

**Workshop 8**  
**The Innovation Gap between the EU and the US**  
**Myth or Reality**

**1. Introduction**

The aim of the workshop is to identify whether there is really an innovation gap between the EU and the US, or whether this is a general perception, which is not corroborated by evidence. The idea is to collect information about benchmarking activities in the member states, identify to what extent they include data on the US and what are their results. The analysis is based on 32 questionnaires received from all national correspondents, except Romania.

**2. General remarks**

Based on the responses, from the examples quoted as relevant by the member states 29 cases were reported, unevenly distributed among countries, namely

Number of benchmarking exercises reported	Number of countries in the category	Countries
No benchmarking	11	Cyprus, Lithuania, Turkey, Lichtenstein, Estonia, Luxembourg, Slovakia, Malta, Ireland, Greece, Hungary
One example analysed	9	Czech Republic, Germany, Latvia, Netherlands, Norway, Poland, Portugal, Spain, Austria
Two examples analysed	12	Bulgaria, Denmark, France, Iceland, Italy, UK, Switzerland, Sweden, Slovenia, Finland and Belgium, Israel
<b>Total</b>	<b>32 countries, 33 cases</b>	

However, one should note that there is a very diverse interpretation on the content of benchmarking and activities to report. Descriptions of the various examples denote sometimes a very broad and sometimes a very narrow interpretation of the question. In particular in exceptional cases CIS was reported as a benchmarking activity, whereas most countries did not mention it at all. Since it is an activity by now established in most member states and not directly comparable with the US it is not among the relevant activities that would add value to the workshop.

Some member states mention the creation of a national development plan, or a national R&D and innovation plan as a benchmarking exercise, whereas others do not. This may reflect a different methodology, suggesting that in some member states the planning process is more evidence based, or simply that there is again divergence in the interpretation of benchmarking.

What is of more interest is the way the most relevant activities can be classified and what can be learned from them. The following remarks refer to the 33 cases described, aggregating them by different criteria. To give an overview of the cases classified in the third column in each case we present the examples, marking the case by the name of the country and 1 or 2 respectively, if the country reported 2 cases. In some cases, where information was not available or not precise enough, there was no reporting for the specific variable. Hence the number for which there is clear evidence was often lower than the total of 33.

### 3. Geographical coverage of the benchmarking activities

The geographical distribution of the countries used for the benchmarking examples reported is as follows:

	Country cases	Number of cases
US focus	France <sup>2</sup>	1
Major non-EU competitors	Finland <sup>1</sup>	1
Major EU and non EU incl. US	Norway, Denmark <sup>2</sup> , Portugal, Spain, UK 1 and 2, France <sup>1</sup> , Germany, Italy <sup>1</sup> , Latvia, Slovenia 1 and 2, Sweden 1 and 2, Switzerland 2, Finland 2, Austria and Israel 1 and 2	19
EU only (all or part)	Belgium <sup>2</sup> , Iceland <sup>1</sup> , Italy <sup>2</sup> , Poland (CEEC), Bulgaria 1 and 2	6
All OECD	Czech Republic, Denmark <sup>1</sup>	2
Regional scope	Belgium <sup>1</sup> , Switzerland <sup>1</sup>	2
Cases on which there is clear evidence		31

Most countries measure themselves against a selection of EU and non-EU countries, which are either their most relevant competitors/countries with similar structures or world leaders. When non EU countries are included the US was always among the comparisons with the exception of the Austrian study. In some cases only European countries are used as benchmarks; this is often the case for ad hoc studies with EU funding. A general remark is that in almost all cases only advanced or rapidly growing countries are used as benchmarks, the less prosperous countries analysed do not seem to be measuring

themselves against their competitors or the less favoured regions of the US. The American competitiveness is observed as the average of the country and not as composed of very different entities.

The second French case, a foresight study on research and innovation in France, including a European and international positioning of the French national research and innovation system is of interest for understanding the EU US gap, because it focuses mainly in the US (e.g., the latest working paper of FutuRIS, on the development of innovative companies, includes an annex describing US policy measures supporting SMEs) and addresses the future as well, not only the past.

The second French case is of particular interest since it is the only one measuring only against the US and addresses high tech areas relevant for the future.

#### 4. Focus on innovation benchmarking

Benchmarking in the member states usually does not take place as an independent activity but as part of a broader competitiveness study (which in some cases is equivalent to the preparation of a national development plan). Most of the cases reported were not specific innovation benchmarking exercises but were by-products either of a general policy document or of a specific point of view complemented by evidence-based comparison.

	Country cases	Number of cases
Part of a general competitiveness study	Czech Republic, United Kingdom 1, Sweden 1 and 2, Slovenia, Latvia, Portugal, Bulgaria 1 and 2	9
Part of a foresight exercise	France 2	1
General innovation benchmarking	Iceland 1 and 2, Netherlands, Iceland1 and 2, Switzerland 2, Denmark 1, France 1, Germany, Israel 1 and 2, Austria	12
Sectoral benchmarking	Spain, Switzerland 1, Belgium 2	3
Benchmarking specific innovation policy tools, indulging regional development	Slovenia 2, Finland 1 and 2, Italy 1 and 2, Denmark 2, Poland, Belgium 1	8
Cases on which there is clear evidence		33

The interesting feature in this breakdown is that there is only limited general innovation benchmarking and a lot of the benchmarking exercises is done in a different context.

Very interesting cases are the specific innovation policy tools, including studies supported by industry (the Italian Confindustria study for instance), but also SME support and technology transfer mechanisms. The Danish incubator centres is also interesting for comparing with the US gap.

The Italian International Benchmarking Study on Research & Innovation policy measures carried out in 2004, by Confindustria (leading organisation representing the manufacturing and service industries) is a benchmarking report on policy measures and instruments that can be used by enterprises to carry out research and innovation activities and hence has a focus, which is particularly relevant for the Lisbon and Barcelona targets. It uses only very advanced countries as benchmarks, notably Italy, US, Canada, Finland, France, Germany, UK, Spain and Sweden; it analyses the policies and instruments that are available for firms in order to finance R&D&I activities in nine countries with the final aim of identifying best practices. For each country a detailed information fiche" is provided.

The Danish case is an interesting example of a narrow focus benchmarking exercise, benchmarking 8 Danish innovation incubators with a number of international world-class innovation incubators, from the UK, UK, Denmark, Finland and Sweden

## 5. Type of work

The content of the examples reported is usually mixed, it includes a variety of indicators complemented with comments, analytical text, conclusions and recommendations. In the minority of cases it is more a result of comparison of specific indicators, which are limited to R&D statistics and patenting.

	Country cases	Number of cases
Indicators and general comments	Ireland 1, France 1 and 2, United Kingdom 2, Italy 1 and 2, Netherlands, Czech Republic, Denmark 1 and 2, Germany, Latvia, Switzerland 2, Belgium 1, Sweden 1 and 2, Slovenia 1 and 2, Bulgaria 1 and 2, Finland 1 and 2, Austria	23
Specific indicators (Usually R&D and patenting)	Iceland 2, Spain, United Kingdom 1, Switzerland 1, Belgium 2, Israel 1 and 2	7
Cases on which there is clear evidence		30

The most relevant cases are those with a more encompassing target than the simple comparison of specific indicators, although in some cases they remain focused in general

comparisons related to the individual countries' interests and are of no value for a comparison between the broader EU-US gap.

The German study, which includes the US as a benchmark, is interesting as typical for a broad coverage. It is an indicator based report on strengths and weaknesses of the German innovation system and its performance with respect to other countries, including policy recommendations for strengthening innovation. The report covers a wide variety of issues, ranging from secondary and tertiary education, science, R&D, innovation in firms, patenting, new firm formation, public support to R&D and innovation, specific sectors (ICT plus others, varying from year to year), foreign trade in high-tech goods and services, structural change of the economy. The reporting system consists of a comprehensive annual summary report, a large number of background papers (ca. 20 per year) and special studies and reviews (ca. 3-5 per year). Part of the reporting system is the development of new indicators on innovation, such as trade marks, new patent indicators, new indicators on firms' innovation activities. All developed industrial countries, namely USA, Japan, France, UK, Nordic countries, Switzerland, Benelux, Southern European countries, increasingly also the new member countries in Eastern Europe, China, India and other emerging economies.

However, one should not underestimate the importance of measuring the gap with the US in important, forward looking activities. A narrow-focus but ambitious case is reported by Switzerland in the case of life sciences, benchmarking metropolitan regions in Europe and the US. The main indicators used in this study are the following: Contribution of the life science sector (comprise pharma, agro, medical engineering, research firms (especially biotechnology)) to real GDP (difference between 1995 and 2003). The relative growth rate of the life science sector compared to other sectors (e.g. finance sector and tourism) in the specific country. The domains covered are: Regulation of employment markets, company taxation, taxation of high skilled staff, international reachability, relative number of employees with tertiary level education, share of public R&D expenditures, regional offer of first-class research, regulation of product markets and degree of federalism. The preliminary results of the first part of this ongoing study are the following: Strengths of Swiss location for life sciences (liberal regulation of employment markets, multicultural orientation and abilities for integration, low taxes, easy to reach, pharma-specific framework conditions are well (technology accepted, patent protection, pharma prices, drug approval policy). Weaknesses of Swiss location for life sciences (expenditures on research and education are too low and less focused, incentives for researchers, teachers and students at universities and universities of applied sciences are too low to want the best and give the best, lack of deregulation and international openness of national markets in general, difficulties to reach critical mass": small country, federalism à la Suisse)."

## **6. Periodicity**

Benchmarking examples in the member states are in their overwhelming majority ad hoc exercises, using dedicated funds for a once-off study. In some cases this is related to EU

funding, where comparison with other EU member states is necessary, whereas in others it is a result of government needs.

	Country cases	Number of cases
Regular, or repeated exercises	Belgium 2, Iceland 2, Netherlands, Norway, France 1, Switzerland 2, Sweden 2	6
Ad hoc, once-off examples	Latvia, United Kingdom 1 and 2, Iceland 1, Italy 1 and 2, Czech Republic, Denmark 1 and 2, France 2, Germany, Belgium 1, Finland 1 and 2, Sweden 1, Switzerland 1, Slovenia 1 and 2, Bulgaria 1 and 2, Israel 1 and 2, Austria	20
Cases on which there is clear evidence		29

The highest interest lies of course with the repeated exercises, which give the opportunity to examine gaps and differences over a longer period of time and study their dynamics. Only in the most competitive member states and associated countries one can find examples of that type. In the most ambitious of these cases there are broader debates and systematic efforts to use the experience from the previous round for an improvement in the future. The Dutch case, although not completed yet, presents interesting features.

The Report on Science & Technology Indicators for Norway is a biannual publication describing the research and innovation system in Norway and includes international comparisons of R&D effort and innovation. In the report, Norway is benchmarked against other European countries, the EU average, the US and Japan in terms of R&D effort and innovation performance. The repeating nature of the exercise helps the country to get an accurate picture of its progress over time.

Similarly, the Swedish Institute for Growth Policy Studies (A national agency) has conducted several case studies where Sweden is benchmarked with the EU, USA and Japan. This is facilitated by the fact that the Institute has offices in the USA (Washington, Los Angeles), China (Beijing) and Japan (Tokyo) - making policy intelligence easier and more accurate. The interesting feature in this case is that the exercise does not include a periodic exercise based on the same methodology but a number of exercises of a similar nature. A few studies can be given as examples: One study concerns comparison of public procurement in the EU, USA and Sweden. The study focuses on opportunities and threats for SMEs. Another study concerns business incubators in the USA. The study provides some examples of good practice and focuses on how Sweden can improve "VINNKUBATOR", i.e. the public financed national programme for business incubators. A third study concerns social capital, innovation policy and the emergence of the

knowledge society, and is a comparison of Sweden, Japan and the USA. A fourth study concerns ownership of university research. The focus of this study is on the impact of patent rights regimes in Sweden and Germany, and on the incentives to patent research results. A fifth study concerns government research and innovation policies in Japan and its bearing on the Swedish context. A sixth study concerns the academic career path in the USA, and what can be learned from a Swedish point of view. A seventh study concerns innovation policy in Canada and focuses on strategies and realities.

## 7. Institutional origin and design

The examples reported usually cover a need identified by an organisation of the national government. The exercise itself is undertaken either by government departments or by specialised institutes.

	Country cases	Number of cases
Government bodies	Bulgaria 1 and 2, Netherlands, Belgium 1 and 2, Italy 2, Latvia, Czech Republic, United Kingdom 1 and 2	10
Specialized institutes or stakeholders	Iceland 1, Italy 1, Switzerland 1, France 1 and 2, Sweden 1 and 2, Israel 1 and 2, Austria	10
Cases on which there is clear evidence		20

This is one of the least specified cases, since it is usually government-led studies but it is not clear who is implementing them.

The interesting feature is that in some countries, like in Sweden or Israel, specific institutes focus their activities on benchmarking exercises, whereas in others the benchmarking is ad hoc, because there was a temporary expressed need by a government body. The descriptions suggest that in the latter case there is a close interaction between the government and the implementing institute.

## 8. Conclusions

There is a high number of benchmarking exercised, increasingly used in the European countries studied. Most of them use both EU and non EU countries as a reference and in the latter case the US have a prominent role. However, there are no national studies, which cover the entire Union and its comparison with the US. A systematic comparison of the gap can only be found in dedicated EU-commissioned studies, mainly those related

to the benchmarking series and those addressing the implementation of the Lisbon strategy of the Barcelona targets.

From the cases analysed here many are of limited interest to a wider discussion because either they address the specific interests on one member state, or because they are engaged in a narrow scope of R&D comparisons, not broadening it to the innovation debate. The content and conclusions of the studies vary. Some of them are of particular interest because of their quality and ambitious methodologies, others are important because of their rich conclusions and last but not least some are very pertinent because of the type of stakeholder involved or because of their rich results.

The French, Italian and Nordic examples described above are worth studying. Some of the ad hoc studies, like the German and UK ones, are highly interesting, because they engage in a broad and ambitious exercise, which includes benchmarking of their countries against the most important European competitors (including the US), offering interesting insight into the focus of the workshop. The specific cases of narrow scope in regions or forward looking activities are also worth investigating. The second UK example, which has a sectoral approach, including sectors that are expected to be relevant in the future, is in that sense also of particular interest.