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Dear Readers,

This is the last edition of this innovation newsletter. Since its start in 2006, INNO-Grips has supported policy-makers in adopting appropriate responses to emerging innovation needs, trends and phenomena. The initiative is now coming to an end. It is time to look back and draw some conclusions. This edition offers a synoptic review of the policy briefs and studies that have been prepared during the second INNO-Grips implementation period, from 2010 to 2013. It highlights the main points learned, and the most surprising results.

When reviewing all the reports and briefs (see overview on pages 18f.), we identified some themes and issues that came up repeatedly. The articles in this newsletter reflect these overarching topics. The themes are also framed against the fundamental question of why innovation is these days considered so important as to demand policy interventions to support it. There are three main lines of argument.

The first is that the capability for innovation is a critical requirement for staying competitive in today’s global economy. Europe has long been a global innovation leader in many ways, but cannot afford complacency and needs to make some improvements. Emerging economies are catching up fast, and European companies must make every effort to stay ahead. The role of policy is to encourage and support these efforts, by creating optimal framework conditions for innovation, entrepreneurship and growth. INNO-Grips has explored relevant drivers and success factors, such as how to nourish a culture of fast-growing innovative SMEs (see article on p. 10f.), the implications of social and cultural attitudes for entrepreneurship and innovation, and the importance of understanding and addressing end-users’ concerns (see article on p. 6f.).

A second reason for promoting innovation is the need for innovative solutions to tackle the grand societal challenges of our day. Success in combating climate change or overcoming dependence on non-renewable energy sources, for instance, will depend heavily on the development of new sustainable technologies, such as more energy-efficient production plants, grids and e-mobility solutions. Several of the INNO-Grips studies have explored this field, discussing the implications of disruptive innovation and how innovation policy can maximise its contribution (see article on p. 8f.).

Thirdly, a strong innovation culture will be needed if structural reforms are to be put in place that will allow Europe to overcome the financial and economic crisis it faces. It is no coincidence that the countries less seriously affected by the economic crisis – notably Sweden, Denmark, Germany and Finland – are seen as strong innovators (in the social sphere too), with world-class innovation systems in place. Establishing (or maintaining) an efficient innovation system and a positive innovation culture is clearly a longer-term objective, but innovation policy also has influence as a short-term instrument in the business cycle, as the first INNO-Grips policy brief suggested (see article on p. 12f.).

In addition, the INNO-Grips studies and briefs have offered further evidence that innovation is much more than research and technological development.

Non-technical innovation - in the public and service sectors, in organisational management and in marketing will be as important as “classical” R&D-based innovation in addressing the many challenges Europe faces. This is why we have devoted the lead article – “Towards a broad-based understanding of innovation” – to this aspect (see p. 3f.).

The European Union is aware of the many challenges and has responded. The Innovation Union, a flagship initiative with over 30 action points, is an ambitious plan to make Europe more innovative and competitive, in business and in the public sector. The Innovation Union is a good start. But to make it a success, full cooperation is required from all stakeholders, and in particular the business community, policymakers, and citizens. To assist in this process, INNO-Grips has brought stakeholders together, discussed relevant issues, and stimulated reflection on what should inform policy decisions. We hope the services have been useful and would like to thank the entire INNO-Grips community for their support, commitment and valuable contributions over the past three years.

Hannes Selhofer
INNO-Grips Project Manager
empirica GmbH
INNO-Grips NEWSLETTER JANUARY 2013

LEAD ARTICLE

Innovation is more than technological RTD

Towards a broad-based understanding of innovation policy

The Innovation Union programme of the European Commission states its commitment to pursuing “a broad concept of innovation”. To derive the full benefits of innovation, Europe needs to explore and harness the potential in all areas. The results of INNO-Grips policy briefs and studies support this strategic objective of encouraging and supporting a broad-based approach. They have looked at new and sometimes neglected areas of innovation which go beyond technological RTD.

If citizens on the street were asked “What is an innovation?”, they would most likely cite a recent product or a feature which has improved an existing product. They might also mention an innovative technological process, such as the pioneering use of biofuels to reduce reliance on fossil fuels. But whatever the answer, it would most likely relate to a tangible high-tech product or process that had been researched, developed, created and deployed so that it was tangible and visible to the public.

In many ways, current innovation policies mirror the view of the ordinary citizen. Innovation policy has typically focused on the research, development or creation of new products or processes. As a result, a key objective of innovation policy has been (and often still is) greater investment in research and technological development (RTD).

However, current research and academic thinking has started to broaden the view of innovation and its scope. Innovation is recognised increasingly as having many facets, and it has become clear that many companies with innovative ideas conduct no RTD at all. Innovations in products and processes that stem from systematic RTD continue, of course, to be important. But several INNO-Grips studies and policy briefs have analysed other types of innovation that are also relevant. And they have confirmed the need for a broad-based understanding of innovation policy. For instance, the study on organisational and marketing innovation and the policy briefs on service innovation and public sector innovation have specifically explored non-technological aspects of innovation.

THE IMPORTANCE OF SERVICE INNOVATION

The policy brief on “Policies in Support of Service Innovation” (prepared by the ICEG European Center in 2011) researched...
how policy might support innovative approaches in the European services industry, a sector which now accounts for 70-80% of European GDP. One issue encountered by the authors was that measuring service innovation is not an easy task. Service innovations tend to be more qualitative rather than quantitative; they rarely result in new companies or brands, or in detectable increases in labour productivity. This might explain why programmes to study and promote service innovation tend, as the policy brief discovered, to be under-represented in Member States’ innovation policy schemes.

Yet there is great importance in service innovations. They can better suit customer needs with services and with “servicing” a product, and they can increase customer loyalty and support sales. The conclusion is that innovation in services is best encouraged by “removing (or at least reducing) identified barriers to service innovation, as well as to the related policy design”. The authors suggest this is more effective than direct support measures for companies or other specific programmes for innovation in services.

However, the brief does suggest one specific area for consideration at European level. This is Intellectual Property (IP) protection for online services. In light of the development of service innovations, “the importance of the internet for service innovation cannot be overestimated”, it observed. If Europe were to better protect IP of internet service innovations, this could improve the incentive to innovate in this sector.

Otherwise, at Member State level, the brief approves of the creation of “collaborative research and innovation networks” as a platform on which service innovations could be discussed and developed. Because the service industry constantly changes how it offers its services, firms need to access and share current ideas and practices if they are to keep up with this evolution and obtain the benefits of innovations in the sector.

MARKETING AND ORGANISATIONAL INNOVATION

The INNO-Grips study on “Marketing and organisational innovation – constrained drivers of growth?”, prepared by the Fraunhofer Institute ISI and NIFU (the Nordic Institute for Studies in Innovation, Research and Education) in 2012, looked at how innovation in these branches might be promoted. Reflecting some of the challenges faced by the policy brief on service innovation, this study found difficulties in measuring the impact of marketing and organisational innovation as “in contrast to technological innovation, the contribution of non-technological innovations cannot always easily be accounted for in concrete numbers”. Nevertheless, evidence from the Community Innovation Surveys (CIS) 2008 suggests a beneficial impact on sales growth from non-technological innovation activities which impact on external relations and sales channels. On this basis, the INNO-Grips, we looked at innovation dynamics in services and in the public sector. Service innovation is often non-technological. This should be remembered when it comes to how to promote innovation in services, which account for a major proportion of economic activity in the knowledge economy.

The most critical success factor for driving innovation in the public sector is to create a framework in which cooperation across departments and authorities is encouraged rather than frowned upon. The innovation capability of the public sector, which differs across various types of institutional architectures (for example federal, highly decentralised and highly centralised states), is very important not only from an economic perspective, but also to ensure citizens’ trust and confidence in their public sector institutions.”

Olivér Kovács, Research Fellow at the ICEG European Center, and main author of the policy briefs on innovation in services and in public service provision.
innovations in marketing and in related organisational processes can offer a viable growth strategy. Innovation policy might consider how such activities could be enhanced.

As part of the study, 12 firms with relevant activities were interviewed. The researchers found that innovations of this type rarely provided a single, one-size-fits-all solution which could be transferred and adopted from firm to firm. Instead, marketing and organisational innovations tended to occur in an indirect manner, driven by an individual company’s response to other changes - such as coping with rapid growth or an urgent need to improve internal work processes.

Although marketing and organisational innovation concepts and practices cannot usually be transferred as carbon copies from one firm to the next, it is important to promote dialogue and share information. This allows companies to learn from the experience of other organisations, and to adapt best practices for their own needs. The study found that, for the 12 interviewed firms, “knowledge and experiences from external partners were considered as very important... for the success of organisational and marketing innovations.” However, they did not know of any networks “to stimulate the diffusion of such types of non-technological innovation and would highly appreciate initiatives to develop such platforms.” This is an instrument policy makers may consider implementing to foster innovation in the fields of marketing and organisation.

INNOVATION IN THE PUBLIC SECTOR

In parallel to the conventional view that technological innovation is principally spurred on by R&D, innovation policy has also tended to focus largely on the private sector as the principal motor for innovating. Yet such a view neglects the public sector, which accounts for much of Europe’s manpower and industry. The policy brief “Policies supporting innovation in public service provision”, prepared by the ICG European Center in 2012, focused on how to promote innovation in this sector – both for the benefit of citizens and businesses, and to reduce administration costs by making processes more efficient.

The brief concluded that the innovative capacity of public sector organisations could benefit from greater decentralisation: “A more decentralised institutional framework tends to motivate public servants and managers to be innovative.” This is not often the case, the study observed. Top-down decision making continues to predominate in public sector organisations, along with stiffness and bureaucracy. The authors suggest that a first step to combat this could lie in setting up autonomous, special units based within public sector organisations. These would be separated from the centralised, bureaucratic public sector body, and free to develop innovative ideas for possible implementation.

The policy brief also asserted that the public sector tends to promote a culture which is not conducive to innovation. Public servants are often expected just to keep doing their job in the way they always have. The brief suggests that, contrary to this, “people should be rewarded for introducing new ideas, and not penalised. Career progression should be linked to innovation, not the status quo”. Another recommendation for reversing a culture of stagnation in the public sector is to introduce new impetus through management - such as through establishing a European Public Sector Leader Academy to train creative and more risk-taking public servants.

The policy brief also touches upon the topic of public procurement, which has been identified by the EU for some time now as a potential instrument for promoting innovation. The brief developed that discussion through its findings on the UK health sector’s spending decisions. It found that this branch of the public sector frequently re-evaluated the technologies it used in order to compare them to potential alternatives pioneered in the private sector. This constant reappraisal allowed for the sourcing and supporting of innovative technologies and health care solutions. Such “smart procurement” techniques could help improve the public sector’s ability to foster innovation in industries external to it.
Bringing innovative ideas to the market:

Addressing demand-side issues – the challenge of end-user resistance

However technically advanced or conceptually novel an innovation may be, its success in the end depends on how well it is accepted on the market. The transformation of an innovative idea into a marketable product or service, creating the end-user demand it deserves, is where an innovation's potential translates into real, tangible means for economic growth. INNO-Grips has explored success factors and barriers.

The very idea of an innovation implies something new, something different to what has been expected so far, a change. The notion of change can be daunting for a human because, as the English writer Arnold Bennett said: “Any change, even a change for the better, is always accompanied by drawbacks and discomforts.” Man’s innate aversion - at least initially - to change has implications for the innovation process. End-users who are averse to novelty will condemn a brilliant innovation to failure on the market. The theme of end-user resistance to change, and how it might be dealt with, has come up in several INNO-Grips innovation studies and policy briefs.

The INNO-Grips study on “Social Attitudes to Innovation and Entrepreneurship” by UNU-MERIT (2012) examines, inter alia, customer resistance to innovation. The authors divided resistance into two categories. Firstly, there are functional barriers – those aspects of the innovation which bring about disruptions or significant changes to the customary living or work patterns and practical habits of end-users. Secondly, psychological barriers, which are those aspects of an innovation that conflict with the end-user’s inner belief structure.

The study provided interesting findings on psychological barriers in relation to...
renewable energy sources. These technologies benefit from increasing consumer optimism, possibly because of widening news coverage of the threat of climate change, which spreads the idea that society needs green technologies. As the potential role of renewables in combating climate change becomes more embedded in end users’ beliefs systems, psychological barriers that generate resistance to innovations in these technologies are visibly reduced.

In addition to these conceptual clarifications and examples, the policy brief makes recommendations for tackling forms of end-user resistance. The first is that “risk reduction strategies are crucial to diminishing customer resistance towards innovation”. The study notes that marketers of innovations have for too long devoted too much energy to promoting the benefits, without adequately addressing end users’ concerns over the risks that the associated change poses to their lifestyle. Diminishing the perception of risk attached to an innovation, rather than just highlighting what is new about it, would help overcome resistance in end-users.

“Functional barriers” can be overcome by giving end-users more information (perhaps as part of the marketing strategy) so that they can see how the innovation will fit smoothly into their lifestyle, the brief recommends. It suggests that innovators “provide tailor-made information to pre-empt customers concerns”. As an extension of this, innovations could be introduced alongside products or services that the customer is already familiar with. This bundling of old and new products may help acceptance in the initial stage of introducing an innovation.

**CONCENTRATION ON CUSTOMER NEEDS TO REDUCE END-USER RESISTANCE IN THE SERVICE SECTOR**

Another policy brief prepared by the ICEG European Center, “Policies in support of service innovation” (2011), also touches upon the theme of end-user resistance. Consideration for end users is arguably even more crucial in the service sector than elsewhere, as services rely on strong customer relations rather than product quality. Based on the analysis of a series of case studies, the brief argues that a ‘concentration on and anticipation of customer needs in fields that have not yet been exploited’ was one of the main success factors in innovative service companies.

The findings of this policy brief imply that innovation in the service sector is inextricably linked with good knowledge of what the end user wants and could benefit from, which presupposes a close relationship between innovator and end user. Moreover, end-user resistance can be avoided if the innovator anticipates the end users’ needs effectively and offers them something they want in a sensitive manner that implies minimum disruption to their current lifestyle patterns.

**THE INNO-GRIPS INNOVATION POLICY BRIEFS AND STUDIES ARE AVAILABLE ON THE DG ENTERPRISE AND INDUSTRY WEBSITE:**

Addressing societal challenges through innovation

The threat of climate change and the need to reduce dependency on non-renewable energy sources are among the major challenges for Europe in the 21st century. These challenges may be daunting for many areas of society, but they also present an opportunity from an innovation perspective. It will require significant, even disruptive, innovations in energy technology and related spheres to make progress in addressing these challenges. This will trigger many forms of activity which could have a positive impact on society. INNO-Grips has looked at the role of innovation and innovation policy in enabling the required paradigm shifts.

Innovation’s role in tackling societal challenges has come up several times in INNO-Grips. It appears that individual Member States and the European Union are already responding, and thinking about how best to manage innovation’s contribution in the future.

Fostering environmental and energy innovation – a major policy trend

A clear international trend that has emerged from the INNO-Grips news monitoring service is that countries are right now developing innovation policies and supporting innovation projects related to environmental and energy challenges. For instance, Germany has focused on innovation in the energy and environmental sector, highlighting its ambition to become a “green economy”, and the need to boost investment in innovative RTD programmes accordingly. Germany’s “Raw Materials Strategy” outlines plans to lead the way in this field, building up knowledge and techniques to ensure that raw materials are more efficiently used and better recycled in the future. Commitment to this goal has been backed up with allocations of public funding. In October 2012, the INNO-Grips news service reported the announcement of the Ministry of Research and Education that it would invest €200 million to support the programme.

A WAY FORWARD - ENERGY EFFICIENCY, RADICAL R&D AND COMPREHENSIVE POLICY

Alongside the current development of strategies and instruments in support of environmental and energy innovation, the INNO-Grips project has itself taken a look at how Europe can best move forward in tackling these issues. The study...
if investment in renewable technology innovations had been made before the current flurry of activity.

Instead, the study proposes other priority areas - and notably energy efficiency. Even if zero carbon technologies are not yet available, Europe’s carbon footprint can still be reduced by simply consuming less energy and therefore burning fewer fossil fuels. It recommends support instruments for R&D in energy efficiency of buildings and appliances.

When it comes to R&D projects themselves, the authors argue that Europe should be thinking big, and even pursuing “blue sky-exploratory research”. It is not enough to settle for small incremental increases in the renewable technologies of which we already have knowledge. Instead, “public investment in R&D should be primarily focused on R&D for disruptive and radical zero carbon energy technologies”. Such a pursuit of radical innovation has the potential to provide the big ideas we need to make the switch to zero-carbon technology.

The study further outlines ideas for strategies in comprehensive policy itself. The authors argue it is best to incorporate environmental policy into wider “Green Growth” and “Quality of Life” strategies. This would see a wider range of mutual goals secured by all these areas together. Meeting environmental challenges can be linked with economic growth, and both actions improve quality of life all round. Innovation too would have its role to play in this wide strategy.

ENERGY CHALLENGES AND DISRUPTIVE INNOVATION – HARMONISING THE TWO FOR BEST RESULTS

Meeting pressing environmental and energy challenges will require contributions from different industries and provoke significant changes, even disruptions, in markets, by influencing patterns and habits acquired over decades. Such shifts in industrial practice and the wider market are an essential part of what the economist Clayton M. Christensen described in his seminal management best-seller “The Innovator’s Dilemma”, in which he discusses disruptive innovation.

The policy brief “Disruptive innovation: implications for competitiveness and innovation policy” (2012), prepared by empirica GmbH, researched the concept and possible future implications of disruptive scale cooperation in Europe. This reflects the need of many disruptive technologies for expertise from different industries.

The policy brief also commented on potentially disruptive developments in the automotive industry. Rising oil prices and increasing concern among customers for their vehicle’s environmental impact may cause a shift away from traditional petrol engines. Electric vehicles are commonly expected to be researched and developed by industry to reduce oil dependency. Although questions still remain over how far and when they will replace vehicles with conventional combustion engines, it is still advisable to promote their development, as the risk of backing the wrong approach has to be weighed against the risk of losing competitiveness in the emerging technology.

“An interesting result of our study was to see the difference in types of entrepreneurs: those who become an entrepreneur because they see opportunities and those who become an entrepreneur out of necessity, such as when they lack employment alternatives (as in the current crisis). These two groups are differently affected by regulatory incentives and alternative employment conditions in the labour market. Future research should look into these differences in detail; for instance, surveys on entrepreneurship should include more questions on social attitudes and their impact on the decision to start a business.”

Hugo Hollanders, MERIT, main author of the INNO-Grips study on social and cultural attitudes to innovation.
Improving framework conditions for entrepreneurs

Fostering entrepreneurship and growth in Europe – a critical mission for innovation policy

Europe needs to improve its entrepreneurial culture, strengthen the international orientation of its businesses, and generate more firms that quickly grow to become global leaders. Several INNO-Grips studies and policy briefs have addressed related issues and suggested targeted policy options. However, the results make clear that one size does not fit all; in particular, the different contexts at Member State level need to be considered.

“The two issues may be particularly important for European policy when fostering innovation and entrepreneurship. First, get the institutions right. Regulations and policies can impede enterprise growth. For example, if governments offer support to companies up to a specific company size, many companies may not seek growth beyond that size, because they would otherwise lose state support. So before thinking about specific policy instruments to foster high-growth enterprises, it may be worthwhile eliminating such growth barriers. Second, don’t neglect ‘hidden champions’. Do not focus only on the big young market leaders in the US or elsewhere – many global market leaders serve niche markets and are medium-sized, but still very important for employment and wealth. Europe has many of them, and this number should increase still further. To this end, it may not be wise to consider particularly high growth as an end in itself. Growth must be sustainable.”

Stefan Lilischkis, Senior Consultant, empirica GmbH, main author of the INNO-Grips policy brief on high-growth SMEs.

The links between innovation, entrepreneurship and growth were a recurrent theme in INNO-Grips. Three INNO-Grips briefs and studies in particular focused on this topic. The brief “Policies in support of high-growth innovative SMEs” (2011) specified the target: increasing the number of innovative enterprises that grow quickly, thus creating jobs and wealth in Europe. The Innovation Union, a Europe 2020 flagship initiative, defines fast growing firms as a key indicator for measuring progress, together with the target indicator of investing 3% of gross domestic product in research and development. The study “Barriers to internationalisation and growth of EU’s innovative companies” (2010) analyses a key issue for enterprises seeking fast growth: home markets may be too small to achieve growth targets, and conquering international markets becomes necessary. And the study “Social attitudes to innovation and entrepreneurship” (2012) examined cultural framework conditions for promoting entrepreneurship, including social esteem for entrepreneurs, the demand for innovative goods, and acceptance of income differences. Social values also influence start-up rates and success for businesses, and determine growth rates.

HOW TO FOSTER HIGH-GROWTH INNOVATIVE SMES?

A policy brief about high-growth SMEs, prepared by empirica in 2011, summarises research results from several countries. It confirms that high-growth firms contribute decisively to creating new jobs. However, while high-growth SMEs receive attention from the European Commission, attention in Member States was found to be limited: few national policy initiatives have specifically targeted high-growth SMEs. Outside Europe, attention for the “gazelles” is growing. For example, Korea and Singapore have implemented policies for high-growth SMEs, and Israel plans to introduce such policies. In Canada, combined SME support through R&D programmes and venture capital was found to increase the number of high-growth companies. The rationale for supporting high-growth firms is, however, a matter of controversy. Empirical evidence about the effectiveness of such measures is thin, as there is still a lack of evaluation studies. The few available findings suggest that support for high-growth SMEs requires a comprehensive approach, including measures such as certified coaching networks, improved access to equity finance, and help in adopting an international perspective. The brief concludes, therefore, that policies should focus on preparing a fertile breeding ground for SMEs to grow, including by removing incentives to stay small, rather than trying to “pick winners” and foster them.

HOW TO REDUCE BARRIERS TO INTERNATIONALISATION AND GROWTH OF ENTERPRISES?

The first innovation study about “Barriers to internationalisation and growth of innovative enterprises” (2010), conducted by WIFO, found that innovative companies are more likely to export. They were more productive and therefore internationally more competitive. Exporting in
Our study confirmed that innovation and internationalisation are closely linked. Looking at the current competitiveness problems of several EU Member States, this suggests innovation is a key mechanism for rebalancing the EU. However, the barriers to innovation differ by country, depending on the respective development level. In the most advanced Member States, the key barrier is the lack of qualified personnel, whereas in catching-up Member States the key barrier is access to finance for innovation. Therefore, support for innovation should not be affected by austerity policies; on the contrary, it should be strengthened considerably in particular in those EU Member States that experience severe structural problems.

Dr. Jürgen Janger, senior researcher, Austrian Institute of Economic Research (WIFO), co-author of the INNO-Grips study on barriers to internationalisation and growth of innovative enterprises.

The study was found to have a positive impact on innovation. Hence, exporting and innovation are complementary strategies that tend to result in higher export shares, turnover and employment growth at the company level. This led to the conclusions that policies supporting innovation and internationalisation should be linked up, and that policy approaches to innovation and internationalisation must be adapted to the context of the respective country. The study confirmed the existence of substantial barriers to innovation with respect to knowledge about markets and technologies, access to finance, and skill shortages. It recommended targeted policies for higher education in Member States, measures to overcome the fragmentation of national markets for risk capital, and continued work towards the removal of trade barriers. The study concluded that there was a considerable dispersion of measures within and across different administrative levels might also be a source of redundancies, policy inconsistencies and contradictory incentives.

HOW TO INFLUENCE CULTURAL ATTITUDES TOWARDS INNOVATION AND ENTREPRENEURSHIP?

The study on social attitudes to innovation and entrepreneurship (2012) by UNU-MERIT highlights the importance of socio-cultural factors that encourage or discourage innovation and entrepreneurship, such as risk taking, flexibility and adaptability, and mobility. The study suggests that a better understanding of the differences in these social attitudes between countries and regions will guide better innovation policy making. Close to 60% of people surveyed in the EU and the US consider becoming an entrepreneur as a desirable career choice. Positive media attention encourages an entrepreneurship culture, but in Europe there is less media attention to successful entrepreneurs than in other major economies. Governments may need to consider the role of mass media when seeking to shift social attitudes towards greater appreciation of entrepreneurship. And since attitudes about entrepreneurs are also shaped by knowledge and skills acquired in formal education, governments should target educational policies to enhance entrepreneurship in Europe, the study concludes.

REFERENCES


Innovation policy can help to alleviate economic downturns

Innovation policy, the business cycle and the European crisis

Innovation policy normally pursues longer-term objectives. However, against the background of the economic and financial crisis which is still troubling large parts of Europe, it is tempting to explore whether stimulating innovation activities can also have short-term benefits. INNO-Grips has looked at the potential of innovation policy to foster recovery – and it found ambivalent evidence.

The European Union is still confronted with a severe economic and financial crisis. Public-sector debt is challenging the stability of several member states, and unemployment in many places is high. National governments and the EU have worked together in search of a response, launched stimulus packages, and maintained attempts to resolve the underlying economic problems. Growth really is needed.

Theoretically, economic growth can be driven by innovation. However, the focus of innovation policy is typically on preparing the ground for sustained longer-term impacts. Could specific instruments also be used with a shorter term objective to address economic downturn? The first INNO-Grips policy brief, “Innovation policy and the business cycle”, prepared in 2010 by IW Consult, has explored this question. An interesting finding was that firms’ behaviour in the current financial
and economic crisis seems to differ from the commonly quoted pro-cyclical pattern of private R&D&I investments. An analysis of Eurostat data and Innobarometer 2009 survey responses indicates that firms have kept their R&D&I activities stable or even increased them, despite the economic downturn of 2008-2009.

THE CASE FOR A “SHORT-TERM” INNOVATION POLICY – AND THE LIMITATIONS

The policy brief concluded that although innovation policy is fundamentally long-term in nature, there is also evidence in support of innovation policy’s short-term effects. Innovation policy can provide short-term incentives to encourage private R&D&I activities during a recession. As private-sector R&D&I investments are likely to dry up in an economic and financial crisis, public support is an appropriate tool for keeping them at a socially optimal level even during the crisis. The focus of such measures, according to the authors, should be to support companies in continuing their ongoing innovation projects which might otherwise be at risk of cancellation.

Ideally, short-term measures during a crisis can have a two-fold impact: they can trigger additional private R&D&I spending, providing short-term economic stimulus; at the same time they can reduce the risk of negative long-term impacts on competitiveness resulting from cancellation or postponement of innovation activity. Several studies concur in their assessment of the “stimulus effect”: the consensus is that one Euro of public support prompts between 0.4 and one Euro of additional private R&D&I spending. Besides triggering economic activity, the major objective of innovation support measures during a crisis should be to prevent long-term negative impacts on competitiveness from reduced innovation activity. This links short-term initiatives and longer-term perspectives.

However, the wider evidence reviewed for this policy brief also showed the constraints of innovation policy as a short-term measure. Empirical studies point to a significant time lag between investments in innovation and their economic impact – often as much as five years. Moreover, the policy brief stresses that the existence of a functioning innovation system is an important factor in the success of such measures. Specific innovation policy measures need to build on the innovation system, as the Finnish case study most compellingly demonstrates.

WHICH INNOVATION POLICY INSTRUMENTS ARE MOST EFFECTIVE IN THE CRISIS?

Subject to the above reservations, the brief recommends that subsidies and grants are the instruments with the most pronounced direct effects during an economic downturn. They can be used selectively so as to put taxpayers’ money to the most efficient use.

“Innovation policy is a marathon and not a sprint. That is not to say that a marathon runner cannot pick up the pace in mid race for a while; but surely a sprinter will be exhausted after a few kilometres. With a sound innovation system in place, countries are much better prepared for a crisis. Although we found evidence that enhanced public support for R&D can have a positive impact on innovation and growth, short-term support measures for R&D promise little help in many circumstances. In my view, other, economic and labour market policy are more vital when it comes to implementing short-term responses to a crisis.”

René Arnold, research associate at IW Consult, main author of the INNO-Grips policy brief on innovation policy and the business cycle.
Interview

The role of multinational companies in innovation

The last INNO-Grips study analysed patterns of internationalisation of innovation related activities of multinational enterprises. It investigates the role of foreign ownership and other forms of cross-border collaborations in the creation of new knowledge or the diffusion of existing knowledge in host countries of FDI (foreign direct investment). The study was jointly prepared by the Austrian Institute of Economic Research (WIFO) and NIFU. In this interview, study co-authors Dr. Yvonne Wolfmayr and Dr. Andreas Reinstaller from WIFO talk about the most surprising results and implications for future research.

What were the most important and unexpected results that came out of this INNO-Grips study?

Multinational enterprises (MNE) are the key driver of the internationalisation trend in innovation. This trend is strong, continuing and involves many new facets. Affiliates are often assigned with far-reaching and strategic R&D and innovation mandates; low-control modes of governance (non-equity partnerships, networks) become increasingly attractive as they are flexible and do not require large capital commitments; access to know-how of universities and innovative firms in host countries become more important. Finally the exclusive focus of innovation related FDI on high-income countries is changed and broadened to include emerging new centres of technological and research activity in Asia.

A surprising and interesting result was that cross-border innovation activities of MNEs are no threat to the home countries’ innovation and productivity performance. On the contrary, positive effects dominate and persist with respect to offshoring activities to emerging countries such as China or India. The evidence also confirmed that innovation related FDI inflows into the EU have important positive effects.

Looking back at the studies you have conducted over the past three years, what are the main recommendations you have for future innovation research and/or policy?

There are several issues of relevance that should be mentioned. On the policy side of the coin, several of the innovation intelligence studies have shown that broad horizontal policies addressing innovation policy across EU Member States are most likely not adequate. The drivers and the barriers to innovation and as a consequence the efficiency of policy instruments differ across countries. The problems which, for instance, Bulgarian innovative firms are facing are quite different from those German firms have to deal with. So, while there is a scope for horizontal policies, they have to be more differentiated to take into account the specifics across Member States. Only in this way will it be possible to have an innovation policy at the EU level that is also more inclusive.

Another issue that has emerged quite clearly is the interdependence of many policy areas: trade policies have a direct and important impact on the opportunities innovative firms face; on the other hand, very innovative firms are also able to overcome trade barriers more easily. Many of the structural problems and imbalances we observe today in the EU are not to be eliminated by fiscal stimulus alone, but by industrial and innovation policies. On the other hand, fiscal stimulus is needed to provide firms a prospect for investing into innovation. One could go on for a long time ...

On the research side of the coin, one important issue emerging is data availability and data quality. Evidence based policy making does not only need data, it needs good data that are up to the questions that are relevant today! In our work we had often to realise that the available data were sometimes not up to the time, as they are based on a relatively old notion of innovation and do not allow to take into account new developments and trends. On the other hand, good data were often available but not easily accessible.

What are major trends in innovation you expect to be relevant in the next 3-5 years, and which will need to be examined?

There are quite a few developments that will concern innovation policy in the medium term. On the one hand, we see that some developments in manufacturing...
which have characterised the last decade are being reversed. While in the past decade many companies have tried to reap the benefits of low wages in emerging countries and low transport costs, nowadays this trend gets increasingly reversed. One the one hand rising wage costs in the emerging countries and an ever increasing mechanisation of productive activities limit the original benefits of off-shoring, and on the other hand firms realise that they are able to generate more value for themselves (and the consumer) if they are closer to the customer. Many firms therefore at least partly reverse their prior off-shoring or outsourcing decisions. In this process they integrate marketing, organisational, technological and service innovations more tightly. Here the question of relevance for policy is what can countries do to become once again attractive locations for these returning companies, and what can be done that this development will not only affect the generation of value of those companies but also lead to the creation of new jobs. What does this tight integration of different areas of activity in the innovation process actually imply for innovation policy?

Another aspect that will most likely get prominently on the agenda of policy makers is related to the emergence of new technologies such as 3D-printing. While the latest communication on Industrial Policy by the EC raises high expectations talking about a “Third Industrial Revolution”, IPR issues may become very acute in this context. The beneficial effects of these technologies on the industrial base of the EU potentially stemming from small batch production of highly customised products may not be realised, say if electronic design templates are copied and illegally diffused. IPRs, their handling, assertion and enforcement will potentially face unprecedented new challenges.

Finally, a major issue is related to the improvement of research and education in the EU. Companies can only be as good as the people they employ. When research quality and the quality of education in higher education institutions will not drastically improve over the next five years, there is the real danger that the EU will lose competitiveness.
International Innovation Policy News

For the last three years, INNO-Grips has monitored international developments in innovation policy. A network of correspondents from more than 30 countries worldwide reported regularly about initiatives and other relevant events in their country. More than 300 news reports were published on the INNO-Grips website. This article features a selection of the latest news reported from some of the countries covered.

**Canada**

In “Growing Innovation Ecosystems: University-Industry Knowledge Transfer and Regional Economic Development in Canada,” authors Allison Bramwell, Nicola Hepburn and David Wolfe take stock of the recent academic research on university-industry knowledge transfer, consider national innovation policies in Europe and North America, and examine the growing focus on local innovation ecosystems in the field. Their particular focus is the challenge faced by Canadian policymakers in building an effective nationwide knowledge transfer system, but there are broader implications in their conclusion that university-industry partnerships need to be tailored to the structure of the regional economy. (Ref. 1)

**Germany**

The German ministries for Education and Research, Health and the Economy presented the final report of the National Strategy for Innovation in Medical Technology in November 2012. The report stresses the need for more R&D focus on end deployment of medical technologies, whilst the report’s release brings attention more generally to the potential for growth and innovation in this sector. The National Strategy is a joint initiative of the three ministries. The German Ministry for Education and Research announced in November 2012 the new research initiative “NanoCare”, to support research into the impact of the use of nanomaterials. The initiative invites teams of researchers from German businesses, universities or other independent research institutes to apply for financial support for research projects focusing on areas such as the effects of synthetic nanomaterials on humans and on the natural environment. (Ref. 2)

**Hungary**

The Hungarian Ministry for the National Economy announced in November 2012 a series of public consultations on the draft of “The National R&D and Innovation Strategy 2020”. The draft version of this document gives an idea of how Hungary plans to develop its Innovation Strategy in the coming decade. Among the most important targets is the plan to increase R&D expenditures to 1.8% of GDP by 2020 from the current level of 1.2%.

**Lithuania**

The Lithuanian national government has, over the past few years, focused on providing risk capital to boost economic recovery. There are signs that the strategy is now bearing fruit. The investments have triggered a positive snowball effect, helping the country to revamp its economic and innovation performance. According to the government, Lithuania has invested €67 million in risk capital schemes and funds over the last four years, in addition to the €100 million which the Baltic Innovation Fund, created in August 2012, plans to invest in existing risk and venture capital funds in Baltic States.

**Malta**

Maltese enterprises invested roughly €100 million in innovation in 2010, according to a recent study conducted by the National Statistics Office in Malta. (Ref. 3)

**Poland**

The Polish Ministry of the Economy organised a ceremony in November 2012 for successful and innovative companies operating in Poland. Recent literature

**REFERENCES**


suggests that such ceremonies of recognition may be effective in encouraging companies to pursue innovation activities. This year was the 10th award selecting the “True Pearls” of the Polish economy. Awards were presented in three categories, depending on the company’s annual revenue.

UK

A refreshed version of the Technology and Innovation Futures Report has recently been released in the UK. This report lists over 50 technologies which have the potential to be significantly developed over the next 20 years, bringing about innovations that support economic growth and help tackle major societal challenges. The report was produced by Foresight, an arm of the UK Department for Business, Innovation and Skills, which advises the Department on future issues and potential strategies relating to science and technology. (Ref. 4)

The UK Intellectual Property Office recently launched its annual Fast Forward Competition for 2013, which aims to encourage universities and public sector research establishments to collaborate with businesses and local communities on innovative projects. It is the third year of the competition, which has so far provided £1.25 million (€1.35 million) in prizes to 23 winning projects in areas ranging from creative industries to medical research and social enterprises. Prizes will be awarded to around a dozen projects in individual awards of between £10,000 and £100,000. (Ref. 5)

USA

In the run-up to the current economic crisis, the erosion of the US manufacturing sector and declining investment in research set the stage for a massive collapse, according to a new work by the Information Technology and Innovation Foundation’s (ITIF) Robert Atkinson and Stephen Ezell. In their book, “Innovation Economics: The Race for Global Advantage”, Atkinson and Ezell argue that sustainable economic recovery will require a focused innovation strategy, similar to those already embraced in competitive nations around the world, but long rejected by US leaders. Such a policy would make innovation a national priority by setting ambitious goals, backing them up with investment in research, and creating incentives for private sector investment.

In another new publication, “Better Capitalism”, Robert Litan and Carl Schramm contend that the US must focus its resources and efforts on the formation and growth of high-growth companies. US policymakers should take a holistic approach to support these potential high-growth companies by addressing issues including capital and finance, immigration, academic entrepreneurship and energy policy, according to the authors. They provide detailed policy recommendations to support high-growth firms, including some that are widely accepted in economic development (e.g., green cards for foreign students in STEM fields and equity-based crowd-funding) and others that are more controversial, such as their proposed market-based reforms to university technology transfer offices.

REFERENCES

[4] For more information, and to download the report, see http://www.bis.gov.uk/foresight/our-work/horizon-scanning-centre/technology-and-innovation-futures
[5] For more information, see: http://www.ipo.gov.uk/whyuse/research/fastforward.htm
INNO-Grips (“Global Review of Innovation Policy Studies”) has been operational from 2006 until January 2013. It has supported policy-makers in adopting appropriate responses to emerging innovation needs, trends and phenomena. It has analysed framework conditions and barriers and drivers to innovation and innovation policy. The 2nd implementation period (“INNO-Grips II”), consisting of two Lots, started in 2010, continued the activities of INNO-Grips I (2006-2010).

Lot 1, INNO-Grips policy analysis and monitoring, was carried out by empirica GmbH, Bonn (http://www.empirica.com) and the ICEG European Center, Budapest (http://www.icegec.hu), with support from the Institut der deutschen Wirtschaft Köln Consult GmbH, Cologne (http://www.iwconsult.de), based on a service contract with the European Commission, DG Enterprise and Industry.

Lot 2, which has prepared the innovation intelligence studies, was carried out by a consortium led by the Austrian Institute of Economic Research (WIFO) and consisting of Fraunhofer ISI, Greenovate!, NIFU-STEP, UNU-MERIT and MCI Management Center Innsbruck.

INNO-Grips NewsLetter January 2013

About INNO-Grips

Overview of studies, briefs and workshops prepared from 2010-2013

INNO-Grips POLICY BRIEFS:

Lot 1 of INNO-Grips II prepared the following policy briefs:

- **Innovation policy and the business cycle: innovation policy’s role in addressing economic downturn (2010).** This policy brief, prepared by IW Consult Cologne, was prepared against the background of the financial and economic crisis. It explores innovation policy’s role in addressing economic downturns: can innovation policy be used as a short-term means to facilitate a faster recovery from crisis? The brief discusses the pattern of private innovation activity during the business cycle, the impact of innovation policy on economic recovery from the recession, and which instruments are best suited for an anti-cyclical innovation policy on the European level.
  
  **Contact / main study author:** René Arnold, IW Consult
  (E-Mail: arnold@iwkoeln.de)

- **Policies in support of high-growth innovative SMEs (2011).** In recent years, policy makers in Europe and around the world have shown increased interest in fostering fast-growing enterprises, sometimes labelled “gazelles”. This policy brief, prepared by empirica GmbH, discusses how innovation policy can help foster high-growth innovative SMEs, and how such policies might differ from general SME policy. The brief presents international examples, including cases from Japan, Israel, South Korea and Singapore.
  
  **Contact / main study author:** Stefan Lilischkis, empirica GmbH
  (E-Mail: stefan.lilischkis@empirica.com)

- **Policies in support of service innovation (2011).** This policy brief explores how innovation policy can contribute to the beneficial development of an innovative services industry in Europe, promoting growth and, ultimately, well-being. The focus on services recognises the economic importance of this sector for employment and growth. In developed economies, service sectors typically account for about 70-80% of GDP, and have been a major source of growth in the past decade. The brief discusses drivers and barriers in relation to service innovation, provides case studies of current support policies, and draws strategic conclusions for future policy. The authors recommend that European policy should concentrate on optimising the framework conditions for service innovation rather than introducing direct support measures such as project grants. The brief was prepared by the IECG European Center, Budapest.
  
  **Contact / main study authors:** Renata Anna Jaksa / Olivér Kovács, IECG European Center
  (E-Mail: rajaksa@icegec.hu, okovacs@icegec.hu)

- **Disruptive innovation: implications for competitiveness and innovation policy (2012).** This policy brief, prepared by empirica GmbH, discusses the concept of disruptive innovation with a view to its relevance for innovation policy. The term is widely used today in the sense introduced originally as “disruptive technology” by Christensen’s seminal work “The Innovator’s Dilemma” (1997). It addresses the question whether innovation policy should pay specific attention to disruptive innovation trends and —if so— how this could be achieved. The policy brief analyses the main innovation trends in three selected industries (automotive, chemical, tourism) and offers an assessment of possible implications for research and innovation policy.
  
  **Contact / main study author:** Hannes Selhofer, empirica GmbH
  (E-Mail: info@empirica.com)

- **Policies promoting innovation in the public sector (2012).** This policy brief was prepared by the IECG European Center. It discusses how governments can foster innovation within the public sector in order to increase efficiency gains, cost-savings and welfare. It documents current policies supporting innovation in public service provision in Europe and beyond, identifies barriers and drivers, and analyses how innovation in the public sector is likely to enhance multi-actor collaborations. It features case studies of public sector innovation from different countries.
  
  **Contact / main study authors:** Renata Anna Jaksa / Olivér Kovács, IECG European Center
  (E-Mail: rajaksa@icegec.hu, okovacs@icegec.hu)

- **New trends in innovation policy (2013).** This policy brief, prepared by IW Consult, analyses emerging trends in innovation, and how these are likely to translate into new requirements for innovation policy. It adopts a
company-level perspective on selected innovation trends that appear to be fostering competitiveness, in light of the developments in the innovation environment it describes. The analysis focuses on two overarching phenomena: (i) the convergence of knowledge, technologies, applications and industries and (ii) the shift from a producer-centred to a user-centred paradigm for innovation. The brief discusses possible implications of these major trends for the design of innovation policy.

Contacts / main study authors: René Arnold & Raphaëla Smarzcz, IW Consult (e-Mail: arnold@iwkoeln.de, smarzcz@iwkoeln.de)

INNO-Grips Innovation Studies:

- **Barriers to Internationalisation and Growth (2010)**
  This study shows that internationalisation and innovation are closely related. Therefore, barriers to innovation also act in parallel as barriers to internationalisation. At the same time, barriers to foreign trade and international business also have a negative impact on innovation. This implies that policies supporting innovation and internationalisation should be interlinked, or designed in such a way that they simultaneously stimulate innovation and internationalisation. The authors of the report suggest a systematic and EU-wide screening of existing national export promotion programmes and innovation support measures. Such an exercise should highlight best practices, and could be a source for policy learning for Member States. The study was conducted by the Austrian Institute of Economic Research (WIFO) and the Fraunhofer Institut für System- und Innovationsforschung (ISI).
  Contacts / main study authors: Andreas Reinstaller, Fabian Unterlass, Werner Hözl, Jürgen Janger (WIFO), Stephanie Daimer, Thomas Stehnken (ISI-Fraunhofer)
  (e-Mail: Andreas.Reinstaller@wifo.ac.at)

- **Implications of Climate Change, Resource Scarcity and Demographic Developments (2011)**
  This INNO-Grips study by the Maastricht Economic Research Institute on Innovation and Technology (UNU-MERIT) concludes that a continuous, coherent, forward-looking process of adaptive policy-making will be vital for a successful energy transition. In this process, the further development of a powerful innovation policy toolbox for mitigating climate change will be key to effectively addressing resource scarcity, demographic change, and rising global affluence.
  Contacts / main study authors: Anthony Arundel, Minna Kanerva, René Kemp, (UNU-MERIT), (e-Mail: r.kemp@maastrichtuniversity.nl, a.arundel@maastrichtuniversity.nl)

- **Open Innovation in Europe: Effects, Determinants and Policy (2011)**
  The study provides novel insights into open innovation and tackles the concept as a multi-dimensional phenomenon rather than a single best practice. The study findings are presented through two research questions which identify company-level open innovation practices and strategies: one investigates the effects of open innovation practices on the innovation performance of firms, and the other analyses the determinants of companies’ use of open innovation practices. The study was prepared by the Nordic Institute for Studies in Innovation, Research and Education (NIFU-STEP), Management Center Innsbruck (MCI) and the Fraunhofer Institute for Systems and Innovation Research ISI (Fraunhofer ISI).
  Contacts / main study authors: Bernd Ebersberger (MCI), Sverre J. Herstad, Eric Iversen (NIFU), Oliver Som and Eva Kinner (Fraunhofer ISI), (e-Mail: Bernd.Ebersberger@mci.edu; eric@ifnu.no).

- **Social Attitudes Toward Entrepreneurship and Innovation Demand (2012)**
  The study provides novel insights into entrepreneurship and social attitudes to innovation, and underlines how social factors influence attitudes towards innovation. Understanding the differences is essential to improving the framework conditions for innovation. The authors recommend actions to change social attitudes, including long-term subsidies lowering the cost price of innovative products, awareness-building measures to emphasise the benefits of innovations, and the introduction of labels to act as guarantees of quality and utility. The study was prepared by UNU-MERIT.
  Contacts / main study authors: Bianca Buligescu, Hugo Hollanders, Tina Saebi (UNU-MERIT), (e-Mail: h.hollanders@maastrichtuniversity.nl)

- **Organisational and Marketing Innovations: Drivers of Growth? (2012)**
  The study examines how far organisational and marketing innovation is affected by specific barriers and obstacles which would require innovation policy support. It finds that these types of innovation are positively associated with sales growth (the impact differs depending on firm size and industry) and discusses implications for innovation policy. The study was jointly prepared by the Fraunhofer Institute for Systems and Innovation Research (ISI) and the Nordic Institute for Studies in Innovation, Research and Education (NIFU).
  Contacts / main study authors: Oliver Som, Janis Diekmann, Stephanie Daimer, Petra Jung, Erceg, Esther Schricke, Torben Schubert, Thomas Stehnken (ISI), Espen Solberg (NIFU), (e-Mail: Oliver.Som@isi.fraunhofer.de).

- **The Role and Internationalisation Strategies of Multinational Companies in Innovation (2012)**
  This study summarises patterns of internationalisation of innovation related activities of multinational enterprises and provides new evidence on the complementarity or substitutability between the innovation activities of the headquarters and its foreign affiliates and the impact on competitiveness. It investigates the role of foreign ownership and other forms of cross-border collaborations in the creation of new knowledge or the diffusion of existing knowledge in host countries of FDI and analyses the policy and non-policy factors influencing the attractiveness of the EU as a place to innovate. It was jointly prepared by the Austrian Institute of Economic Research (WIFO) and NIFU.
  Contacts / main study authors: Yvonne Wolfmayr, Elisabeth Christen, Martin Falk, Andreas Reinstaller, Fabian Unterlass (WIFO), Michael Pfaffemayr (WIFO and University of Innsbruck), Heinz Hollenstein (ETH Zürich – KOI), Mark Knell (NIFU), (e-Mail: Yvonne.Wolfmayr@wifo.ac.at).
INNO-GRIPS WORKSHOPS:
All INNO-Grips studies and policy briefs were presented and discussed in workshops. INNO-Grips II has organised the following international innovation workshops:

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This INNO-Grips newsletter has been prepared by empirica Gesellschaft für Kommunikations- und Technologieforschung mbH, Oxfordstr. 2, 53111 Bonn, Germany, on behalf of the European Commission, Enterprise and Industry Directorate General.

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