

# Community innovation statistics

## From today's Community Innovation Surveys to better surveys tomorrow

(AG, 6 September 2006)

### **1. Introduction**

This document provides an overview of the European policy context for innovation and of the work in progress on Community innovation statistics, starting with the Fourth Community Innovation Survey (CIS) and looking ahead to future surveys, also touching on micro-data use and access.

### **2. The policy context**

The Lisbon and Barcelona European Councils signalled the important role of R&D and innovation in the EU. One of the goals set by the European Union was to raise overall research investment in the EU from 1.9% of GDP to approaching 3% by 2010. Based on this, in March 2005 the European Council decided to relaunch the Lisbon Strategy with the initiative on growth and jobs.

*Knowledge and innovation for growth* became one of three main areas for action in the new Lisbon partnership for growth and jobs. Research and innovation should be put at the heart of EU policies, EU funding and business. For further information see:

[http://ec.europa.eu/growthandjobs/index\\_en.htm](http://ec.europa.eu/growthandjobs/index_en.htm).

European activities on innovation use several instruments to obtain data on innovation indicators and to assess national innovation performance. The two main instruments are the Community Innovation Surveys (CIS) and the European Innovation Scoreboard (EIS). Both are interlinked: the EIS mostly uses the data collected by Eurostat in the Community Innovation Surveys.

In the EIS a Summary Innovation Index is calculated to measure the innovation performance of European countries, but also to compare EU-25 with Japan and the United States. In the 2005 EIS this Summary Innovation Index is based on 26 indicators taken from Community Innovation Surveys, R&D surveys or other official data sources. For further information on the European Innovation Scoreboard see [www.trendchart.org](http://www.trendchart.org).

In 2006 and subsequent years the EIS – like the CIS - will be developed further. On the one hand more analysis will be done on innovation broken down by economic sector and by region. On the other, more work is needed in order to form a better picture of knowledge and technology dissemination, organisational and marketing innovation, or innovation and public procurement in forthcoming CIS (in particular in CIS 2008).

### **3. The Fourth Community Innovation Survey (CIS 4)**

In most countries the CIS 4 was launched in 2005, based on the reference period 2004 and an observation period running from 2002 to 2004. The CIS 4 survey was carried out in around 30 European countries plus some non-European countries. As for previous CIS, Eurostat developed the harmonised survey questionnaire and the survey methodology in close cooperation with the countries participating. These two instruments lead to a certain level of harmonisation of input.

#### **The main characteristics of CIS 4 are as follows:**

- The harmonised CIS 4 questionnaire (based on the 1997 Oslo Manual) focuses on product and process innovation, looking mainly at the effects of innovation, sources of information about innovation activities, and innovation expenditure. The questionnaire also examines the factors hampering innovation and use of intellectual property rights. Finally, there is a smaller module on organisational and marketing innovation. **The CIS 4 questionnaire is shorter and considerably less difficult than the CIS 3 questionnaire previously used.**
- The core target population for CIS 4 is industry (NACE sections C, D and E), wholesale trade (NACE 51), transport, storage and communication (NACE 60-64), financial intermediation (NACE 65-67), computer and related activities (NACE 72), architectural and engineering activities (NACE 74.2) and technical testing and analysis (NACE 74.3). All enterprises with more than 10 employees are covered.
- Eurostat prepared two tabulation schemes for reporting aggregated data from the countries participating to Eurostat. These cover the statistical results and the breakdowns for national and regional data respectively. Economic activities are broken down to NACE division (2-digit) level. Results broken down by size classes (in terms of number of employees) are also provided.
- The tabulated results had to be returned to Eurostat by 30 June 2006 (18 months after the end of the reference year 2004). Eurostat also asked countries voluntarily to transmit the national micro-data sets. Based on these, Eurostat will disseminate the CIS 4 results as soon as possible after transmission of the data to Eurostat, i.e. from the third or fourth quarter of 2006 onwards.

#### **Although complete and comprehensive information on national implementation of CIS 4 is not yet available, the main findings emerging are as follows:**

- **The data quality from CIS 4 is expected to be much better than from CIS 3 in virtually all countries participating.** This can be seen in terms of, for example, unit or item response rates or of production and release of the data on time. These improvements seem to be due mainly to the improved CIS 4 survey questionnaire used in nearly every country, the broad compliance with the methodological guidelines issued, the greater familiarity of respondents with the questionnaire and the better overall process defined and applied by all parties involved.
- Fairly comprehensive national reports on data quality and an overall summary report on quality produced by Eurostat will be available in early 2007. These reports will allow comprehensive quality assessment of CIS 4 and of the costs and benefits of this survey.

- The regional CIS 4 results to be transmitted to Eurostat on a voluntary base will, however, remain incomplete as not every country applied the recommended sample stratification at regional level. Eurostat will investigate further possible action to improve this situation.
- Also not all the countries participating have transmitted the CIS 4 micro-data to Eurostat yet. On this point too, further action will be investigated to improve the situation.

Based on better data quality, better communication, free dissemination of tabulated data and better access to micro-data, Eurostat expects a strong increase in use of the CIS 4 data by a broad user community.

**See Annex 1 to this document for the harmonised CIS 4 survey questionnaire.**

#### **4. From CIS 4 to CIS 2008**

##### **4.1. CIS 2006**

The Community legislation on innovation statistics increased the frequency for compiling Community innovation statistics from every four to every two years. In 2006 Eurostat – in close cooperation with the Member States – therefore continued the preparatory work on the next CIS based on the reference year 2006 (“CIS 2006”). It was decided that CIS 2006 should take a fairly conservative approach, keeping the harmonised survey questionnaire and the harmonised survey methodology used for CIS 4. Both components will therefore be used again for CIS 2006. This means that CIS 2006 will once again be based on the 1997 Oslo Manual.

Based on the current legal situation, countries have the option fully to repeat CIS 4 as CIS 2006 using the CIS 4 questionnaire and methodology. Countries can also use only a subset of the CIS 4 questions for CIS 2006. At this stage, it seems that more than 15 out of around 30 countries will repeat CIS 4 as CIS 2006. The other half will ask just a subset of the CIS 4 questions.

CIS 2006 will be launched at national level in 2007. Considering that 18 months are allowed for data transmission, the tabulated data (based on the tabulations already used for CIS 4) will be sent to Eurostat by 30 June 2008 and the data will be duly released shortly afterwards.

As the questionnaire and methodology have been left unchanged from CIS 4 (2004) to CIS 2006, it will be possible to compare data and analyse trends by looking at the results from CIS 4 and CIS 2006.

##### **4.2 Towards CIS 2008**

In addition to CIS 2006, Eurostat – in close cooperation with Member States – has started to prepare for CIS 2008. Some of the basic ideas and issues for CIS 2008 are:

- The 2005 version of the Oslo Manual needs to be implemented. This means that the two new types of innovation (organisational and marketing) need to be taken into account in the CIS 2008 harmonised survey questionnaire more fully than in the small module in the CIS 4/CIS 2006 questionnaire.

- Eurostat has therefore already prepared and discussed pilot modules on organisational and marketing innovation plus a short module on knowledge management which countries should test in 2007. These two pilot modules deal mainly with the specifics of these two types of innovation. Depending on the results of the pilot surveys, these modules will have to be incorporated into the CIS 2008 questionnaire.
- It also needs to be decided whether the observation period for the CIS should be cut from three years to two in the light of the fact that the frequency of the CIS has been increased to every two years. This decision needs to be based on evidence from a number of countries.
- Finally, the discussions also need to focus on whether the CIS questions cover all types of innovation. If the answer is yes, this will affect the comparability of the CIS 2008 data with the previous CIS results.

This list of ideas and issues concerning CIS 2008 is certainly not exhaustive. More will emerge when the discussions on CIS 2008 start in 2007/2008.

**See Annex 2 to this document for the latest drafts of the CIS pilot modules to be tested by countries in 2007 (the final versions will be decided in October 2006).**

### **5. Additional data needed from the CIS**

Over the last few months users have expressed additional needs which might affect the CIS in the medium term, e.g. in the form of adding new questions or just making better use of the existing tabulated and micro-data. More specifically, users have expressed the following needs:

- A number of users (in the European Commission, the IAEA or other users) want to keep better track of eco-innovation. This would mean that question 7.1 in the CIS 4 questionnaire in particular would need to be fine-tuned to give more details on this subject. This can also be expected to have a further impact on the CIS questionnaire.
- The CIS questionnaire should give a better picture of dissemination of technology. A question about the importance to the respondent of obtaining new product and process technology from external sources could be added.
- Innovation and public procurement are also rising up the EU policy agenda. At a certain stage the CIS should also be able to provide some answers on this. A question could be added to the survey asking firms whether they sell to the government and, if so, to report on the relative influence of costs versus innovative characteristics on procurement decisions.
- Some users have also asked if measurement of the linkages between innovation input (e.g. innovation expenditure) and innovation output indicators (e.g. turnover related to new or improved products) could be improved in the CIS.
- Several users have already asked for the CIS to be extended to more economic activities, in particular to public services or non-market activities.

Besides these requested additions to the CIS questionnaire, much better use could be made of the existing micro-data from CIS 4/CIS 2006. This would provide new additional indicators on knowledge dissemination (from questions 2.2, 3.2 and 6.2 in CIS 4), technology dissemination (questions 2.2 and 3.2), fast growing gazelles (e.g. questions 11.1 or 11.2), organisational innovation (question 10), demand for innovation (questions 1.2 or 8.2) and demand for technology (questions 5.1 and 5.2). The work on better exploitation of the CIS 4 has started at Eurostat.

## **6. Better access to micro-data: crucial for a better cost/benefit ratio**

In order considerably to improve the cost/benefit ratio for the CIS, Eurostat – in close cooperation with Member States – wants to improve access to and use of the CIS micro-data by researchers. The necessary precondition is that Member States transmit the micro-data to Eurostat which is not yet the case everywhere.

Access by researchers to the CIS micro-data is governed by Commission Regulation No 831/2002. This access is twofold: to the anonymised micro-data (disseminated on CD-ROM) or to the non-anonymised micro-data at the Eurostat Safe Centre in Luxembourg. Both forms of access require the explicit agreement, project by project, of each country which submits its micro-data file to Eurostat.

### **6.1. Access to anonymised micro-data**

In order to open up access to the anonymised CIS micro-data, Eurostat – in close cooperation with the countries participating - had to create a CIS anonymisation method which then had to be accepted by the countries concerned.

The CIS 3 anonymisation method finally developed is based on the micro-aggregation process (MAP) which modifies the individual data in such a way that an enterprise can no longer be identified as such, i.e. it is no longer feasible to match a respondent (enterprise) with its exact replies. The method is divided into different stages: pre-processing of the data, micro-aggregation, global recoding, evaluation of the disclosure risk, data suppression, and release of the final micro-data file.

Eurostat applied this method to the CIS 3 micro-data in the course of 2005/2006. Out of the 24 countries for which the CIS 3 micro-data sets are available at Eurostat, 15 accepted it. The anonymised CIS 3 micro-data from these 15 countries are consequently disseminated to researchers on a CD-ROM.

However, Eurostat is aiming to increase acceptance of the anonymisation method by the countries concerned, in particular with regard to the application of the method to the CIS 4 micro-data. Eurostat is therefore currently investigating ways to improve the method by changing some parameters, depending, amongst other things, on the size of the countries or the sample held. The plan is to start to apply the refined CIS anonymisation method to the CIS 4 micro-data by the beginning of 2007.

## **6.2. Access to the non-anonymised micro-data**

Based on similar legal requirements to those for access to the anonymised micro-data, Eurostat is opening the Safe Centre in Luxembourg where researchers can access the non-anonymised CIS 3 micro-data following a specific procedure laid down for such Safe Centre access.

Researchers can thus come to Luxembourg and work in a secure environment on the CIS 3 non-anonymised micro-data. In accordance with the aforementioned Regulation, the aggregated output files produced by the researchers need to be checked thoroughly by Eurostat for tabular data confidentiality and data quality.

Compared with access to the anonymised micro-data, as described above, the Safe Centre access is a more expensive option for all involved, both for the data users who have to travel to Luxembourg and for Eurostat which has to check thoroughly everything produced by the researchers granted access.

**Both means of access to the micro-data substantially increase the use and usefulness of the CIS data. As the discussions on the burden placed on enterprises (in particular small and medium-sized firms) by statistics have recently been becoming more intense in Europe, pooling and better use of micro-data is a crucial option for enhancing the benefits without increasing the costs of the CIS.**

## **7. Conclusions**

Good progress has been made with preparation and implementation of CIS 4 in Europe, and higher quality results are to be expected in 2006. In many places CIS 4 will be repeated as CIS 2006. Two major pilot studies on organisational and marketing innovation have been launched to prepare for CIS 2008. Beyond that, a number of needs for additional data from the CIS have already been identified. Finally, access to the CIS micro-data is crucial for improving its cost/benefit ratio of the CIS.

**ANNEX 1:**

**The CIS 4 Harmonised Survey Questionnaire**

**The Fourth Community Innovation Survey  
(CIS IV)**

THE HARMONISED SURVEY QUESTIONNAIRE

**The Fourth Community Innovation Survey (Final Version: October 20 2004)**

This survey collects information about product and process innovation as well as organisational and marketing innovation during the three-year period 2002 to 2004 inclusive. Most questions cover new or significantly improved goods or services or the implementation of new or significantly improved processes, logistics or distribution methods. Organisational and marketing innovations are only covered in section 10. In order to be able to compare enterprises with and without innovation activities, we request all enterprises to respond to **all** questions, unless otherwise instructed.

Person we should contact if there are any queries regarding the form:

Name: \_\_\_\_\_  
Job title: \_\_\_\_\_  
Organisation: \_\_\_\_\_  
Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_  
E-mail: \_\_\_\_\_

## General information about the enterprise

Name of enterprise \_\_\_\_\_

Address: \_\_\_\_\_

Postal code \_\_\_\_\_ Main activity<sup>2</sup> \_\_\_\_\_

**1.1 Is your enterprise part of an enterprise group?** (A group consists of two or more legally defined enterprises under common ownership. Each enterprise in the group may serve different markets, as with national or regional subsidiaries, or serve different product markets. The head office is also part of an enterprise group.)

<sup>3</sup> Yes  In which country is the head office of your group located?  
\_\_\_\_\_

No

**If your enterprise is part of an enterprise group, please answer all further questions only for your enterprise in [your country]. Do not include results for subsidiaries or parent enterprises outside of [your country]**

**1.2 In which geographic markets did your enterprise sell goods or services during the three years 2002 to 2004?**

	Yes	No
Local / regional within [your country]	<input type="checkbox"/>	<input type="checkbox"/>
National	<input type="checkbox"/>	<input type="checkbox"/>
Other European Union (EU) countries, EFTA, or EU candidate countries*	<input type="checkbox"/>	<input type="checkbox"/>
All other countries	<input type="checkbox"/>	<input type="checkbox"/>

\*: Include the following countries: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Italy, Ireland, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovenia, Slovakia, Switzerland, Turkey, Spain, Sweden and the United Kingdom.

<sup>1</sup> NUTS 2 code

<sup>2</sup> NACE 4 digit code

<sup>3</sup>Country code according to ISO standard

## 2. Product (good or service) innovation

A product innovation is the market introduction of a **new** good or service or a **significantly** improved good or service with respect to its capabilities, such as improved software, user friendliness, components or sub-systems. The innovation (new or improved) must be new to your enterprise, but it does not need to be new to your sector or market. It does not matter if the innovation was originally developed by your enterprise or by other enterprises.

### 2.1 During the three years 2002 to 2004, did your enterprise introduce:

	Yes	No
New or significantly improved goods. (Exclude the simple resale of new goods purchased from other enterprises and changes of a solely aesthetic nature.)	<input type="checkbox"/>	<input type="checkbox"/>
New or significantly improved services.	<input type="checkbox"/>	<input type="checkbox"/>

If no to both options, go to question 3.1, otherwise:

### 2.2 Who developed these product innovations?

*Select the most appropriate option only*

Mainly your enterprise or enterprise group	<input type="checkbox"/>
Your enterprise together with other enterprises or institutions	<input type="checkbox"/>
Mainly other enterprises or institutions	<input type="checkbox"/>

### 2.3 Were any of your goods and service innovations during the three years 2002 to 2004:

	Yes	No
<b>New to your market?</b> Your enterprise introduced a new or significantly improved good or service onto your market before your competitors (it may have already been available in other markets)	<input type="checkbox"/>	<input type="checkbox"/>
<b>Only new to your firm?</b> Your enterprise introduced a new or significantly improved good or service that was already available from your competitors in your market	<input type="checkbox"/>	<input type="checkbox"/>

**Using the definitions above, please give the percentage of your total turnover<sup>4</sup> in 2004 from:**

Goods and service innovations introduced during 2002 to 2004 that were <b>new to your market</b>	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> %
Goods and service innovations introduced during 2002 to 2004 that were <b>only new to your firm</b>	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> %
Goods and services that were <b>unchanged or only marginally modified</b> during 2002 to 2004 (include the resale of new goods or services purchased from other enterprises)	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> %
<b>Total turnover in 2004</b>	<input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 20px; border: 1px solid black;" type="text"/> %

<sup>4</sup> For Credit institutions: Interests receivable and similar income, for insurance services: Gross premiums written

### 3. Process innovation

A process innovation is the implementation of a **new** or **significantly** improved production process, distribution method, or support activity for your goods or services. The innovation (new or improved) must be new to your enterprise, but it does not need to be new to your sector or market. It does not matter if the innovation was originally developed by your enterprise or by other enterprises. Exclude purely organisational innovations.

#### 3.1 During the three years 2002 to 2004, did your enterprise introduce:

	Yes	No
New or significantly improved methods of manufacturing or producing goods or services	<input type="checkbox"/>	<input type="checkbox"/>
New or significantly improved logistics, delivery or distribution methods for your inputs, goods or services	<input type="checkbox"/>	<input type="checkbox"/>
New or significantly improved supporting activities for your processes, such as maintenance systems or operations for purchasing, accounting, or computing	<input type="checkbox"/>	<input type="checkbox"/>

If no to all options, go to section 4, otherwise:

#### 3.2 Who developed these process innovations?

*Select the most appropriate option only*

- Mainly your enterprise or enterprise group
- Your enterprise together with other enterprises or institutions
- Mainly other enterprises or institutions

### 4. Ongoing or abandoned innovation activities

Innovation activities include the acquisition of machinery, equipment, software, and licenses; engineering and development work, training, marketing and R&D<sup>5</sup> when they are *specifically* undertaken to develop and/or implement a product or process innovation.

#### 4.1 Did your enterprise have any innovation activities to develop product or process innovations that were abandoned during 2002 to 2004 or still ongoing by the end of 2004?

- Yes
- No

**If your enterprise had no product or process innovations or innovation activity during 2002 to 2004 (no to all options in questions 2.1, 3.1, and 4.1), go to question 8.2.**

**Otherwise, go to question 5.1**

<sup>5</sup> Include basic R&D as an innovation activity even if not specifically related to a product and/or process innovation

## 5. Innovation activities and expenditures

### 5.1 During the three years 2002 to 2004, did your enterprise engage in the following innovation activities:

		Yes	No
Intramural (in-house) R&D	Creative work undertaken within your enterprise to increase the stock of knowledge and its use to devise new and improved products and processes (including software development)	<input type="checkbox"/>	<input type="checkbox"/>
	If yes, did your firm perform R&D during 2002 to 2004:		
	Continuously? <input type="checkbox"/>		
	Occasionally? <input type="checkbox"/>		
Extramural R&D	Same activities as above, but performed by other companies (including other enterprises within your group) or by public or private research organisations and purchased by your enterprise	<input type="checkbox"/>	<input type="checkbox"/>
Acquisition of machinery, equipment and software	Acquisition of advanced machinery, equipment and computer hardware or software to produce new or significantly improved products and processes	<input type="checkbox"/>	<input type="checkbox"/>
Acquisition of other external knowledge	Purchase or licensing of patents and non-patented inventions, know-how, and other types of knowledge from other enterprises or organisations	<input type="checkbox"/>	<input type="checkbox"/>
Training	Internal or external training for your personnel specifically for the development and/or introduction of new or significantly improved products and processes	<input type="checkbox"/>	<input type="checkbox"/>
Market introduction of innovations	Activities for the market introduction of your new or significantly improved goods and services, including market research and launch advertising	<input type="checkbox"/>	<input type="checkbox"/>
Other preparations	Procedures and technical preparations to implement new or significantly improved products and processes that are not covered elsewhere.	<input type="checkbox"/>	<input type="checkbox"/>

### 5.2 Please estimate the amount of expenditure for each of the following four innovation activities in 2004 only. (Include personnel and related costs)<sup>6</sup>

*Tick 'nil' if your enterprise had no expenditures in 2004* **Nil**

Intramural (in-house) R&D (Include capital expenditures on buildings and equipment specifically for R&D)		<input type="checkbox"/>
Acquisition of R&D (extramural R&D)		<input type="checkbox"/>
Acquisition of machinery, equipment and software (Exclude expenditures on equipment for R&D)		<input type="checkbox"/>
Acquisition of other external knowledge		<input type="checkbox"/>
Total of these four innovation expenditure categories		<input type="checkbox"/>

<sup>6</sup> Give expenditure data in 000's of national currency units to eight digits.

**5.3 During the three years 2002 to 2004, did your enterprise receive any public financial support for innovation activities from the following levels of government?** Include financial support via tax credits or deductions, grants, subsidised loans, and loan guarantees. Exclude research and other innovation activities conducted entirely for the public sector under contract.

	Yes	No
Local or regional authorities	<input type="checkbox"/>	<input type="checkbox"/>
Central government (including central government agencies or ministries)	<input type="checkbox"/>	<input type="checkbox"/>
The European Union (EU)	<input type="checkbox"/>	<input type="checkbox"/>
If yes, did your firm participate in the EU's 5 <sup>th</sup> (1998-2002) or 6 <sup>th</sup> (2003-2006) Framework Programme for Research and Technical Development	<input type="checkbox"/>	<input type="checkbox"/>

## 6. Sources of information and co-operation for innovation activities

**6.1 During the three years 2002 to 2004, how important to your enterprise's innovation activities were each of the following information sources?** Please identify information sources that provided information for new innovation projects or contributed to the completion of existing innovation projects.

		Degree of importance			
		<i>Tick 'not used' if no information was obtained from a source.</i>			
	Information source	High	Medium	Low	Not used
Internal	Within your enterprise or enterprise group	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Market sources	Suppliers of equipment, materials, components, or software	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Clients or customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Competitors or other enterprises in your sector	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Consultants, commercial labs, or private R&D institutes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Institutional sources	Universities or other higher education institutions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Government or public research institutes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other sources	Conferences, trade fairs, exhibitions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Scientific journals and trade/technical publications	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Professional and industry associations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**6.2 During the three years 2002 to 2004, did your enterprise co-operate on any of your innovation activities with other enterprises or institutions?** Innovation co-operation is active participation with other enterprises or non-commercial institutions on innovation activities. Both partners do not need to commercially benefit. Exclude pure contracting out of work with no active co-operation.

- Yes   
 No  (Please go to question 7.1)

**6.3 Please indicate the type of co-operation partner and location** *(Tick all that apply)*

Type of co-operation partner	[Your country]	Other Europe*	United States	All other countries
A. Other enterprises within your enterprise group	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B. Suppliers of equipment, materials, components, or software	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
C. Clients or customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D. Competitors or other enterprises in your sector	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
E. Consultants, commercial labs, or private R&D institutes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F. Universities or other higher education institutions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G. Government or public research institutes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

\*: Include the following European Union (EU) countries, EFTA, or EU candidate countries: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Italy, Ireland, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovenia, Slovakia, Switzerland, Turkey, Spain, Sweden and the United Kingdom.

**6.4 Which type of co-operation partner did you find the most valuable for your enterprise's innovation activities? (Give corresponding letter) \_\_\_\_\_**

## 7. Effects of innovation during 2002-2004

**7.1 How important were each of the following effects of your product (good or service) and process innovations introduced during the three years 2002 to 2004?**

		Degree of observed effect			
		High	Medium	Low	Not relevant
Product oriented effects	Increased range of goods or services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Entered new markets or increased market share	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Improved quality of goods or services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Process oriented effects	Improved flexibility of production or service provision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Increased capacity of production or service provision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Reduced labour costs per unit output	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other effects	Reduced materials and energy per unit output	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Reduced environmental impacts or improved health and safety	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Met regulatory requirements	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## 8. Factors hampering innovation activities

### 8.1 During the three years 2002 to 2004, were any of your innovation activities or projects:

	Yes	No
Abandoned in the concept stage	<input type="checkbox"/>	<input type="checkbox"/>
Abandoned after the activity or project was begun	<input type="checkbox"/>	<input type="checkbox"/>
Seriously delayed	<input type="checkbox"/>	<input type="checkbox"/>

### TO BE ANSWERED BY ALL ENTERPRISES:

### 8.2 During the three years 2002 to 2004, how important were the following factors for hampering your innovation activities or projects or influencing a decision not to innovate?

		Degree of importance			
		High	Medium	Low	Factor not experienced
Cost factors	Lack of funds within your enterprise or group	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Lack of finance from sources outside your enterprise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Innovation costs too high	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Knowledge factors	Lack of qualified personnel	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Lack of information on technology	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Lack of information on markets	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Difficulty in finding cooperation partners for innovation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Market factors	Market dominated by established enterprises	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Uncertain demand for innovative goods or services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reasons not to innovate	No need due to prior innovations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	No need because of no demand for innovations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## 9. Intellectual property rights

### 9.1 During the three years 2002 to 2004, did your enterprise:

	Yes	No
Apply for a patent	<input type="checkbox"/>	<input type="checkbox"/>
Register an industrial design	<input type="checkbox"/>	<input type="checkbox"/>
Register a trademark	<input type="checkbox"/>	<input type="checkbox"/>
Claim copyright	<input type="checkbox"/>	<input type="checkbox"/>

## 10. Organisational and marketing innovations

An organisational innovation is the implementation of new or significant changes in firm structure or management methods that are intended to improve your firm's use of knowledge, the quality of your goods and services, or the efficiency of work flows. A marketing innovation is the implementation of new or significantly improved designs or sales methods to increase the appeal of your goods and services or to enter new markets.

### 10.1 During the three years 2002 to 2004, did your enterprise introduce:

		Yes	No
Organisational innovations	New or significantly improved knowledge management systems to better use or exchange information, knowledge and skills within your enterprise	<input type="checkbox"/>	<input type="checkbox"/>
	A major change to the organisation of work within your enterprise, such as changes in the management structure or integrating different departments or activities	<input type="checkbox"/>	<input type="checkbox"/>
	New or significant changes in your relations with other firms or public institutions, such as through alliances, partnerships, outsourcing or sub-contracting	<input type="checkbox"/>	<input type="checkbox"/>
Marketing innovations	Significant changes to the design or packaging of a good or service (Exclude routine/ seasonal changes such as clothing fashions)	<input type="checkbox"/>	<input type="checkbox"/>
	New or significantly changed sales or distribution methods, such as internet sales, franchising, direct sales or distribution licenses.	<input type="checkbox"/>	<input type="checkbox"/>

### 10.2 If your enterprise introduced an organisational innovation during the three years 2002 to 2004, how important were each of the following effects?

	Degree of observed effect			
	High	Medium	Low	Not relevant
Reduced time to respond to customer or supplier needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improved quality of your goods or services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Reduced costs per unit output	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improved employee satisfaction and/or reduced rates of employee turnover	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## 11. Basic economic information on your enterprise

11.1 What was your enterprise's total turnover for 2002 and 2004?<sup>7</sup> Turnover is defined as the market sales of goods and services (Include all taxes except VAT<sup>8</sup>).

2002	2004
<input type="text"/>	<input type="text"/>

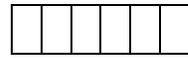
11.2 What was your enterprise's total number of employees in 2002 and 2004?<sup>9</sup>

2002	2004
<input type="text"/>	<input type="text"/>

<sup>7</sup> Give turnover in '000 of national currency units to nine digits.

<sup>8</sup> For Credit institutions: Interests receivable and similar income; for Insurance services: Gross premiums written

<sup>9</sup> Annual average. If not available, give the number of employees at the end of each year. Give figures to six digits.



## ANNEX 2:

<b>The CIS pilot modules on organisational and marketing innovation</b>
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### Module on Organisational Innovation

An organisational innovation is the implementation of a new organisational method in the firm's business practices, workplace organisation or external relations.

1. Compared to other European enterprises of a similar size and sector, how close was your enterprise's organisational structure in 2004 to best practice in Europe? Best practice is defined as an organisational structure in 2004 that maximized productivity, quality, and customer service.

- Close to or at best practice
- Above average
- Average
- Below average
- Well below average

2. During the three years 2004 to 2006, did your enterprise introduce:

	Yes	No
2.1 New or significantly improved knowledge management systems to better use or exchange information, knowledge and skills within your enterprise <sup>1</sup>	<input type="checkbox"/>	<input type="checkbox"/>
2.2 New management systems for the production and/or supply operations of your enterprise <sup>2</sup>	<input type="checkbox"/>	<input type="checkbox"/>
2.3 Significant changes to the organisation of work in your enterprise that (tick all that apply): Increased employee decision making and responsibility for their work Decreased employee decision making and responsibility for their work Had no effect on employee decision making and responsibilities	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2.4 A significant change to the management structure of your enterprise, such as creating new divisions or departments, integrating different departments or activities, adoption of a networked structure, etc <sup>3</sup>	<input type="checkbox"/>	<input type="checkbox"/>
2.5 New or significant changes in your relations with other firms or public institutions, such as through alliances, partnerships, outsourcing or sub-contracting	<input type="checkbox"/>	<input type="checkbox"/>

Go to question 3 if your enterprise introduced at least one organisational innovation between 2004 and 2006. Otherwise go to question 7.

**3. What was the source of the ideas for your enterprise's organisational innovations?** <sup>4</sup>

<i>Select the most appropriate option only</i>	
3.1 Mainly your enterprise or enterprise group	<input type="checkbox"/>

3.2 Both your enterprise and other enterprises, institutions, publications, etc.	<input type="checkbox"/>
3.3 Mainly other enterprises, institutions, publications, etc.	<input type="checkbox"/>

**4. How important were each of the following effects of your enterprise's organisational innovations between 2004 and 2006?**

(If your enterprise introduced several organisational innovations, make an overall evaluation)				
	High	Medium	Low	None / Not relevant
4.1 Reduced time to respond to customer or supplier needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2 Improved quality of your goods or services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.3 Reduced costs per unit output	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.4 Improved employee satisfaction and/or lower employee turnover	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.5 Improved communication or information sharing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.6 Increased ability to develop new products or processes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**5. Approximately what percent of your employees were directly affected by your enterprise's organisational innovations between 2004 and 2006?<sup>5</sup>**

\_\_\_\_\_ %

**6. Were any of these organisational innovations essential to the implementation of other types of innovations introduced by your enterprise between 2004 and 2006?**

(Tick not relevant if your enterprise did not introduce one of the following innovations)

	Yes	No	Not relevant
6.1 Process innovation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.2 Product innovation for a new or improved service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.3 Product innovation for a new or improved good	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*Go to question ...*

**7. Why did your enterprise not introduce an organisational innovation between 2004 and 2006?**

	Yes	No
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<i>7.1 Organisational innovations were introduced before 2004 and no need for further change</i>	<input type="checkbox"/>	<input type="checkbox"/>
<i>7.2 Lack of funds or staff to implement an organisational innovation</i>	<input type="checkbox"/>	<input type="checkbox"/>
<i>7.3 Resistance of staff or management to organisational change</i>	<input type="checkbox"/>	<input type="checkbox"/>

## Module on marketing innovation

A marketing innovation is the implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing.

1. During the three years 2004 to 2006, did your enterprise introduce the following marketing innovations:

		Yes	No
<b>Design</b>	1.1 Introduce significant changes to the <b>design</b> of a good or service (Exclude routine/ seasonal changes such as clothing fashions)	<input type="checkbox"/>	<input type="checkbox"/>
	1.2 Introduce significant changes to the <b>packaging</b> of a good	<input type="checkbox"/>	<input type="checkbox"/>
<b>Promotion</b>	1.3 Implement a new marketing strategy to <b>target new customer groups or market segments</b>	<input type="checkbox"/>	<input type="checkbox"/>
	1.4 Use <b>new media or techniques to promote products</b> , such as new advertising concepts, a new brand image or new techniques to customize promotion to individual customers or groups	<input type="checkbox"/>	<input type="checkbox"/>
<b>Placement</b>	1.5 Use <b>new sales channels</b> , such as direct selling, internet sales, or product licensing	<input type="checkbox"/>	<input type="checkbox"/>
	1.6 Introduce new concepts for <b>product presentation</b> in sales outlets (e.g. sales rooms, websites, other types of outlets)	<input type="checkbox"/>	<input type="checkbox"/>
<b>Pricing</b>	1.7 Use <b>new pricing methods</b> to market goods or services	<input type="checkbox"/>	<input type="checkbox"/>

Go to question 2 if your enterprise introduced at least one marketing innovation between 2004 and 2006. Otherwise go to question ...

**2. Who developed these marketing innovations?**

<i>Select the most appropriate option only</i>	
2.1 Mainly your enterprise or enterprise group	<input type="checkbox"/>
2.2 Your enterprise together with other enterprises or institutions	<input type="checkbox"/>
2.3 Mainly other enterprises or institutions	<input type="checkbox"/>

**3. How important were each of the following effects of your enterprise's marketing innovations between 2004 and 2006?**

(If your enterprise introduced several marketing innovations, make an overall evaluation)				
	High	Medium	Low	None/ Not relevant
1. Sales growth for your goods and services <sup>1</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Introduced products to new markets or customer groups	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Increased visibility of products or business	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Strengthened relationships with customers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Improved customer satisfaction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**4. How important were the following market-related activities for your enterprise's innovation projects between 2004 and 2006?<sup>2</sup>**

	High	Medium	Low	None/ Not used
4.1 Maintaining close links between your marketing department and departments or groups involved in developing or implementing your innovations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2 Systematic analysis of your customer's needs by your marketing division	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.3 Systematic analysis of the effectiveness of your marketing techniques	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**5. If your firm introduced a marketing innovation and introduced a product innovation between 2004 and 2006:**

	Yes	No
5.1 Were any of these marketing innovations an integral part of any of your enterprise's product innovations? (For example, a design change was an essential part of a technical innovation, or a new marketing method was part of a process innovation) <sup>3</sup>	<input type="checkbox"/>	<input type="checkbox"/>
5.2 Were any of these marketing innovations <u>necessary</u> for the successful introduction of your enterprise's product innovation(s)?	<input type="checkbox"/>	<input type="checkbox"/>

## Module on Knowledge Management

1. Is your firm currently using each of the following knowledge management practices?<sup>1</sup>

**If yes, please indicate if your firm first introduced or made a significant change to each practice between 2004 and 2006 inclusive**

	No	Yes ( <i>tick both if relevant</i> )
1.1 A written knowledge management policy	<input type="checkbox"/>	<input type="checkbox"/> Introduced/changed 2004-2006 <input type="checkbox"/> Introduced/changed before 2004
1.2 Incentives for employees to share knowledge within your enterprise	<input type="checkbox"/>	<input type="checkbox"/> Introduced/changed 2004-2006 <input type="checkbox"/> Introduced/changed before 2004
1.3 Dedicated resources to monitor and obtain knowledge from outside your enterprise	<input type="checkbox"/>	<input type="checkbox"/> Introduced/changed 2004-2006 <input type="checkbox"/> Introduced/changed before 2004
1.4 A policy to bring in external experts from universities, research institutes, or other firms to participate in project teams, as needed <sup>2</sup>	<input type="checkbox"/>	<input type="checkbox"/> Introduced/changed 2004-2006 <input type="checkbox"/> Introduced/changed before 2004
1.5 Regular updates of internal databases or manuals of good work practices, lessons learned, or expert advice	<input type="checkbox"/>	<input type="checkbox"/> Introduced/changed 2004-2006 <input type="checkbox"/> Introduced/changed before 2004