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First IRIMA workshop Industrial Research and Innovation Monitoring and Analysis: Identifying policy-makers and business community needs – SUMMARY REPORT

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The European Commission, more particularly DG Research and Innovation and the Joint Research Centre, have collected on a regular basis since 2004 financial data on enterprises investing in research. This information has been exploited to analyse patterns and trends in corporate R&D and innovation activities, as well as their contribution to the competiveness of the EU, benchmarking the EU with its main competitors. In June 2012, a new phase of this activity was launched in order to continue to support evidence-based policy development at European level and to accelerate innovation in the EU. The Industrial Research and Innovation Monitoring and Analysis (IRIMA) will run until mid-2016.

In order to identify how the IRIMA activities can best serve the information needs of policy makers and industrialists, a workshop was organised on 4th December 2012. The workshop was structured around two main topics:

- **Session 1: High-growth innovative companies in Europe**: What do we know about them? How to increase their number?

- **Session 2: Globalisation and R&D localisation**: How to attract R&D investments in Europe? What is the link between R&D and manufacturing activities?

The participants were requested to provide feed-back on the pertinence and policy relevance of the research questions identified for the next stage of the IRIMA project and to signal any missing areas where further empirical evidence would be needed. For this purpose a discussion paper identifying

[1] *The views expressed are purely those of the author and may not in any circumstances be regarded as stating an official position of the European Commission.*

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relevant issues and questions was circulated in advance to participants (see attached). This document summarises the main feed-back received. The issue of location of R&D investments and its implications in terms of where the value derived from the resulting innovation (in terms of manufacturing and commercialisation of new products and services) is finally retained (in terms of jobs created and economic growth) has been a recurrent theme also during session 1. This is the reason why the below summary does not distinguish between the two sessions.

FEED-BACK FROM WORKSHOP PARTICIPANTS

1. THERE IS A NEED TO STUDY GLOBAL VALUE CHAINS AND THE COMPETITIVE ADVANTAGES THAT EUROPE'S SPECIFICITIES CAN OFFER TO COMPANIES FOR LOCATING THEIR ACTIVITIES (R&D AND MANUFACTURING) IN THEIR TERRITORY (E.G. PROXIMITY TO KNOWLEDGE SOURCES AND TO THE MARKET).

The construction of these value chains interactions through the combination of several sources of data –both quantitative and qualitative- is possible (example of the one developed for the "bio-economy" by the OECD) and can be very useful for analysing the behaviour of individual companies and their relationships with other companies within these value chains.

The analysis should include a dynamic perspective, anticipating the challenges that the European industry will face in the medium-term: shortage of skilled people (due to ageing and long-term unemployment), increased cost of capital (due to financial reforms) and increased cost of energy (due to scarcity and energy policy choices).

Furthermore, it is also necessary to analyse the policy tools which can be used to foster Europe's role in global value chains (e.g. support to clusters and knowledge networks, twinning of big and small companies) and to evaluate their effectiveness.

2. THE ISSUE OF LOCATION OF R&D INVESTMENTS AND OF THE RESULTING INNOVATION ACTIVITIES ALONG THE WHOLE VALUE CHAINS (FROM MANUFACTURING TO COMMERCIALISATION AND AFTER SALES SERVICES) NEEDS TO BE PROPERLY STUDIED.

We need a better information on where the Scoreboard firms are locating their (R&D and other) activities. A sectoral approach that takes into consideration the specific timing of the innovation cycle (from research to market) is also necessary. The use of patent information can contribute to this analysis but it should not be taken as the only proxy to measure R&D outputs.

One interesting aspect to study in more detail is how / to what extent the public research system can be factor of attraction of FDI on R&D and how public intervention can help in this respect.

In relation to the internationalisation of R&D investments, there is a need to improve information concerning their location in China and India and on how companies based in these countries are also globalising their activities.

3. THE IMPORTANT ROLE THAT LARGE COMPANIES PLAY IN EUROPE'S INNOVATION SYSTEMS AND IN PARTICULAR IN THE ESTABLISHMENT OF CLUSTERS SHOULD NOT BE OVERLOOKED.

Large players play a crucial role in the creation of innovation clusters and the attraction of smaller innovative companies participating at different stages of the innovation chains. In many cases, large companies operate as SMEs conglomerates. There is a need to further analyse how to support

cooperation between large and small companies in the context of both user-driven innovation and open-innovation modes.

4. More analysis is needed to understand what kind of support could be provided to the development and uptake of new and key enabling technologies in Europe.

It has been argued that Europe retains a good research base to develop new technologies (as patent indicators show) but it fails when it comes to the deployment and manufacturing of these technologies (the example of photovoltaic technologies has been mentioned). There is a need to bring down the analysis of patenting and its translation into markets to particular sectors/technologies and locations.

The role of **public-private partnerships** will be crucial to support new technology developments and application in key sectors related with the solution of societal challenges (e.g. bio-industry). Financing support is needed to develop large demonstrators. More analysis is needed to understand the functioning of these public-private partnership schemes and on what kind of support is needed at EU level.

5. Management factors and business models are crucial in explaining companies' growth success.

We need to find the way of getting more empirical evidence about how companies are managed and see what kind of indicators and measurement tools could be used in this respect. There is a need to better understand different firms' strategies and business-models in different sectors and compare these across companies in different locations.

There is also a need to examine how up-coming supporting instruments (e.g. Horizon 2020, cohesion support) could support manager's capacities through training, coaching and mentoring. There is a need in particular to support the "scaling-up" of successful start-ups and in this respect supporting the managerial capacity of these enterprises is crucial. Schemes for "high-growth coaching" targeting innovative SMEs should be considered. However this kind of public intervention should also be "scaled-up" to reach a critical mass and be able to deliver results at EU and global scale.

6. Demand plays a crucial role to pull innovation from the business sector. Particular reference has been made to the case of the pharmaceutical industry.

As risks associated to market uncertainties deter private R&D investments, policies which are framing the markets where the innovations will be commercialized have a crucial role to play in fostering private R&D investments.
There is a need to further analyse the role that **public procurement** can play to pull innovation in concrete sectors and what modalities could be applied at EU level.

7. The European Commission might play an important role in identifying policy good practices and successful application of policy supporting instruments worldwide.

Reference to some successful experiences in Member States have been mentioned (e.g. R&D tax credits and patent box in the UK, "top sectors' approach" for policy planning involving the private

sector in the Netherlands, the Vigo accelerator project in Finland, incubator programme in Israel). It has been argued that the real challenge is how to properly combine policy instruments (**policy mixes**) to respond to specific contexts.

Policy instruments need to be more dynamic, they need to integrate proper evaluation, permanent assessment of business environment and policy adaptation mechanisms. In addition, the specific instruments aiming at supporting the growth of companies need to be tailored not only to specific contexts (sectors and locations) but also to the different stages of development/growth of companies (need for proper sequencing of measures to accompany different growth stages of individual companies).

The work being done by the S3 Platform in support of the development and implementation of research and innovation strategies for smart specialisation in MS and the regions, could be a useful source of good practices and a good forum to facilitate policy learning.

8. GETTING THE INSTITUTIONS RIGHT IS ESSENTIAL TO PROVIDE COMPANIES WITH THE APPROPRIATE BREEDING GROUND FOR GROWTH.

This includes a wide array of policies (labour, financing, education, taxation, company law, bankruptcy law, environment, energy etc.). Companies need a clear and stable regulatory framework, something sometimes difficult to find in the context of the EU and Member States. The role of tax systems in relation to growth of firms needs to be studied (e.g. do they favour acquisitions in comparison with organic growth?). SME-targeted support schemes may also become incentives to stay small. There is a need for a dynamic assessment of the marginal effects that the regulatory and institutional frameworks have on the growth of companies at different stages of their life/size (an example of such analysis has been carried-out in the Netherlands).

MAIN IMPLICATIONS FOR THE IRIMA RESEARCH AGENDA

On the basis of the feed-back received, the following conclusions can be drawn concerning the planned focus of the IRIMA research agenda for the years to come:

- The monitoring and analysis of EU R&D big players needs to be done taking into consideration their particular context which goes well beyond the main sector of activity and the location of their headquarters. A broader view is needed to integrate in the analysis the positioning of their activities to respect to global value chains, the location of their subsidiaries, their technological profile, their relationship and interaction with other companies and institutions etc. It is crucial to address issues such as clustering, cooperation with SMEs, knowledge management and open innovation strategies.

For this purpose, efforts should continue to combine the collection of key financial data on large R&D investors with other sources of information. Apart from the collection of data from company accounts and the survey, specific case studies and targeted interviews should be considered. Matching of IRIMA and patents databases could present interesting findings on location of R&I of these firms. There are also opportunities to better analyse firms strategies to get access to strategic knowledge networks, using notably scientific publications. Recent experience show how challenging these extended data collection can be.
Therefore, there is a need for well-targeted analyses focusing on specific sectors, locations and/or groups of companies.

There is also a clear need to extend the analysis beyond large R&D investors.

Exploitation of data on the subsidiaries of large Scoreboard groups and the extension of the data collection process are promising avenues for the IRIMA project but the need to access new data sources and to extend the resources available to manage and exploit the data remains a key issue.

- There is a clear interest in deepening the analysis of policy instruments available to support the growth of innovative companies[2]. One possibility would be to exploit the available information on on-going policy mixes in place in selected Member States (including framework conditions such as level of local/national competition, sophistication of home demand and strengths of S&T supply linkages) and see if any correlation or casual link can be established with the observed evolution of a representative sample of innovative companies operating in their territory. Even if, given the time perspective now available in the Scoreboard, it is possible to detect fast-growing firms among the Scoreboard firms, access to proper company data remains always a key challenge in this respect.

- There is a clear interest in opening the IRIMA analysis to some managerial aspects to better understand firms strategies, decision-making processes (e.g. on R&D investments decisions, on entrepreneurial attitudes in high-tech sectors) and to analyse different business models. There is a need to see how to access proper data and to agree on what indicators would best suit these kind of analyses.

[2] while taking into account that this is precisely the object of the forthcoming study "Policies in support of high-growth innovative enterprises" of DG RTD (January-September 2013).

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