective is the EIB (8% vs. 25%).

Total: 45 respondents

Figure 12 – The most effective institutions to support innovation according to the Austrian respondents



Source: Ernst & Young and CEPS survey 2013.

Belgium

Private spending, a key issue for innovation in Belgium

- Only 24% of Belgian respondents have the feeling that innovation policy has improved in their country (vs. 39% for the whole sample). In fact, 49% of them think that innovation policy has neither improved nor deteriorated in their country (vs. 31%). The conclusions are the same considering the European Union level: 21% think it improved (vs. 38%), 52% think it remained stable (vs. 34%).

Belgium prefers the European level for innovation policy

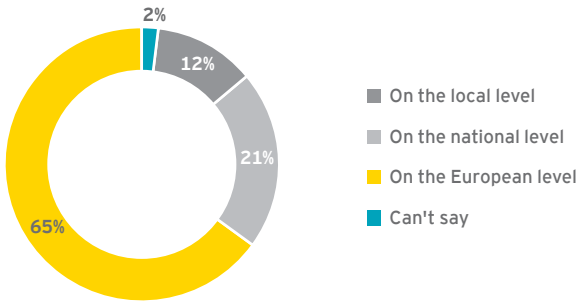
- 65% of Belgian respondents think that innovation policy is most effective at the European level (vs. 37%). Only 21% of them approve its efficiency at the national level (vs. 39%).

Strong commitments are expected

- 83% of Belgian respondents consider that there is not enough money to foster innovation in Europe (vs. 66%).
- 91% think that there should be a dedicated EU agency for innovation (vs. 74%).
- 76% of them agree with the fact that a lack of labor mobility is a key obstacle to EU competitiveness (vs. 60%).
- 74% think that innovation policy should be more centralized at the EU level (vs. 53%).
- Only 54% believe that innovation policy in the EU has failed to fully match industry needs (vs. 72%)
- 66% of them agree with the idea of a partnership between the EU, BRICs and other rapid-growth countries to foster innovation (vs. 80%).
- 11% of Belgian respondents can't say whether the EU institutions should put more funds in the development of a common broadband infrastructure or not (vs. 4%).
- 77% think more business-to-business, business-to-academics or academics-to-academics collaboration would contribute to innovation in their sector (vs. 87%).
- At the same time, 73% think more business-to-business, business-to-academics, academics-to-academics cross-border collaboration would contribute to innovation in their sector (vs. 88%).

Total: 46 respondents

Figure 13 – The most effective level for innovation policy for Belgian respondents



Source: Ernst & Young and CEPS survey 2013.

Finland

An optimistic assessment of innovation policy

- 57% of Finn respondents have the feeling that innovation policy improved in their country (vs. 39% for the whole sample). The conclusions are the same considering the European Union level: 53% think it improved (vs. 38%).

The national level preferred for the innovation policy

- 57% of Finn respondents believe that innovation policy is most effective at the national level (vs. 39%). They believe in the European level far less than the average (18% vs. 37%) and think that the EU is not able to develop a more effective approach to research and innovation (35% vs. 23%).

European-level actions are not seen as a solution for Finland

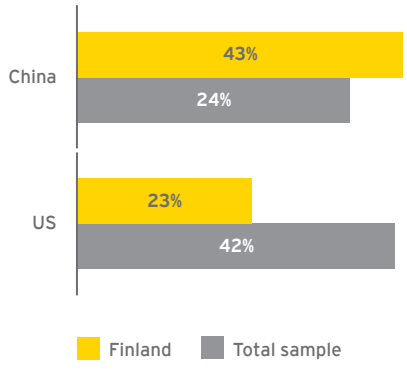
- 53% of Finn respondents feel that there is enough money invested to foster innovation in Europe (vs. 24%) and only 37% that there is not enough (vs. 66%).
- 92% of them think that Europe's innovation policy should encourage more university and industry partnerships and technology transfer (vs. 98%).
- 76% consider that tax incentives should be used more frequently to stimulate the supply of innovation (vs. 86%).
- 75% believe that PPPs should be used to speed the deployment of enabling technologies such as broadband networks (vs. 90%).
- Less Finn respondents think that EU innovation policy should focus on key enabling products and services (66% vs. 79%), or consider that there should be a dedicated EU agency for innovation (59% vs. 74%).
- A minority of them think that innovation policy should be more centralized at the EU level (31% vs. 53%).
- Less Finn respondents consider that EU policy is too fragmented, and needs more coordination (65% vs. 81%).
- 23% of Finn respondents consider a common platform of open access information for all EU researchers as inefficient (vs. 9%), and only 56% (vs.74%) consider efficient the fact that the EU set up an IPR exchange platform to enable trading of patents and IP-based joint ventures.
- In the meantime, 58% think that the EU institutions should put more funds in the development of a common broadband infrastructure (vs. 77%).
- Among all the nations, the Finn respondents are the least convinced about the partnership of Europe with the US in order to become more competitive (23% vs. 42%). Nevertheless, 43% believe in a partnership with China (vs. 24%).

A quite low awareness of European infrastructure except for the CEF

- 11% are familiar with the concept of KICs (vs. 25%).
- 33% of them mention the Joint Research Center and the European Commission as the most effective institution to support innovation (vs. 20%).

Total: 45 respondents

Figure 14 – Which country do you think Europe should partner with in order to become more competitive?



Source: Ernst & Young and CEPS survey 2013.

France

Private spending, a key issue for innovation in France

- 92% of French respondents think that private spending contributes to technological and scientific innovation in France (vs. 74% for the total sample).
- 21% of them consider that their country has the strongest innovation policy and the strongest innovation climate (vs. 4%).
- According to 49% of French respondents, innovation policy has neither improved nor deteriorated in France (vs. 31%). Only 22% of them think it has improved (vs. 39%).
- Only 46% of French respondents think that innovation policy will improve in France in the next years (vs. 67%). 29% of them think it will neither improve, nor deteriorate (vs. 15%).
- And only 53% of French respondents think that innovation policy will improve in the European Union in the next years (vs. 69%). 31% of them think it will neither improve, nor deteriorate (vs. 15%).

The local level preferred for the innovation policy

- 47% of French respondents think that innovation policy is most effective at the local level (vs. 22%). Furthermore, only 17% of them approve its efficiency at the European level (vs. 37%).

Different commitments are expected

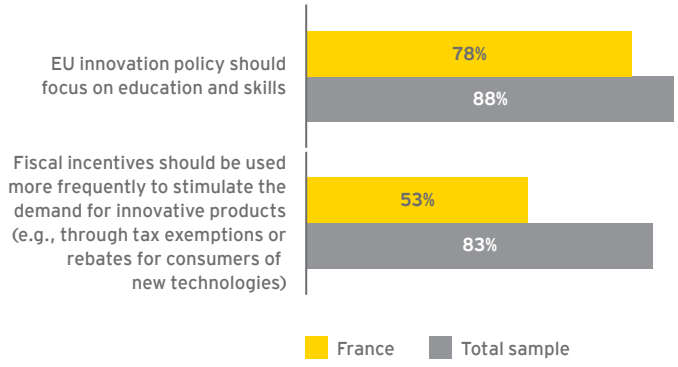
- 78% of French respondents think that innovation policy should focus on education and skills (vs. 88%). And only 53% of them agree with the fact that fiscal incentives should be used more frequently to stimulate the demand for innovative products (vs. 83%).
- Only 48% of them think that innovation policy in the EU has failed to match society's needs fully.
- 74% of French respondents consider that a common platform of open access information for all EU researchers is efficient (vs. 88%). At the same time, 86% of them think it is efficient that the EIF relies on local intermediaries to identify innovators, rather than giving funds to individual companies (vs. 66%).
- Whereas 24% of the sample thinks that Europe should partner with China in order to become more competitive, only 10% of French respondents do. They would more rely on Russia (7% vs. 2%), or Morocco (2% vs. less than 1%).

A particularly low awareness of European infrastructures

- 7% of French respondents know the work of the European Institute for Innovation and Technology (vs. 19%).
- 15% of French respondents know the work of the European Commission to promote innovation within Europe (vs. 30%).
- 12% of French respondents are familiar with the concept of KICs (vs. 25%).

Total: 46 respondents

Figure 15 – Different commitments expected by the French respondents



Source: Ernst & Young and CEPS survey 2013.

Germany

Germans highly praise their country's innovation policy

- 93% of German respondents consider that their country has the strongest innovation policy and the strongest innovation climate (vs. 60% of the whole sample). This figure goes up to 96% when Western Europe is considered (79%).
- According to 59% of German respondents, innovation policy has neither improved nor deteriorated in Germany (vs. 31%). And 59% of them point out the same conclusions for the European Union (vs. 34%).

Different commitments are expected

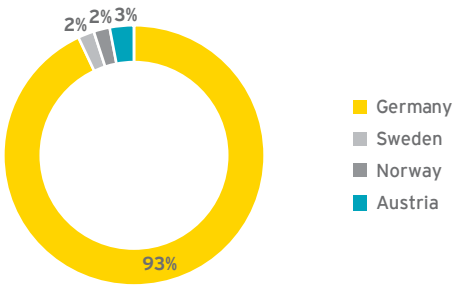
- 52% of German respondents think that there should be a dedicated EU agency for innovation (vs. 74%).
- Only 44% of them agree with the fact that lack of labor mobility is a key obstacle to EU competitiveness (vs. 60%).
- Only 53% of them think that innovation policy in the US is more effective than in the EU (vs. 68%).
- 24% of them disagree with the fact that access to EU funds should be made easier (vs. 14%).
- 57% of German respondents think that large European companies should act as innovation intermediaries by conveying public and private funds to innovative SMEs (vs. 71%).

A quite low awareness of European infrastructures

- Only 12% of German respondents are familiar with the concept of KICs (vs. 25%).

Total: 46 respondents

Figure 16 – According to German respondents, the European country with the strongest innovation policy and innovation climate is



Source: Ernst & Young and CEPS survey 2013.

Greece

Innovation policy in Greece: a pessimistic assessment of the national situation, an optimistic vision about the future

- It seems to 58% of Greek respondents that innovation policy deteriorated in Greece (vs. 28% for the total sample). 12% of them think it neither improved nor deteriorated (vs. 31%).
- At the same time, 57% of them believe that innovation policy deteriorated in the European Union (vs. 38%).
- 81% of Greek respondents think that innovation policy will improve in Greece in the next years (vs. 67%).
- And 93% think that innovation policy will improve in the European Union in the next years (vs. 69% – highest score vs. other countries).

The EU, key player to encourage collective decision

- 96% of Greek respondents think that the EU is able to develop a more effective approach to research and innovation (vs. 76% – highest score vs. other countries).
- 54% believe that innovation policy is most effective at the European level (vs. 37%).

Different commitments are expected

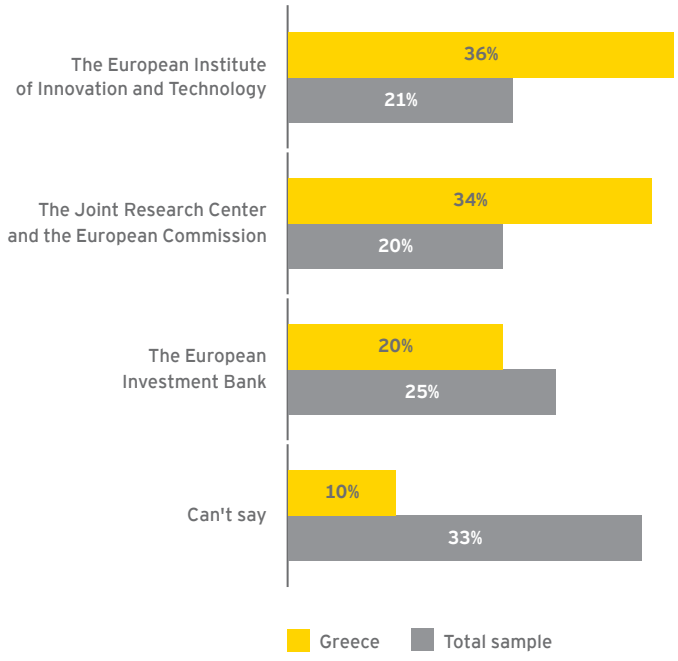
- 91% of Greek respondents think that a community patent would foster more innovation for SMEs (vs. 77%).
- 85% of them think that innovation policy in the US is more effective than in the EU (vs. 68%).
- 4% think that it would not be efficient if the EU set up an IPR exchange platform to enable trading of patents and IP-based joint ventures (vs. 15%).
- 98% believe that the EU institutions should put more funds in the development of a common broadband infrastructure (vs. 77% – highest score vs. other countries).
- 90% think that large European companies should act as innovation intermediaries by conveying public and private funds to innovative SMEs (vs. 71% – highest score vs. other countries).

The best level of awareness concerning European infrastructure

- 56% know the work of the European Commission to promote innovation within Europe (vs. 30%).
- 50% are familiar with the concept of KICs (vs. 25%).
- 40% of Greek respondents know the work of the European Institute for Innovation and Technology (vs. 19%).
- To them, the most effective institutions to support innovation are both the EIT (36% vs. 21%) and the Joint Research Center and the European Commission (34% vs. 20%). Greek respondents are particularly aware on these questions: only 10% of them weren't able to give their opinion (vs. 33%).

Total: 45 respondents

Figure 17 – The most effective institutions to support innovation as mentioned by the Greek respondents compared with the total sample



Source: Ernst & Young and CEPS survey 2013.

Hungary

Hungarian respondents are very positive about the EU

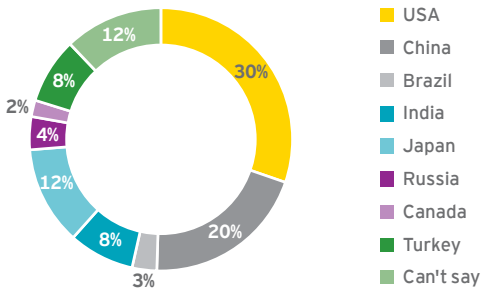
- According to 46% of Hungarian respondents private spending does not contribute to technological and scientific innovation in their country (vs. 23% for the total sample).
- 76% of them consider that Germany is the country that has the strongest innovation policy and the strongest innovation climate (vs. 60%). Except Germany itself, it is the highest score vs. other countries.
- There are no Hungarian respondents thinking that innovation policy in the last year has deteriorated in the European Union (vs. 18%). 69% of them say that it has improved (vs. 38%). They are optimistic for the future as well. 84% believe that the innovation policy in EU will improve in the next year (vs. 69%), and none of them think that it will deteriorate (vs. 14%).

Different commitments are expected

- 75% of Hungarian respondents think that Europe needs forms of permanent consultation of industry stakeholders to identify industry needs and act accordingly (vs. 87%).
- 63% of them consider that Europe needs to strengthen IP-backed finance for SMEs (vs. 84%).
- Among all the interviewed countries, in Hungary there was the highest percentage of respondents who think that access to EU funds should be made easier (98% vs. 84%).
- On the contrary, Hungarian respondents are less disappointed with the innovation policy's ability to match with industry needs. Only 55% think that it has failed (vs. 72%).
- As for the propositions to promote innovation in Europe, 76% of Hungarian respondents consider a common platform of open access information for all EU researchers as efficient (vs. 88%). Only 57% of them think the same about the idea that the EU should set up an IPR exchange platform to enable trading of patents and IP-based joint ventures (vs. 74%). However, these results might be due to lack of opinion. 27% of Hungarian respondents could not judge the second proposition (vs. 11%) and 18% of them could not give their opinion about the idea that the EIF should rely on local intermediaries to identify innovators, rather than giving funds to individual companies (vs. 7%). Both scores were the highest among all the countries.
- "Can't say" was the common answer of Hungarian respondents in other topics as well. 8% in the question about the idea that large European companies should act as innovation intermediaries by conveying public and private funds to innovative SMEs (vs. 3%). 12% did not know if more business-to-business, business-to-academics or academics-to-academics collaboration would contribute to innovation in their sector (vs. 3%). And 10% chose this answer for the similar question about cross-border collaboration (vs. 2%).
- Among all the nations, the Hungarian respondents are the most convinced about the partnership of Europe with Japan in order to become more competitive (12% vs. 5%) and with Turkey (8% vs. 1%).

Total: 46 respondents

Figure 18 – Hungarian respondents think Europe should partner with the following countries in order to become more competitive



Source: Ernst & Young and CEPS survey 2013.

Ireland

To Irish respondents, innovation at the European level does not necessarily depend on Germany

- Only 39% of Irish respondents consider that Germany is the European country with the strongest innovation policy and innovation climate (vs. 60% of the whole sample). As for many other countries of the survey, a significant figure of Irish respondents consider that their country has the strongest innovation policy or climate (25% vs. 2%). Finally, a high percentage of them (13%) have no opinion about the topic (vs. 6%).
- They are very positive about the evolution of the innovation policy in their country. According to 67% of Irish respondents, the innovation policy has improved in Ireland over the past years (vs. 39%).
- They are very optimistic about the future as well. 89% of Irish respondents anticipate that the innovation policy in their country will improve in the next year (vs. 67%).

The EU, a key player to encourage innovation in Europe

- Only 10% of Irish respondents do not believe that the EU is able to develop a more effective approach to research and innovation (vs. 23%).

Strong support for the European-level actions

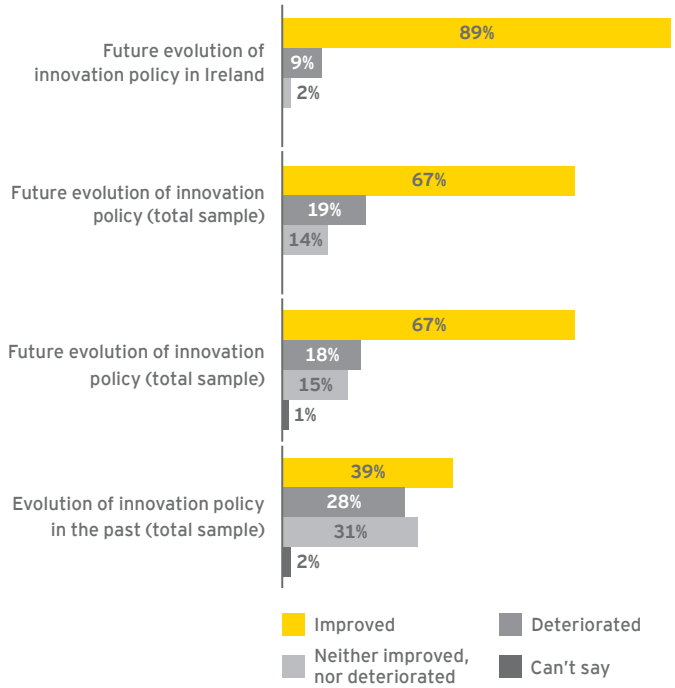
- 90% of Irish respondents consider that a community patent would foster more innovation for SMEs (vs. 77%).
- 89% think that there should be a dedicated EU agency for innovation (vs. 74%).
- 37% of them believe that Europe should partner with China in order to become more competitive (vs. 24%).

A quite high awareness of European infrastructure

- 44% of Irish respondents are familiar with the concept of KICs (vs. 25%) and 26% know what CEF is (vs. 10%).
- 42% of them see The EIB as the most effective institution to support innovation (vs. 25%). Only 17% gave no answer (vs. 33%).

Total: 45 respondents

Figure 19 – The developments of innovation policy have been improved and will improve according to Irish respondents



Source: Ernst & Young and CEPS survey 2013.

Italy

Italy counts on the EU

- According to 66% of Italian respondents, the innovation policy has deteriorated in Italy over the past year (vs. 28% for the total sample).
- However, they are rather optimistic about the evolution of the innovation policy in the EU. 89% of Italian respondents anticipate that it will improve in the next years (vs. 69%).

The EU, a key player to encourage innovation in Europe

- 89% of Italian respondents believe that the EU is able to develop a more effective approach to research and innovation (vs. 76%). They think that the European level is the most effective one for innovation policy (68% vs. 37%). On the contrary, they consider the effectiveness of the national and local levels as much weaker. Only 23% (vs. 39%) for the former and 7% (vs. 22%) for the latter.

European-level actions seen as a solution for Italy

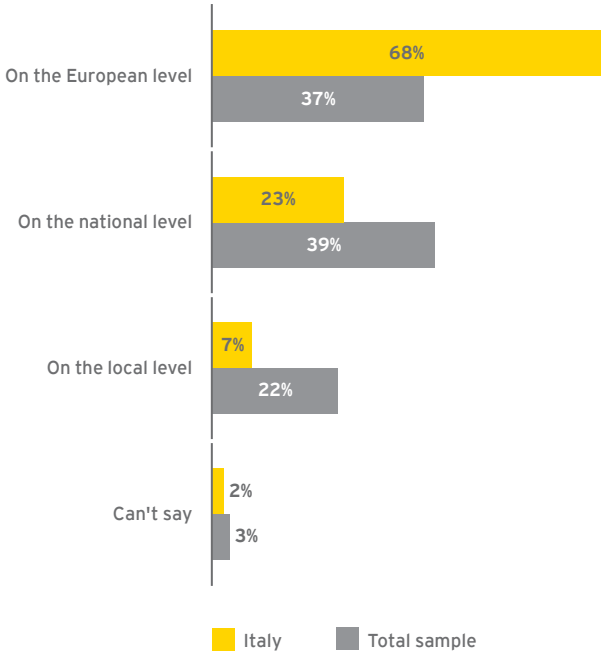
- 81% of Italian respondents consider that there is not enough money invested to foster innovation in Europe (vs. 66% for the total sample). 94% of them think that the EU institutions should put more funds in the development of a common broadband infrastructure (vs. 77%).
- All of them, 100%, think that Europe needs to strengthen IP-backed finance for SMEs (vs. 84%).
- 90% of Italian respondents believe that public procurement should be used to create demand for innovative products and services (vs. 77%).
- The lack of labor mobility is seen as a key obstacle to EU competitiveness by 87% of Italian respondents (vs. 60%).
- 88% of them claim that innovation policy should be more centralized at the EU level (vs. 53%). For the moment, 95% of Italian respondents see EU policy as too fragmented, and in need of more coordination (vs. 81%). They think that innovation policy in the EU has failed to fully match society's needs (88% vs. 67%) and that it is less effective than in the US (84% vs. 68%).
- As for the propositions to promote innovation in Europe, 98% of Italian respondents consider a common platform of open access information for all EU researchers as efficient (vs. 88%). 89% of them think the same about the idea that the EU should set up an IPR exchange platform to enable trading of patents and IP-based joint ventures (vs. 74%).
- Among all the nations, the Italian respondents are the most convinced about the partnership of Europe with the US in order to become more competitive (64% vs. 42%). Only 21% think about the partnership with China (vs. 36%).

A quite high awareness of European infrastructure except for the CEF

- 59% of Italian respondents are aware of the role played by European Research Infrastructure (vs. 44% for the total sample) and 39% are familiar with the concept of KICs (vs. 25%).
- None of them knows what the CEF is (vs. 10%).

Total: 46 respondents

Figure 20 – The most effective level for innovation policy according to Italian respondents and to the total sample



Source: Ernst & Young and CEPS survey 2013.

The Netherlands

A quite pessimistic vision about innovation at the European level

- Only 51% of Dutch respondents feel that private spending contributes to technological and scientific innovation in the European Union (vs.72% of the total sample).
- 29% of Dutch respondents consider that their country has the strongest innovation policy and the strongest innovation climate (vs. 4%).
- According to 32% of Dutch respondents, innovation policy will deteriorate in the Netherlands in the next years (vs. 18% for the total sample). As for the evolution of the innovation policy of the European Union, 55% of the Dutch respondents think that it will improve (vs. 69%) and 27% that it will deteriorate (vs. 14%).

Strong commitments are expected

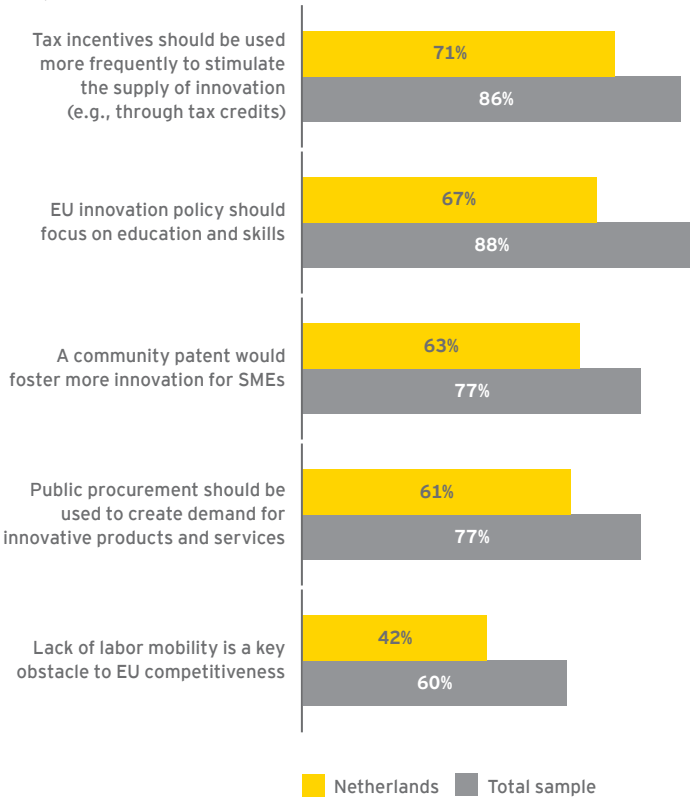
- 67% of Dutch respondents think that EU innovation policy should focus on education and skills (vs. 88%) and 66% on key enabling products or services (vs. 79%).
- 71% consider that tax incentives should be used more frequently to stimulate the supply of innovation (vs. 86%).
- 61% of them agree that public procurement should be used to create demand for innovative products and services (vs. 77%).
- 63% think that a community patent would foster more innovation for SMEs (vs. 77%).
- Only 42% believe that the lack of labor mobility is a key obstacle to EU competitiveness (vs. 60%).
- Among all the interviewed countries, the Netherlands is the country with the lowest percentage of the respondents who think that innovation policy in the US is more effective than in the EU (47% vs. 68%).
- Only 31% of Dutch respondents do not think that the EU institution should put more funds in the development of a common broadband infrastructure (vs. 19%).

A quite low awareness of European infrastructure

- Only 10% of Dutch respondents are familiar with the concept of KICs (vs. 25%).

Total: 45 respondents

Figure 21 – A marked difference compared with the total sample



Source: Ernst & Young and CEPS survey 2013.

Poland

A very positive public mood

- 9% of Polish respondents consider that Finland is the country that has the strongest innovation policy and the strongest innovation climate (vs. 3% of the whole sample).
- Only 2% of them think that innovation policy in the last year has deteriorated in Poland (vs. 28%) and only 5% say similarly for the European Union (vs. 18%). As for the evolution of innovation policy in the next year, there are very few pessimists. Only 2% of Polish respondents think that it will deteriorate in Poland (vs. 18%) as well as in the European Union (2% vs. 14%).
- 11% of Polish respondents cannot say if private spending contributes to technological and scientific innovation in Poland (vs. 3%). This answer's score rises to 22% in the case of the European Union (vs. 12%).

The US, a good partner to improve competitiveness

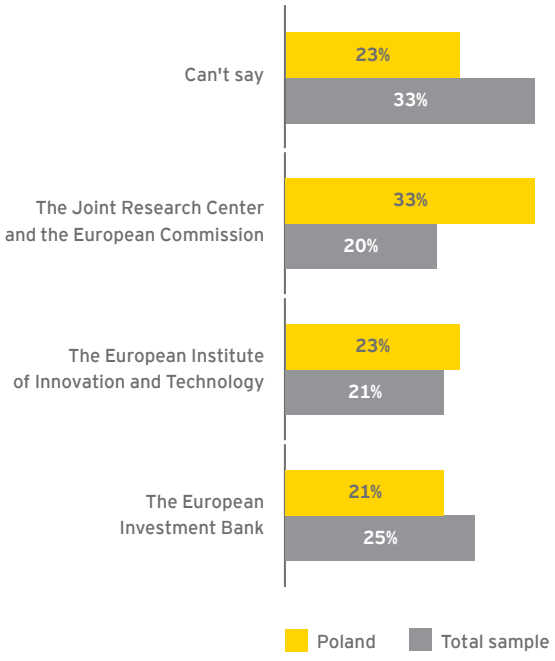
- 62% of Polish respondents think that EU policy has focused too much on competition so far, and not enough on investment incentive (vs. 76%). 57% of them claim that innovation policy in the EU has failed to match industry needs fully (vs. 72%).
- There is a strong support of Polish respondents for the partnership of Europe with the US in order to become more competitive (56% vs. 42%). On the contrary, only 24% of them think about partnership with the BRIC countries (vs. 38%).

The Joint Research Center and the European Commission praised for their effectiveness

- Polish respondents judge the Joint Research Center and the European Commission as the most effective institution to support innovation (33% vs. 20%).

Total: 45 respondents

Figure 22 – The most effective institutions to support innovation as mentioned by the Polish respondents compared with the total sample



Source: Ernst & Young and CEPS survey 2013.

Portugal

Private spending poorly esteemed

- According to Portuguese respondents, private spending does not contribute to technological and scientific innovation, neither in Portugal (52% vs. 23% for the total sample), nor in the European Union (40% vs. 16%).
- Only 23% of them think that innovation policy in the last year improved in Portugal (vs. 39%) as for the EU, 24% say it improved (vs. 38%), and 53% judge it stable (vs. 34%).

A quite low confidence in the EU's possibility to encourage innovation in Europe.

- 39% of Portuguese respondents do not believe that the EU is able to develop a more effective approach to research and innovation (vs. 23%).

Strong commitments are expected

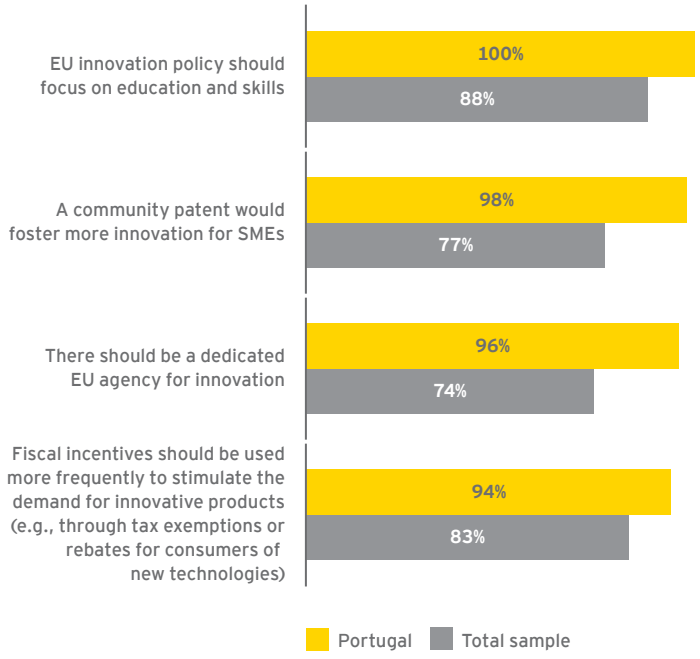
- Only 62% of Portuguese respondents believe that public-private partnerships should be used to accelerate the deployment of enabling technologies such as broadband networks (vs. 90%).
- All of them consider that the EU innovation policy should focus on education and skills (vs. 88%) and that Europe needs forms of permanent consultation with industry stakeholders to identify industry needs and to act accordingly (vs. 87%).
- 94% of them consider that fiscal incentives should be used more frequently to stimulate the demand for innovative products (vs. 83%).
- 98% of Portuguese respondents believe that a community patent would foster more innovation for SMEs (vs. 77%) and 96% think that there should be a dedicated EU agency for innovation (vs. 74%).
- At this time, 91% of them think that innovation policy in the EU has failed to match industry needs fully (vs. 72%).
- As for the propositions to promote innovation in Europe, 89% of Portuguese respondents consider efficient the idea that the EU should set up an IPR exchange platform to enable trading of patents and IP-based joint ventures (vs. 74%).
- 98% of them think that more business-to-business, business-to-academics or academics-to-academics cross-border collaboration would contribute to innovation in their sector (vs. 88%).

An unequal awareness of European infrastructure

- 60% of Portuguese respondents are aware of the role played by European Research Infrastructure (vs. 44%) but only 6% are familiar with the concept of KICs (vs. 25%).
- The Portuguese respondents view the EIB as the most effective institution to support innovation (41% vs. 25%). Only 5% of them mention the Joint Research Center and the European Commission (vs. 20%).

Total: 45 respondents

Figure 23 – Strong commitments expected by the Portuguese respondents



Source: Ernst & Young and CEPS survey 2013.

Spain

A pessimistic assessment of the innovation policy

- Only 4% of Spanish respondents have the feeling that innovation policy improved in their country (vs. 39% for the whole sample). The conclusions are the same considering the European Union level: 12% think it improved (vs. 38%).

The EU, key player to encourage collective decision

- 55% of Spanish respondents believe that innovation policy is most effective at the European level (vs. 37%).

European-level actions seen as a solution for Spain

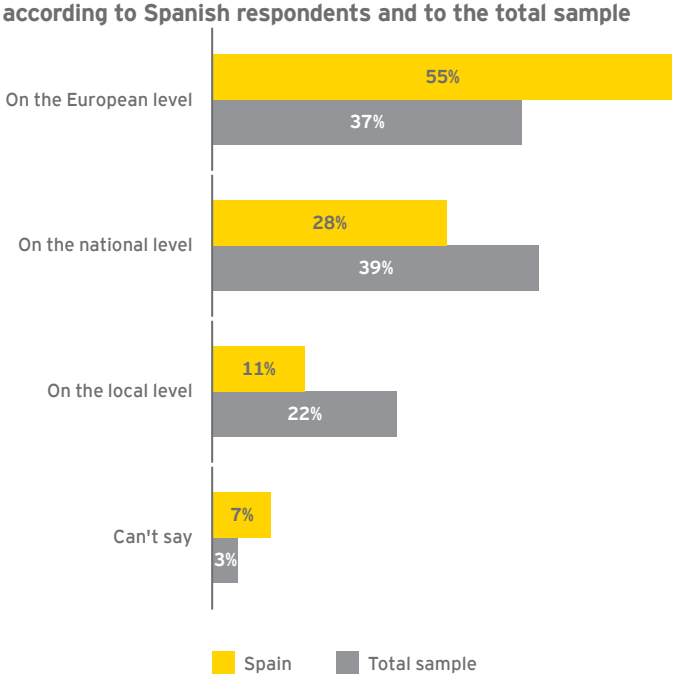
- All of them think that PPPs should be used to accelerate the deployment of enabling technologies such as broadband networks (vs. 90%).
- The lack of labor mobility is seen as a key obstacle to EU competitiveness by 77% of Spanish respondents (vs. 60%).
- 73% of them claim that innovation policy should be more centralized at the EU level (vs. 53%).
- For the moment, 93% of Spanish respondents see EU policy as too fragmented, and in need of more coordination (vs. 81%). They think that innovation policy in the EU has failed to match society's needs fully (93% vs. 67%) as well as industry needs (90% vs. 72%).
- As for the propositions to promote innovation in Europe, 98% of Spanish respondents consider a common platform of open access information for all EU researchers as efficient (vs. 88%). 88% of them think the same about the idea that the EU should set up an IPR exchange platform to enable trading of patents and IP-based joint ventures (vs. 74%).
- 93% of them think that the EU institutions should put more funds in the development of a common broadband infrastructure (vs. 77%).
- Among all the nations, Spanish respondents have the most difficulty in giving their opinion about the partnership of Europe with another country in order to become more competitive (17% vs. 8%).

A quite low awareness of European infrastructure except for the CEF

- Only 7% of Spanish respondents know the work of the European Institute for Innovation and Technology (vs. 19%).
- Only 10% of Spanish respondents know the work of the European Commission to promote innovation within Europe (vs. 30%).
- 12% of them see the EIB as the most effective institution to support innovation (vs. 25%).

Total: 45 respondents

Figure 24 – The most effective level for innovation policy according to Spanish respondents and to the total sample



Source: Ernst & Young and CEPS survey 2013.

Sweden

An optimistic assessment of innovation policy

- 95% of Swedish respondents think that private spending contributes to technological and scientific innovation in Sweden (vs. 74% for the total sample).
- 65% of them have the feeling that innovation policy improved in their country (vs. 39% for the whole sample), and that it is going to improve more again in the next years (89% vs.67%). 28% of Swedish respondents also consider that their country has the strongest innovation policy climate (vs.7%).

A quite low confidence in the EU's possibility to encourage innovation in Europe

- Swedish respondents believe in the European level far less than the average to encourage innovation (21% vs. 37%).

Different commitments are expected

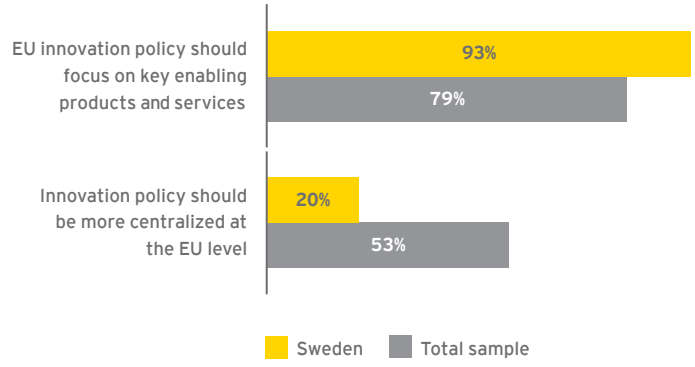
- 20% think that innovation policy should be more centralized at the EU level (vs. 53%).
- More Swedish respondents think that EU innovation policy should focus on key enabling products and services (93% vs. 79%).
- They also consider that EU policy is too fragmented, and needs more coordination (55% vs. 81%).
- At the same time, 14% of them think it is not efficient that the EIF relies on local intermediaries to identify innovators, rather than giving funds to individual companies (vs. 27%).
- Less Swedish respondents (55%) think that the EU institutions should put more funds in the development of a common broadband infrastructure (vs. 77%).
- 54% are convinced about the partnership of Europe with Asia in order to become more competitive (vs. 36%).

The awareness of European infrastructure is unequal

- 45% of Swedish respondents know the work of the European Commission to promote innovation within Europe (vs. 30%).
- 3% know what smart specialization is and what it entails (vs.12%).
- Only 10% of Swedish respondents consider the EIB as the most effective institution to support innovation (vs. 25%).

Total: 45 respondents

Figure 25 – Different commitments expected by the Swedish respondents



Source: Ernst & Young and CEPS survey 2013.

United Kingdom

Private spending, a key issue for innovation in the UK

- 87% of UK respondents think that private spending contributes to technological and scientific innovation in the UK (vs. 74% for the total sample).
- 28% of them consider that their country has the strongest innovation policy and the strongest innovation climate (vs. 5%). This figure goes up to 95% when Western Europe is considered (79%).
- 7% of UK respondents can't say if innovation policy has improved or deteriorated in the UK (vs. 2%). This figure goes up to 20% when the European level is considered (10%).
- 26% of UK respondents think that innovation policy will deteriorate in the European Union in the next years (vs. 14%).

Strong commitments are expected

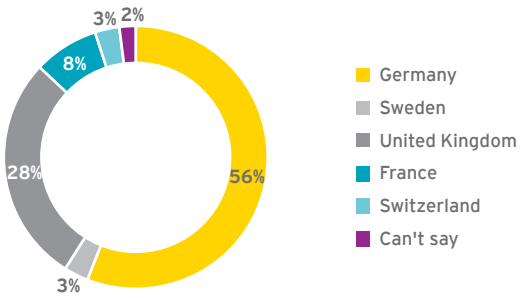
- 92% of UK respondents think that Europe's innovation policy should encourage more university and industry partnerships and technology transfer (vs. 98%).
- 82% of UK respondents agree with the fact that EU and national governments can do more to create demand for innovation (vs. 93%).
- 64% of them think that public procurement should be used to create demand for innovative products and services (vs. 77%).
- 63% of them consider that a community patent would foster more innovation for SMEs (vs. 77%).
- 58% believe that there should be a dedicated EU agency for innovation (vs. 74%).
- Only 39% of them agree with the fact that a lack of labor mobility is a key obstacle to EU competitiveness (vs. 60%).
- 68% of UK respondents think that EU policy is too fragmented, and needs more coordination (vs. 81%).
- Only 51% think it is efficient that the EIF relies on local intermediaries to identify innovators, rather than giving funds to individual companies (vs. 66%).
- At the same time, 63% think that EU institutions should put more funds in the development of a common broadband infrastructure (vs. 77%). And 56% believe that European companies should act as innovation intermediaries by conveying public and private funds to innovative SMEs (vs. 71%).

The awareness of European infrastructures is relatively better in the UK than in the other countries ... but the level is still quite low

- 50% are familiar with the concept of KICs (vs. 25%).
- 33% of UK respondents know the work of the European Institute for Innovation and Technology (vs. 19%).
- 22% of them know the work of the European Research Infrastructures (vs. 44%).

Total: 45 respondents

Figure 26 – According to the UK respondents, the European country with the strongest innovation policy and innovation climate is



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