European Commission

Annual Report 2003

www.trendchart.org

Building a comprehensive picture of innovation policies across Europe

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Annual Report 2003

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Executive summary

The 2003 Annual Report reviews the Trend Chart's activities and achievements. It describes the current status of its products and services, presents selected findings from recent reports and workshops, and looks ahead to future developments.

- The European Trend Chart on Innovation encompasses the ***monitoring of innovation performance, the collection and analysis of data on innovation support measures, and the exchange of good policy practice***. It aims to build a comprehensive and up-to-date picture of innovation policy-making across Europe, and to contribute to implementation of the Commission's policy priorities in the field of innovation.
- In response to feedback from users, the Trend Chart website (www.trendchart.org) has evolved into a ***comprehensive and easy-to-use on-line tool kit***. It includes a searchable database of innovation policy measures, a library of downloadable expert reports, and a directory of active innovation policy-makers and practitioners.
- The policy database presents a ***comprehensive account of about 700 innovation support measures*** implemented across Europe. It is supported by regular analytical reports which place the latest national innovation policy developments in their economic and political context, examine in detail their objectives, mechanisms and impacts, and assess common trends in policy priorities.
- The Innovation Scoreboard sends a ***powerful message about Europe's overall innovation performance***, and provides a valuable starting point for debate – in particular, for co-operation and mutual learning between innovation policy-makers and practitioners. The 2002 edition extended the Scoreboard's scope downward to the regional level, and outward to cover the 13 candidate countries.
- The Trend Chart's policy benchmarking workshops are ***pioneering the direct exchange of experience between innovation policy-makers***, and pushing forward both debate and practice in key policy areas. A recent evaluation confirmed participants' appreciation of the workshops, as well as their concrete impact on national policies and transnational co-operation.
- Policies to stimulate and support ***clusters*** were the subject of both a thematic 'trend report' and a policy benchmarking workshop during the year. The number and diversity of measures is large, but neither their policy goals nor their real economic impacts are always clear, while the administrative regions to which they are applied do not always match the 'functional regions' recognised by companies themselves.
- Policy-makers are starting to worry that certain uses of the ***patent system*** may have adverse effects. At a recent policy benchmarking workshop on 'strategic patenting', experts from 18 countries concluded that further study would be needed to ascertain its real impacts on innovation.
- Two entirely new topics were addressed by thematic reports published during 2003. ***Organisational and entrepreneurial innovation*** concerns the need for broader and more holistic policy approaches, and for new mechanisms to support cross-departmental coordination, for reflection and for policy learning. ***Public debate on innovation***, a key aim of the Commission's 2000 Communication on innovation policy, is an essential means of securing the stakeholder involvement that characterises a dynamic innovation culture. Most countries have introduced initiatives in this area, but they tend to be low-key and poorly funded.
- The Trend Chart provides an essential platform for transparency, dialogue and exchange. But the 'context-dependence' of innovation support makes ***continuous, structured national policy learning initiatives*** essential, too.
- Now firmly established as an essential tool kit for European innovation policy-makers, the Trend Chart will ***continue to extend and refine its products and activities*** in the years ahead – making it more useful to more of those with responsibility for promoting innovation.
- The Trend Chart is now on its way to becoming the "***assessment mechanism for taking stock of the progress achieved***" in innovation in the EU Member States, as requested by the European Council.

Smoothing the lear for Europe's innova

The European Trend Chart on Innovation encompasses the monitoring of innovation performance, the collection and analysis of data on innovation support measures, and the exchange of good policy practice. It aims to build a comprehensive and up-to-date picture of innovation policy-making across Europe, and to contribute to implementation of the Commission's policy priorities in the field of innovation.

A tool for transnational policy learning

At the Lisbon Council of March 2000, the European Union's Member States called for the benchmarking of national performance in the fields of employment, innovation, enterprise and research. In particular, they requested the regular collection of data on specific indicators, the development of guidelines for national policies, and mutual learning or 'open coordination' effected through peer reviews.

To fulfil this request in the field of innovation policy, a new framework for interaction and learning was needed. Piloted in 1999, and launched fully in 2000, the Trend Chart provides this framework, and is designed to strengthen innovation policy-making and innovation performance as efficiently and rapidly as possible.

It consists of three main components:

> The **European Innovation Scoreboard**, which summarises data on quantitative indicators of innovation performance for each Member State and candidate country, based on available statistics. Highlighting both strengths and weaknesses, it is designed to stimulate debate between members of the business, research and policy-making communities, and to provide a starting point for policy improvement.

> A **database of innovation policy measures** – Freely available on-line, the database currently identifies around 700 innovation support schemes by theme and by country. It not only describes each scheme's target group, objectives and mechanisms, but also gives an account of practical achievements and problems, and in most cases names an individual contact person. Information is collected continuously by a team of expert national correspondents. The correspondents regularly produce detailed **country and thematic 'trend' reports** on recent innovation policy developments and directions.

> A series of **policy benchmarking workshops** – Drawing on the country and trend reports, the workshops proactively address specific topics of policy design or practical implementation, bringing together groups of policy-makers and practitioners from around Europe for peer review of policy measures in particular areas of shared interest.

European Commissioner, Erkki Liikanen

"While innovation policy takes place mostly at the national and regional levels, the Member States and the Commission need to intensify their co-operation for the strengthening of innovation in the EU, including coordination and assessment mechanisms for mutual learning, as well as for taking stock of progress achieved."

(quote from Communication COM(2003) 112 final)

"The Trend Chart workshop has improved the quality of discussions within government."

ning curve
tion policy-makers

The **Trend Chart website** at www.trendchart.org is the public showcase for all of these activities and outputs. The Innovation Scoreboard, the innovation policy database, the country and thematic reports and a range of related information can all be accessed at the site, free of charge.

Who is involved?

The activities of the Trend Chart are carried out by the European Commission's Directorate-General for Enterprise in close consultation with a Group of Senior Officials (GSO). With representatives from all Member States, as well as acceding, candidate and associate countries, the GSO ensures that the Trend Chart's activities respond to the changing needs and interests of national policy-making communities. It also plays a key role in the preparation of the benchmarking workshops by identifying emerging policy trends, relevant national schemes, and active or interested players.

The GSO, the 275 or more who have already participated in workshops, and the many thousands who visit the Trend Chart's website each month, form a growing and increasingly close-knit European innovation policy-making community. It encompasses senior university and business decision-makers as well as national and regional government officials. By facilitating both real-time exchanges of expertise and practical, long-term partnerships within this community, the Trend Chart makes a significant contribution to the upgrading of Europe's innovative capacity that is needed to achieve the objectives of the Lisbon summit.

What is the purpose of this report?

The Annual Report 2003 is an activity report. It describes the current status of the Trend Chart's products and services, presents selected findings from recent reports and workshops, and previews the further developments envisaged for the year ahead.

The present edition complements the report of last year, which assessed Member States' progress towards the objectives set out in the Commission's Innovation policy Communication of September 2000 on the basis of Trend Chart activities and reports (*see box*).

In future, the Commission will continue to issue reports of each type in alternate years. Taken together, they offer a comprehensive overview of the Trend Chart itself and the evolution of the European innovation scene to which it contributes. ■

Biennial Innovation Policy Report

At its 2003 spring meeting on the economic, social and environmental situation of the Union, the European Council highlighted the need for continuing development of the Trend Chart as a mechanism for monitoring progress in the area of innovation policy:

"*The European Council recognises the importance of innovation in developing new products, services and ways of doing business; calls upon Member States and the Commission to take further action in order to create the conditions in which business innovates, in particular, by bringing together research, financial and business expertise; and urges that a framework of common objectives for strengthening innovation in the EU should be set up, including an* ***assessment mechanism for taking stock of the progress achieved***."

The European Commission, in its 2003 Communication *Innovation policy: updating the Union's approach in the context of the Lisbon strategy* [1], undertook to "report, every two years, on progress in strengthening innovation policy at national and EU level".

The current edition of this report, *Innovation policy in Europe 2002*, can be browsed or downloaded at http://trendchart.cordis.lu/Reports/annual_home.html

The next edition will be published in 2004.

(1) COM(2003) 112 final, available at http://www.cordis.lu/innovation-policy/communications/

1. The development of

1.1 Four years of innovation

The Trend Chart provides Europe's innovation policy-makers with a robust and sustainable platform for monitoring performance, exchanging good practice and improving policies – a platform that is not available anywhere else in the world.

Transnational policy learning is based on personal contacts and in-depth discussion of experiences. Peter Löwe of Enterprise DG (second from left), who leads the Commission team responsible for the Trend Chart, talking with participants at a recent policy benchmarking workshop.

Much has been achieved by the Trend Chart in the four years since the launch of the pilot phase in January 1999. Notably:

> **Three editions of the European Innovation Scoreboard have been published**. Since the first 'indicative' benchmarking exercise was carried out in 2000, steady *progress* has been made to extend the scoreboard's *performance* indicators, to improve the comparability of the national data it employs, and to refine its analytical methodology. In particular, time series for many indicators are now used to assess the relative *progress* as well as the relative *performance* of each country – and thus to identify countries which are 'moving ahead', 'catching up', 'losing momentum' or 'falling further behind'. The Scoreboard has succeeded in raising the profile of innovation policy-making, and is making a major contribution to the wider exercise of benchmarking the *performance* of EU Member States.

> **Twelve policy benchmarking workshops have been organised,** each focusing on a specific innovation policy theme. Between December 2000 and June 2003, workshops on topics as varied as loan guarantees and lifelong learning have attracted a total of over 275 participants from 32 countries. Presentations and in-depth discussions of national policies and schemes (selected from the Trend Chart database) and performance indicators (drawn from the European Innovation Scoreboard) have provided policy-makers with the basis for 'intelligent benchmarking' – and in many cases for practical policy improvements.

> **A sustainable Europe-wide network of national innovation correspondents has been established.** The network now covers 30 countries and includes around 40 independent experts. It continuously updates and adds to the Trend Chart's database of innovation policy measures. Now covering nearly 700 policies and schemes, the database greatly facilitates the transnational spread of good practice by enabling policy-makers to identify experience in other countries in areas of current policy interest. Every year, the network of national correspondents produces a report on each of the 30 countries covered. Regular 'trend reports' are also produced on policy themes of particular interest, such as industry-science relationships, and innovation finance.

The framework for innovation policy benchmarking and improvement offered by the Trend Chart is unique – neither the United States nor Japan, for example, have yet attempted anything like it.

The rewards for this pan-European effort are already apparent to policy-makers, but will continue to grow. After collecting comparable data continuously for nearly four years, for example, for the first time it is becoming possible to identify clearly the 'trends' in policy direction and impact to which the Trend Chart owes its name.

> *"The Trend Chart results have been taken into consideration in the design of strategies for workplace training and learning regions."*

the Trend Chart

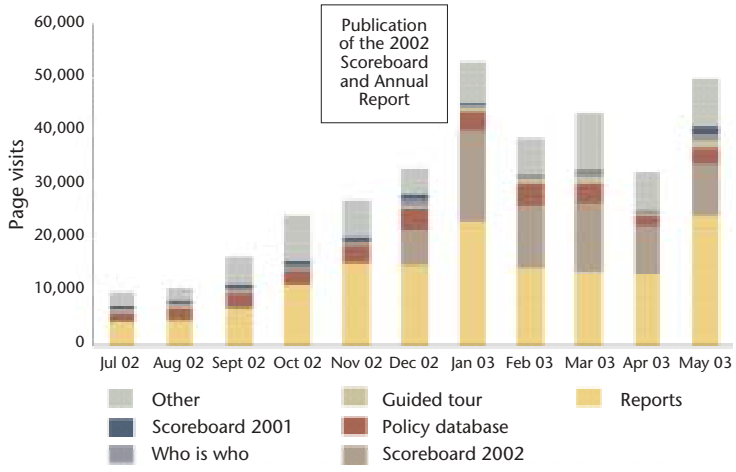
1.2 The Trend Chart website – tool kit and user interface

In response to feedback from users, the website has evolved into a comprehensive and easy-to-use on-line tool kit. It includes a searchable database of innovation policy measures, a library of downloadable expert reports, and a directory of active innovation policy-makers and practitioners.

The homepage provides easy access to all areas of the site, and is now updated regularly to highlight the latest and most popular reports.

The Trend Chart aims to inform and support as many as possible of the institutions and individuals that formulate, deliver or are affected by innovation policy in Europe. Not all of these stakeholders have the opportunity to attend one of the Trend Chart's policy benchmarking workshops. But anyone can visit its website, where all the analytical reports on which the workshops are based, together with the presentations and conclusions of the workshops themselves, are freely available alongside major publications such as the European Innovation Scoreboard. Traffic on the Trend Chart website has been growing by approximately 20% per month since July 2002, to around 50,000 hits per month by May 2003 (*see Figure 1*). In common with other sites, traffic is reduced during holiday periods and stimulated by the release of major new content. January 2003, for example, saw a rise of 64% in visitor numbers following publication in December of the 2002 Innovation Scoreboard and Innovation Policy Report. The overall number of policy-related documents and reports available for download has increased rapidly to around 1,300, 70% of them in the policy database (*see Figure 2*). Analysis of the visits to different areas of the site confirms the strength of interest in each new edition of the annual European Innovation Scoreboard. Visits to the Scoreboard and downloads of the country, trend and annual reports together account for about 70% of total traffic.

Figure 1: Growth in visitors to the Trend Chart website, and breakdown of traffic by area, July 2002 to May 2003

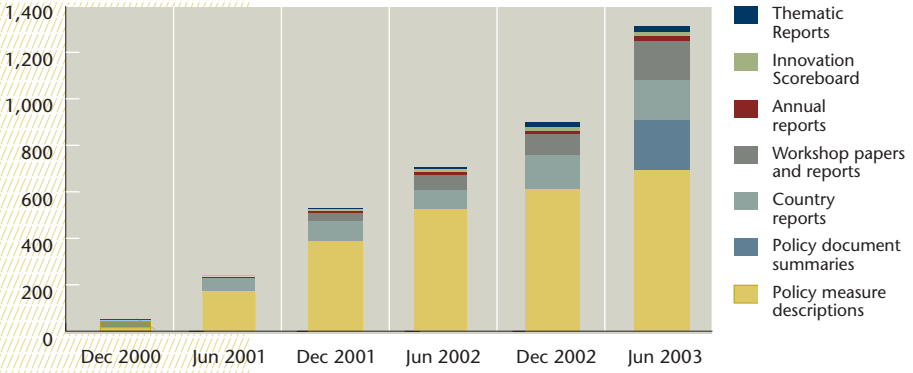


Traffic on the Trend Chart website has grown steadily since July 2002, to around 50,000 hits per month. The month following publication of the 2002 Innovation Scoreboard and Innovation Policy Report saw a 64% increase in visitors.

Keep up the good work

During the second half of 2002, the Trend Chart conducted an extensive survey of users among national and regional governments, agencies responsible for implementing innovation policies, innovation support organisations, universities and research centres, and Commission units. The aim was to gain a clearer understanding of the way real visitors used the website: Why did they come? Which areas did they find most interesting? Was the site's content useful to them? Were there any additional features that they would appreciate? ▷

Figure 2: Growth in the number of documents available for download, by type, 2000-2003



Most visitors come to the Trend Chart website to download reports of one kind or another. Together, the highlighted areas account for over 80% of total site traffic.

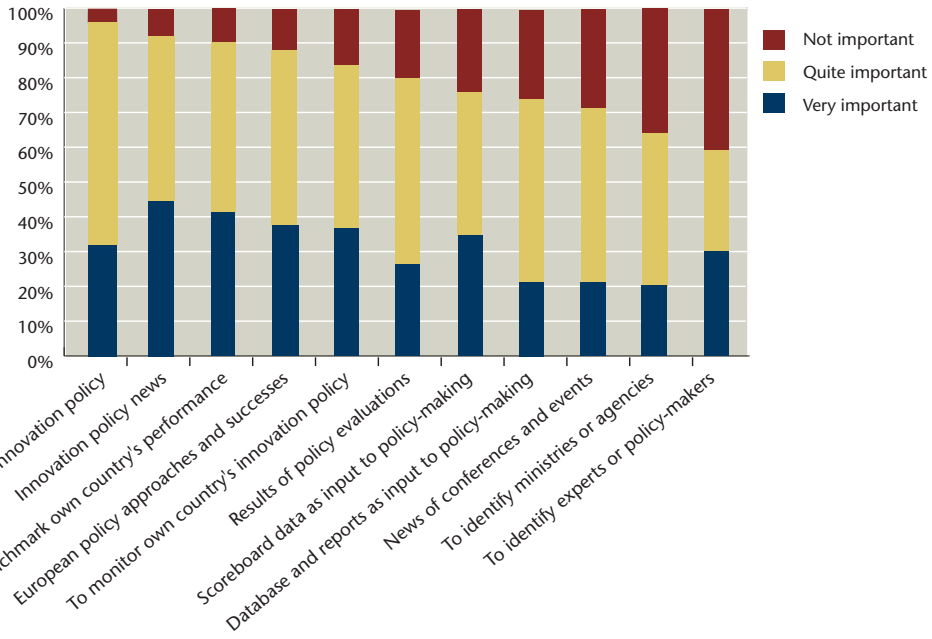
The detailed responses received from 131 users delivered an overwhelmingly positive verdict on the Trend Chart's website. Asked to assess the site's content for accuracy, comprehensiveness, relevance to need, and clarity, 56% rated it 'good' or 'excellent', and a further 34% 'acceptable'. Similarly, 48% rated the site's structure, ease of use, and visual appeal 'good' or 'excellent', and 42% 'acceptable'.

Why we came

Confirming the analysis of visitor statistics, survey participants identified the Innovation Scoreboard as the on-line product they used most frequently. Although it is only published annually, 78% of users said that they accessed it four times a year or more. However, the survey revealed higher than expected use of the policy database – 73% said that they used this four times a year or more. Grouping by type of organisation showed that the area of the site devoted to the policy benchmarking workshops was most heavily used by industrial and academic practitioners, the trend reports by innovation support organisations, and the database by governmental bodies.

The survey went on to ask users to assess the relative importance of a number of possible reasons for visiting the site. The results (*see Figure 3*) indicate a general emphasis on news and the monitoring of policy developments. Access to information as an input to policy-making was deemed slightly less important, especially among users from the candidate countries. The least popular reason for visiting the site, the identification of contacts, was nevertheless rated as 'quite important' or 'very important' by around 60% of respondents.

Figure 3: Reasons for using the Trend Chart website



"Since the workshop, I have made regular visits to the Trend Chart website for further information."

Introduced in March 2003, the new Country Pages area offers a simple and intuitive way to access all Trend Chart resources relating to any individual country.

Recent improvements

A number of significant improvements to the site were introduced in March 2003 in direct response to the findings of the user survey:

- The homepage has been redesigned to provide a clearer overview of the site's different areas, and to highlight products of particular interest.
- A new page – What's new on the site – has been added as a further means of highlighting both new features and new documents.
- A new Country Pages section offers an easy way to access all Trend Chart resources relating to an individual country, by selecting it either from a pick-list or by clicking on a map.
- A new general search page allows users to limit their search to one or more specific sections of the site.
- The 'Who is who' area (contact database) has been completely overhauled to enable users to search by organisation or by person, and in each case to narrow their search by country and by innovation theme.

The complete picture

In addition, the following sections of the site continue to offer access to the wealth of information generated by the Trend Chart:

- The **Policy database** contains information about current and completed innovation policy measures, classified by theme and country, plus policy document summaries.
- The **Who is who database** provides contact details for the agencies, government departments and individuals responsible for the schemes included in the policy database.
- The **Workshops** section gives detailed information on all the benchmarking events organised by Trend Chart, including background papers, presentations and conclusions.
- The annual **Innovation Scoreboard**, the main tool for assessing Europe's innovation performance, can be browsed or downloaded.
- The **Country reports** highlight innovation policy trends and priorities in the 30 EU Member States, acceding, candidate and Associate countries covered by the network of national correspondents.
- **Trend Reports** present a 'horizontal' analysis of the information collected for the country reports, examining and illustrating emerging trends and themes of particular interest.
- Every two months, the Trend Chart **Newsletter** is published on the site (as well as being distributed to registered users by e-mail). It provides information on new policy documents, initiatives and schemes, news of relevant conferences, and an interview with a notable figure from the European innovation scene.

1.3 Policy database – an analytical tool

A central component of the Trend Chart tool kit, presenting a comprehensive account of nearly 700 innovation support measures which have been implemented across Europe, the policy database is supported by regular analytical reports. These place the latest developments in national innovation policy in their economic and political context, examine in detail their objectives, mechanisms and impacts, and assess common trends in policy priorities.

The policy database

The database itself offers easy access to the information stored on each specific measure through a clickable matrix of countries and 'action lines'. Users can click on row or column headings to view all of the measures related to a country or policy theme, or on an individual cell to select the measures implemented in one country to address a particular theme (*see screenshot*). An advanced search tool makes it possible to refine queries by country, action line, target group, start and completion date, and title.

Each record in the database not only identifies and describes the measure, with references to related documents and contact details for the agency and manager responsible. It also summarises the eligibility criteria, delivery mechanisms and budget, and where appropriate the results of any evaluation of the measure's impacts.

In addition, the database now includes a number of **policy document summaries** – abstracts of high-level official documents including Green and White Papers, strategic plans, speeches, budget statements and policy studies. A database of the **contact organisations and persons** associated with each policy measure forms an integral part of the policy database, but is also accessible independently. Taken as a whole, the Trend Chart policy database enables users to identify schemes of interest in other European countries, to make an initial assessment of their relevance, to acquire more detailed information from the responsible department or agency, and to initiate a dialogue with the officials concerned.

Innovation Policy Measures and Policy Document Summaries

	A	B	EC	Y	CZ	CD	D	EE	ES	FI	F	R	GR	HU	IE	IL	IS	IT	L	T	LU	LV	NL	NO	PL	PT	RO	SE	SK	SI	UK
Policy Document Summaries	5	5	6	4	28		7	3	7	9	28	1	13	1		12	8	2	8	10	13	7	8	2	13	1	3	12
Policy Measures Objectives																															
I.1. Education & Training	2		1		9		3		1	3	4	8				3	4		8	8		1	3	2	3		1	11
I.2. Mobility Students/Researcher/Teachers		3	1		12	3		3		8	4	4	5		1	3	2	1	4	1			2	1	4		3	8
I.3. Raising Public Awareness	1	1			9	1	3	4			5		2		2	4			3	3	1		8	3	3			18
I.4. Innovation & Management	5	4	3		8	2		3	1		5	4	5		1	1	1	3	4	3	11	1	8		4		1	17
I.5. Public Authorities					5		3	1	1	1						5		2	1		2		1	2	2		1	3
I.6 Promotion of clustering and co-operation for innovation	8	8	1		16	1	1	5	3	8		4	1	1	1	2	1	2	2	2	8		4	3	5		2	8
II.1. Competition			3		1																	1		3			1	
II.2. Protection of IPR	1	7	1		9	1			2	1	3					1	2	2	2		1		3				3	12
II.3. Administrative Simplification					2		2		1			3				9	1		2		1		1		2		2	
II.4. Legal and Regulatory Environment			1		8					1		3				1	4		3	1								
II.5. Financing	21	8	3	2	13	3		17	10	5	7		8	4	1	23	1	3	3	8	7	1	11		7	1		18
II.6. Taxation	1	3			1			1		1			2			2	1			1	1	1	1					7
III.1. Strategic Vision of R&D		4	5		10	2	3	1	1	1	18	1		1		7	1	1	8	2			1	3	2		1	7
III.2. Strengthening Company Research	4	13		5	16	4	1	11	4	8	4	8	1	1	1	7		1	1	10	5		9	6	3	2	3	6
III.3. Start-up of technology-based companies	17	4	3	1	18	3	2	3	8	4	8	2	5	2	6	4	1	3	3	8	9	1	4	1	8		2	14
III.4. Co-operation Research/Universities/Companies	13	15	1	1	20	8	4	16	7	13	18	5	3	1	2	17	1		3	9	10	1	10	4	4		2	17
III.5. Absorption of Technologies by SMEs	7	11	5	5	12	3	1	8	2	7	8	3	2	2		11	2	1	5	7	7	2	12	4	5	2	4	8
IV.1. Other Objectives	3						1		1		1										1	2						2

A clickable matrix of countries and policy objectives offers a user-friendly means of interrogating the policy database.

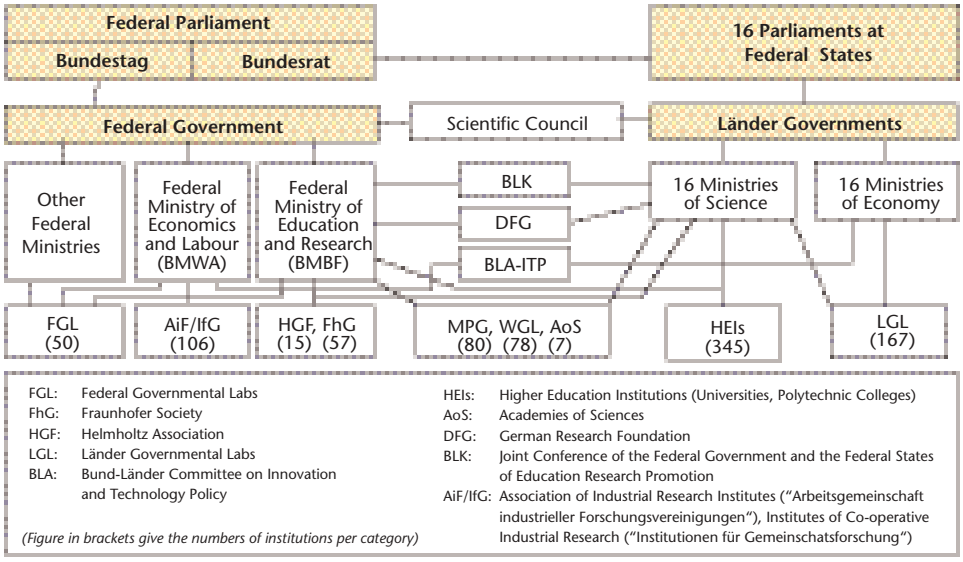
> *"Learning from other national schemes was extremely useful."*

Country by country

As usual, in the past year the Trend Chart has published one comprehensive country report on each of the 30 countries covered.

Typically, each report starts with an updated overview of the 'innovation scene' in the country concerned, highlighting new issues, recently launched initiatives, and relevant institutional and political changes:

Main public institutions in German science, research and innovation



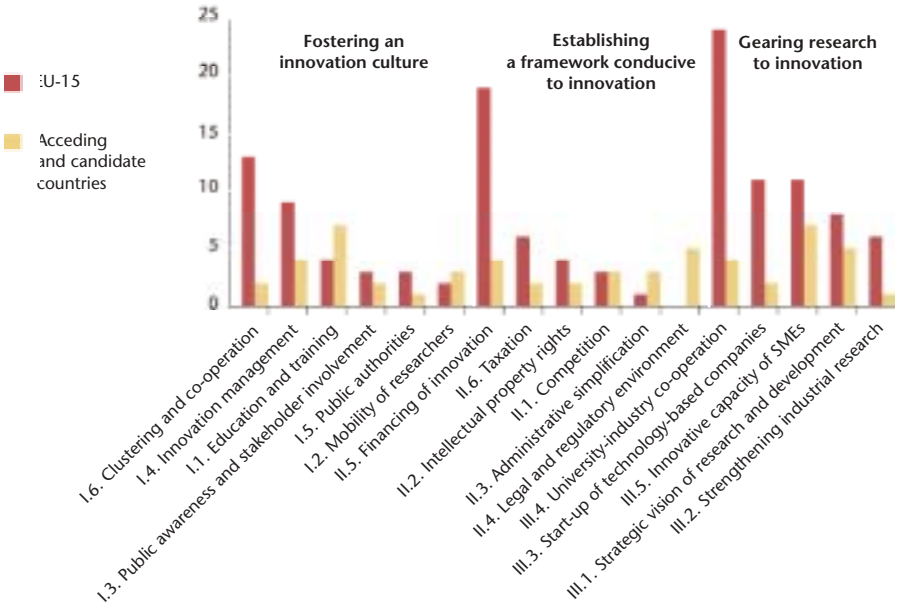
- **the system of governance** – the structures and institutions involved in the formulation and delivery of innovation policy (*see example above*);
- **innovation performance** – as measured by the Trend Chart's own European Innovation Scoreboard, with additional explanatory comments and notes;
- **policy developments** – legislation, policy statements, budget appropriations and other significant developments affecting national support for innovation;
- **policy debate** – since public and institutional discussions about innovation often give early indications of future policy developments, national correspondents also report on these;
- **regional dimensions** – the regional structures and policies which have an impact on innovation capacity and performance.

The reports go on to review the current status of support for innovation under each of the 17 policy 'action lines' in the country concerned, once more focusing on recent changes and anticipated developments. They conclude with an overview of all the national measures listed in the Trend Chart policy database, and of the policy document summaries currently available there.

Synthesis reports

Once every year, the Trend Chart produces a synthesis report based on the two most recent sets of country reports. This provides an overview of major findings and trends, and presents a cross-country comparative analysis that highlights significant shifts in the direction of national innovation policies. ▷

Figure 4: Number of new or modified measures in 2002, per action line

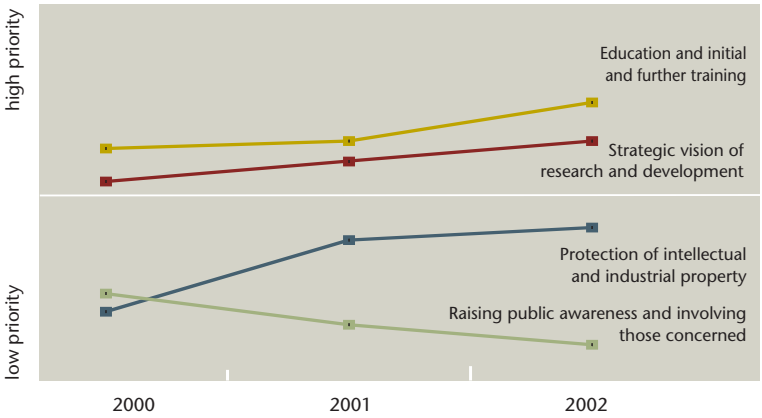


Categorising the innovation support measures introduced or changed during 2002 by theme shows that both in the EU and in the acceding and candidate countries the greatest policy attention is still devoted to the broad area of 'Gearing research to innovation'.

The 2002 synthesis report, which covers the period from December 2001 to October 2002, points to:

- wide variations in the relative priority accorded to different policy objectives, both within and between countries;
- a tendency for greatest policy attention to be focused in the area of 'Gearing research to innovation', and least in that of 'Fostering an innovation culture', both in the EU Member States as well as acceding and candidate countries;
- the appearance, in the Member States, of policy 'hot-spots' in the areas of university-industry co-operation, innovation finance, and support for high-tech start-ups;
- continuing emphasis, in the acceding and candidate countries, on education and training, and on the capacity of SMEs to absorb innovation.

Figure 5: Perceived priorities of selected innovation policy areas, 2000-2002



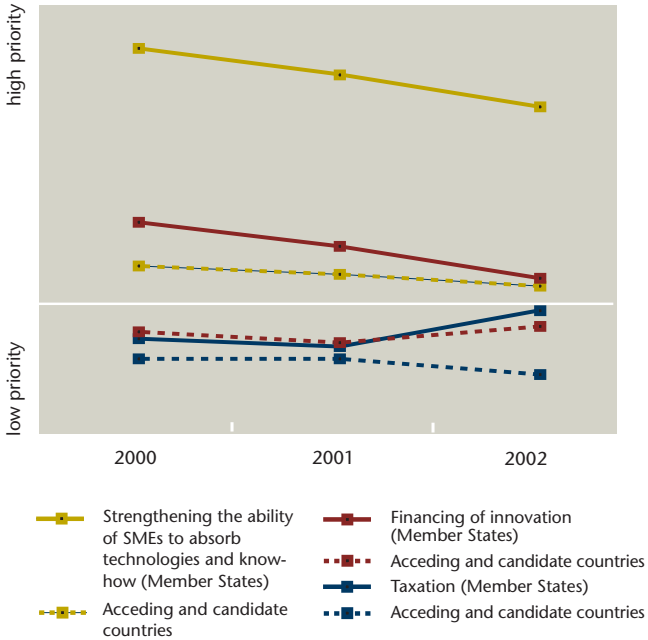
These patterns are clearly visible from the numbers of policy measures introduced or modified during 2002 (*see Figure 4*). They are further confirmed by assessments of the relative 'effort' devoted in each country to each of the action lines. Although subjective, these assessments have been made by the national innovation correspondents using the same criteria for three years, and now offer the opportunity to gauge shifts in policy priority from a novel perspective.

Figure 5 shows the increasing emphasis placed on three policy objectives, and the decreasing emphasis accorded to a fourth, between 2000 and 2002. In the case of these four action lines, a similar pattern was found in the EU Member States and the acceding and candidate countries. The resources and political attention devoted to education and training, and to strategic planning of national R&D, were 'above average', and increased gradually through the period.

The priority given to intellectual property rights also increased, but remained 'below average'. Surprisingly, the priority given to public awareness of innovation was already relatively low in 2000, and had fallen further by 2002.

In Figure 6, we see the changing relative priority given to three further policy objectives. Here, however, the picture in the acceding and candidate countries (shown in dotted lines) is markedly different from that in the EU Member States (solid lines). The relative emphasis on strengthening the capacity of SMEs to absorb innovation fell slightly, both in the EU and the acceding and candidate countries, but remained much higher in the latter. The priority given to innovation finance fell in the EU but rose in the acceding and candidate countries, albeit from a lower point. The relative importance of taxation as a concern of innovation policy rose in the Member States, but fell in the acceding and candidate countries.

Figure 6: Perceived differences in priority of selected innovation policy areas, 2000-2002, Member States vs. Accession countries



Countries covered by the Trend Chart's survey of innovation policy measures

EU Member States:

Austria	Germany	Netherlands
Belgium	Greece	Portugal
Denmark	Italy	Spain
Finland	Ireland	Sweden
France	Luxembourg	United Kingdom

Acceding and candidate countries:

Bulgaria	Hungary	Romania
Cyprus	Latvia	Slovak Republic
Czech Republic	Lithuania	Slovenia
Estonia	Poland	

Associate countries:

Iceland	Liechtenstein
Israel	Norway

Trend reports

The trends highlighted in the annual synthesis report draw to a large extent on special thematic 'trend reports', also prepared by the network of national correspondents. Eight such reports were published in the past year, the majority covering specific Trend Chart policy action lines:

- **Intellectual property rights** (IPR) – In the EU Member States, new measures in this area no longer treat IPR as a specialised legal issue, but as a central and practical aspect of successful innovation policy. Governments are devoting greatest effort to improving the legal framework and establishing IP intermediaries. Direct subsidy for the acquisition of IP is rare.
- **Innovation finance** – Access to finance remains the most significant constraint on the growth of young, innovative companies, and governments play a more important role than ever in stimulating investment, particularly in areas perceived as high risk. Use of the tax system to promote certain types of innovative behaviour appears to be gaining in popularity. All countries are seeking to increase the provision of venture capital, but not all to the same extent.
- **Start-ups and new technology-based firms (NTBFs)** – Policy rhetoric on the need to foster NTBFs is not matched by actual policy effort. In the acceding and candidate countries in particular, more action is needed. Current support is predominantly delivered through direct grants or loans to SMEs and entrepreneurs. Government funding for incubators is surprisingly low, perhaps because they are funded locally, but national 'virtual incubation' schemes are beginning to emerge.
- **Industry-science relationships** – Half of all schemes in this area support the transfer and exploitation of results, but mobility and networking initiatives are also important. There is an apparent trend towards support for longer-term, network-based partnerships as a means of promoting industry-science relationships. Regional initiatives receive greater emphasis in the Member States than in the acceding and candidate countries.

"Many of the report's practical recommendations are implemented in the action plan of the national Innovation programme."

The four most recent trend reports, each focusing on a specific theme, are presented in Chapter 2, starting on page 18. ▷

Innovation policy themes and action lines

The 700 programmes and schemes currently listed in the Trend Chart's policy database are classified within 17 'action lines', grouped under three main thematic headings. These themes and action lines correspond to the objectives of the European Commission's 1996 *First Action Plan for Innovation in Europe* [2].

I	**Fostering an innovation culture**
I.1	Education and initial and further training
I.2	Mobility of students, research workers and teachers
I.3	Raising the awareness of the larger public and involving those concerned
I.4	Fostering innovative organisational and management practices in enterprises
I.5	Public authorities and support to innovation policy-makers
I.6	Promotion of clustering and co-operation for innovation
II	**Establishing a framework conducive to innovation**
II.1	Competition
II.2	Protection of intellectual and industrial property
II.3	Administrative simplification
II.4	Amelioration of legal and regulatory environments
II.5	Innovation financing
II.6	Taxation
III	**Gearing research to innovation**
III.1	Strategic vision of research and development
III.2	Strengthening research carried out by companies
III.3	Start-up of technology-based companies
III.4	Intensified co-operation between research, universities and companies
III.5	Strengthening the ability of companies, particularly SMEs, to absorb technologies and know-how

[2] COM(1996) 589 – the framework may be adopted by the Competitiveness Council in 2004 as the EU Common Framework of priority themes in innovation policy.

1.4 European Innovation Scoreboard

The Scoreboard sends a powerful message about Europe's innovation performance, and provides a valuable starting point for debate – in particular, for co-operation and mutual learning between innovation policy-makers and practitioners. The 2002 edition extended its scope down to the regional level, and outward to cover the 13 candidate countries. Now the Commission plans further refinement of the Scoreboard on the basis of recent discussions with national innovation policy-makers themselves.

> *"The European Innovation Scoreboard is among the best tools available for policy-makers."*

Early years of the Scoreboard

The first edition of the European Innovation Scoreboard was published in September 2000. It summarised data on innovation performance in each Member State, grouped under four main headings: human resources; knowledge creation; the transmission and application of new knowledge; and innovation finance and outputs, and investment in information and communication technologies (ICT). For those indicators where comparable data was available, the Scoreboard also showed the performance of the United States and Japan relative to that of the EU and the Member States.

The *European Innovation Scoreboard 2001*[3] built on the outline of the previous year, adding a new indicator on lifelong learning, strengthening the innovation focus of several indicators and extending coverage of the US and Japan. For ten indicators, time series data was now available, and the 2001 edition offered a detailed analysis of trends – including an overall segmentation of the countries covered relative to average EU performance for 1999/2000 and to average improvement between 1995/1997 and 1999/2000 (*see Figure 7*).

Latest Scoreboard – 2002 edition

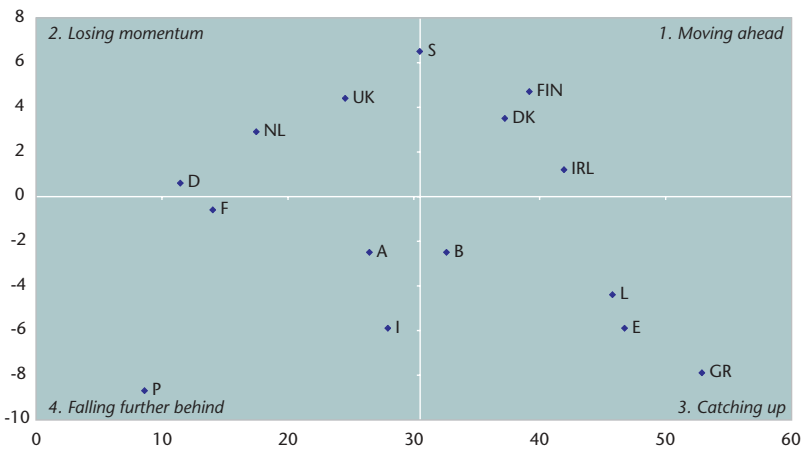
The most recent edition, the *European Innovation Scoreboard 2002*[4], fully updated 13 of the 17 indicators, based on data available in September 2002.

It confirmed that the EU's innovation performance continues to lag behind that of its main global competitors. In particular, EU business investment in research and development as a proportion of GDP, already around 60% that of the US, increased by only 5.4%, compared with an increase of 7.0% in the US. And although EU high-tech patents at the European Patent Office were up 55% since 2001, US high-tech patenting activity in Europe had grown even faster (up 67.8%). However, the Scoreboard also offered evidence that Europe may be catching up in some areas – for five out of eight comparable indicators, EU performance is improving faster than that of the US.

The 2002 edition further developed the Scoreboard's scope and resolution:

- Full national data was included for three countries associated with the Sixth Research Framework Programme – **Iceland, Norway and Switzerland**.
- For the first time, data on the **13 EU candidate countries** was included, revealing that some already outperform the EU mean for tertiary education, high-tech employment, investment in ICT, and foreign direct investment (FDI).

Figure 7: Overall country trends by innovation index



Source: European Innovation Scoreboard 2001

In almost all areas, average candidate country performance lags behind the EU mean, but for five of the ten comparable indicators it is improving faster – in particular, for investment in R&D and ICT.

> Also for the first time, the 2002 Scoreboard compared the innovative performance of **EU regions**. Designed to support the effective selection, adaptation and targeting of regional and municipal innovation support measures, the new regional scoreboard identified both Europe's most innovative regions and those where new policy impetus is needed. The seven indicators used, covering human resources, high-tech employment, investment in R&D, and patenting activity, represent only a first step towards full regional benchmarking. They nevertheless provide the basis for rankings based on two composite indicators, allowing comparisons between regions within each country, and between each region and the EU mean.

> The 2002 Scoreboard also included the first in a planned family of **thematic scoreboards**, which investigates the relationship between a country's investment in lifelong learning and its innovation performance. Using 15 specialised indicators to examine workforce adaptability, basic education, and participation and investment in lifelong learning, it confirms the correlation observed in the 2001 Scoreboard – Sweden, Denmark and the Netherlands, the 'best performers' in the field of lifelong learning, are also among the leading innovators, for example.

The 2002 Scoreboard did not include the 'summary innovation index' (SII) of the two previous editions, since up-to-date data for four indicators of innovation within enterprises, based on the Community Innovation Survey (CIS), was not available at the time. New CIS data will become available during 2003, allowing these indicators to be incorporated in the next edition of the Scoreboard, which will once more include both an SII and a comparison between the index and average trends for each country, of the kind shown in Figure 7.

The way forward

The Scoreboard will continue to develop. The Commission wants to increase its awareness-raising impact and to improve its synergy with other EU scoreboards – those of enterprise, research and employment, as well as with the 'structural indicators'. It also wants to enhance the Scoreboard's usefulness to policy-makers, in conjunction with the other Trend Chart tools and in the light of the 2003 Communication *Innovation policy: updating the Union's approach in the context of the Lisbon strategy*[5], which places a renewed emphasis on diffusion-based (rather than research-based) innovation.

In February 2003, a special policy workshop on 'The Future of the European Innovation Scoreboard' brought together policy-makers and statistical experts to discuss the way forward. As a result, the next edition of the Scoreboard will:

> provide a clearer view of innovation in 'non-high-tech' sectors;

> divide the indicators on enterprise-level innovation into sub-indicators for manufacturing and services;

> offer complementary indicators characterising the various 'innovation paths' of different Member States.

The workshop also revealed demand for coverage of innovation other than that based on research and development. However, this will require comparable data not presently available. ▷

(3) SEC(2001) 1414, available on the Trend Chart website at http://trendchart.cordis.lu/Scoreboard/scoreboard.htm
(4) SEC(2002) 1349, available on the Trend Chart website at http://trendchart.cordis.lu/Scoreboard2002/index.htm
(5) COM(2003) 112 final, available at http://www.cordis.lu/innovation-policy/communications/

Regional Innovation Scoreboard for Lazio, 2002

Lazio is the first EU region to have produced its own innovation scoreboard. Employing the same structure and methodology as the Trend Chart's Innovation Scoreboard, it significantly improved the availability of regional indicators for Italy.

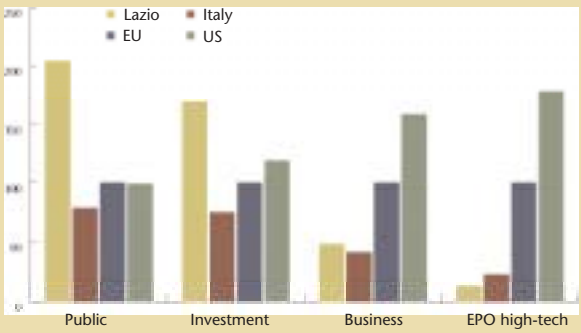
It also added comparisons with the same indicators for the EU, the US and Japan.

As Figure 8 shows, the Scoreboard reveals both strengths and weaknesses in Lazio's innovation performance. Strengths include public sector R&D spending, investment in ICT, and high-tech employment, while patenting and venture capital are among its weaknesses.

"*The report will be a useful working instrument for those involved in innovation policy within the region*," says Luis Iurcovich of FILAS, who coordinated the project.

The full Scoreboard can be downloaded from: http://www.osservatoriofilas.it/download/Scoreboard_Lazio_Engl.PDF

Figure 8: Relative performance of the Lazio region for selected indicators (EU = 100) *Source: RLIS 2002*



1.5 Policy workshops – platforms for transnational learning

The Trend Chart's policy benchmarking workshops are pioneering the direct exchange of experience between innovation policy-makers, and pushing forward both debate and practice in key policy areas. A recent evaluation confirmed participants' appreciation of the workshops – and their concrete impact on national policies and transnational co-operation.

Effective transnational policy learning involves both formal presentations . . .

By reflecting national innovation performance in the European Innovation Scoreboard, and by making information on existing measures to support innovation accessible through the policy database, the Trend Chart already offers policy-makers opportunities to learn from one another's successes and failures. But it does so most directly and most actively through a series of workshops, each of which focuses on a specific innovation policy theme.

Every country's needs and capacities, as well as its industrial, economic and institutional structures, are different. The policy workshops provide a platform for the 'intelligent benchmarking' required to adapt transnational lessons to local contexts. Each brings together around 30 innovation policy-makers and scheme managers for two days of in-depth discussion, based on exploration of selected national policies and schemes and performance indicators, drawn from the database and the Scoreboard. Typically, around half the participants make short presentations, followed by structured discussion and informal networking.

Before each workshop, participants receive a background paper with data on relevant indicators, analysis of key issues and policy responses, descriptions of specific schemes, and references to additional useful documentation. After the workshop, an output paper summarises the main points of the discussion, the lessons learned from the exchanges of experiences, and any policy recommendations. Both sets of papers, together with agendas, participant lists and presentations, are available on the Trend Chart website.

> *"The workshop was a very useful source of potential contacts for future exchange."*

Latest workshops

To date, a total of 12 workshops have been organised. The five held during the past year covered a very broad range of topics:

- **Increasing the impact of lifelong learning policies on innovation**, October 2002 – Examples from Finland and the Netherlands showed that an integrated institutional framework was helpful in realising the potential synergy between lifelong learning and innovation policies. Portugal and the UK presented two cases of a central coordinating body for lifelong learning initiatives. German and Italian initiatives provided differing examples of the 'bottom-up' mobilisation of lifelong learning using local resources. The workshop revealed promising links between the use of lifelong learning as an innovation policy tool and approaches oriented towards education and employment. It paved the way for concrete policy improvements by identifying areas in which good practice might be adapted and applied in other countries. Participants found the thematic scoreboard 'Lifelong learning for innovation' valuable as a starting point for policy learning based on comparison of relative strengths and weaknesses.
- **Improving transnational policy learning in innovation**, November 2002 – In addition to the case of the Trend Chart itself, the workshop considered the experience of six national and three European transnational

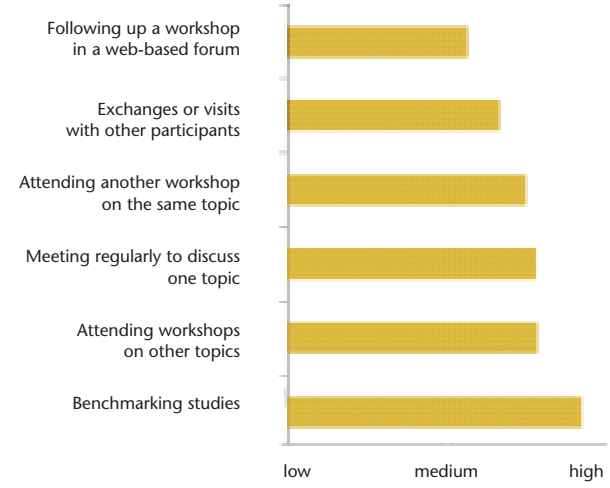
> *"We have used the programmes we learned about at the workshop to design new spin-off entrepreneurship projects."*

. . . and informal networking.

policy learning exercises. Policy learning works best when senior policy-makers who thoroughly understand their own countries' systems are actively committed to it as part of a coherent strategy. The Innovation Scoreboard has helped to convince policy-makers that performance should and can be improved, but must not be used mechanistically. The context dependence of any innovation policy demands 'policy intelligence' in the selection and adaptation of good practice. The Trend Chart's policy database has improved transparency, but does not yet indicate effectiveness. The policy workshops offer useful learning platforms, but should develop as a more continuous activity, which also involves the least aware policy-makers. Each country must develop its innovative capacity around its own unique strengths, and benchmarking strategies need to be combined with a greater understanding of national diversity.

> **The future of the European Innovation Scoreboard**, February 2003 (*see page 15*)

Figure 9: Workshop participants' priorities for follow-up activities



Source: Trend Chart evaluation

> **Innovative hot spots in Europe: policies to promote trans-border clusters of creative activity**, May 2003 (*see page 19*)

> **New trends in IPR policy: the challenge of strategic patenting**, June 2003 (*see page 21*)

Evaluation

Early in 2003, the Trend Chart carried out an evaluation of the eight workshops held in 2001 and 2002, based on participants' responses to a questionnaire.

> The overall satisfaction rate averaged a remarkable 77%, ranging from 82% to 70% for individual workshops.

> Participants' appetite for follow-up activities was also high (*see Figure 9*), revealing significant demand for continuous or at least ongoing thematic policy forums.

> Learning from exchanging information and good and bad experiences' and 'personal networking' were the two useful workshop results most frequently mentioned by participants. The most common complaint concerned the lack of sufficient time for informal networking and one-to-one discussion.

> Thirty-nine per cent of respondents confirmed that the workshop they attended had produced concrete impacts, leading to new or improved activities, to the adoption of new ideas, or to a general strengthening or sharpening of policy focus.

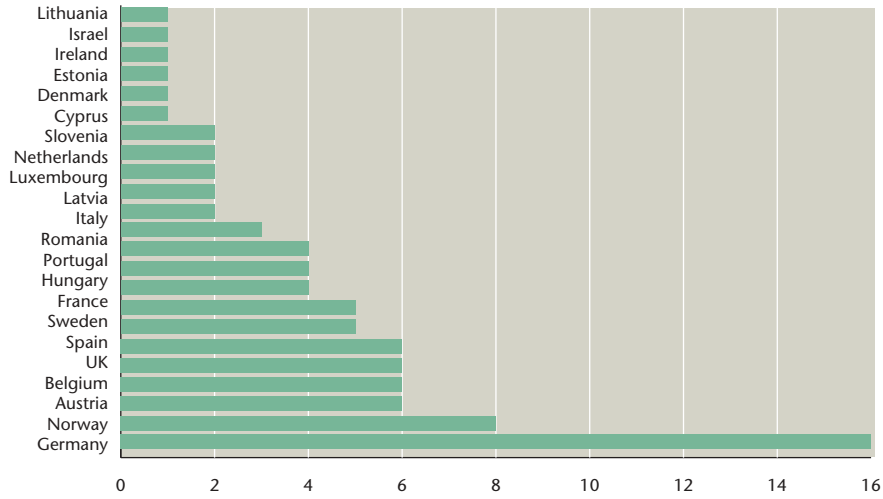
> Fourteen per cent of respondents reported having made practical use of the contacts made at the workshop, arranging visits or joint activities. ■

2. Recent topics of interest

2.1 Cluster policies

Policies to stimulate and support clusters have been the subject of both a thematic 'trend report' and a policy benchmarking workshop during the past year. The number and diversity of measures is large, but neither their policy goals nor their real economic impacts are always clear, while the administrative regions to which they are applied do not always match the 'functional regions' recognised by companies themselves. The Commission's support for methodological development and transnational policy learning is of real value.

Figure 10: Number of measures in the Trend Chart policy database to promote clustering and co-operation, by country



Source: Trend Chart policy database

'Clusters' has been a buzzword of innovation policy since US economist Michael Porter popularised the concept in his 1990 book *The Competitive Advantage of Nations*. Countries and regions, he argued, do not compete at all. A country's prosperity is determined by the competitiveness and productivity of its companies, and public policy should remove barriers to competition and invest in education and training. In the long term, the subsidy of 'key industries', protectionism and wage cost reduction tend to reduce productivity by undermining the dynamic rivalry which spurs firms to innovate.

The availability of skills and capital, strong domestic demand, fierce local competition, and the support of related industries – with these in place, said Porter, a virtuous circle is established in which productive specialisation can flourish and sustain itself through the continuous upgrading of technologies and products. In short, it is in *clusters* of industries that productivity 'lift-off' takes place most readily.

> *"We were able to learn from both good and bad practices."*

Trend report

According to the thematic report of April 2003, the Trend Chart country reports show that cluster policy is 'mature' in some countries, but still developing or only beginning to emerge in others. There is also considerable diversity as to the level of aggregation targeted, whether policies are applied nationally or regionally, which ministry or department is responsible, and the extent to which policy design is driven by policy-makers or by industry.

"I am involved in devising an appropriate fiscal incentive scheme, and the information and insights obtained at the workshop were very useful in this work."

Cluster development is widely accepted as a key means of improving competitiveness, and is mentioned as a priority in policy documents in many countries. Specific initiatives are predominantly launched as part of regional development policies, in which clustering is viewed as a means to an end rather than a policy goal in itself. The wide variety of policies include those which aim to strengthen synergies between industry, research and government, those which focus more narrowly on R&D co-operation among companies and between companies and research organisations, and those that also encourage non-R&D co-operation between companies, for example to strengthen sectoral value chains.

Policies that aim to bolster existing 'traditional' clusters are more often based on bottom-up processes, and frequently form part of industrial or regional development strategies. Those designed to encourage the formation of new, high-tech clusters, on the other hand, are generally driven by top-down strategic decisions linked to science and technology policies.

The rationale for cluster policies is based on the following ideas:

- By stimulating concentrations of expertise and knowledge in a limited geographical area, clusters act as '**innovation magnets**'.
- Clusters enhance the **competitiveness** of participating firms through economies of scale and the rapid diffusion of knowledge. They also help to overcome common problems and stimulate a learning culture.
- Support for technology-based clusters is a strategic investment in future **economic growth.**
- Clustering facilitates the development of **common visions** and thus contributes to the achievement of common goals.

Some countries have deliberately chosen to leave cluster policies to the regional level, while others complement regional policies by national cluster initiatives. Most candidate countries are in the very early stages of developing these policies, and for them policy learning and exchange is vital.

What is clear is that, particularly in larger countries, national and regional policies are becoming better coordinated. It remains surprising how few cross-border cluster policies have been developed, given that businesses are often constrained by political or administrative borders. ▷

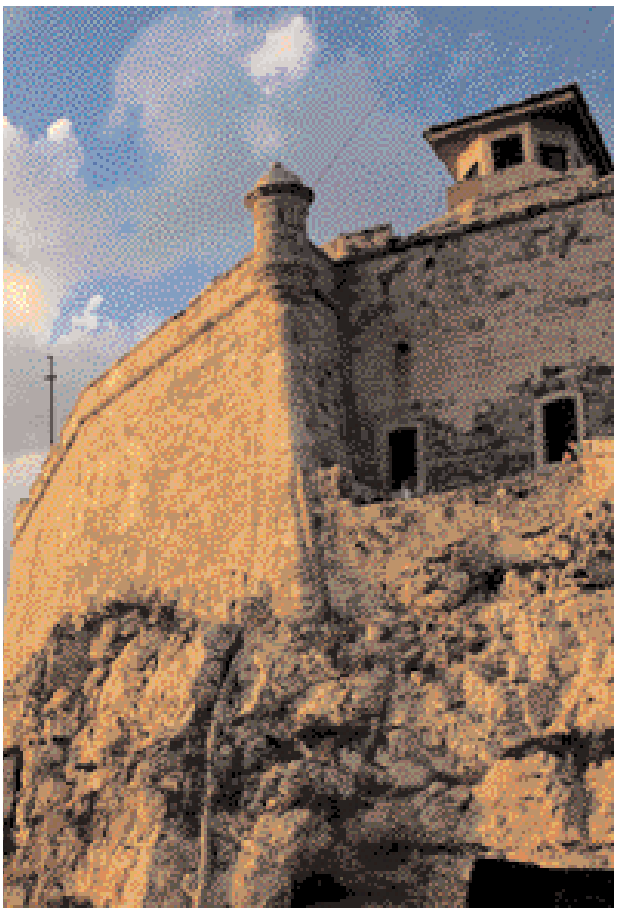
Policy workshop

In May 2003, 45 policy-makers and experts from 17 European countries took part in a policy benchmarking workshop on 'innovative hot spots'. It examined new trends in national and regional cluster policies and featured a peer review designed to identify good practice. The workshop addressed three main issues: What methods are available to identify and map 'innovation hot spots', and to assess their strengths and weaknesses? How well do current cluster policies address 'innovation hot spots'? And to what extent do these policies take account of European or cross-border linkages, and how can this dimension be strengthened?

Cluster policies are necessarily horizontal in nature, and depend on the modern approach to 'innovation systems'. But they should not be treated as a panacea for all policy issues, the workshop concluded. Empirical analysis of existing data cannot adequately capture cross-sectoral and cross-border initiatives, and policy-makers must do more to address the clusters defined by enterprises themselves, which may span more than one region or country. Successful clusters do not develop in isolation, and linkages between local and global systems should be recognised and strengthened. The beneficial effects of clustering cannot be taken for granted, and the lack of a clear good practice model makes impact assessment particularly necessary. The European Commission can play an important supporting role, promoting further benchmarking, exchange of experience and inter-regional networking and helping to develop transferable methodologies for cluster evaluation and promotion. This possible role of the Commission was also discussed at a European Seminar on Cluster Policy in Copenhagen on 10 June 2003 organised by the Enterprise Directorate-General and the Danish National Agency for Enterprise and Housing.

2.2 Strategic patenting

In recent years, patenting has been widely promoted to universities, SMEs and others as a means of increasing Europe's innovative capacity. But policy-makers are starting to worry that certain uses of the patent system may also have adverse effects. A recent policy benchmarking workshop made an important contribution to the debate on "strategic patenting", bringing together experts from 18 countries to share experiences and compare responses. They concluded that further study would be needed to ascertain the real impacts of strategic patenting.



Patents are designed to stimulate innovation in two ways. A patent gives the holder exclusive rights to the exploitation of a new product or process – normally, for 20 years. Since the system enables inventors to profit from their work, either directly or by selling a patent or a licence to a third party, it creates an incentive for innovation. But by obliging holders, in return, to publish detailed descriptions of the patented technologies, patent law also contributes to the diffusion of innovation across the whole economy. Disclosure permits others to avoid wasting resources on problems which have already been solved – and accelerates progress by enabling them to leapfrog over the state of the art.

However, current patent law may not take proper account of a new type of patenting activity. The term 'strategic patenting' is used to describe a recent trend among firms, which are increasingly using patents not merely to protect their intellectual property, but to prevent competitors from patenting similar or rival technologies. There has been growing concern among policy-makers that widespread use of such strategies may hamper the efficiency with which new knowledge is applied across the economy as a whole.

Trend report

The thematic report on strategic patenting of April 2003 offers a comprehensive overview of the key issues:

Extension of patent rights – Since the 1980s, most of the changes in patent regimes have been designed to strengthen patent rights or to extend them in line with EU legislation – for example, to cover biotechnology and software. This has contributed to rapid growth in patenting activity. It has also coincided with a surge of innovation, especially in emerging technological fields, but it remains unclear to what extent growth in the number of patents is a cause or an effect of increased innovation.

> *"For me, strategic patenting was a new idea. I am now convinced it is an important issue."*

▷

Restrictions on the fair use exemption – The 'research exemption', which permits the non-commercial application of patented knowledge, is as old as the patent system itself. However, as universities increasingly engage in commercial activities, it is becoming less clear where the boundary between exemption and enforcement should be drawn. This is now a topic of debate in almost every country, although few have so far introduced policy actions to enforce the fair use exemption, even for public sector research.

Infringement and the costs of enforcement – The promotion of patenting, and increased use of strategic patenting, has produced an increase in litigation over patent infringement. This represents a significant cost to any firm, but especially to SMEs which lack the financial resources to defend their patents against infringement by larger competitors. However, there appear to be few measures in place within the EU to reduce the costs of patent litigation, whether targeted towards SMEs or not.

Information campaigns – Most national campaigns aim to stimulate patenting by companies, SMEs, entrepreneurs, inventors, research institutes and universities. Targeting depends on levels of patenting activity in each country. Thus the acceding and candidate countries tend to focus on companies and SMEs while EU Member States have placed greater emphasis on universities and public research institutes. Sweden is the only country that has provided information for SMEs on the impact of strategic patenting by their competitors.

IPR and public research – The patenting of research results by universities and public research institutions is widely believed to stimulate innovation by incentivising firms to invest in the commercialisation of these results. Measures to encourage this kind of patenting, which are widespread in the EU, are of three kinds – new legislation on the ownership of intellectual property rights by public institutions, information and support services, and awareness-raising. Although some acceding and candidate countries do promote patenting in the academic and public research sectors, this is a lower priority than in the Member States.

Head of Innovation Unit, Jean-Noël Durvy

"The objective of a Community patent that is simple, cheap and reliable has proved difficult to attain, but has recently become much closer through the adoption by the Council of a common political approach on the main elements of the Community patent. The advantages are clear: estimated annual savings in processing and administering intellectual property rights of around € 0.5 billion, lower litigation costs and simpler enforcement."
(quote from Communication COM(2003) 112 final)

Policy workshop

The policy workshop of June 2003 examined these issues in the light of experience in the 18 countries represented, as well as that of the United States.

Most participants reported that strategic patenting was not yet being addressed as a significant problem. For some, the workshop came as a complete revelation, while for others it confirmed the need for careful monitoring, as well as for further research and policy discussion.

The workshop revealed a lack of hard evidence that strategic patenting has a negative impact on innovation. Indeed, it was pointed out that even though strategic patenting imposes costs, it can contribute to the flow of knowledge and provide an incentive to conduct research and development. In other words, looked at from the perspective of a systems approach to innovation, strategic patenting may produce a positive effect by making tacit knowledge easier to communicate and trade.

The negative impact of strategic patenting on innovation among SMEs in particular was raised as a concern by many participants, calling into question the value of policy schemes aiming exclusively at increasing number of patents. The real policy challenge, the workshop concluded, is to strengthen SMEs' ability to enforce their own intellectual property rights.

Europe's diversity demands intelligent benchmarking, if Member States are to avoid either a lemming effect or endless reinvention of the wheel. Continued policy learning is needed, informed by improved data and understanding on the real impact of IPR policies on innovation.

2.3

Public debate about innovation

Two entirely new topics were addressed by thematic reports published during 2003. Organisational and entrepreneurial innovation concerns the need for broader and more holistic policy approaches, and for new mechanisms to support cross-departmental coordination, for reflection and for policy learning. Public debate on innovation, a key aim of the Commission's 2000 Communication on innovation policy, is an essential means of securing the stakeholder involvement that characterises a dynamic innovation culture. Most countries have introduced initiatives in this area, but they tend to be low-key and poorly funded.

Organisational and entrepreneurial innovation

Innovation policy has in recent years outgrown traditional definitions of innovation, which tended to focus on research and development. A more modern, holistic approach embodies a recognition that the knowledge-driven economy will necessitate new ways to understand and promote organisational and entrepreneurial innovation. Encompassing the full range of internal and external factors which influence the behaviour and performance of innovation systems, it demands careful coordination between policy areas. Public policy is having to learn to place innovation at the heart of other policy areas such as employment, trade, competition, fiscal policy and regional policy, in order to raise awareness, to ensure coherence, and to foster an entrepreneurial culture.

An ever-increasing range of topics is generally acknowledged to be included within innovation policy in most countries. The topics most commonly cited by the Trend Chart country correspondents as being encompassed by national innovation policy include education and training, the stimulation of entrepreneurship, research and development, employment, and regulatory issues. In most countries, innovation policy is formulated and implemented by more than one agency, ministry or department, and coordinated through some form of inter-ministerial dialogue or similar process. 'Good practice' countries are using a 'council' or other means of coordination to implement inter-ministerial dialogue around innovation policies. ▷

> *"We made contacts for future bilateral co-operation."*

The evolution of policy-making processes in response to governance and regulatory reform issues has also given innovation greater prominence, as has increased interest in benchmarking and comparative or trend analysis, which impact on 'learning and dialogue'. A central concern here is the extent to which the results of evaluations and impact assessments are fed back into the policy-making process and communicated to a wider audience. Numerous examples of the evaluation of innovation policy can be found in EU Member States and Associate countries, but the extent of evaluation varies widely between countries, and it appears usually to be carried out on an ad hoc basis. Austria, Belgium, Finland, the Netherlands, Germany, Norway, Spain, Sweden and the UK offer examples of evaluations linked to policy learning and dialogue. In most acceding and candidate countries the importance of evaluating policy measures is stressed in policy documents, and evaluation can therefore be expected to spread in coming years. An important new issue is the question of whether a positive impact on innovation policy can result from reforms and regulations (on employment conditions or planning processes, for example) or from other framework conditions (such as patent laws and taxation regimes). Some measures to improve framework conditions, such as encouragement for patenting by public research organisations and higher education institutions, are common, especially across EU Member States. A number of countries have adopted specific policies and measures in the area of IPR. Similarly, many countries are discussing the possibility of introducing 'tax credits' for R&D or innovation, while those that already employ tax credit schemes continue to assess and refine them.

A number of national initiatives seek to promote entrepreneurship, with new developments in both EU Member States and Associate countries. The spirit of entrepreneurship remains weaker in some of the acceding and candidate countries, although new initiatives promise to improve this situation in the near future. Enterprise is at the heart of successful innovation, but entrepreneurial attitudes also underpin innovation in the public sector, indicating a need for the broadest possible support for entrepreneurship. This is likely to require new approaches in the educational and vocational training systems, as well as methods which link innovation management and entrepreneurship. If SMEs are to continue to remain an important focus of innovative activity and of policy interest, then their links with universities and other training institutions is critical. This is being addressed in a number of countries.

Stakeholder debate on innovation

The European Commission's 2000 Communication *Innovation in a knowledge-driven economy* [6] highlighted the need for Member States to continue to address Europe's 'innovation deficit', reiterating the call of the Lisbon European Council for increased efforts to improve innovative capacity.

The Communication set out the broad policy lines by which the European Union and the Member States would strengthen innovation capacity across Europe in the years ahead, carrying forward the innovation agenda established in 1996 by the First Action Plan for Innovation in Europe. It established a framework for ensuring the spread of successful innovation policies, and identified priorities for action at national and European level.

One objective aimed to develop "A society open to innovation" and recommended that Member State governments should "encourage comprehensive 'stakeholder' debates on innovation, involving scientists, industry, consumers and public authorities". The systemic nature of the innovation process makes stakeholder debate on innovation at all levels a critical element of a thriving system of innovation. Directly or indirectly, innovation affects all society's members, and all sections of the community need both to be aware of the importance of innovation and to be part of the process which drives it forward. Government therefore has a responsibility to foster such awareness and to stimulate participation in such debate.

It is clear that innovation encompasses a broad range of topics, and the promotion of debate extends into the general promotion of awareness on scientific and technological issues. Due to the pervasive nature of innovation and its connection with the broader field of science and technology, the range of initiatives that address stakeholder debate and awareness in European countries is necessarily very wide. They range from activities such as Science Weeks, through debates on specific science and technology topics, innovation prizes, dedicated web-based services, and innovation workshops to foresight exercises, as well as high-level consultations on the formulation of regional or national innovation policy.

The thematic report showed that most EU Member States have introduced at least one initiative aimed at promoting stakeholder involvement and debate or raising public awareness of innovation. These activities vary considerably in type and extent, and are generally less well developed in the acceding and candidate countries. Overall, however, there is evidence that the promotion of stakeholder debate on innovation is becoming more widespread as an element of national policy. ■

Enterprise DG Deputy Director-General, Heinz Zourek

"European diversity brings with it different aspirations and attitudes to innovation that have to be respected. Attitudes are especially likely to be nuanced when innovative developments have a social impact. The full and genuine participation of all stakeholders in the innovation process, including the public at large, needs to be ensured."
(quote from Communication COM(2003) 112 final)

[6] COM(2000) 567 final, available at http://www.cordis.lu/innovation-policy/communications/

3. Outlook

3.1 Improving transnational policy learning in innovation

The Trend Chart provides an essential platform for transparency, dialogue and exchange. But the 'context-dependence' of innovation support makes continuous, structured national policy learning initiatives essential, too.

Transnational policy learning is a process that helps policy-makers and programme managers to design or improve their policies, programmes and support schemes. Current Trend Chart country reports offer some evidence that learning of this kind is taking place among European innovation policy-makers (*see box below*). However, regular and systematic 'intelligence gathering' on other countries' policies is not yet 'state of the art'. Searches for 'best practice' appear to be conducted on an ad hoc basis in response to specific needs. Overseas missions by policy-makers to discuss innovation policy issues and trends are also ad hoc, and normally the result of individual initiative.

A policy workshop on the subject, held in November 2002, concluded that transnational policy learning requires intelligent adaptation of good practice to local contexts. The Trend Chart itself plays an important role in both stimulating and supporting a learning culture among policy-makers, as well as in improving transparency – and has, indeed, been given a mandate by the European Council to develop its work further (*see box on page 28*). However, the diversity of national innovation systems and policy approaches demands a balance between 'top-down' benchmarking exercises carried out at EU level – which cannot deliver ready-made country-specific solutions – and 'bottom-up' national exercises, which lack the visibility to mobilise the wider policy-making community.

Nordic transnational policy learning

The GoodNIP (Good practices in Nordic Innovation Policies) project, financed by the Nordic Industrial Fund, carried out a survey of innovation support measures for small and medium-sized enterprises in Norway, Iceland, Finland, Sweden and Denmark. Using Trend Chart data and reports as the basis for a more in-depth regional study, GoodNIP has provided policy-makers with a comprehensive comparison of the region's past and present innovation policies and policy instruments.

The project's three reports are available free of charge at http://www.step.no/goodnip/publications.html

3.2 Prospects – future activities and opportunities

Now firmly established as an essential tool kit for European innovation policy-makers, the Trend Chart will continue to extend and refine its products and activities in the years ahead – making it more useful to more of those with responsibility for promoting innovation.

"Continuity is essential," says Peter Löwe of the Innovation policy unit in the European Commission's Directorate-General for Enterprise, who leads the team that manages the initiative. "Without regular collection and analysis of comparable data we could only offer a series of snapshots. In fact, the Trend Chart gives policy-makers the ability to track changes as they happen – improvement or deterioration, both absolute and relative, in the performance of their own country or region, and that of others, as well as emerging issues and successful new approaches." At the same time, says Löwe, the Commission and the Group of Senior Officials, as well as the Trend Chart's many participants and users, remain on a steep learning curve. "This has never been attempted before, anywhere in the world," he points out. "There is still plenty to do to improve the utility of our different products and tools – not least, because the world in which innovation policy is implemented is changing so fast."

Broader horizons

From the beginning of 2004, the geographic coverage of the Trend Chart's network of national innovation policy correspondents is to be extended to one additional Associate country (Switzerland) as well as Malta and Turkey.

For the first time it will also encompass three non-European groups of countries, as the basis for much more detailed international comparison and policy learning:

- the countries of the North American Free Trade Association (NAFTA) and Brazil
- the MEDA countries – Algeria, Egypt, Jordan, Lebanon, Morocco, Syria and Tunisia
- the Asian economies – China, India, Indonesia, Japan, South Korea, Malaysia, Singapore, Taiwan and Thailand

Annual country group reports will be produced for these three groups, in the same format and structure as the individual reports produced for each European country. ▷

> *"The Innovation Scoreboard is useful as a way to raise awareness and stimulate discussions."*

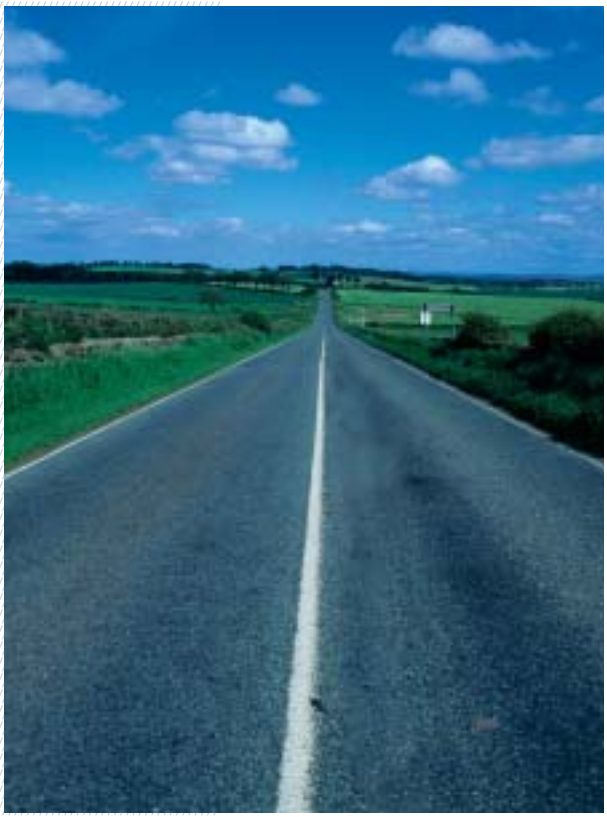
Trend Chart – a long-term pivotal role

The Competitiveness Council of May 2003 invited Member States, Accession countries and the Commission to:
*"**ensure appropriate co-ordination** of innovation policy, on a voluntary basis, at EU, national and regional levels;*
***strengthen existing processes, in the framework of the Trend Chart on Innovation in Europe**, enabling Member States to learn from each other's experience in innovation policy development and implementation;*
***intensify their co-operation and create a framework of common objectives** for strengthening innovation in the EU, including an **assessment mechanism for taking stock of the progress achieved**, while respecting the characteristics of national innovation systems and the diversity of national approaches;*
***actively engage in the definition of further action required** in order to support the Council's work in rapidly progressing towards more favourable conditions in which business can innovate, with a view to contributing effectively to reaching the Lisbon objectives."*

Virtuous circle

Linkages between the Trend Chart's various component activities are also to be strengthened, to maximise their value to the policy-making community and their impact on practical transnational policy learning.

> As input to the four policy workshops that will take place each year, the thematic reports of the correspondents' network will be supplemented by statistical papers.



In some cases, these will include further thematic scoreboards, examining specific policy areas on the basis of detailed indicators.

> Thematic scoreboards, as well as the European Innovation Scoreboard itself, will be taken into account more fully in the analysis of national policy developments in order to identify linkages between policy action and changes in innovative performance.

> Continuous independent monitoring of all Trend Chart activities, together with regular collection and analysis of feedback from website users and workshop participants, will provide the basis for effective quality control and for incremental improvement of the service.

Overall, the Trend Chart is on its way to becoming the "assessment mechanism for taking stock of the progress achieved" in innovation in the EU Member States, as requested by the European Council. ■

European Commission

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