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Innovation in Europe

Results for the EU, Iceland and Norway

Data 1998–2001

9

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Foreword

Enhancing innovation is a cornerstone of the Lisbon strategy which aims to make the European Union the most competitive and dynamic knowledge-based economy by the end of the decade. In order to raise living standards over the coming years the Union should become a world reference for innovation. However, progress towards such an innovative European economy is proving tentative and fragile.

In 2003 the Communication of the Commission 'Innovation policy: updating the Union's approach in the context of the Lisbon strategy' developed a renewed vision of innovation in Europe, its role and importance, its challenges and its multifaceted character. The 2003 European Innovation Scoreboard stressed that much remains to be done to meet the Lisbon goal, not only in creating new knowledge through research, but also in the transfer and application of already existing leading edge technologies.

In subsequent policy discussions, the Competitiveness Council reiterated these messages, inviting the Commission to create a framework of common objectives for innovation policy including an assessment mechanism for taking stock of the progress achieved. In 2004 a new European Action Plan on Innovation will be launched to put this analysis into practice.

All these political efforts depend on the existence of a sound statistical basis. The Community Innovation Survey (CIS) provides this basis. It is the main statistical instrument that allows the monitoring of Europe's progress in the area of innovation. The CIS creates a better understanding of the innovation process and analyses the effects of innovation on the economy (regarding competitiveness, employment, economic growth, trade patterns, etc.).

Three waves of the Community Innovation Survey have already been carried out. Based on the Oslo manual that provides the methodological guidelines, this publication presents the results of the Third Community Innovation Survey (CIS 3) for most of the EU countries, Norway and Iceland.

In part one, a general overview of the CIS 3 results, on the basis of an EU aggregate are presented, before examining innovation across enterprise size-classes and by NACE Sections. Part one finishes by looking at employment and market characteristics of enterprises with innovation activity. Part two then provides a set of tables by country, looking at the same set of innovation features that are mentioned above.

There is still ample room for improvement in innovation statistics. Cross-country comparability must be improved and more frequent data gathering cycles are necessary. The regional aspect also needs to be explored in greater detail because companies and in particular SMEs depend to a large extent on the existence of regional innovation networks and infrastructure. Understanding of the 'non-technical' aspects of innovation, such as management techniques, organisational change, design and marketing issues also needs to be enhanced.

Some of these improvements of the CIS are already underway. Our next steps will be the revision of the Oslo manual along the above lines and a new legal basis for innovation statistics.

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Innovation in Europe - results for the EU, Iceland and Norway
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INTRODUCTION

Introduction

THE ECONOMICS OF INNOVATION

One of the most influential works on the subject of innovation, the 'Theory of Economic Development', was written almost 100 years ago by Joseph Schumpeter (1911). It describes the entrepreneur as an innovator who efficiently combines resources, adopting new technical improvements in machinery and organising more efficiently the division of labour. The theory is based on a steadily growing economy, which is punctuated by discontinuous changes. Schumpeter argued that the main reason for these changes in the pace of economic growth is entrepreneurial behaviour in the form of innovation. In the case of productivity-enhancing process innovations, the enterprise gets a cost advantage over its competitors, whereas in the case of product innovations, the enterprise may enter into a monopolistic or oligopolistic position. Schumpeter argued that both product and process innovations therefore result in enterprises gaining rents. When other entrepreneurs observe these rents, they too are encouraged to innovate (or imitate) and as a result there is a period of rapid economic growth. Many economists use the growth of the Internet economy in the late 1990s as an example of such a phenomenon.

William Baumol (Princeton University) built upon the work of Schumpeter in 'The Free-Market Innovation Machine'. Baumol argues that the industrial structure that fosters innovation the most is that of oligopoly, a market characterised by a few, large enterprises competing with each other. Rather than trying to charge the lowest prices, oligopolists compete through product differentiation, thus stimulating innovative activity and economic growth. Baumol argues that within market economies, innovative activity is mandatory for enterprises to survive. He also states that new technology is spread rapidly across economies, as it often pays innovators to share their knowledge, rather than to hoard it to themselves.

KNOWLEDGE AS A PUBLIC GOOD

While innovation might spread across the economy as a result of financial inducements paid to innovators, other economists argue that the only way to motivate innovation is by offering protection from imitation. Often the costs of making knowledge available to many users are low compared to the actual costs of innovation development itself. Furthermore, once knowledge has been disseminated, it is often difficult to deny (potential) future users further access to it. As a result, knowledge displays many of the features of a public good, with the social return on innovation often higher than the private return for an enterprise developing it. This can lead to the situations where there is market failure, as potential innovators do not have sufficient motivation to innovate.

Governments are often implicated in these areas of market failure. There are two main policy tools that are used to stimulate innovative performance. On the one hand, governments provide direct funding to enterprises that fulfil certain criteria to stimulate innovation. This is most common in areas of basic research, where governments effectively take on the responsibility for providing innovation as a public good. The second option is for governments to introduce protection for intellectual property rights, in the form of patents, copyrights and trademarks that prevent innovations being copied. This approach is sometimes criticised as it blocks the diffusion of innovations for a number of years before they can be generically copied (for example, research into new drugs by pharmaceuticals enterprises). On the other hand, many writers argue that if such guarantees of exclusivity did not exist, then enterprises would not have enough significant incentives (in terms of compensation) to innovate in the first place.

DEFINING INNOVATION

INVENTION AND INNOVATION

Dictionary definitions of innovation are usually centred on the development and successive refinement of inventions into usable products (product innovation) or techniques (process innovation) that are deemed worthy of being launched on a market or used internally within an enterprise. As such, a first distinction can be made between invention and innovation.

R&D AND INNOVATION

A second distinction can be made between the concepts of innovation and research and development (R&D). R&D is concerned with the commitment of resources by an enterprise to research and the refinement of ideas aimed at the development of commercially viable products and processes. The innovation concept is broader than that of R&D. All R&D enterprises are by definition innovative, but all innovators are not automatically R&D performers.

The Frascati (the OECD's Manual on R&D) defines R&D and identifies the difficulties of separating R&D from other scientific and technological activities. It states that these difficulties are essentially caused by the performance of several activities at the same institution. 'In survey practice, the identification of the R&D portion is facilitated by using rules of thumb for making distinctions. Two such rules are:

- Institutions or units of institutions and firms whose principal activity is R&D often have secondary, non-R&D activities (e.g. scientific and technical information, testing, quality control, analysis). Insofar as a secondary activity is undertaken primarily in the interests of R&D, it should be included in R&D activities; if the secondary activity is designed essentially to meet needs other than R&D, it should be excluded from R&D.
- Institutions whose main purpose is an R&D-related scientific activity often undertake some research in connection with this activity. Such research should be isolated and included when measuring R&D' [(1)].

[(1)] Frascati Manual, OECD, page 21.

INNOVATION

Innovation has a broader definition, as intramural R&D [(2)] is not the only way for an enterprise to introduce new or changed products and processes. Technology and knowledge can be bought either through the acquisition of extramural R&D [(3)] (from other enterprises, research institutes or public bodies) or by acquiring knowledge in the form of licensed goods, patents or copyrights. An alternative means is to purchase machinery and equipment that specifically leads to the introduction or implementation of innovations. Enterprises also have recourse to training their staff (either in-house or externally) to equip their workforce with the necessary skills required for the development or introduction of innovative products and processes. Finally, an enterprise may commission market research or advertising in relation to the market introduction of a new product (be it a good or a service). All of these forms of behaviour may be considered as innovation activity.

Technological product and process innovations (TPP innovation) are defined within the Oslo Manual (page 30) as comprising 'technologically new products and processes and significant technological improvements in products and processes. A TPP innovation has been implemented if it has been introduced on the market (product innovation) or used within a production process (process innovation). TPP innovations involve a series of scientific, technological, organisational, financial and commercial activities. The TPP innovating firm is one that has implemented technologically new or significantly technologically improved products or processes during the period under review'.

[(2)] 'Intramural R&D expenditure: this item comprises all expenditure on R&D performed within the firm as defined in the Frascati Manual and as reported in R&D surveys. In most cases all this R&D is intended to contribute to the introduction of technologically new or improved products or processes in the firm concerned. However, where a firm carries out R&D purely as a service for another enterprise (or government agency), to contribute exclusively to innovation by the latter, an attempt should be made to identify the funds concerned so that they can be excluded in order to avoid double-counting when total (intramural and extramural) expenditure is summed over industries. R&D which is not directed towards specific new products and processes but is intended to expand the knowledge base of a firm is also covered here', Oslo Manual, OECD, page 65.

[(3)] 'Extramural R&D expenditure: this comprises the acquisition of R&D services', Oslo Manual, OECD, page 65.

INNOVATION POLICY WITHIN EUROPE

Historically, innovation policy grew out of science and technology policy, but it has subsequently absorbed aspects of enterprise policy too. Initially, technological progress was assumed to be achieved through a linear process starting with basic scientific research and progressing through more applied levels of research into areas such as marketing and the final launch of a new product or process. Science was seen as the driver of innovation and, as a result, governments concentrated on science policy. New ways of considering innovation have brought about a change in thinking as regards innovation-related policies.

EUROPEAN UNION INNOVATION POLICY

Community-wide policy interest in the subject of innovation took off in the mid-1990s. Since this date, a succession of measures to foster innovation at a European level have been introduced (only the most recent, main developments are noted here).

Mid-1990s policy was reinforced by the introduction of the fifth RTD (Research and Technological Development) framework programme, which was adopted in 1998. This included a horizontal programme for the promotion of innovation and encouraged, in particular, the participation of small and medium-sized enterprises (SMEs).

Innovation then became one of the cornerstones of the 'Lisbon strategy' launched by the European Council in March 2000. The Lisbon Council committed the European Union to the ambitious objective of becoming, by 2010, 'the most competitive and dynamic knowledge-based economy in the world'. The fulfilment of this ambition depends critically on the success of rapidly upgrading the innovative capacity of the EU. The Lisbon Council also introduced targets and objectives, based upon quantitative and qualitative indicators that benchmark the performance of each Member State against the best practice observed in the remainder of the EU.

A communication entitled, 'More research for Europe - Towards 3 % of GDP' [(4)], called for the EU to increase its R&D expenditure so that it accounted for 3 % of GDP before 2010. This suggestion was made in response to the large R&D investment gap between the EU and its major competitors (the United States and Japan). The gap with the United States was estimated at EUR 120 billion in 2000, in the main due to a lack of business investment in R&D within the EU. In order to rectify this situation, the communication proposed a number of areas for action. The first was to create more attractive framework conditions for innovation:

- sufficient and high quality human resources;
- a strong public research base with strong links to industry;
- entrepreneurship for, and through, R&D;
- effective adaptation and use of intellectual property rights systems;
- research- and innovative-friendly regulations;
- a competitive environment and supportive competition rules;
- supportive financial markets covering the various stages of development of high-tech and other innovative companies;
- macro-economic stability and favourable fiscal conditions.

The second step that was taken was to encourage a more effective use of public financing for business R&D, which was broken down into the following actions:

- direct support measures;
- fiscal incentives;
- guarantee mechanisms;
- public support for risk capital;
- improving the overall mix of instruments.

The final area identified was to encourage R&D and innovation as part of corporate strategies and management policies so that they were fully integrated into the business plans of enterprises across the whole of the EU.

[(4)] COM(2002) 449 final.

In its communication entitled, 'Innovation policy: updating the Union's approach in the context of the Lisbon strategy' [5], the European Commission stressed that much remained to be done to take the Lisbon strategy forward. The findings confirmed that innovation performance in the EU remained below levels recorded in the United States or Japan, and that a lack of innovation activity could be one of the key factors in explaining the EU's under performance in terms of productivity growth in recent years. The communication called upon the EU to recognise the full scope of the innovation phenomenon, while at the same time identifying a number of challenges that needed to be faced by innovation policy, namely:

- inadequate performance;
- enlargement of the EU in 2004, with the likely addition of 10 acceding countries;
- a skills shortage;
- special features of the EU's economic and social setting (including the relatively large size of the public sector and European diversity that means that different attitudes exist as regards innovation and entrepreneurship and the ways in which Europeans measure success).

As a result the communication called for innovation policy to be developed along the following lines:

- increased interaction with other policy areas (notably, competition, trade, employment, regional and environmental policies);
- stimulation of greater market dynamism and exploitation of the concept of 'lead-markets';
- the promotion of innovation in the public sector;
- the strengthening of a regional dimension to European innovation policy.

The first of these goals has, to some degree, already been met, insofar as the Enterprise Directorate-General is co-ordinating policy regarding innovation, industrial policy in an enlarged Europe [6] and entrepreneurship policy [7] through a framework intended to foster competitiveness and contribute to the growth of the EU economy.

[5] COM(2003) 112 final.
[6] See, 'Industrial Policy in an Enlarged Europe', COM(2002) 714 final.
[7] See Green Paper, 'Entrepreneurship in Europe', COM(2003) 27 final.

The Trend Chart on Innovation in Europe (http://trendchart.cordis.lu/) is a tool in the area of innovation policy that consists of three main strands. First, a benchmarking exercise that measures the innovation performance of each Member State and allows comparisons against an EU-average; this is called the European Innovation Scoreboard. Secondly, a database of innovation policy measures, which is freely available on the Cordis web-site (see above for the web address). This project identifies nearly 700 innovation support schemes around Europe, describing the target group of each scheme, its objectives and mechanisms, as well as giving an account of its successes and problems. The final element is a set of policy benchmarking workshops that bring together groups of policy-makers and practitioners from around Europe to review policy measures and methods.

The Innobarometer telephone survey http://www.cordis.lu/innovation-smes/src/innobarometer.htm provides a regular snapshot of European business leaders' perceptions and concerns in the field of innovation.

However, the largest data collection exercise is the CIS, which provides comparable data gathered across more than 60 000 enterprises in the EU. The data is collected on a four-yearly basis. The CIS1 survey was carried out in 1993, the CIS2 survey was carried out in 1997/1998 and the CIS3 survey was implemented in 2000/2001. The results of CIS3 form the main bulk of information that is presented within this publication. As with previous Community Innovation Surveys, CIS3 is based on the Oslo Manual (second edition from 1997) which gives methodological guidelines and defines the innovation concept. It should be mentioned that the CIS goes beyond the Technological product and process (TPP) innovation concept of the Oslo Manual and surveyed, for the first time, other kinds of innovation activity such as organisational innovation. The Oslo Manual is currently in the process of being revised. CIS3 is the basis of practically all of the information that is provided within this publication.

1. INNOVATION IN EUROPE: OVERVIEW OF THE THIRD COMMUNITY INNOVATION SURVEY (CIS3)

DATA NOTES:
For this chapter, the EU aggregate excludes Ireland, Luxembourg and the United Kingdom for all tables and figures (except in subchapter 1.5).
Figures are rounded separately and therefore may not sum up exactly.
The industrial sector is defined as NACE Sections C to E.
The services sector is defined as NACE Division 51, Sections I and J, Divisions 72 and 73, and Groups 74.2 and 74.3.
The total (otherwise referred to as the business economy) is defined as the sum of industry and services.

1. Innovation in Europe: overview of the third Community Innovation Survey (CIS3) - Results

INTRODUCTION

In a Communication from the Commission entitled, 'Innovation policy: updating the Union's approach in the context of the Lisbon strategy' [(1)], the innovation process is described as a reaction to competitive pressures, whereby enterprises attempt to maintain and expand their markets.

The Communication offers a number of ways of categorising enterprises with innovation activity. One of the most important distinctions is between inventors who subsequently innovate and imitators that diffuse innovations. The Communication identifies that the most important economic contribution does not necessarily come from 'early adopters' who are on the cutting-edge of technological developments, but rather from 'fast followers' who are capable of taking innovations and modifying them so they allow markets to be captured.

According to the second edition of the Oslo Manual, research shows that successful innovations are more commonly based on tried and tested technologies and focus on meeting customers' needs or saving money with respect to production processes. As a result, innovation is more often incremental, rather than being characterised by a significant, great step forward in the form of a major technological advance. Indeed, the innovations that most commonly fail are identified as those that are based on new and untested technologies, where there is no clearly defined use or market.

The speed and efficiency with which innovations are diffused throughout an economy is thought to be critical in increasing productivity and economic growth, as the final impact of an innovation can be many times greater than that brought about by its first application.

With this in mind, it is interesting to think about how it is possible to classify types of innovator. The Communication on innovation policy identifies four different types of innovator:

- innovators that take the lead, basing much of their work on basic research;
- innovators that focus on adapting ideas from other business sectors to use them in their own industry or service;
- innovators that use innovation as a means to search for and expand untapped markets (mainly through product differentiation);
- innovators that are reactive (imitators), copying and adapting innovations already brought to the market by their competitors. The CIS excluded the pure selling of innovations wholly produced and developed by other enterprises.

[(1)] COM(2003) 112 final.

Innovation: an innovation is a new or significantly improved product (good or service) introduced to the market or the introduction within an enterprise of a new or significantly improved process. Innovations are based on the results of new technological developments, new combinations of existing technology or the utilisation of other knowledge acquired by the enterprise. Innovations may be developed by the innovating enterprise or by another enterprise; however, purely selling innovations wholly produced and developed by other enterprises is not included as an innovation activity. Innovations should be new to the enterprise concerned; for product innovations they do not necessarily have to be new to the market and for process innovations the enterprise does not necessarily have to be the first to have introduced the process.

Product innovators: introduced new and significantly improved goods and/or services with respect to their fundamental characteristics, technical specifications, incorporated software or other immaterial components, intended uses, or user friendliness. Changes of a solely aesthetic nature and the pure sale of product innovations wholly produced and developed by other enterprises are not included.

Process innovators: implemented new and significantly improved production technologies or new and significantly improved methods of supplying services and delivering products. The outcome of such innovations should be significant with respect to the level of output, quality of products (goods or services) or costs of production and distribution. Purely organisational or managerial changes are not included.

Enterprises with innovation activity (propensity to innovate): enterprises that introduce new or significantly improved products (goods or services) to the market or enterprises that implement new or significantly improved processes. Innovations are based on the results of new technological developments, new combinations of existing technology or the utilisation of other knowledge acquired by the enterprise. The term covers all types of innovator, namely product innovators, process innovators, as well as enterprises with only on-going and/or abandoned innovation activities.

Successful innovators: introduced or implemented product innovations, process innovations, or both product and process innovations during the period 1998-2000. An innovation is successful if it has been introduced to the market (product innovation), or if it has been implemented (process innovation).

Enterprises with only on-going and/or abandoned innovation activity: had on-going or abandoned innovation activities to develop or introduce new or significantly improved products (goods or services) or implement new processes, including R&D activity.

Enterprises without innovation activity: had no innovation activity whatsoever during the survey period. These enterprises only answered a limited set of questions from the survey in relation to: the absence of innovation activity; factors hampering innovation; patents and other protection methods; and other important strategic and organisational changes within the enterprise.

1.1 SUMMARY RESULTS

According to the third Community Innovation Survey (CIS3), there were a total of just under 458 000 enterprises in the business economy [(2)] of the EU in 2000. Of these, almost 201 000 were enterprises that had some form of innovation activity during the period 1998-2000, equivalent to 44 % of the total (see table 1.1.1 overleaf).

A closer look at the different types of enterprises with innovation activity shows that within the EU, during the period 1998-2000, some 23 % of all enterprises were both product and process innovators, 10 % were product only innovators, 7 % process only innovators and 3 % were enterprises with only on-going and/or abandoned innovation activity (see figure 1.1.1 overleaf).

When comparing data across countries, it is important to reflect upon the potential differences between cultures as regards entrepreneurship, as well as the differences in the economic structure of the enterprise population. As such, differences in the propensity to innovate (the proportion of enterprises that had some form of innovation activity) may, to some degree, be explained by factors such as the relative importance of the industrial sector to that of services; or the relative importance of small, medium-sized or large enterprises.

(2) A term used for all activities covered by CIS3, namely industrial activities and the services sector composed of NACE Sections C-E (industry) and NACE Division 51, Sections I and J, Divisions 72 and 73, and Groups 74.2 and 74.3 (services).

Table 1.1.1

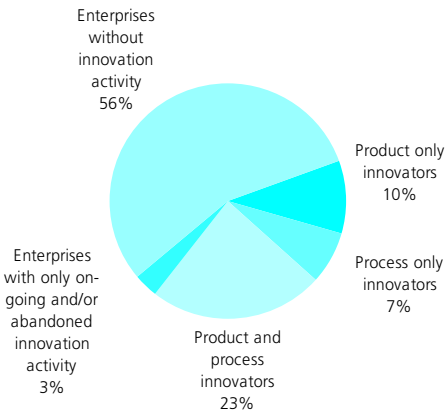
Typology of innovators, EU, 1998-2000

	Number of enterprises (thousands)	Proportion of total number of enterprises (%)
Total	458	100
Enterprises with innovation activity	201	44
Successful innovators	186	41
Product only innovators	47	10
Process only innovators	32	7
Product and process innovators	106	23
Enterprises with only on-going and/or abandoned innovation activity	15	3
Enterprises without innovation activity	256	56

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Figure 1.1.1

Typology of innovators, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

The propensity to innovate is a ratio that measures the number of enterprises with some form of innovation activity (including enterprises with only on-going or abandoned innovation activity) compared to the total enterprise population.

Successful innovators are (as noted before) defined as enterprises that completed at least one product or process innovation between 1998 and 2000. The vast majority (93 %) of enterprises with innovation activity in the EU successfully completed an innovation during the period considered.

Successful innovators are divided by the CIS3 survey into three different groups according to the different types of innovation they carried out: product only innovators, process only innovators, and both product and process innovators. More than half (57 %) of the successful innovators in the EU during the period 1998 to 2000 introduced both product and process innovations, while product only innovators accounted for 25 % of the total number of successful innovators, and process only innovators the remaining 17 %.

Tables 1.1.2 and 1.1.3 provide a breakdown of innovation activity according to major economic sector (in other words between industry and services). Looking at this comparison it is important to underline that all industrial activities (NACE Sections C to E) were surveyed as part of CIS3. For services, the picture was somewhat different, as motor trade, retail trade, hotels and restaurants and several business services were not covered by the survey; as such, the activity coverage is not complete. Secondly, the data collected by the CIS3 survey includes only enterprises with 10 or more employees. It is important to note that this is likely to be more significant among services, due to the predominance of SMEs in the services sector.

In general, a higher proportion (47 %) of industrial enterprises in the EU had some form of innovation activity, compared to the services sector (40 %).

In the industrial sector (see table 1.1.2), product and process innovators were generally the most common type of successful innovator. Making a calculation based on the data presented, it is possible to deduce that product and process innovators accounted for 58 % of successful innovators in the EU, followed by product only innovators (22 %) and process only innovators (19 %). The distribution of successful innovators within the EU's services sector (see table 1.1.3) was split 55 % for both product and process innovators, 32 % for product only innovators, and 14 % for process only innovators.

The box on page 17 provides a standard definition of product innovators. It is possible to break down this information further into those product innovators that introduced a product that was new to the market, during the period 1998 to 2000, and those that introduced a product that was new to the enterprise, but not the market, during the same period. This breakdown can be used to study the proportion of 'proactive innovators', or 'market leaders', who attempt to reinforce their position by creating unique product innovations that often use cutting-edge technologies. The converse group of product innovators can be described as 'reactive innovators', or 'diffusers' of innovation, as they spread technologies after they have been introduced to the market, with the result that products become standards within any given industry or service. The importance of this distinction becomes apparent when considering the different types of economic activity for which information has been collected by CIS3. For example, in activities where there is a high degree of technological change it is normal for product life cycles to be short, as new technologies replace old ones in a relatively short period of time (for example, mobile telephones). As a result, product innovators that wish to remain competitive in these activities are likely to introduce new products to the market in order to remain competitive.

Implicit within the definition of a product innovation is that the innovation is 'significantly different'. However, the impact on employment or turnover of a radically new product is likely to differ considerably from the impact of a new version of an existing product (however improved it may be). Indeed, between the introduction of a genuinely novel product at a worldwide level and the gradual, incremental change of an existing product at the level of the enterprise there is a wide range of new and improved products.

Table 1.1.2

Typology of innovators, industry, EU, 1998-2000

	Number of enterprises (thousands)	Proportion of total number of enterprises (%)
Total	279	100
Enterprises with innovation activity	130	47
Successful innovators	122	44
Product only innovators	27	10
Process only innovators	24	8
Product and process innovators	71	25
Enterprises with only on-going and/or abandoned innovation activity	8	3
Enterprises without innovation activity	149	53

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 1.1.3

Typology of innovators, services, EU, 1998-2000

	Number of enterprises (thousands)	Proportion of total number of enterprises (%)
Total	178	100
Enterprises with innovation activity	71	40
Successful innovators	64	36
Product only innovators	20	11
Process only innovators	9	5
Product and process innovators	35	20
Enterprises with only on-going and/or abandoned innovations	7	4
Enterprises without innovation activity	107	60

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 1.1.4

Proportion of product innovators that introduced a product that was new to the market, EU, 1998-2000 (%)

	Total	Industry	Services
All product innovators	54	56	50
Product only innovators	64	71	55
Product and process innovators	49	51	47

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 1.1.5

On-going innovation activity, EU, 1998-2000 (%)

	Proportion of all enterprises that had on-going innovation activity	Proportion of enterprises with innovation activity that had on-going innovation activity
Total	29	66
Industry	29	63
Services	28	71

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 1.1.6

Abandoned innovation activity, EU, 1998-2000 (%)

	Proportion of all enterprises that had abandoned innovation activity	Proportion of enterprises with innovation activity that had abandoned innovation activity
Total	6	14
Industry	7	15
Services	5	13

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 1.1.7

Enterprises without innovation activity, EU, 1998-2000

	Number of enterprises without innovation activity (thousands)	Proportion of enterprises without innovation activity (%)
Total	256	56
Industry	149	53
Services	107	60

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 1.1.4 shows information on the proportion of product innovators that introduced a new product to the market during the period 1998 to 2000. A higher proportion (56 %) of industrial product innovators in the EU introduced new products to the market than their counterparts in the services sector (50 %).

There are many examples of innovation and enterprise policy that have focused on trying to make a conscious attempt to 'pick winners'. However, information on unsuccessful innovators is also worthwhile, as the real costs of innovation may reside in unfinished or failed innovation activities. Managing to identify 'losers' early in the innovation process before development costs have escalated is likely to free-up resources that may be used elsewhere in other innovation activities. For a more detailed discussion of the hampering factors that prevent innovation activity, please refer to subchapter 1.4 that contains more specific information on the barriers to innovation.

Table 1.1.5 provides information on the proportion of enterprises that had on-going innovations at the end of 2000 (note that during the period 1998 to 2000 these enterprises could also have made successful innovations or alternatively abandoned innovation activity). Within the EU, over a quarter (29 %) of all enterprises had on-going innovations at the end of 2000, while among enterprises that had some form of innovation activity between 1998 and 2000, this share rose to two thirds (66 %).

Table 1.1.6 presents data for the proportion of enterprises with abandoned innovation activity during the period 1998 to 2000 (again it is important to note that during this period these enterprises could also have made successful innovations or alternatively they could have had on-going innovations at the end of 2000). On average within the EU, some 6 % of all enterprises reported abandoned innovation activity between 1998 and 2000, while 14 % of enterprises with innovation activity had abandoned innovation activity as well.

The proportion of enterprises with abandoned innovation activity was, however, generally higher among industrial enterprises than enterprises in the services sector: 7 % of all industrial enterprises in the EU compared to 5 % for those in the services sector.

There are two main reasons why enterprises might not innovate. Firstly, because they feel they do not need to, as they have during an earlier period. Secondly, because the enterprise faces a set of hampering factors that prevent innovation (see subchapter 1.4 for more details). The information presented in table 1.1.7 shows the proportion of enterprises without any innovation activity during the period 1998 to 2000. There were 256 000 enterprises without innovation activity, some 56 % of the total number of enterprises in the EU.

In CIS3, 'the innovation is based on the results of new technological developments, new combinations of existing technology, or utilisation of other knowledge acquired by your enterprise'. Beside the surveying of product and process innovation, CIS3 also collected information on other strategic and organisational change in the enterprise. Other strategic and organisational change is increasingly significant to the pace at which economic growth proceeds, especially in the services sector. Equally, it is increasingly difficult to separate these other strategic and organisational changes from innovation activity. Examples include marketing, strategic and management activities, organisational changes, and aesthetic changes in appearance and design.

These new forms of 'innovation' have led to the introduction of terminology such as 'organisational innovation', which reflects new ways of organising work, for example to take positive actions to involve all employees in decision-making, or restructuring an enterprise. 'Presentational innovation' has also been coined as a term to cover innovation in areas such as design and marketing. For the moment, these concepts are not included in the CIS definition of innovation, although they are covered by the final question of the CIS3 survey - a question that was directed to all enterprises, whether they had innovation activity or not.

Table 1.1.8 presents information for other strategic and organisational changes that took place in enterprises between 1998 and 2000. Enterprises with innovation activity were more likely to engage in other strategic and organisational change than enterprises without innovation activity (and this for each of the five categories for which data are available). As noted above, these types of change are often associated with the rapid growth of the services sector and this is apparent when looking at the breakdown of the data presented in table 1.1.8, where, for each category, the proportion of services enterprises introducing other important strategic and organisational change was higher than the corresponding figure for industrial enterprises (whether the enterprises were with or without innovation activity).

Table 1.1.8

Other important strategic and organisational changes, EU, 1998-2000 (%)

	Enterprises with innovation activity	Enterprises without innovation activity
Total		
Strategy	46	17
Management	39	14
Organisation	53	23
Marketing	38	15
Aesthetic change	42	17
Industry		
Strategy	40	14
Management	34	12
Organisation	49	21
Marketing	33	13
Aesthetic change	41	19
Services		
Strategy	58	21
Management	47	17
Organisation	62	27
Marketing	47	18
Aesthetic change	44	15

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

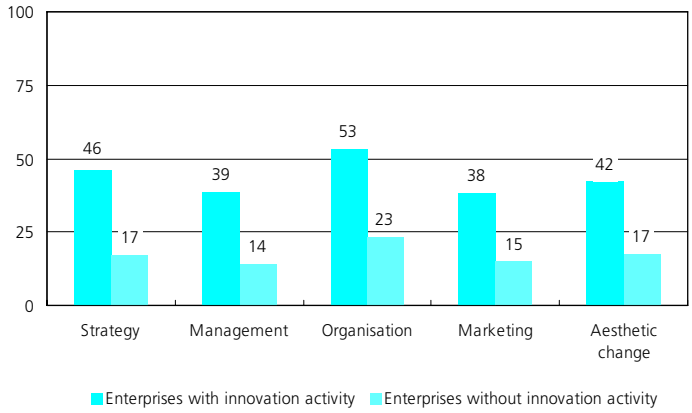
Figure 1.1.2 shows clearly that EU enterprises with innovation activity during the period 1998 to 2000 had a higher recourse to strategic and organisational changes than those enterprises without innovation activity. This observation held for each of the five sub-categories of strategic and organisational change that were identified by the CIS3 questionnaire. For each of these sub-categories, the proportion of enterprises with innovation activity that reported strategic or organisational change was more than 20 percentage points above the corresponding level for enterprises without innovation activity. As such, enterprises with innovation activity are usually twice as likely (than those without innovation activity) to make strategic or organisational changes. This supports the view that the complexity of the innovation process is such that the introduction of new products or the implementation of new processes is also likely to lead to strategic and organisational change and vice-versa.

The indicators presented so far are simple counts of enterprises with innovation activity. These take no account of the size (and subsequent economic impact) of the enterprises that are being considered - in other words, an SME with some form of innovation activity is treated in the same way as a multinational enterprise that could have a hundred times more innovations.

In order to provide a more balanced picture, the final part of this section looks at a different set of weights. Table 1.1.9 shows the contribution of enterprises with innovation activity to the total number of enterprises (in other words, the propensity to innovate), as well as their contribution to total turnover and employment in 2000. While enterprises with innovation activity accounted for 44 % of the total number of enterprises in the EU during the period 1998 to 2000, their share of total turnover and employment reached 75 % and 72 % respectively in 2000. These differences provide evidence that the economic weight of enterprises with innovation activity is considerably higher than their numbers would so far suggest.

Figure 1.1.2

Proportion of enterprises introducing other important strategic and organisational changes, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 1.1.9

Relative importance of enterprises with innovation activity, EU, 2000 (%)

	Share of enterprises with innovation activity
Number of enterprises	44
Turnover	75
Employment	72

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

1.2 SOURCES AND INPUTS OF INNOVATION

This subchapter looks at the ingredients of innovation, the inputs used by enterprises in their innovation efforts. It begins by studying where innovations are developed, whether they are exclusively developed within the enterprise, whether they come from co-operation agreements or whether they are developed externally by other enterprises or organisations. There follows a breakdown of the information sources that are the spark or support for innovation activity.

The final section looks at inputs for innovation that come from sources external to the enterprise. It begins with an analysis of the frequency and distribution of public funding of innovation, and then provides details of innovation co-operation partners, in terms of their importance, type of organisation, and geographical location.

As stated above, it is possible to consider innovation as three linear stages, from inputs and resources, through the innovation process, to the final output of innovation. However, most innovations result out of interaction between a number of players both within and external to the enterprise. In addition, it is rare that an innovation project runs smoothly along this linear path. Instead, innovation is likely to involve going backwards to earlier stages in development, re-assessing needs and re-appraising the goals for the development of an innovation.

SOURCES OF INNOVATION

It can be difficult to isolate the original source of information that sparked a particular innovation project. Nevertheless, it is clear that information is a key input in the innovation process, be it at the start of a project (in terms of knowledge creation) or at the end (in terms of knowledge dissemination).

It is often argued that enterprises prefer to develop their own internal pool of skills, knowledge and experience, which allows them to cultivate a position of technology and/or market leader. This is thought to be particularly important for products in rapidly changing markets, where life cycles are relatively short and differentiation is a key driver of competition.

The results from CIS3 indicate a difference between product and process innovators concerning the origin of innovations. Some 66 % of product innovators in the EU (see table 1.2.1) developed innovations internally (within the enterprise or the enterprise group), whereas process innovators (see table 1.2.2) tended to rely more on co-operation with other enterprises or institutions. Indeed, 25 % of product and process innovators reported that their process innovations were developed in co-operation with other enterprises or institutions, compared to 18 % of all product innovators. Note that some enterprises (those that are both product and process innovators) feature in both of these tables and that while table 1.2.1 also contains information for product only innovators, table 1.2.2 does not (as information for process only innovators is not available).

A distinction between industry and services shows that successful innovators within the industrial economy were more likely than their counterparts in the services sector to develop innovations internally. Indeed, more than two thirds (70 %) of industrial product innovators in the EU developed innovations internally, while the corresponding share among product innovators in the services sector was almost 60 %.

Table 1.2.1

Proportion of product innovators developing product innovations with selected partners, EU, 1998-2000 (%) (1)

	Total	Industry	Services
Developed within the enterprise or enterprise group	66	70	59
Developed in co-operation with other enterprises or institutions	18	17	22
Developed mainly by other enterprises or institutions	9	6	12

(1) Product only innovators and both product and process innovators; the three categories do not sum to 100% due to non-response.
Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 1.2.2

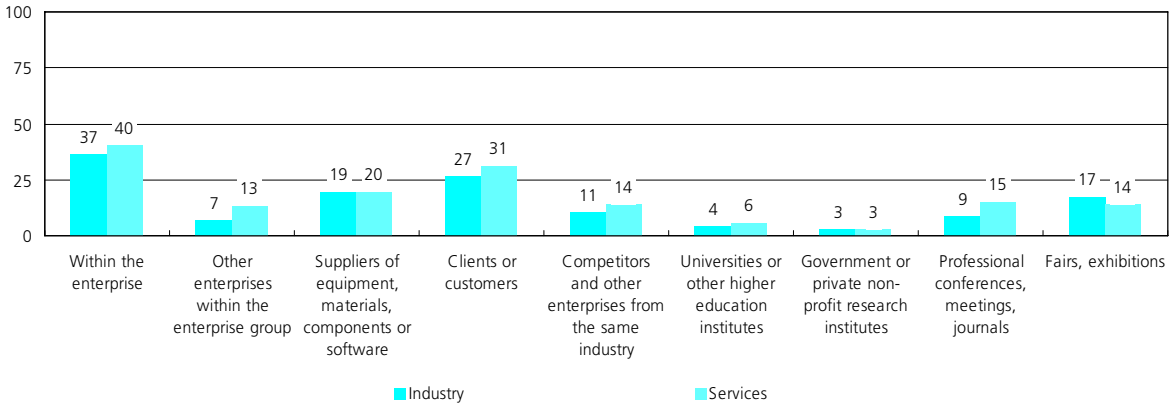
Proportion of process innovators developing process innovations with selected partners, EU, 1998-2000 (%) (1)

	Total	Industry	Services
Developed within the enterprise or enterprise group	57	58	56
Developed in co-operation with other enterprises or institutions	25	22	31
Developed mainly by other enterprises or institutions	9	9	9

(1) This includes enterprises that are both product and process innovators; the three categories do not sum to 100% due to non-response.
Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Figure 1.2.1

Proportion of enterprises with innovation activity indicating that selected sources of information were considered as highly important for innovation, EU, 1998-2000 (%) (1)



(1) Multiple answers allowed.
Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

An alternative way of classifying the origin of innovations is to group according to the source of the original idea or ideas that supported implementation of projects. Under this system, the sources of information for innovation can be classified as a result of a technological push from within the enterprise or a commercial push from suppliers and competitors or a commercial pull from customers. CIS3 extends this broad classification of sources through the addition of two supplementary categories, namely, institutional sources, such as universities, governments and research institutes, and other sources of information for innovation, including professional conferences, meetings, journals, trade fairs and exhibitions. Note that respondents were allowed to select more than one of these sources.

Table 1.2.3 shows that among enterprises with innovation activity, the most important source of information during the period 1998 to 2000 was from within the enterprise itself, cited as highly important by 38 % of respondents. The next most important source of information that was considered as being highly important was clients or customers (28 %), followed by suppliers of equipment, materials, components or software (20 %) and trade fairs and exhibitions (16 %).

The two categories that recorded the lowest ratings in terms of being highly important sources of information for suggesting or supporting innovation projects were government or private non-profit research institutes (cited by 3 % of respondents in the EU) and universities or other higher education institutes (5 %).

Figure 1.2.1 shows the same information broken down into industry and services. Generally a higher proportion of enterprises with innovation activity in the services sector thought that selected sources of information were highly important. Fairs and exhibitions were the only source of information where this was not the case.

Table 1.2.3

Proportion of enterprises with innovation activity indicating that selected sources of information were considered as highly important for innovation, EU, 1998-2000 (%)

Internal sources	
Within the enterprise	38
Other enterprises within the enterprise group	9
Market sources	
Suppliers of equipment, materials, components or software	20
Clients or customers	28
Competitors and other enterprises from the same industry	12
Institutional sources	
Universities or other higher education institutes	5
Government or private non-profit research institutes	3
Other sources	
Professional conferences, meetings, journals	11
Fairs, exhibitions	16

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

INNOVATION INPUTS FROM PUBLIC FUNDING AND CO-OPERATION

As well as being a source of information, external sources can be important in other ways, for example, through public funding or full-scale co-operation on innovation projects.

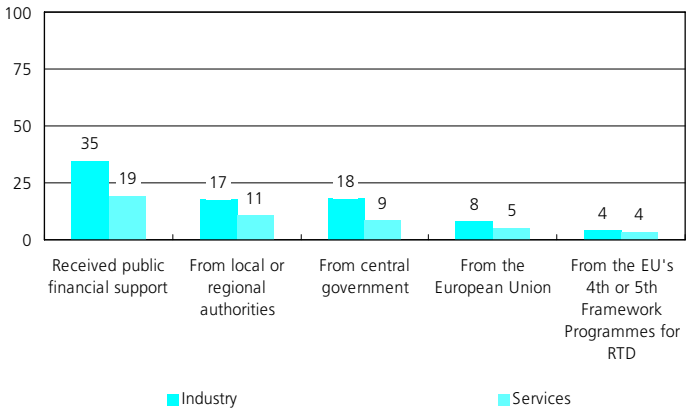
Public funding includes all financial support in terms of grants and loans for innovation activities. The data collected for CIS3 breaks down public funding according to the type of organisation providing the support during the period 1998 to 2000. As a first step, enterprises were asked whether they received any public financial support from local or regional authorities, central government (including institutions working on their behalf) or the European Union. A follow-up question was directed at those enterprises receiving funding from the EU's 4th or 5th Framework Programmes for RTD. The questionnaire asked respondents whether they received funding or not and no information was collected on the value of that financial support.

Figure 1.2.2 clearly shows a pattern as regards the proportion of enterprises that received some form of public funding during the period 1998 to 2000. For each type of organisation providing finance, the proportion of industrial enterprises with innovation activity that received support was always higher than the corresponding proportion of enterprises in the services sector. At an aggregated level, just over one third (35 %) of all industrial enterprises with innovation activity received some form of public funding, while the corresponding proportion for services was 19 %.

The most common sources of public financial support were central government and local or regional authorities. They provided support to around 18 % of industrial enterprises with innovation activity, and to around 10 % of enterprises from the services sector (please note that enterprises may have received support from more than one source). European Union funding of innovation activities reached approximately half the number of enterprises reached by local, regional or central governments, some 8 % of those enterprises with innovation activity in the industrial sector and 5 % within the services sector (see table 1.2.4).

Figure 1.2.2

Proportion of enterprises with innovation activity that received public financial support, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 1.2.4

Proportion of enterprises with innovation activity that received public financial support, EU, 1998-2000 (%)

	Total	Industry	Services
Received public financial support	29	35	19
From local or regional authorities	15	17	11
From central government	15	18	9
From the European Union	7	8	5
From the EU's 4th or 5th Framework Programmes for RTD	4	4	4

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 1.2.5

Proportion of enterprises with innovation activity that received public financial support, by type of enterprise, EU, 1998-2000 (%) (1)

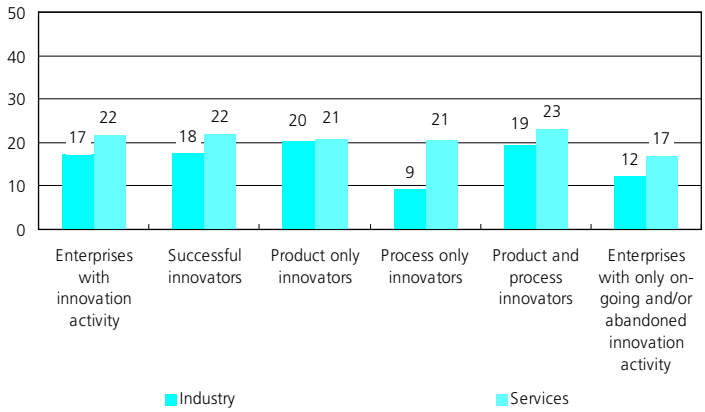
	Enterprises with innovation activity	Product only innovators	Product and process innovators
Received public financial support	29	30	27
From local or regional authorities	15	15	14
From central government	15	15	15
From the European Union	7	7	6
From the EU's 4th or 5th Framework Programmes for RTD	4	4	4

(1) No data available for successful innovators, process only innovators and enterprises with only on-going and/or abandoned innovation activity.
Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 1.2.5 provides a breakdown of public financial support according to the type of innovator. It shows that there were very few differences as regards the proportions of each type of innovator that received public funding, with 30 % of product innovators and 27 % of both product and process innovators receiving some financial support from a public body.

Figure 1.2.3

Proportion of enterprises with innovation activity involved in innovation co-operation, by type of enterprise, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

The definition of innovation co-operation adopted by CIS3 involves active participation in joint R&D and other innovation projects with other enterprises (or non-commercial organisations). The survey studies innovation co-operation as regards its importance and the type and location of innovation partners. Note that for the type and location of innovation partners, respondents were allowed to give multiple answers.

Figure 1.2.3 shows that there were similar levels of innovation co-operation within industry and services during the period 1998 to 2000, although generally higher in services: 17 % of EU enterprises with innovation activity in the industrial sector and 22 % of those in the services sector reported some form of co-operation. As with a number of other indicators used earlier in this chapter, the highest propensity to co-operate was recorded among enterprises with both product and process innovations (19 % for industry and 23 % for services).

Looking more closely at the levels of co-operation across different types of innovator, the only type of innovator where there was a major difference between levels of co-operation in industry and services was process only innovators. Within the services sector, some 21 % of process only innovators in the EU reported innovation co-operation between 1998 and 2000, while in industry this figure fell to 9 %. This was the lowest rate of innovation co-operation within the industrial sector across all types of innovator (including enterprises with only on-going and/or abandoned innovation activity). In the services sector, the lowest rate of innovation co-operation was registered by enterprises with only on-going and/or abandoned innovation activity (17 %).

Table 1.2.6 shows the proportion of enterprises that had some form of innovation co-operation during the period 1998 to 2000. It confirms that both product and process innovators were the most likely type of innovator to be involved in co-operation (21 %), followed by product only innovators (20 %). The proportion of process only innovators that were involved in some form of innovation co-operation (12 %) was lower than the proportion of enterprises with only on-going and/or abandoned innovation activity that reported innovation co-operation (14 %).

A breakdown of innovation co-operation by partner shows that there were few differences between industrial and services enterprises as regards the types of co-operation partners that they chose. Indeed, the data presented in figure 1.2.4 shows that at most there was a four percentage points difference between the proportion of industrial and services enterprises co-operating with each type of partner within the EU (10 % of enterprises from the services sector had innovation co-operation compared to 6 % of industrial enterprises).

The most common partners for innovation co-operation were suppliers of equipment, materials, components or software, and clients or customers (12 % of enterprises reported co-operation with these types of partners). The next most common types of partner were other enterprises within the enterprise's group and universities or other higher education institutes (cited by 9 % of enterprises). Somewhat surprisingly perhaps, the least common type of partner for innovation co-operation was commercial laboratories/R&D enterprises, used by just 5 % of industrial enterprises with innovation activity and by 4 % of those in services (see table 1.2.7).

As with other analysis of innovation co-operation, there was little or no difference in the importance of various co-operation partners by country of origin between industrial and services enterprises.

Table 1.2.6

Proportion of enterprises with innovation activity involved in innovation co-operation, by type of enterprise, EU, 1998-2000 (%)

	Total	Industry	Services
Enterprises with innovation activity	19	17	22
Successful innovators	19	18	22
Product only innovators	20	20	21
Process only innovators	12	9	21
Product and process innovators	21	19	23
Enterprises with only on-going and/ or abandoned innovation activity	14	12	17

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 1.2.7

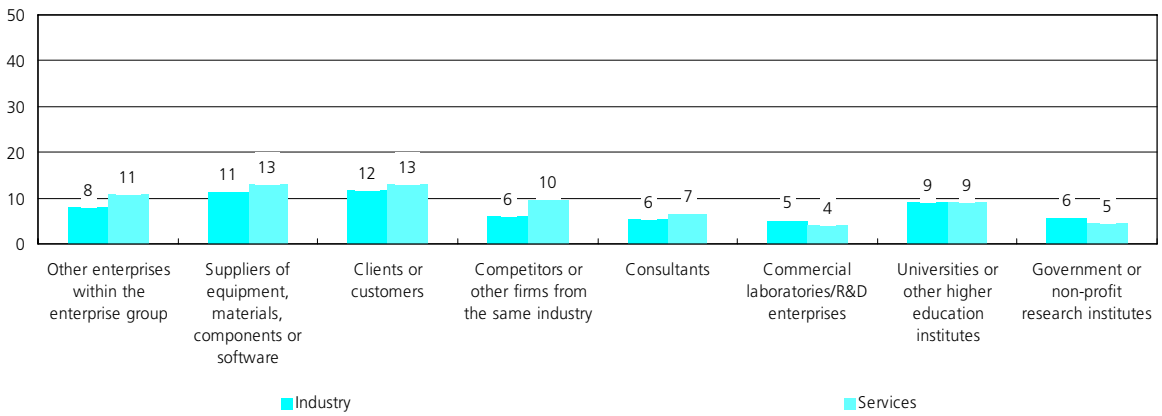
Proportion of enterprises with innovation activity involved in innovation co-operation, by type of partner, EU, 1998-2000 (%)

	Total	Industry	Services
Other enterprises within the enterprise group	9	8	11
Suppliers of equipment, materials, components or software	12	11	13
Clients or customers	12	12	13
Competitors or other firms from the same industry	7	6	10
Consultants	6	6	7
Commercial laboratories/ R&D enterprises	4	5	4
Universities or other higher education institutes	9	9	9
Government or non-profit research institutes	5	6	5

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Figure 1.2.4

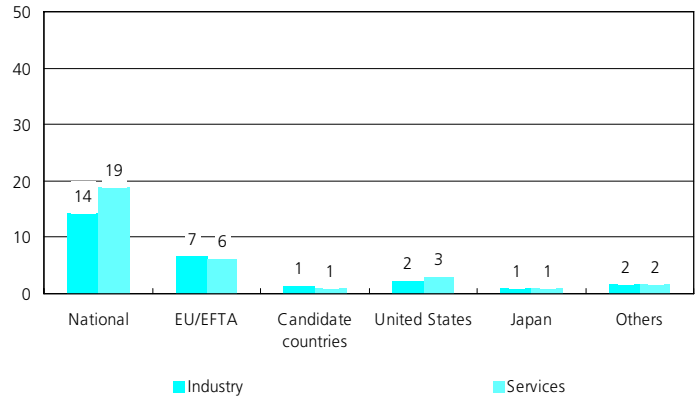
Proportion of enterprises with innovation activity involved in innovation co-operation, by type of partner, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Figure 1.2.5

Proportion of enterprises with innovation activity involved in innovation co-operation, by location of partner, EU, 1998-2000 (%)



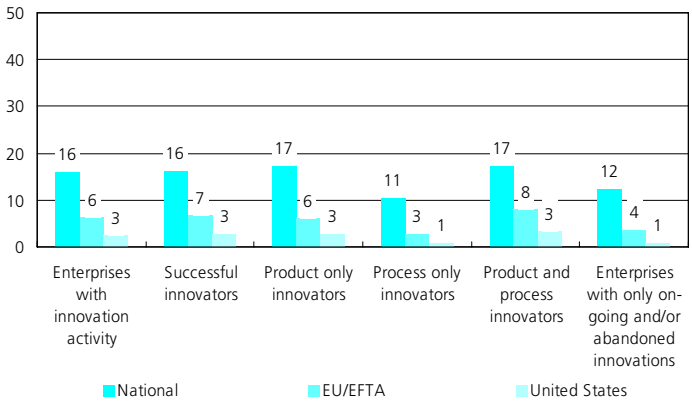
Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

The ranking of the most common locations for co-operation partners followed, to some degree, the physical distance between enterprises and their possible partners. As such, it was not surprising to find that within the EU the most common partner for innovation co-operation during the period 1998 to 2000 was a partner located in the same country. Some 16 % of enterprises with innovation activity reported that they had co-operation with a national partner (see table 1.2.8). The next most important group was innovation partners located within other EU or EFTA countries (6 %), followed by the United States (3 %). A very low proportion of enterprises with innovation activity in the EU were involved in innovation co-operation with partners from the candidate countries (1 %) or Japan (1 %). There was little or no difference between the proportion of industrial and services enterprises citing a particular location for innovation partners, other than the higher propensity to engage in co-operation with national partners in the services sector (19 % compared to 14 % in industry) - see figure 1.2.5.

Analysing the figures regarding innovation co-operation by the location of the innovation partner and by the type of innovator reveals that enterprises that were both product and process innovators had the highest rate of co-operation with partners from each of the geographical areas considered in figure 1.2.6. The lowest rates of co-operation (no matter which geographical area was considered) were recorded by process only innovators and by enterprises with only on-going and/or abandoned innovation activity (see table 1.2.9).

Figure 1.2.6

Proportion of enterprises with innovation activity involved in innovation co-operation, by location of partner and by type of enterprise, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 1.2.8

Proportion of enterprises with innovation activity involved in innovation co-operation, by location of partner, EU, 1998-2000 (%)

	Total	Industry	Services
National	16	14	19
EU/EFTA	6	7	6
Candidate countries	1	1	1
United States	3	2	3
Japan	1	1	1
Others	2	2	2

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 1.2.9

Proportion of enterprises with innovation activity involved in innovation co-operation, by type of enterprise, EU, 1998-2000 (%)

	Enterprises with innovation activity	Successful innovators	Product only innovators	Process only innovators	Product and process innovators	Enterprises with only on-going and/or abandoned innovations
National	16	16	17	11	17	12
EU/EFTA	6	7	6	3	8	4
Candidate countries	1	1	1	0	1	0
United States	3	3	3	1	3	1
Japan	1	1	1	0	1	0
Others	2	2	1	0	2	2

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

1.3 EFFECTS AND IMPACT: INNOVATION OUTPUT

Having studied innovation inputs in subchapter 1.2 this subchapter focuses on innovation output, or more accurately the effects and impact of innovation activities.

The information in this subchapter is presented in three main sections:

- the importance of innovation output in terms of turnover;
- the effects of innovation on the way an enterprise conducts its business;
- the protection of innovation output (in the form of patents and similar protection methods).

INNOVATION OUTPUT: TURNOVER MEASURES

Turnover in itself is not a measure of the success of an enterprise - high levels of turnover do not necessarily imply high profits - but it is a measure of output. This section looks at the relationship between turnover growth during the period 1998 to 2000 with respect to the innovation activity of enterprises. Chapter 4 includes a focus on product innovators and contains a related analysis on the composition of turnover among these innovators.

Table 1.3.1 shows annual average growth rates of turnover during the period 1998 to 2000, according to the innovation activity of enterprises. Across the EU, the turnover generated by enterprises with innovation activity grew, on average, by 9 % per annum, compared to 3 % per annum for enterprises without innovation activity.

Turnover growth was higher among industrial (as compared to services) enterprises (see table 1.3.2). In the EU between 1998 and 2000, turnover grew, on average, by 8 % per annum within industrial enterprises, compared to 6 % per annum for services. Industrial enterprises with innovation activity reported a growth rate of 9 % per annum, while those without innovation activity saw their turnover rise by 5 % per annum.

Table 1.3.1

Annual average growth rates of turnover, by type of enterprise, EU, 1998-2000 (%)

All enterprises	7
Enterprises with innovation activity	9
Successful innovators	:
Product only innovators	8
Process only innovators	:
Product and process innovators	9
Enterprises with only on-going and/or abandoned innovation activity	:
Enterprises without innovation activity	3

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 1.3.2

Annual average growth rates of turnover, by type of enterprise and by sector, EU, 1998-2000 (%)

	Total	Industry	Services
All enterprises	7	8	6
Enterprises with innovation activity	9	9	9
Enterprises without innovation activity	3	5	1

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Within the services sector, turnover growth among enterprises with innovation activity was, on average, also 9 % per annum, while the rate of change was much lower for those without innovation activity (1 % per annum).

INNOVATION OUTPUT: EFFECTS ON THE ENTERPRISE

The second section of this subchapter turns from a quantitative analysis of the importance of innovations to the effects of innovation as perceived by enterprises. This qualitative set of indicators is available for both product innovators and process innovators. As noted earlier, one of the main results of process innovations is that they are likely to change the production function of an enterprise, in other words, they are likely to change the use of factors of production (manpower, material consumption, energy, fixed capital).

CIS3 asked respondents to classify the effects of innovation into a number of different categories. Note that the question was based on a qualitative assessment of the effects, whereby each effect had to be rated in terms of the degree of impact (high, medium, low or not relevant). The different effects were arranged under three sub-headings, namely:

- product oriented effects (improved quality, increased range of goods and services, increased market share);
- process related effects (improved production flexibility, reduced labour costs, reduced materials consumption, increased production capacity);
- other effects (met regulations and standards, improved environmental or health and safety aspects).

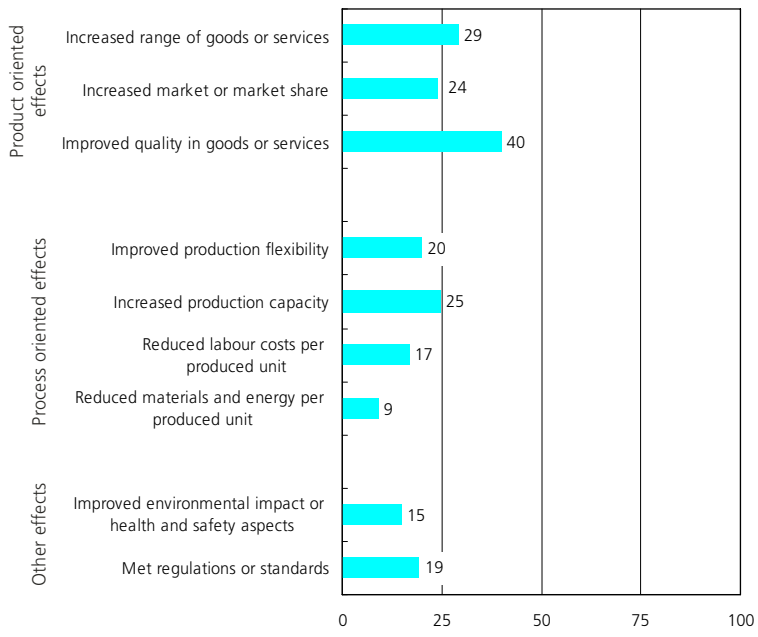
Respondents were asked to indicate the degree of importance they attached to each of these alternatives, in terms of their impact on the enterprise at the end of 2000, as a result of innovation activity that took place during the period 1998 to 2000. Multiple answers were allowed, in other words, several different effects could be identified, with varying degrees of impact.

Figure 1.3.1 shows the proportion of enterprises with innovation activity in the EU that considered their innovation activity had a high impact on various effects. The most significant impact appeared to be improving the quality of goods or services, which was cited by 40 % of enterprises with innovation activity. The next most important effect was to increase the range of goods or services (29 %), followed by increasing production capacity (25 %) and increasing market or market share (24 %). Two of the remaining process oriented effects (improving production flexibility and reducing labour costs) and the two 'other' effects (improving environmental impact or health and safety aspects, and meeting regulations or standards) were cited by between 15 % and 20 % of enterprises with innovation activity. The lowest level of impact (rated as highly important) was recorded with respect to reducing materials and energy per produced unit, which was cited by 9 % of respondents in the EU.

Table 1.3.3 presents the same indicator, but broken down by economic activity between the industrial and services sector. The proportion of enterprises with innovation activity that considered that their innovation activity had a high impact on specified effects was generally higher among industrial enterprises. This was particularly true for increasing production capacity, which was cited by 29 % of industrial enterprises with innovation activity in the EU compared to just 16 % of those in the services sector. The proportion of respondents citing each effect was slightly higher within the services sector for two product oriented effects, increasing the range of goods or services (2 percentage points above the industrial average) and increasing the market or market share (1 point higher).

Figure 1.3.1

Proportion of enterprises with innovation activity that considered that their innovation activity had a high impact on specified effects, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 1.3.3

Proportion of enterprises with innovation activity that considered that their innovation activity had a high impact on specified effects, by sector, EU, 1998-2000 (%)

	Industry	Services
Product oriented effects		
Increased range of goods or services	29	30
Increased market or market share	24	25
Improved quality in goods or services	41	38
Process oriented effects		
Improved production flexibility	23	15
Increased production capacity	29	16
Reduced labour costs per produced unit	20	11
Reduced materials and energy per produced unit	11	6
Other effects		
Improved environmental impact or health and safety aspects	18	9
Met regulations or standards	21	16

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

INNOVATION OUTPUT: PROTECTION METHODS

The third section of this subchapter covers patents and other protection methods, which can also be viewed as the final stage of innovation. CIS3 collects information on patents together with other formal methods of protection, such as registrations of design patterns, trademarks and copyrights, and strategic methods of protection, such as secrecy, complexity of design and lead-time advantages on competitors. This information is presented for all types of enterprise, as enterprises without innovation activity could have applied for patents for innovations that were made during the period prior to 1998, or alternatively, they could still have valid patents from earlier innovations. It is also important to note that data presented on patents could be biased towards industrial products and/or processes given the nature of the patenting process.

Patents are a measure of invention, as opposed to innovation. The analysis of patents could ideally be carried out by looking at their impact in relation to the proportion of turnover that is protected by patents. Because of response burden this question was optional in CIS3 and, as such, a full set of results is not available. The questionnaire did however ask whether the enterprise had applied for any patents during the period 1998 to 2000, as well as whether the enterprise was still benefiting from patents at the end of 2000.

Table 1.3.4 shows that around 10 % of all enterprises applied for a patent during the period 1998 to 2000. Patent applications were higher among enterprises from the industrial sector (10 %) compared to those from the services sector (6 %).

Table 1.3.5 clearly shows that a higher proportion of enterprises with (as opposed to those without) innovation activity applied for at least one patent to protect inventions or innovations. Within the EU, 17 % of enterprises with innovation activity applied for at least one patent during the period 1998 to 2000, compared to just 2 % of enterprises without innovation activity. This latter group is likely to be composed of enterprises that carried out inventions or innovations up to 1997 and applied for a patent a year later. As may be expected, a higher proportion of product only innovators applied for patents.

Table 1.3.6 shows that a considerably higher proportion of enterprises with innovation activity during the period 1998 to 2000 had patents at the end of 2000 (irrespective of when the patent was granted). As with the previous analysis, higher values for this indicator were recorded by product only innovators. Some 21 % of enterprises with innovation activity had at least one valid patent at the end of 2000 compared to just 4 % of enterprises without innovation activity.

Table 1.3.4

Protection of innovations, EU (%)

	Proportion of enterprises that applied for at least one patent to protect inventions or innovations during the period 1998-2000	Proportion of enterprises that had at least one valid patent at the end of 2000
Total	9	11
Industry	10	14
Services	6	8

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 1.3.5

Proportion of enterprises that applied for at least one patent to protect inventions or innovations, EU, 1998-2000 (%)

All enterprises	9
Enterprises with innovation activity	17
Successful innovators	:
Product only innovators	23
Process only innovators	:
Product and process innovators	18
Enterprises with only on-going and/or abandoned innovation activity	:
Enterprises without innovation activity	2

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 1.3.6

Proportion of enterprises that had at least one valid patent, EU, end of 2000 (%)

All enterprises	11
Enterprises with innovation activity	21
Successful innovators	:
Product only	28
Process only	:
Product and process	21
Enterprises with only on-going and/or abandoned innovation activity	:
Enterprises without innovation activity	4

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

As well as data on patents, CIS3 also asked respondents if they used any other methods to protect inventions or innovations developed by the enterprise during the period 1998 to 2000 (see table 1.3.7), whether these were formal (registration of design patterns, trademarks, copyrights) or strategic (secrecy, complexity of design, lead-time advantages).

Table 1.3.7

Proportion of enterprises with innovation activity making use of methods (other than patents) to protect inventions or innovations, by sector, EU, 1998-2000 (%)

	Industry	Services
Formal methods		
Registration of design patterns	15	12
Trademarks	20	21
Copyright	4	11
Strategic methods		
Secrecy	27	28
Complexity of design	17	21
Lead-time advantage on competitors	34	39

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 1.3.8

Proportion of enterprises making use of methods (other than patents) to protect inventions or innovations, EU, 1998-2000 (%)

	Enterprises with innovation activity	Enterprises without innovation activity
Formal methods		
Registration of design patterns	14	2
Trademarks	21	6
Copyright	6	1
Strategic methods		
Secrecy	27	5
Complexity of design	19	3
Lead-time advantage on competitors	36	6

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 1.3.9

Proportion of succesful innovators making use of methods (other than patents) to protect inventions or innovations, by type of enterprise, EU, 1998-2000 (%) (1)

	Product only innovators	Product and process innovators
Formal methods		
Registration of design patterns	18	15
Trademarks	28	21
Copyright	9	6
Strategic methods		
Secrecy	33	28
Complexity of design	23	19
Lead-time advantage on competitors	46	35

(1) No data available for process only innovators.
Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Across the EU, trademarks were the most frequently used alternative to patents as a formal protection method, used by 21 % of enterprises with innovation activity (see table 1.3.8). The next most used alternative formal protection method in the EU was the registration of design patterns (14 % of enterprises with innovation activity), followed by copyrights (6 %).

Within the EU, the most often cited strategic protection method was gaining a lead-time advantage on competitors (some 36 % of enterprises with innovation activity), followed by secrecy (27 %) and complexity of design (19 %).

Table 1.3.7 presents information on the proportion of enterprises with innovation activity in the EU that made use of protection methods (other than patents) during the period 1998 to 2000. A comparison between industry and services shows that a higher proportion of EU enterprises in industry favoured the registration of design patterns as a protection method, while in the services sector, a higher proportion of enterprises favoured the use of copyrights, lead time advantages on competitors and the complexity of design. There was almost no difference in the use of trademarks or secrecy between industrial and services enterprises.

The proportion of enterprises making use of protection methods (other than patents) was consistently higher among enterprises with innovation activity, compared to those without (see table 1.3.8). Nevertheless, at an EU level, some 6 % of enterprises without innovation activity reported that they still made use of trademarks and lead-time advantage on competitors to protect inventions or innovations, despite the fact that they had no new innovation activity during the period considered (1998 to 2000).

Table 1.3.9 provides further information on the proportion of enterprises with innovation activity making use of methods (other than patents) to protect inventions or innovations, according to the type of enterprise. A somewhat higher proportion of product only innovators (compared to product and process innovators) made use of formal and strategic methods to protect inventions or innovations.

1.4 BARRIERS TO INNOVATION

While innovation activity is not the only factor influencing competitiveness, it is generally accepted that it can lead to an increase in competitiveness. It is therefore of interest, especially to policy makers, to look at the problems faced by enterprises when trying to carry out innovation, and the factors that prevent enterprises from innovating. The importance and relevance of problems faced by enterprises in their efforts to innovate and the different factors that hamper innovation may differ across enterprise size-classes (see subchapter 2.3 for more details) and across activities (see subchapter 3.4 for more details).

An important dimension to policy development is the extent to which obstacles constrain the ability of enterprises to innovate successfully. This first section concentrates on the problems perceived by enterprises that reported some form of innovation activity during the period 1998 to 2000. The effects of obstacles to innovation were measured by CIS3 in terms of the following classification:

- projects seriously delayed;
- projects prevented from being started;
- projects that were burdened/encumbered with other serious problems.

Table 1.4.1 shows that among enterprises with innovation activity the first of these three categories was the most frequently cited as having been experienced. Some 37 % of enterprises with innovation activity in the EU reported that innovation projects had been seriously delayed, while 22 % had experienced innovation projects that were burdened/encumbered with other serious problems and 22 % reported projects where obstacles had prevented them from starting to innovate.

Table 1.4.1

Proportion of enterprises with innovation activity where innovation activity was hampered, by sector, EU, 1998-2000 (%)

	Total	Industry	Services
Seriously delayed	37	31	46
Prevented to be started	22	21	24
Burdened/encumbered with other serious problems	22	22	22

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Delays in projects were more often felt in the services sector, by 46 % of enterprises with innovation activity in the EU, compared to 31 % for industry. Some 24 % of services enterprises with innovation activity had innovation projects that were prevented from being started, compared to 21 % of industrial enterprises. A similar proportion of industrial and services enterprises reported that innovation projects had been burdened or encumbered with other serious problems (22 %).

Table 1.4.2 provides a similar set of information on the proportion of enterprises with innovation activity whose innovation activity was hampered, broken down by type of enterprise. For each of these three effects, a higher proportion of product only innovators faced the effects of obstacles to innovation, while a lower proportion of both product and process innovators were affected.

Table 1.4.2

Proportion of successful innovators where innovation activity was hampered, by type of enterprise, EU, 1998-2000 (%) (1)

	Product only innovators	Product and process innovators
Seriously delayed	45	32
Prevented to be started	27	18
Burdened/encumbered with other serious problems	24	20

(1) No data available for process only innovators.
Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 1.4.3

Proportion of enterprises where innovation activity was highly hampered, EU, 1998-2000 (%) (1)

	Enterprises with innovation activity	Enterprises without innovation activity
Economic factors		
Excessive perceived economic risks	17	14
Innovation costs too high	24	19
Lack of appropriate sources of finance	19	13
Internal factors		
Organisational rigidities within the enterprise	6	5
Lack of qualified personnel	16	11
Lack of information on technology	4	5
Lack of information on markets	5	4
Other factors		
Insufficient flexibility of regulations or standards	11	8
Lack of customer responsiveness to new goods or services	6	8

(1) Multiple answers allowed.
Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 1.4.4

Proportion of enterprises with innovation activity where innovation activity was highly hampered, by sector, EU, 1998-2000 (%) (1)

	Industry	Services
Economic factors		
Excessive perceived economic risks	16	19
Innovation costs too high	23	26
Lack of appropriate sources of finance	17	22
Internal factors		
Organisational rigidities within the enterprise	5	7
Lack of qualified personnel	15	19
Lack of information on technology	5	4
Lack of information on markets	5	5
Other factors		
Insufficient flexibility of regulations or standards	9	15
Lack of customer responsiveness to new goods or services	5	8

(1) Multiple answers allowed.
Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

HAMPERING FACTORS

This section focuses on a different sub-population of enterprises, as hampering factors are perhaps most interesting when looked at in relation to enterprises with only on-going and/or abandoned innovation activity and in relation to enterprises without innovation activity.

Hampering factors are divided into three main groups within CIS3. The first covers economic factors and is sub-divided into excessive economic risk, high innovation costs and a lack of financial resources. The second covers internal factors, such as organisational rigidity, a lack of qualified personnel, a lack of information on technology or markets. The final category covers other factors such as insufficient flexibility of regulations or standards or a lack of customer responsiveness to new goods or services.

Among the economic factors that are listed as part of CIS3 (see table 1.4.3), innovation costs appear to be the most often cited reason why innovation activity is hampered, followed by a lack of appropriate sources of finance and excessive perceived economic risks. Within the EU, almost one quarter (24 %) of enterprises with innovation activity cited the cost of innovation as a hampering factor, while 19 % cited a lack of appropriate sources of finance and 17 % excessive perceived economic risks.

In keeping with the ranking of the different factors for enterprises with innovation activity, those without innovation activity also tended to cite innovation costs as the principal economic factor hampering innovation (19 %) - see table 1.4.3. However, among enterprises without innovation activity, the importance of excessive perceived economic risks (14 %) and a lack of appropriate sources of finance (13 %) were reversed when compared to the results for enterprises with innovation activity. It should be noted that for all three economic factors, a higher proportion of enterprises with innovation activity cited these factors, as compared to enterprises without innovation activity.

As with economic factors, the proportion of enterprises without innovation activity that cited internal factors was generally lower than the corresponding share of enterprises with innovation activity (see again table 1.4.3). This pattern did not hold for one of the internal factors, namely the lack of information on technology, nor for one of the other factors, where a lack of customer responsiveness to new goods or services was cited by a higher proportion of enterprises without innovation activity.

A comparison of the proportion of enterprises citing each of the factors shows that more enterprises generally felt constrained by economic circumstances than by internal factors, although a lack of qualified personnel was often viewed as one of the most important factors constraining innovation.

Table 1.4.4 shows that the proportion of enterprises that cited the various hampering factors was generally higher among enterprises in the services sector. Within the EU, the largest difference in the proportion of enterprises with innovation activity citing each of these factors was 6 percentage points (between services and industry), as regards insufficient flexibility of regulations or standards. While the differences between services and industry were generally small, only one of the nine factors (concerning a lack of information on technology) hampered a greater proportion of enterprises in industry.

Tables 1.4.5 and 1.4.6 show similar information as table 1.4.4, but for enterprises with only on-going and/or abandoned innovation activity and for enterprises without innovation activity. No matter which breakdown is studied, the most common hampering factors tended to be economic: high innovation costs, a shortage of financial resources and excessive economic risks.

Among enterprises without innovation activity, the proportion of enterprises where innovation activity was hampered was generally higher for industrial enterprises than for those from the services sector. This was particularly true for economic factors, with the largest difference registered for high innovation costs, which were cited as a hampering factor by 20 % of all industrial enterprises without innovation activity compared to 16 % in the services sector.

Table 1.4.5

Proportion of enterprises with only on-going and/or abandoned innovation activity where innovation activity was highly hampered, industry, EU, 1998-2000 (%) (1)

	Industry
Economic factors	
Excessive perceived economic risks	18
Innovation costs too high	24
Lack of appropriate sources of finance	21
Internal factors	
Organisational rigidities within the enterprise	11
Lack of qualified personnel	18
Lack of information on technology	8
Lack of information on markets	6
Other factors	
Insufficient flexibility of regulations or standards	15
Lack of customer responsiveness to new goods or services	5

(1) Multiple answers allowed.
Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 1.4.6

Proportion of enterprises without innovation activity where innovation activity was highly hampered, by sector, EU, 1998-2000 (%) (1)

	Industry	Services
Economic factors		
Excessive perceived economic risks	15	12
Innovation costs too high	20	16
Lack of appropriate sources of finance	13	12
Internal factors		
Organisational rigidities within the enterprise	5	5
Lack of qualified personnel	12	9
Lack of information on technology	5	4
Lack of information on markets	5	4
Other factors		
Insufficient flexibility of regulations or standards	7	9
Lack of customer responsiveness to new goods or services	8	8

(1) Multiple answers allowed.
Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

1.5 COMPARISON OF THE SECOND AND THIRD COMMUNITY INNOVATION SURVEYS

COMPARISON OF CIS2 AND CIS3

The comparability of data between CIS2 and CIS3 is limited due to a number of changes with respect to the target populations of the two surveys, as well as methodological differences for survey techniques and the definition of indicators.

In CIS3 the definition of innovation was changed from 'technological innovation' to 'innovation', while, the term 'technological' remained part of the explanatory text defining innovation within the questionnaire. It is likely that the effect of this change was to enlarge the population of enterprises with innovation activity. The change is considered particularly important with respect to the definition of enterprises with innovation activity within the services sector.

Contrary to CIS2, the same questionnaire was used for enterprises in industry and the services sector when CIS3 was carried out. The use of a common questionnaire contributed to improved comparability of data between economic activities.

The size of the core questionnaire for CIS3 was substantially larger than the questionnaire used for CIS2. The CIS3 questionnaire included roughly 50 % more questions for enterprises with innovation activity, while the number of questions addressed to enterprises without innovation activity was three times as many.

There was an expansion in the list of economic activities covered by CIS3 compared to CIS2. As a result, the following additional activities were incorporated within CIS3: mining and quarrying (NACE Section C), storage and communication (NACE Divisions 63 and 64), research and development (NACE Division 73) and technical testing and analysis (NACE Group 74.3).

In CIS3 all enterprises with 10 or more employees were included within the survey for both industry and the services sector. In CIS2 the cut-off was enterprises with 20 or more employees for manufacturing activities and enterprises with 10 or more employees in the services sector. As a result, size-class information can be compared between CIS2 and CIS3 only for medium-sized and large enterprises in selected manufacturing activities, while for the services' activities common to both surveys comparisons can be made for enterprises in all size-classes.

In the tables and graphs shown in this chapter, results are given for the two surveys for medium-sized and large enterprises for manufacturing. For CIS2 the reference period is 1994 to 1996 and for CIS3 the reference period is 1998 to 2000, unless otherwise mentioned.

For this subchapter, the EU aggregate excludes Greece, Ireland and the United Kingdom.

PROPENSITY TO INNOVATE IN MANUFACTURING

In order to establish a basis for comparison, an aggregate of 12 EU countries was compiled for both CIS2 and CIS3 for manufacturing enterprises with 50 or more employees. Within the manufacturing sector (see table 1.5.1), 40 000 medium-sized and large enterprises were classified as having innovation activity in the EU for CIS2, while for CIS3 this figure grew to 43 000. The number of medium-sized enterprises with innovation activity increased from 30 000 to 35 000, whereas the number of large enterprises with innovation activity decreased from 10 000 to 8 000. In relative terms the propensity to innovate of medium-sized manufacturing enterprises increased from 60 % in CIS2 to 64 % in CIS3. The propensity to innovate for large enterprises was only one percentage point higher in CIS3 (82 %) than in CIS2 (81 %). In both surveys, large enterprises registered higher propensities to innovate than medium-sized enterprises.

Table 1.5.1

Enterprises with innovation activity, manufacturing, EU (thousands)

	CIS2 (1996)	CIS3 (2000)
Enterprises with innovation activity	40	43
of which:		
Medium-sized enterprises	30	35
Large enterprises	10	8
Propensity to innovate (%)		
Medium-sized enterprises	60	64
Large enterprises	81	82

Source: Eurostat, NewCronos (theme9/innovat/).

Table 1.5.2

Breakdown by type of innovation activity, manufacturing, EU (1)

	CIS2 (1996)		CIS3 (2000)	
	Number of enterprises (thousands)	Proportion of all enterprises (%)	Number of enterprises (thousands)	Proportion of all enterprises (%)
Enterprises with innovation activity	40	64	43	67
Successful innovators	39	61	41	64
Product only innovators	8	13	8	12
Process only innovators	4	7	5	8
Product and process innovators	26	42	29	44
Enterprises with only on-going and/or abandoned innovation activity	1	2	2	3
Enterprises without innovation activity	23	36	21	33

(1) Only medium-sized and large enterprises.
Source: Eurostat, NewCronos (theme9/innovat/).

As already noted, the number of enterprises with innovation activity increased to 43 000 in CIS3. As can be seen from table 1.5.2, in absolute terms most of this growth was among successful innovators, whose number increased from 39 000 to 41 000. Although the number of enterprises with only on-going and/or abandoned innovation activity increased by a smaller number (700), this was equivalent to an increase of around 50 %, compared to an increase slightly less than 10 % for successful innovators.

Among successful innovators, the number of product only innovators fell slightly (-300 enterprises), while increases were recorded for process only innovators (600) and enterprises with both product and process innovations (2 200).

An analysis relative to the whole enterprise population can be used to describe the development of the structure of the enterprise population between CIS2 and CIS3. There was a total of 63 000 enterprises surveyed in the manufacturing sector in 1996 compared to 64 000 in 2000. The proportion of enterprises classified as successful innovators grew from 61 % in CIS2 to 64 % in CIS3. Within this broad category, the proportion of enterprises in the population that were process only innovators increased by one percentage point from 7 % of manufacturing enterprises in CIS2 to 8 % in CIS3, and the proportion that were product and process innovators grew from 42 % to 44 % from 1996 to 2000, while the proportion of enterprises that were product only innovators fell from 13 % to 12 % over the same period.

2. INNOVATION ACROSS ENTERPRISE SIZE-CLASSES

DATA NOTES:
For this chapter, the EU aggregate excludes Ireland, Luxembourg and the United Kingdom for all tables and figures.
Figures are rounded separately and therefore may not sum up exactly.
The industrial sector is defined as NACE Sections C to E.
The services sector is defined as NACE Division 51, Sections I and J, Divisions 72 and 73, and Groups 74.2 and 74.3.
The total (otherwise referred to as the business economy) is defined as the sum of industry and services.

2. Innovation across enterprise size-classes

INTRODUCTION

CIS3 provides statistics on innovation broken down by size-class. The following breakdown has been adopted for the purpose of this publication: small enterprises are defined as those with between 10 and 49 employees, medium-sized enterprises with between 50 and 249 employees and large enterprises with 250 or more employees. As such, for the purpose of the analysis in this publication small and medium-sized enterprises (SMEs) are defined as those enterprises with between 10 and 249 employees. Enterprises with less than 10 employees are not covered by the CIS survey. This chapter follows to a large extent the same structure as chapter 1, but focuses on the relationship between innovation activity and the size of enterprises.

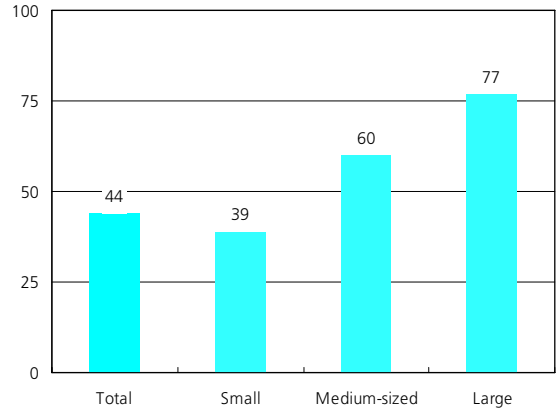
2.1 SUMMARY RESULTS

THE PROPENSITY TO INNOVATE IN RELATION TO ENTERPRISE SIZE

The main result when looking at innovation activity in relation to the size of enterprises is that the propensity to innovate generally increases with the average size of an enterprise. This outcome can be related to other results from CIS3 provided below, notably the more frequent presence of intramural R&D activity in large enterprises. Figure 2.1.1 clearly shows that a much higher proportion of enterprises in the EU reported having carried out innovative activities among large or medium-sized enterprises than among small enterprises. In other words, the larger the enterprise, the more likely it was to have had some form of innovation activity during the period 1998 to 2000.

Figure 2.1.1

Proportion of enterprises with innovation activity, EU, 1998-2000 (%)

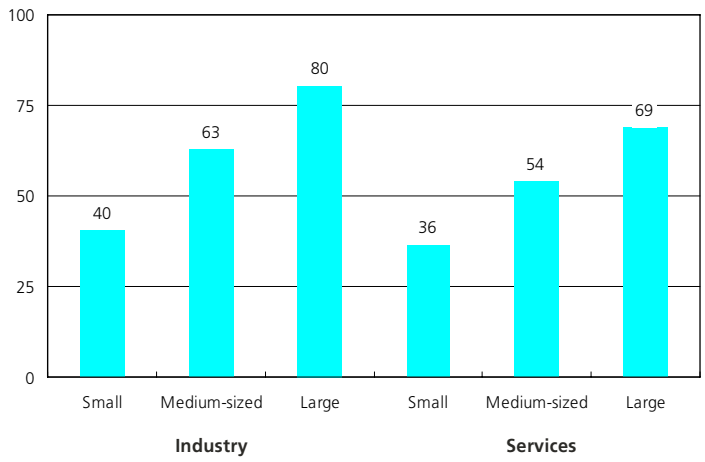


Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

There were proportionally more enterprises in the EU with innovation activity in industry than in services for each of the size-classes. However, the gap between these two sectors increased as a function of the size-class, as shown in figure 2.1.2. Indeed, the proportion of enterprises with innovation activity among small enterprises was relatively close between those in the industrial sector (40 %) and the services sector (36 %). The difference however widened to 9 percentage points among medium-sized enterprises and further still to 11 percentage points among large enterprises. These results can be influenced by the definition of innovation adopted within CIS3, which may be more in line with the activities of a large manufacturing enterprise (see part three for more details on the methodology and definitions).

Figure 2.1.2

Proportion of enterprises with innovation activity, by sector, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

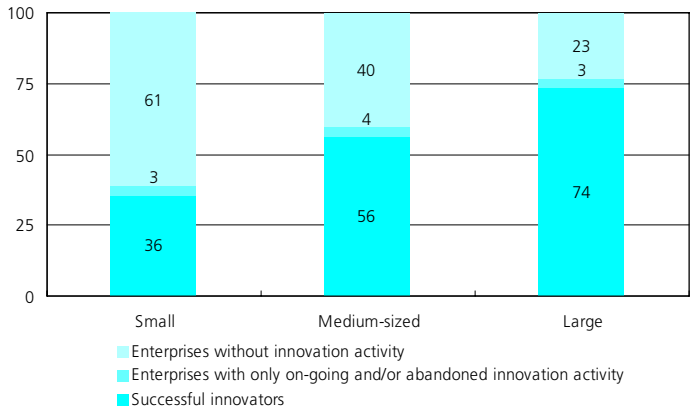
Figure 2.1.3 shows the proportion of enterprises with and without innovation activity broken down by size-class. It reveals that the share of enterprises with only on-going and/or abandoned innovation activity was not related to the size of the enterprise, at either 3 % or 4 % of the total number of enterprises in each of the three size classes for which data are presented.

Looking at a breakdown of the types of innovator (see figure 2.1.4), it appears that the likelihood of an enterprise being both a product and process innovator increased in relation to the average size of the enterprise. One explanation for this relationship may be the amount of resources that are allocated to innovation activity. Indeed, large enterprises may have greater resources available to engage in several different innovation activities, while smaller enterprises may have to concentrate on one type of innovation, either product or process. Among enterprises that had successfully introduced a single type of innovation, there was a greater likelihood that this innovation was related to a product rather than a process, independent of the size-class considered.

Figure 2.1.5 shows that the proportion of product and process innovators was more likely to be higher in the industrial sector rather than in the services sector, independent of the size of an enterprise. In addition, the proportion of both product and process innovators increased with the average size of an enterprise in both industry and services. Looking at the distribution of product only innovators and process only innovators in each size-class, there were similar proportions in industry among small enterprises (24 % and 23 %), while the proportion of product only innovators in small services' enterprises was two and a half times greater than that registered for process only innovators (35 % and 13 %). Among large enterprises, in contrast, there were around 50 % more product only innovators than process only innovators in industrial activities (14 % and 9 %), while in the services sector the difference was much more narrow (15 % and 9 %) than it had been for small enterprises.

Figure 2.1.3

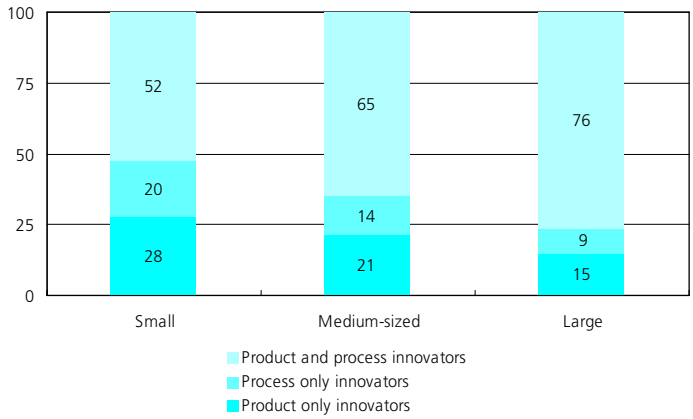
Proportion of enterprises, by type of innovator, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Figure 2.1.4

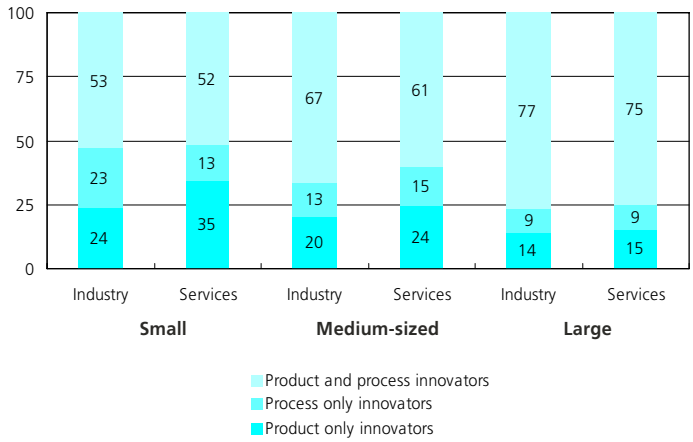
Successful innovators: proportion of enterprises, by type of innovator, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Figure 2.1.5

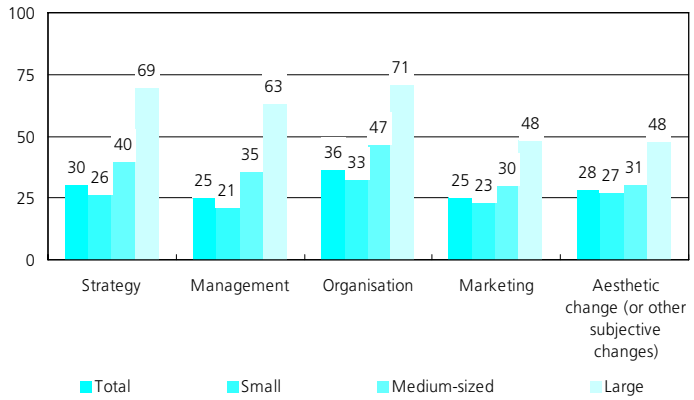
Successful innovators: proportion of enterprises, by type of innovator, by sector, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Figure 2.1.6

Proportion of enterprises undertaking other important strategic and organisational change, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

OTHER FORMS OF STRATEGIC OR ORGANISATIONAL CHANGE

The CIS3 definition of innovation may be described as restrictive. The questionnaire specifies that innovation should be based on the results of new technological developments, new combinations of existing technology or the utilisation of other knowledge acquired by the enterprise. However, enterprises change their behaviour through new business strategies and management and organisation practices to make themselves more competitive. The CIS3 survey covers these important strategic and organisational changes. Enterprises were asked whether they had been carrying out improvements in the field of strategy, management, organisation, marketing or aesthetic change.

The results broken down by size-class are presented in figure 2.1.6. The first result is that, as with the propensity to innovate, the propensity to introduce strategic and organisational change also increased with the average size of an enterprise. Indeed, taking the most common type of change, namely organisational change, 33 % of small enterprises had undertaken this type of change, compared to 47 % among medium-sized enterprises and 71 % among large enterprises. As such, even this most common type of change was less frequently undertaken than 'traditional' innovations in all three size-classes studied: the respective proportions of EU enterprises with some form of innovation activity were 39 % among small enterprises, 60 % among medium-sized enterprises and 77 % among large enterprises (see figure 2.1.1 on page 40).

Independent of the size-class being studied, the most frequent change undertaken by enterprises was the implementation of new or significantly changed organisational structures (see table 2.1.1). Approximately three quarters of all the large enterprises in the EU reported having done so during the period 1998 to 2000, almost half of the medium-sized enterprises and a third of the small enterprises. Another frequent measure adopted across all three size-classes was the implementation of new or significantly changed corporate strategies; this concerned 69 % of large enterprises, 40 % of medium-sized enterprises and 26 % of small enterprises in the EU. This represents the largest variation across size-classes in the proportion of enterprises introducing new forms of strategic and organisational change. In contrast, the proportion of enterprises undertaking marketing changes or aesthetic change varied less according to the size-class being studied. A final point of interest is the relatively low proportion of small enterprises that introduced new management techniques (21 %) during the period 1998 to 2000, especially when compared to the corresponding shares among medium-sized (35 %) and large (63 %) enterprises.

Table 2.1.1

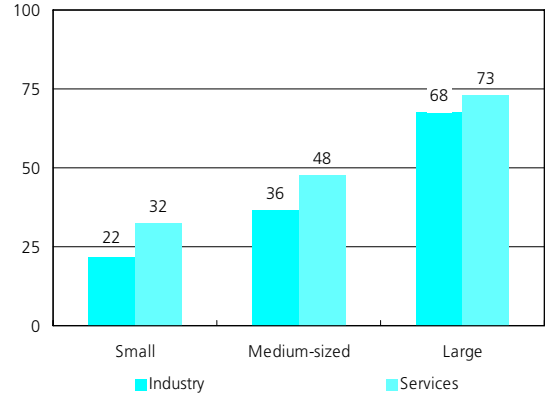
Proportion of enterprises undertaking other important strategic and organisational change, EU, 1998-2000 (%)

	Strategy	Management	Organisation	Marketing	Aesthetic change (or other subjective changes)
Total	30	25	36	25	28
Small enterprises	26	21	33	23	27
Medium-sized enterprises	40	35	47	30	31
Large enterprises	69	63	71	48	48

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Figure 2.1.7a

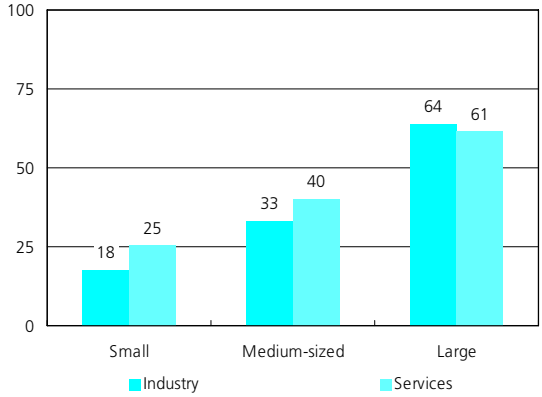
Proportion of enterprises implementing new or significantly changed corporate strategies, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Figure 2.1.7b

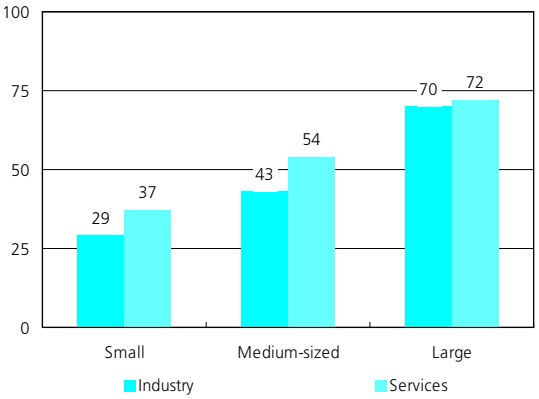
Proportion of enterprises implementing advanced management techniques, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Figure 2.1.7c

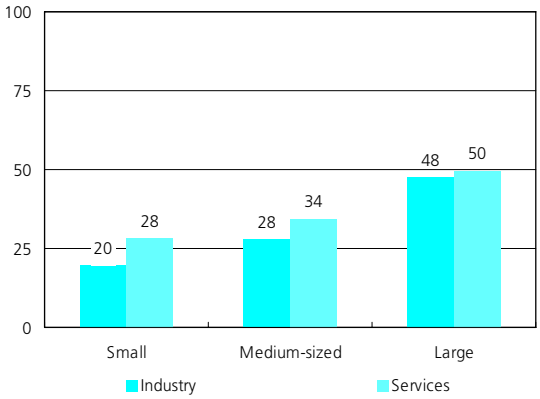
Proportion of enterprises implementing new or significantly changed organisational structures, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Figure 2.1.7d

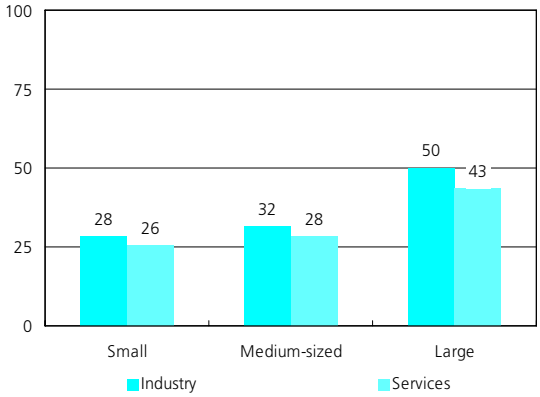
Proportion of enterprises changing significantly their marketing concepts/strategies, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Figure 2.1.7e

Proportion of enterprises implementing new or significant changes in the aesthetic appearance or design, or other subjective changes in at least one of their products, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Enterprises in the services sector, of any size-class, appeared more inclined than their industrial counterparts to introduce strategic and organisational change, contrary to the general finding that there is a higher propensity to innovate within the industrial sector. Figure 2.1.7 shows that in most cases, services enterprises (in every size-class) had a greater propensity to introduce strategic and organisational change, other than for the introduction of aesthetic change (which was more frequently used across all size classes within industry) and for implementing advanced management techniques (which was more frequently used among large industrial enterprises). Half of all large industrial enterprises implemented new or significant changes in aesthetic appearance or design, compared to 43 % of large enterprises in the services sector. This difference of 7 percentage points was the highest across the three size classes, with the difference for medium-sized enterprises equal to 4 percentage points and that for small enterprises equal to 2 percentage points.

The difference between the propensity to introduce strategic and organisational change among enterprises in the industrial and services sectors was however generally narrower among large enterprises than small enterprises; as large enterprises in both parts of the business economy had a higher propensity to introduce these changes (see table 2.1.2). Among small enterprises active in the services sector there was a relatively high recourse to introduce such strategic and organisational changes when compared to small industrial enterprises. This was particularly true for the introduction of new or significantly changed organisational structures, which were introduced by 37 % of small enterprises in the services sector (compared to 29 % within industry). Just under one third (32 %) of all the small enterprises in the services sector introduced new or significantly changed corporate strategies (compared to 22 % in the industrial sector).

It is possible to separate enterprises with innovation activity from those without and to look at the introduction of strategic and organisational change in both of these categories across size-classes. It appears that the propensity to introduce strategic and organisational change (see table 2.1.3) was much higher among enterprises with innovation activity, particularly among large enterprises.

The results presented in figure 2.1.8 show clearly that enterprises with innovation activity were more likely to engage in other forms of strategic and organisational change, independent of the size of the enterprise. The proportion of SMEs undertaking strategic and organisational change was often more than twice as high among enterprises with innovation activity as those without. For each strategic and organisational change the difference was higher among small enterprises than it was among medium-sized enterprises.

Table 2.1.2

Proportion of enterprises undertaking other important strategic and organisational change, by sector, EU, 1998-2000 (%)

	Strategy	Management	Organisation	Marketing	Aesthetic change (or other subjective changes)
Industry					
Total	26	23	34	22	30
Small enterprises	22	18	29	20	28
Medium-sized enterprises	36	33	43	28	32
Large enterprises	68	64	70	48	50
Services					
Total	36	29	41	30	26
Small enterprises	32	25	37	28	26
Medium-sized enterprises	48	40	54	34	28
Large enterprises	73	61	72	50	43

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 2.1.3

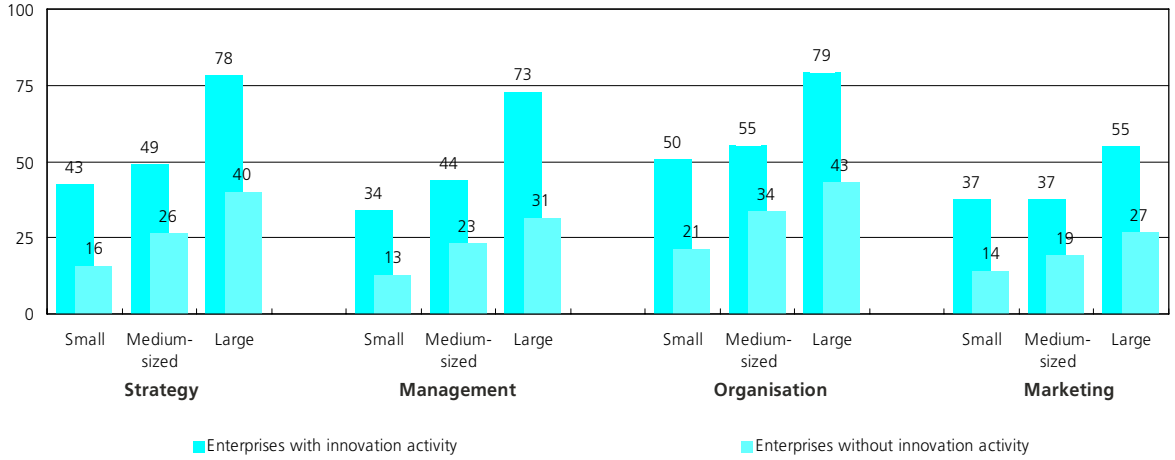
Proportion of enterprises undertaking other important strategic and organisational change, by type of enterprise, EU, 1998-2000 (%)

	Strategy	Management	Organisation	Marketing	Aesthetic change (or other subjective changes)
Enterprises with innovation activity					
Total	46	39	53	38	42
Small enterprises	43	34	50	37	43
Medium-sized enterprises	49	44	55	37	38
Large enterprises	78	73	79	55	54
Enterprises without innovation activity					
Total	17	14	23	15	17
Small enterprises	16	13	21	14	17
Medium-sized enterprises	26	23	34	19	19
Large enterprises	40	31	43	27	29

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Figure 2.1.8

Proportion of enterprises undertaking other important strategic and organisational change, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

2.2 SOURCES AND INPUTS OF INNOVATION

The majority of enterprises with innovation activity indicated, independently of their size, that their most important source of information for innovation was their own enterprise (see table 2.2.1). The larger the enterprise with innovation activity, the higher the probability that its main source of information for innovation was itself.

The most important external sources of information for innovation that were considered as highly important for enterprises of all size-classes were clients and customers or suppliers. It would appear that relationships with business partners, both upstream (procurement) and downstream (distribution) are an important issue in innovation. The average size of an enterprise did not have any significant influence on this observation.

In contrast, important size-class effects were reported, as regards the information source of 'other enterprises within the group'. This was more often a highly important source of information for innovation among large enterprises, which are in effect more likely to be part of an enterprise group than SMEs. Interestingly, government and other non-profit research institutes were also cited more often as a source of information for innovation by large enterprises with innovation activity. In a similar way, large enterprises with innovation activity also showed a greater propensity to collaborate with universities or other higher education institutes than SMEs, suggesting that economies of scale could be an important factor in determining whether or not an enterprise has the resources to follow-up on potential sources of information for innovation.

One source of information for innovation that was relatively important for SMEs was the use of fairs and exhibitions. This category was considered as highly important by 16 % of small enterprises in the EU and by 15 % of medium-sized enterprises (almost the same proportion as for large enterprises).

Table 2.2.1

Proportion of enterprises with innovation activity citing selected sources of information considered as highly important for innovation, EU, 1998-2000 (%)

	Within the enterprise	Other enterprises within the enterprise group	Suppliers	Clients or customers	Competitors and other enterprises from the same industry	Universities or other higher education institutes	Government or private non-profit research institutes	Professional conferences; meetings; journals: all sizes	Fairs and exhibitions
Total	38	9	20	28	12	5	3	11	16
Small	34	6	19	26	11	4	2	11	16
Medium-sized	41	14	18	30	13	5	3	10	15
Large	70	31	29	47	21	10	6	16	17

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

PUBLIC SUPPORT FOR INNOVATION

Innovation is regarded by policy-makers as a highly important topic that should be supported in order to stimulate competitiveness and economic growth. As a result, several public programmes have been put into force at regional, national and European levels, aiming to provide financial support to enterprises that have some form of innovation activity.

Within the framework of CIS3, enterprises with innovation activity were asked whether they benefited from public funding of innovation, and if so, where did the money come from. A list of three types of donors was provided: local or regional authorities, central government and the European Union. In addition, enterprises were specifically asked whether they had received funding from the European Union's 4th or 5th Framework Programmes for RTD.

Data on the public funding of innovation are shown in table 2.2.2, where it appears that the main source of public funding during the period 1998 to 2000 was central government, except for small enterprises which were more likely to have received local or regional funding.

The proportion of enterprises receiving public funding increased with the average size of an enterprise. Note this does not imply that they received more funding (as the amounts of funding are not given), simply that a higher proportion of enterprises received some form of funding. The difference between the proportion of SMEs that received funding and the proportion of large enterprises that received funding was bigger for European Union funding than it was for funding from central government, which in turn was bigger than for funding from local or regional authorities. As a result it appears that a higher proportion of large enterprises with innovation activity benefited from public funding programmes, especially with respect to European Union initiatives.

A breakdown by sector (see table 2.2.3) shows that a higher proportion of large industrial enterprises were recipients of public funding programmes for innovation. This was particularly true as regards financing from central government.

Table 2.2.2

Proportion of enterprises with innovation activity having received public financial support for innovation activities, EU, 1998-2000 (%)

	Public funding (any source)	Local or regional authorities	Central government	The European Union	EU's 4th or 5th framework programme
Total	29	15	15	7	4
Small enterprises	27	15	12	5	3
Medium-sized enterprises	31	14	18	8	5
Large enterprises	48	19	33	20	15

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 2.2.3

Proportion of enterprises with innovation activity having received public financial support for innovation activities, by sector, EU, 1998-2000 (%)

		Public funding (any source)	Local or regional authorities	Central government	The European Union	EU's 4th or 5th framework programme
Small	Industry	32	18	15	6	3
	Services	18	11	8	4	3
Medium-sized	Industry	35	15	21	8	4
	Services	21	12	10	7	6
Large	Industry	57	22	41	22	17
	Services	26	12	16	14	10

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

INNOVATION CO-OPERATION

Enterprises that engage in innovation activities may co-operate with external partners. Co-operation means that they actively participate with their partner in joint innovation projects: this excludes contracting out work to develop innovations. This does not imply, however, that all partners derive immediate commercial benefit from their joint innovation projects.

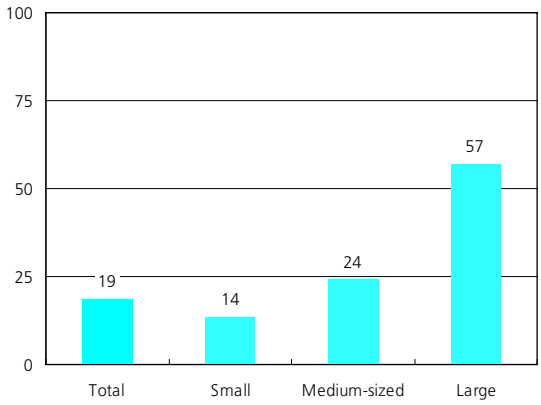
Figure 2.2.1 reveals that the propensity to engage in innovation co-operation was strongly linked to the average size of an enterprise. However, while innovation co-operation could be thought to appeal more to small enterprises lacking in resources, the CIS reveals that large enterprises were in fact more prone to use co-operation than SMEs during the period 1998 to 2000. Indeed, while only 14 % of small enterprises with innovation activity in the EU had some sort of co-operation agreements with external partners in the field of innovation, there were just less than twice as many medium-sized enterprises (24 %) and four times as many large enterprises (57 %) that did so.

Looking at the breakdown between industry and services (see figure 2.2.2), it appears that SMEs in the services sector were more likely to engage in innovation co-operation than their industrial counterparts. Among enterprises having innovation activities, only 11 % of small enterprises and 22 % of medium-sized enterprises in industry actively participated in innovation co-operation, compared to 18 % and 29 % of SMEs in services. Among large enterprises, in contrast, innovation co-operation was more frequently observed among industrial enterprises (61 %) as opposed to those in the services sector (47 %).

A higher proportion of successful innovators participated in innovation co-operation than enterprises with only on-going and/or abandoned innovation activity. This observation held true across each of the three size-classes (see figure 2.2.3). The relative difference between the proportion of successful innovators and enterprises with only on-going and/or abandoned innovation activity that participated in innovation co-operation was biggest among medium-sized enterprises, where 25 % of successful innovators engaged in innovation co-operation compared to 19 % of enterprises with only on-going and/or abandoned innovation activity. For large enterprises the relative difference was slightly less, as 57 % of successful innovators were involved in innovation co-operation compared to 46 % of enterprises with only on-going and/or abandoned innovation activity. For small enterprises there was only a slight difference between the two proportions, as 14 % of successful innovators were involved in innovation co-operation compared to 12 % of enterprises with only on-going and/or abandoned innovation activity.

Figure 2.2.1

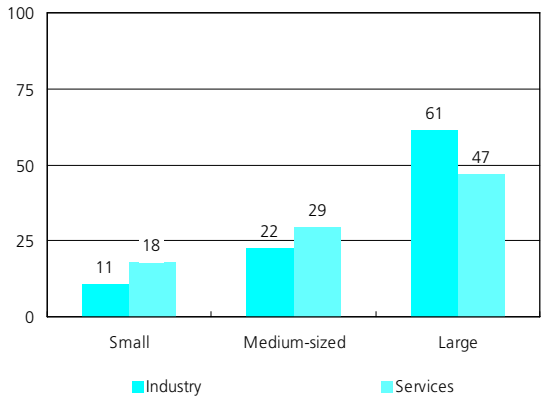
Proportion of enterprises with innovation activity involved in innovation co-operation, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Figure 2.2.2

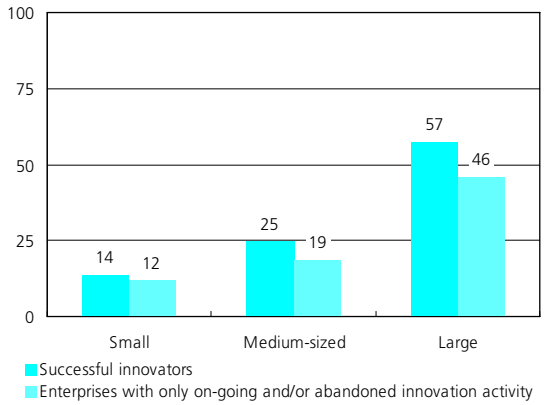
Proportion of enterprises with innovation activity involved in innovation co-operation, by sector, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Figure 2.2.3

Proportion of enterprises with innovation activity involved in innovation co-operation, by type of enterprise, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

2.3 BARRIERS TO INNOVATION

After having examined the breakdown of enterprises with innovation activity and the sources of innovation, this next subchapter looks at the issue of barriers to innovation. In CIS3 enterprises were asked whether their innovation activity had faced any problems in the period 1998 to 2000, and what were the most important hampering factors.

Table 2.3.1

Proportion of enterprises with innovation activity whose innovation activity was hampered, EU, 1998-2000 (%)

	Seriously delayed	Prevented to be started	Burdened/encumbered with other serious problems
Total	37	22	22
Small	32	21	20
Medium-sized	41	21	23
Large	66	38	37

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

PROBLEMS FACED

Among enterprises with innovation activity, the proportion reporting that they had experienced problems in their innovation activity generally increased with the average size of the enterprise. This means that large enterprises were more likely to experience problems than SMEs, with their projects being seriously delayed, prevented from being started or burdened by other factors (see table 2.3.1). Indeed, 66 % of large enterprises with innovation activity reported serious delays for their innovation activity, while the corresponding proportion for medium-sized enterprises was 41 % and that for small enterprises was 32 %.

This observation that large enterprises tend to have experienced more problems than SMEs is a somewhat surprising result, as large enterprises generally have more resources available for innovation activities than SMEs. However, at the same time, large enterprises are more likely to have a number of on-going innovation projects and hence the possibility of one (or more) of them experiencing problems increases. Furthermore, as large enterprises may be expected to devote more resources to the innovation process than SMEs, their expectations of the results that can be achieved may also be higher.

The most cited problem faced by enterprises of all size-classes with respect to innovation activities was serious delays. A breakdown by sector shows that, independent of size, industrial enterprises with innovation activity reported more often than their services' counterparts that they had been prevented from starting innovation projects.

FACTORS HAMPERING INNOVATION ACTIVITY

Whereas the previous analysis was restricted to enterprises with innovation activity, this section focuses on all enterprises, in other words, including those without innovation activity. For each item in a list of selected hampering factors, enterprises could assign a degree of importance, high, medium, low or not relevant.

Some clear size-class effects can be seen from the results, notably in the field of economic factors. As a general rule, the proportion of enterprises that regarded selected hampering factors as highly important decreased somewhat as the enterprise size-class increased. In other words, hampering factors affect proportionally more small enterprises than large ones. One of the most typical hampering factors faced by SMEs was a lack of appropriate sources of finance (see table 2.3.2). Indeed, this category had the largest difference between the proportion of small and large enterprises citing it as highly important (6 percentage points), as 16 % of small enterprises reported a lack of appropriate sources of finance compared to 10 % of large enterprises.

Other factors that were ranked relatively highly by SMEs were the high cost of innovation and the excessive perceived economic risks associated with innovation. The high cost of innovation affected 21 % of small enterprises and 19 % of medium-sized enterprises, while excessive perceived economic risks associated with innovation affected 16 % of small enterprises and 13 % of medium-sized enterprises. The only other categories where a double-digit share of SMEs reported specific hampering factors were a lack of qualified personnel (13 % of small enterprises and 14 % of medium-sized enterprises) and insufficient flexibility of regulations or standards (10 % of small enterprises).

One explanation of these relatively high values for SMEs may be that costs and risks could be perceived in a different way according to the average size of an enterprise. While the failure of an innovation project may jeopardise the very survival of a small enterprise, it is less likely to do so for larger structures, where there are generally more diversified activities that can compensate for the loss of a failed project.

Table 2.3.2

Proportion of enterprises that regarded selected hampering factors that they had experienced as highly important, EU, 1998-2000 (%)

	Excessive perceived economic risks	Innovation costs too high	Lack of appropriate sources of finance	Organisa-tional rigidities within the enterprise	Lack of qualified personnel	Lack of information on technology	Lack of information on markets	Insufficient flexibility of regulations or standards	Lack of customer responsive-ness to new goods or services
Small	16	21	16	6	13	5	5	10	8
Medium-sized	13	19	13	5	14	4	4	8	6
Large	18	21	10	6	13	3	4	7	5

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

3. INNOVATION AND ECONOMIC ACTIVITIES

DATA NOTES:
For this chapter, the EU aggregate excludes Ireland, Luxembourg and the United Kingdom for all tables and figures.
Figures are rounded separately and therefore may not sum up exactly.
The industrial sector is defined as NACE Sections C to E.
The services sector is defined as NACE Division 51, Sections I and J, Divisions 72 and 73, and Groups 74.2 and 74.3.
The total (otherwise referred to as the business economy) is defined as the sum of industry and services.

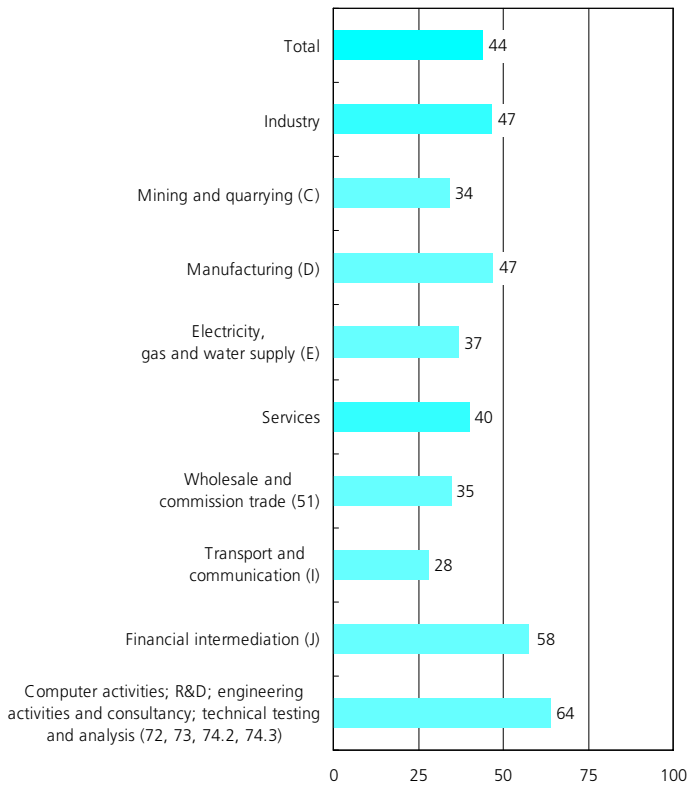
3. Innovation and economic activities

INTRODUCTION

In this chapter, the results of CIS3 are presented by economic activity. This section of the publication provides an insight into which sectors show a greater propensity to innovate. For this type of analysis, one of the major improvements since CIS1 has been the extension of the coverage of activities into services. Compared to CIS2, several more services activities have been added, as well as mining and quarrying, such that most activities within NACE Sections C to K were covered by CIS3, with the exception of construction (Division 45), motor trades (Division 50), retail trade (Division 52), hotels and restaurants (Division 55) and various business services (parts of Section K).

Figure 3.1.1

Proportion of enterprises with innovation activity, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

3.1 SUMMARY RESULTS

PROPENSITY TO INNOVATE IN INDUSTRY AND SERVICES

Industrial enterprises appeared to have a higher propensity to innovate than their services' counterparts. Indeed, CIS3 reveals that 47 % of EU enterprises in the industrial sector reported having carried out some sort of innovation activity, against only 40 % in the services sector. However, figures available at a less aggregated level show that within each of these broad aggregates there were considerable differences according to which activity is studied.

A look at the propensity to innovate in enterprises at the level of NACE Sections [(1)] (see figure 3.1.1) shows that the services sector included both the lowest and the highest propensity to innovate. Transport and communications enterprises (NACE Section I) reported the lowest propensity to innovate across all Sections of the business economy in the EU, with only 28 % of enterprises reporting innovation activities. This was less than half the corresponding share recorded in financial intermediation (58 %, Section J) and business services (64 %, Divisions 72 and 73, and Groups 74.2 and 74.3). In the industrial sector, the propensity to innovate varied less, ranging from a low of 34 % in mining and quarrying (Section C) to a high of 47 % in manufacturing (Section D).

SUMMARY RESULTS - INDUSTRY

In the industrial sector, a majority of enterprises having successfully implemented innovations were both product and process innovators. This was particularly true in manufacturing, where 59 % of innovators implemented both product and process innovations, but less so in mining and quarrying (51 %) and electricity, gas and water supply (39 %) - see figure 3.1.2.

Another distinction that can be highlighted among the three NACE Sections that compose the industrial sector is the importance of process only innovators in non-manufacturing activities. Process only innovators accounted for more than one third of the total number of innovators in the mining and quarrying sector and the electricity, gas and water supply industries, but less than one fifth of the total in the manufacturing sector.

[(1)] Only wholesale trade is covered for Section G, while Section K only includes selected Divisions and Groups.

Table 3.1.1

Innovation activity: by type of enterprise, industry, EU, 1998-2000 (%)

	Industry	Mining and quarrying	Manufacturing	Electricity, gas and water supply
Successful innovators	44	30	44	32
Product only innovators	10	3	10	8
Process only innovators	8	12	8	11
Product and process innovators	25	15	26	13
Enterprises with only on-going and/or abandoned innovation activity	3	4	3	5
Enterprises without innovation activity	53	66	53	63

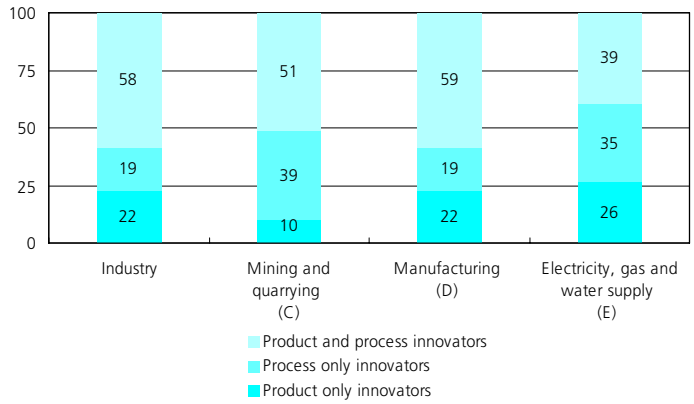
Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

A more detailed typology of innovation among enterprises in the industrial sector is presented in table 3.1.1. A majority of industrial enterprises were not engaged in any innovation activity, particularly in the mining and quarrying, and electricity, gas and water supply industries. Indeed, 53 % of industrial enterprises were without innovation activity, a share that rose to 63 % for the electricity, gas and water supply industries and to 66 % for mining and quarrying (compared to 53 % for manufacturing).

Secondly, most of the enterprises that did carry out innovation activities managed to successfully implement or introduce innovations. Enterprises with only on-going and/or abandoned or innovation activity represented less than 5 % of the total number of enterprises. As such, for every enterprise with only on-going and/or abandoned innovation activity there were approximately 15 successful innovators. This proportion was slightly higher in the mining and quarrying, and electricity, gas and water supply industries, whereas it was at a similar level in manufacturing.

Figure 3.1.2

Successful innovators: by type of innovator, industry, EU, 1998-2000 (%)



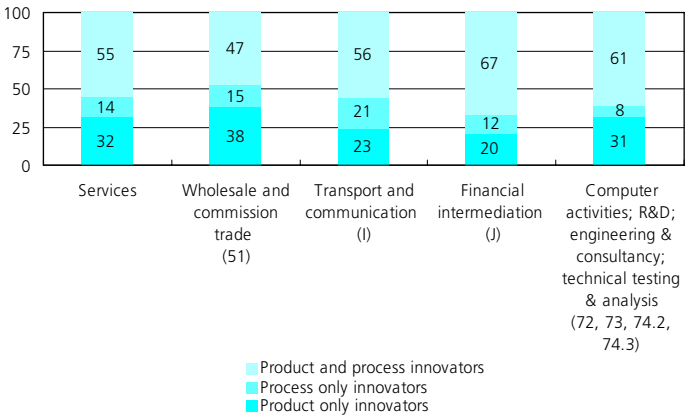
Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

SUMMARY RESULTS - SERVICES

In a similar way to industrial activities, a majority of enterprises having successfully introduced innovations in the services sector had introduced both product and process innovations. This was particularly true in the fields of financial intermediation and business services, where 67 % and 61 % of successful innovators were both product and process innovators (see figure 3.1.3), but less so in wholesale trade where only 47 % of successful innovators were both product and process innovators. But what distinguishes most the services sector from the industrial sector is the relatively high proportion of product innovators, as opposed to process innovators. On average, 32 % of successful innovators in the services sector were product only innovators, more than twice the proportion of process only innovators (14 %). In wholesale trade, the proportion of product only innovators was the highest at 38 %. Only transport and communications displayed a relatively balanced situation, with a similar proportion of product only (23 %) and process only (21 %) innovators.

Figure 3.1.3

Successful innovators: by type of innovator, services, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 3.1.2 and figure 3.1.4 show that the highest propensity to innovate in the services sector was within the financial intermediation and the business services sectors. These were the only NACE Sections to report a higher number of enterprises with innovation activity compared to those without. For each 100 enterprises without innovation activity, there were 179 enterprises with innovation activity in the business services sector, while the corresponding ratio in the financial intermediation sector showed that there were 135.

Figure 3.1.4 shows that for every 100 enterprises without innovation activity there were 88 with innovation activity in the manufacturing sector. This was the highest ratio among industrial activities, as 59 enterprises had innovation activity in the electricity, gas and water supply sector (per 100 enterprises without innovation activity. The lowest ratio was recorded for mining and quarrying sector (52 enterprises with innovation activity per 100 without).

Table 3.1.2

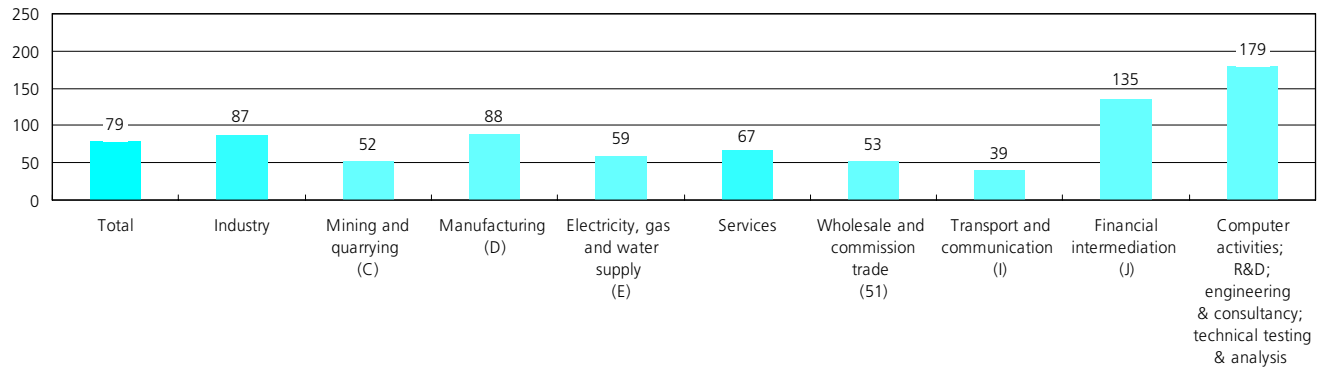
Innovation activity: by type of enterprise, services, EU, 1998-2000 (%)

	Services	Wholesale and commission trade	Transport and communication	Financial intermediation	Computer activities; R&D; engineering activities and consultancy; technical testing and analysis
Successful innovators	36	32	25	54	57
Product only innovators	11	12	6	11	18
Process only innovators	5	5	5	7	5
Product and process innovators	20	15	14	36	35
Enterprises with only on-going and/or abandoned innovation activity	4	3	3	4	7
Enterprises without innovation activity	60	65	72	42	36

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Figure 3.1.4

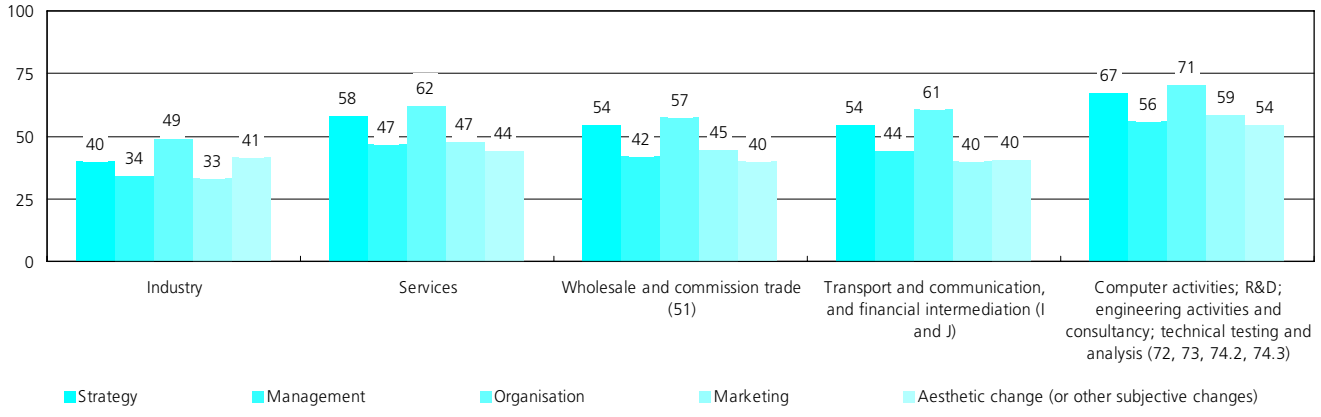
Number of enterprises with innovation activity per 100 enterprises without innovation activity, EU, 1998-2000



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Figure 3.1.5

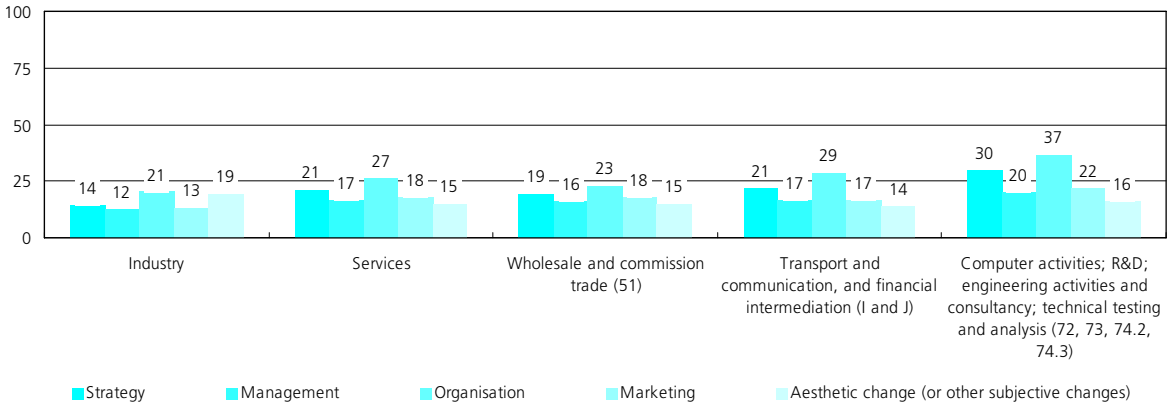
Proportion of enterprises with innovation activity undertaking other important strategic and organisational changes, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Figure 3.1.6

Proportion of enterprises without innovation activity undertaking other important strategic and organisational changes, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

OTHER FORMS OF STRATEGIC AND ORGANISATIONAL CHANGE

As already mentioned, enterprises are also engaged in activities that, although not formally classified as innovations, can play an important role in changing strategic or organisational considerations, for example, new business strategies or management practices. To cover this particular aspect of change within the enterprise, CIS3 asked enterprises to report on their activities in the field of strategy, management, organisation, marketing and aesthetic change.

The propensity to introduce strategic and organisational change was generally greater in services than in industry (see figure 3.1.6), except for aesthetic (or other subjective) changes to the product. For all other aspects of strategic and organisational change, the services sectors reported higher values. The highest propensity to introduce strategic and organisational change was recorded in terms of the introduction of organisational change, which was cited by 27 % of enterprises in the services sector, a proportion that rose as high as 37 % within the business services sector.

Indeed, a breakdown for the services sector shows that enterprises in business services were most likely to be engaged in all of these strategic and organisational changes. The only exception was for the introduction of aesthetic change (or other subjective changes), which was cited by a higher proportion of enterprises in the industrial sector (19 %) compared to the business services sector (16 %).

Figures 3.1.5 and 3.1.6 show the proportion of enterprises having engaged in selected types of change, the first showing the situation for enterprises with innovation activity and the second for those without. These strategic and organisational changes were less common among enterprises without innovation activity than they were among enterprises with innovation activity. In other words, enterprises that were engaged in innovation were also more likely to be engaged in strategic and organisational change too.

An analysis by sector shows that the pattern of higher engagement in strategic and organisational change among enterprises with innovation activities is present in most sectors.

Wholesale trade enterprises with innovation activity were generally two and a half times more likely to engage in each of the five types of strategic and organisational change than enterprises without innovation activity.

In business services the difference in the proportion of enterprises with and without innovation activity engaging in these types of change was again high; it was largest with respect to aesthetic change and lowest with respect to organisational change.

3.2 SOURCES AND INPUTS OF INNOVATION

This subchapter focuses on three sections. The first looks at the origins or sources of information (internal or external) that are perceived as having been important for enterprises to innovate during the period 1998 to 2000. The second studies the aspect of public financial support for innovation activities. Finally, co-operation agreements within the field of innovation are assessed, in relation to types of co-operation partner and the geographical location of partners.

SOURCES OF INFORMATION FOR INNOVATION

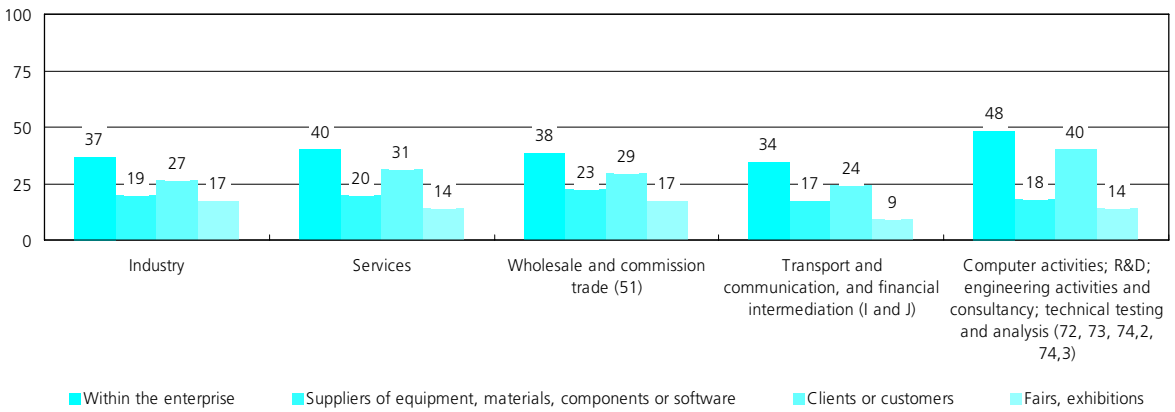
Enterprises were asked to indicate the importance of selected sources of information that they used when engaging in innovation activities (be they for suggesting new innovation projects or for contributing to the implementation of existing projects). Figure 3.2.1 and table 3.2.1 show the results of this question, presenting the proportion of respondents considering each source of information as highly important.

Regardless of the sector considered, enterprises with innovation activity indicated that their most important source of information for innovation was internal to their own enterprise. Some 34 % of enterprises with innovation activity cited this source of information as being highly important within the transport and communications sector, a share that rose to 48 % for business services.

Turning to external factors, clients and customers were the next most important source of information for innovation, cited by just under one third of enterprises in most sectors. Upstream in the production/distribution chain, suppliers were also important sources of information, inciting or assisting enterprises to innovate, particularly within the activity of wholesale trade (23 %). In business services 18 % of enterprises in the EU with innovation activity said that their suppliers had been a highly important source of information for their innovation activities.

Figure 3.2.1

Proportion of enterprises with innovation activity citing selected sources of information for innovation as highly important, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 3.2.1

Proportion of enterprises with innovation activity citing selected sources of information for innovation as highly important, EU, 1998-2000 (%)

	Within the enterprise	Other enterprises within the enterprise group	Suppliers of equipment, materials, components or software	Clients or customers	Competitors and other enterprises from the same industry	Universities or other higher education institutes	Government or private non-profit research institutes	Professional conferences, meetings, journals	Fairs, exhibitions
Total	38	9	20	28	12	5	3	11	16
Industry	37	7	19	27	11	4	3	9	17
Mining and quarrying, and electricity, gas and water supply (C and E)	39	19	19	24	20	8	6	11	5
Manufacturing (D)	37	7	20	27	10	4	3	9	18
Services	40	13	20	31	14	6	3	15	14
Wholesale and commission trade (51)	38	17	23	29	11	4	2	10	17
Transport and communication, and financial intermediation (I and J)	34	13	17	24	17	2	1	12	9
Computer activities; R&D; engineering activities and consultancy; technical testing and analysis (72, 73, 74.2, 74.3)	48	9	18	40	15	12	6	24	14

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 3.2.2

Proportion of enterprises with innovation activity having received public financial support for innovation activities, EU, 1998-2000 (%)

	Public funding (any source)	Local or regional authorities	Central government	The European Union	The EU's 4th (1994-1998) or 5th (1998-2000) Framework Programmes for RTD
Total	29	15	15	7	4
Industry	35	17	18	8	4
Mining and quarrying, and electricity, gas and water supply (C and E)	30	12	19	7	4
Manufacturing (D)	35	18	18	8	4
Services	19	11	9	5	4
Wholesale and commission trade (51)	16	9	6	4	2
Transport and communication, and financial intermediation (I and J)	11	7	4	2	1
Computer activities; R&D; engineering activities and consultancy; technical testing and analysis (72, 73, 74.2, 74.3)	31	17	16	9	8

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Fairs and exhibitions were more common as a source of information for innovations among industrial and wholesale enterprises than other services enterprises. In both industry and wholesale trade, 17 % of enterprises with innovation activity said they considered fairs and exhibitions a highly important source of information for innovation. The corresponding share was only 14 % for enterprises in the services sector, caused by a low proportion in transport services and financial intermediation.

PUBLIC FINANCING FOR INNOVATION

Public policies recognise the important role that can be played by innovation in fostering competitiveness and economic growth. As such, many governments and international institutions have set up funding programmes aimed at providing public financial support to encourage enterprises to innovate. CIS3 addressed this issue of public financing with a question to enterprises with innovation activity, asking them whether they benefited from public funding for innovation, and if yes, asking them to identify the donor(s); choices were given as local or regional authorities, central government or the European Union. A follow-up question asked if the enterprise had specifically received funding from the EU's 4th or 5th Framework Programmes for RTD.

Industrial enterprises, rather than their services counterparts, were the main beneficiaries of public financing for innovation within the EU (see table 3.2.2), as 35 % of industrial enterprises with innovation activity received public funding from any source (compared to 19 % for the services sector). This was the case for local, regional and central government funding. However, the proportion of enterprises with innovation activity receiving funding from the EU's 4th or 5th Framework Programmes for RTD was equally split between industrial and services sectors (4 %).

Local or regional authorities and central government both provided innovation funding to a similar proportion of enterprises (15 % of all enterprises with innovation activity). Within industry, the proportion of enterprises that received funding from central government rose to as high as 19 % within the mining and quarrying, and electricity, gas and water supply sector, while local or regional authorities funded just 12 % of enterprises with innovation activity in this sector. The provision of funding within manufacturing was equally split, as both central and local or regional authorities funded 18 % of all enterprises with innovation activity.

In the services sector the proportion of enterprises that received funding from local or regional authorities was higher than the corresponding share for central government. This observation held across the three services' subsectors that are detailed in table 3.2.2. Business services were the main beneficiary of public financial support for innovation activities within the services sector and reported levels of innovation funding that were similar to those for manufacturing. The lowest proportion of enterprises receiving funding was recorded within the transport and communication, and financial intermediation sector, no matter which source was considered.

CO-OPERATION IN THE FIELD OF INNOVATION

Co-operation as defined by the CIS3 questionnaire is a joint R&D or other innovation project that is undertaken with another organisation (either other enterprises or non-commercial institutions). Co-operation does not imply that both partners derive immediate commercial benefit from the venture. Pure contracting out of innovation work, where there is no active collaboration, is not regarded as co-operation.

CIS3 reveals that services enterprises were, in general, more likely to be involved in co-operation agreements. Indeed, co-operation agreements concerned 22 % of services enterprises with innovation activity, some 5 percentage points more than in industry (see table 3.2.3). The highest incidence of co-operation was nevertheless recorded in an industrial sector, the EU's electricity, gas and water supply industries, where as many as 35 % of enterprises with innovation activity had some form of co-operation. Among the activities that make-up the services sector, the highest proportion of enterprises that were engaged in innovation co-operation was recorded within business services (34 %). Transport and communication, in contrast, recorded the lowest incidence of co-operation in the EU's services sector (15 %).

Looking at the breakdown by origin of co-operation partner (see figure 3.2.2), the economic activity of each enterprise does not appear to be a major factor in determining the location of innovation partners. Nevertheless, international partners were significantly more important in the electricity, gas and water supply industries, as well as in business services.

Table 3.2.3

Proportion of enterprises with innovation activity involved in innovation co-operation, EU, 1998-2000 (%)

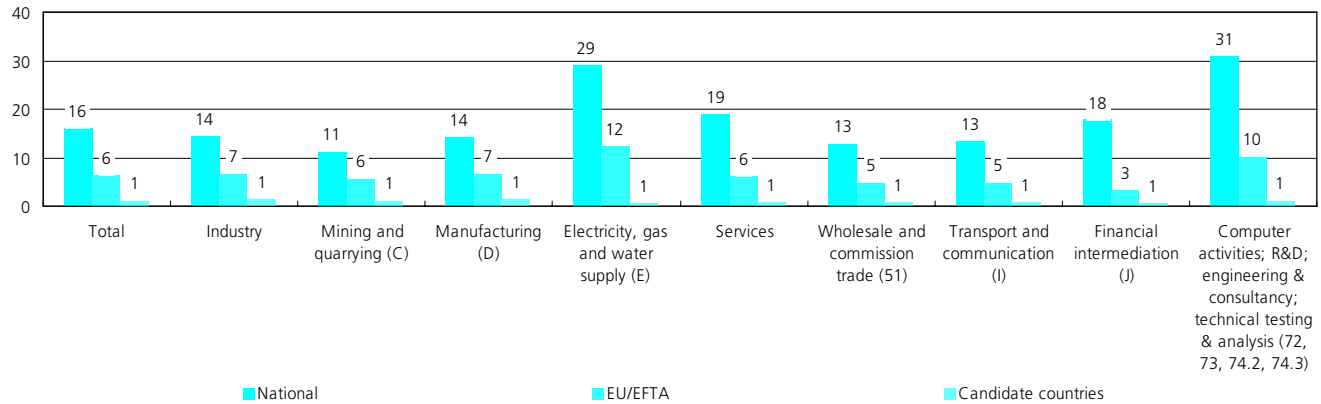
Total	19
Industry	17
Mining and quarrying (C)	13
Manufacturing (D)	17
Electricity, gas and water supply (E)	35
Services	22
Wholesale and commission trade (51)	16
Transport and communication (I)	15
Financial intermediation (J)	21
Computer activities; R&D; engineering activities and consultancy; technical testing and analysis (72, 73, 74.2, 74.3)	34

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Across all sectors the frequency of co-operation partners being located in the candidate countries was consistently low. Generally, rates of international innovation co-operation were also very low. For each of the activities for which data are provided in figure 3.2.2, national innovation partners were considerably more common than partners from other EU/EFTA countries or partners from the candidate countries. Indeed, just 1 % of all enterprises with innovation activity in every economic sector covered in figure 3.2.2 had some form of co-operation with partners from the candidate countries.

Figure 3.2.2

Proportion of enterprises with innovation activity involved in innovation co-operation, by partner, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

3.3 EFFECTS AND IMPACT: INNOVATION OUTPUT

This subchapter consists of three sections with data broken down by economic activity. In the first section the impact of innovation activity is investigated in terms of its influence on turnover. The second section studies various effects of innovation as perceived by enterprises and the third presents an analysis of protection methods used by enterprises.

RATES OF CHANGE OF TURNOVER

CIS3 reveals that enterprises with innovation activity between 1998 and 2000 overall registered a growth in turnover of 18 % in the EU's business economy (see table 3.3.1). Growth rates for industry and service were similar: industrial enterprises with innovation activity registered an overall increase in turnover of 19 %, one percentage point more than their counterparts in the services sector.

The EU's industrial sector is dominated by the manufacturing sector which reported a 20 % growth in turnover. The remaining subsectors, namely mining and quarrying, and electricity, gas and water supply, together averaged an increase of 9 %.

Very little detailed data is available for the services sector, although it can be noted that the wholesale trade sector recorded growth of 14 %, four percentage points below the average for the services sector.

EFFECTS OF INNOVATION ACTIVITY

The level of turnover is clearly influenced by many factors, not just innovation activity. As part of the CIS3 survey, enterprises were also asked to indicate the effects of the results of innovation activity, using a classification of 9 effects. Enterprises were asked to indicate whether these had had a high, medium or low impact, or if they were not relevant (see table 3.3.2). In general terms enterprises with innovation activity in the EU's business economy indicated a high degree of impact on what are termed as 'product oriented effects'. A breakdown by industry and services repeated the same pattern: 41 % of industrial enterprises with innovation activity and 38 % of services sector enterprises declared that the results of innovation activity had a high impact on improving the quality of their goods or services, followed by an increased range of goods or services (29 % and 30 %).

Table 3.3.1

Turnover growth rate of enterprises with innovation activity, EU, 1998-2000 (%)

Total	18
Industry	19
Mining and quarrying, and electricity, gas and water supply (C and E)	9
Manufacturing (D)	20
Services	18
Wholesale and commission trade (51)	14
Transport and communication (I)	:
Financial intermediation (J)	:
Computer activities; R&D; engineering activities and consultancy; technical testing and analysis (72, 73, 74.2, 74.3)	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 3.3.2

Proportion of enterprises with innovation activity that considered that their innovation activity had a high impact on the selected effects, EU, 1998-2000 (%)

	Product orientated effects			Process orientated effects				Other effects	
	Increased range of goods or services	Increased market or market share	Improved quality in goods or services	Improved production flexibility	Increased production capacity	Reduced labour costs per produced unit	Reduced materials and energy per produced unit	Improved environ-mental impact or health and safety aspects	Met regulations or standards
Total	29	24	40	20	25	17	9	15	19
Industry	29	24	41	23	29	20	11	18	21
Mining and quarrying, and electricity, gas and water supply (C and E)	19	15	30	16	22	15	15	27	19
Manufacturing (D)	29	24	41	23	30	20	11	18	21
Services	30	25	38	15	16	11	6	9	16
Wholesale and commission trade (51)	29	25	32	15	17	12	7	10	18
Transport and communication, and financial intermediation (I and J)	20	17	40	17	16	13	7	10	14
Computer activities; R&D; engineering activities and consultancy; technical testing and analysis (72, 73, 74.2, 74.3)	42	32	44	13	15	8	4	6	16

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Manufacturing, as the biggest sector in industry, shows very similar values to the industry sector in general, with a larger proportion of enterprises reporting innovation activity having a high impact on product oriented effects, for example 41 % reporting improved quality in goods and services (see table 3.3.2 on the previous page). Generally a lower proportion of enterprises in mining and quarrying, and electricity, gas and water supply reported a high impact on each of the effects than was the case for manufacturing: for many of the product and process effects the proportion of enterprises indicating a high impact was about one third less than for manufacturing. Two effects, reduced materials and energy per produced unit, and improved environmental impact or health and safety aspects, deviated from this pattern, as the mining and quarrying, and electricity, gas and water supply sectors recorded a higher impact for these effects (15 % and 27 %) than in manufacturing (11 % and 18 %).

The effects for which enterprises most commonly reported a high impact in the wholesale trade sector were improved quality for goods or services (32 %) and an increased range of goods or services (29 %), although these were less commonly reported than on average for services. However, in general values reported for wholesale trade did not deviate greatly from the services average.

In the business services sector a higher proportion of enterprises with innovation activities reported a high impact on product oriented effects than the services average, over 40 % reporting a high impact on the range and quality of goods and services. For all of the process oriented and other effects, the values for this indicator were lower in the business sector than the services average.

The combined results for the remaining two sectors, transport and communication, and financial intermediation, displayed nearly the reverse position of business services. The proportion of enterprises reporting a high impact on product oriented effects was lower than the services average except concerning the quality of goods and services (40 % compared to a services average of 38 %), while higher than average values were reported for the process oriented effects and improved environmental impact or health and safety aspects, where 10 % of transport and communication, and financial intermediation enterprises considered that their innovation activity had a high impact on the selected effects, compared to 9 % for the services average.

PROTECTION OF INVENTIONS OR INNOVATIONS

Patents are one method which can be used to try to protect inventions or innovations, and CIS3 provides information on the proportion of enterprises that applied for patents during the period 1998 to 2000 and the proportion that held valid patents at the end of 2000. In the EU's business economy 17 % of enterprises with innovation activity between 1998 and 2000 had applied for at least one patent in the same period. As can be seen in figure 3.3.1, applying for patents was more common in industry than in services: 19 % of industrial enterprises with innovation activity applied for patents between 1998 and 2000, compared to 13 % of services enterprises.

While the proportion of manufacturing enterprises having applied for at least one patent was 19 %, the average for the mining and quarrying, and electricity, gas and water supply sector was just 14 %, closer to the services average than the industrial average. Within services a greater range of values was reported, with just 2 % of transport and communication, and financial intermediation enterprises having applied for a patent, compared to 21 % in business services.

Table 3.3.3

Proportion of enterprises with innovation activity that made use of specified methods to protect inventions or innovations, EU, 1998-2000 (%)

	Formal methods			Strategic methods		
	Registration of design patterns	Trademarks	Copyright	Secrecy	Complexity of design	Lead-time advantage on competitors
Total	14	21	6	27	19	36
Industry	15	20	4	27	17	34
Mining and quarrying, and electricity, gas and water supply (C and E)	5	12	3	21	8	23
Manufacturing (D)	15	21	4	27	18	34
Services	12	21	11	28	21	39
Wholesale and commission trade (51)	16	26	9	20	14	35
Transport and communication, and financial intermediation (I and J)	3	10	5	15	11	23
Computer activities; R&D; engineering activities and consultancy; technical testing and analysis (72, 73, 74.2, 74.3)	15	26	19	50	38	60

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Besides patents, there are other methods to protect inventions or innovations, classified by CIS3 into formal and strategic methods. Both in industry and in services, lead-time advantages on competitors and secrecy were the most commonly used protection methods among enterprises with innovation activity during the period of 1998 to 2000.

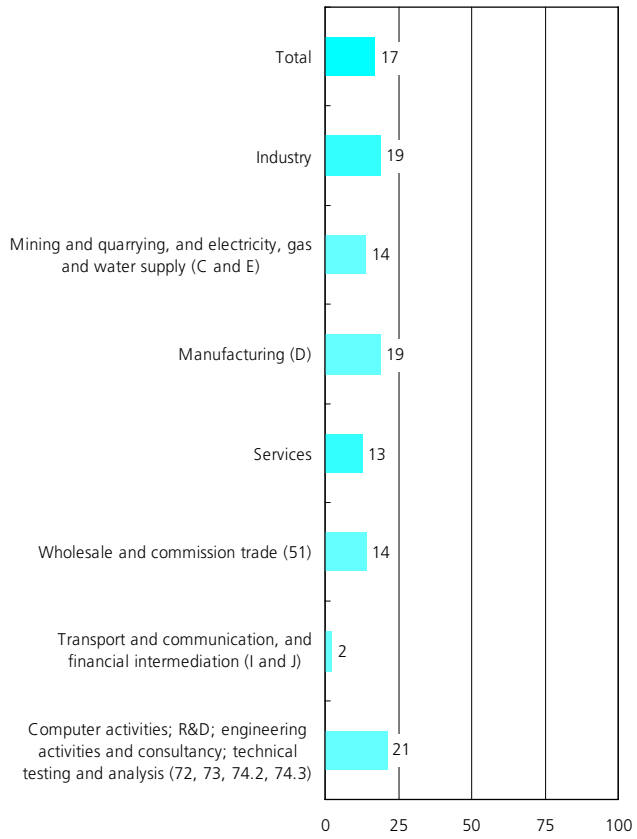
As can be seen from table 3.3.3 a lower proportion of enterprises in the quarrying and mining, and electricity, gas and water supply sector used these protection methods than in manufacturing.

Overall the services sector showed a similar pattern regarding these protection methods as for patents. For most methods, including all of the strategic methods, business services enterprises were the most likely to use protection methods, and transport and communication, and financial intermediation enterprises the least. For all three of the services sectors shown in table 3.3.3, strategic methods were more often used than the formal methods. Nevertheless, trademarks and design patterns in the wholesale trade sector were more likely to be used than some of the strategic methods.

Figure 3.2.2 shows that the proportion of enterprises that made use of specific methods to protect inventions or innovations was particularly high in the business services sector, where half of the enterprises with innovation activity made use of industrial secrecy and as many as 60 % of enterprises with innovation activity made use of lead-time advantages. A higher proportion of enterprises with innovation activity in the business services sector (compared to the industry or services averages) made use of each of the specific methods to protect inventions and innovations, except for the registration of design patterns, where a similar proportion of enterprises in the industrial sector was recorded (15 %).

Figure 3.3.1

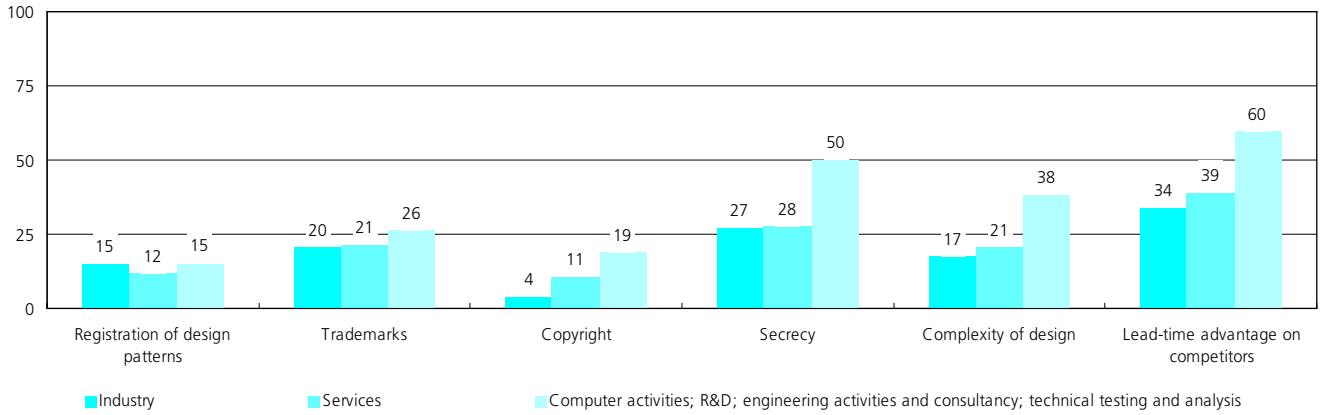
Proportion of enterprises with innovation activity that applied for at least one patent to protect inventions or innovations, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Figure 3.3.2

Proportion of enterprises with innovation activity that made use of specified methods to protect inventions or innovations, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

3.4 BARRIERS TO INNOVATION

After having analysed the effects and impact of innovation, this subchapter provides two analyses focusing on the barriers to innovation during the period 1998 to 2000. The first deals with enterprises with innovation activity and whether any of their innovation activity faced problems or delays. The second part looks at all enterprises and develops a more detailed analysis of the factors that hamper innovation activity.

PROBLEMS FACED BY ENTERPRISES WITH INNOVATION ACTIVITY

Enterprises with innovation activity were asked if any of their innovation activity had been seriously delayed, prevented from being started, or burdened with other serious problems. In the EU, innovation activities that had faced problems of this type were almost equally distributed between the industrial and services sectors, except for serious delays, which were more common in services. The most common barrier for innovation activities was to have been seriously delayed: this was the case for 31 % of EU enterprises in industry and 46 % of those in the services sector (see table 3.4.1).

Figure 3.4.1 shows the proportion of EU enterprises with innovation activity that experienced specific problems when innovating. Within the services sector, some 42 % of the enterprises with innovation activity in the wholesale trade sector (NACE Division 51) faced serious delays with respect to their innovation activity, and this share rose to 55 % for the business services sector.

The two other categories (projects prevented from being started and projects burdened with other serious problems) were almost equally reported by industrial and services enterprises. Innovation activities were burdened with other serious problems in 22 % of enterprises with innovation activity in the industrial and services sector, while 21 % of industrial and 24 % of services' enterprises with innovation activity reported that their innovation activities had been prevented from being started.

Table 3.4.1

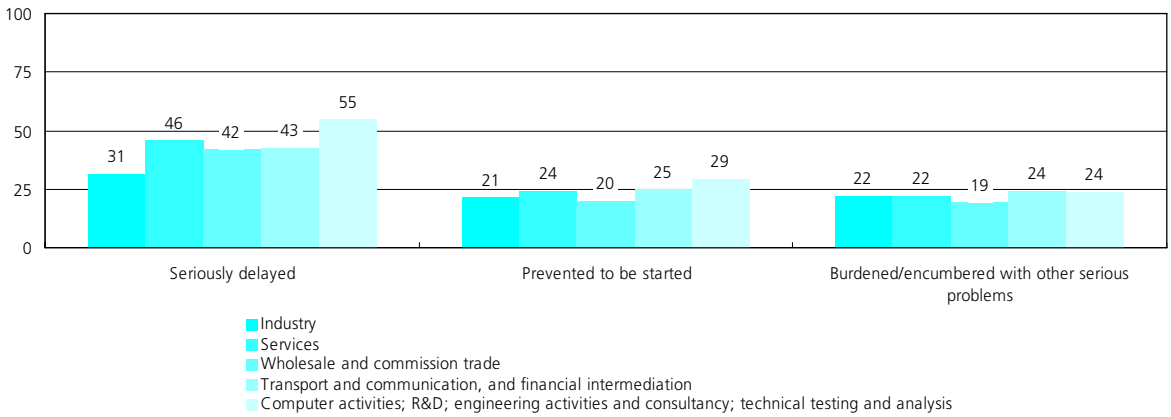
Proportion of enterprises with innovation activity whose innovation activity faced selected problems, EU, 1998-2000 (%)

	Seriously delayed	Prevented to be started	Burdened/ encumbered with other serious problems
Total	37	22	22
Industry	31	21	22
Mining and quarrying, and electricity, gas and water supply (C and E)	25	16	13
Manufacturing (D)	32	21	22
Services	46	24	22
Wholesale and commission trade (51)	42	20	19
Transport and communication, and financial intermediation (I and J)	43	25	24
Computer activities; R&D; engineering activities and consultancy; technical testing and analysis (72, 73, 74.2, 74.3)	55	29	24

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Figure 3.4.1

Proportion of enterprises with innovation activity whose innovation activity faced selected problems, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Among enterprises in the services sector, the proportion of enterprises within business services (29 %) that faced problems that prevented their innovation activity from starting was higher than the proportion registered among other services sectors.

The final category relating to other serious problems was reported as an obstacle that had been faced by 19 % of wholesale trade enterprises and by 24 % of business services enterprises.

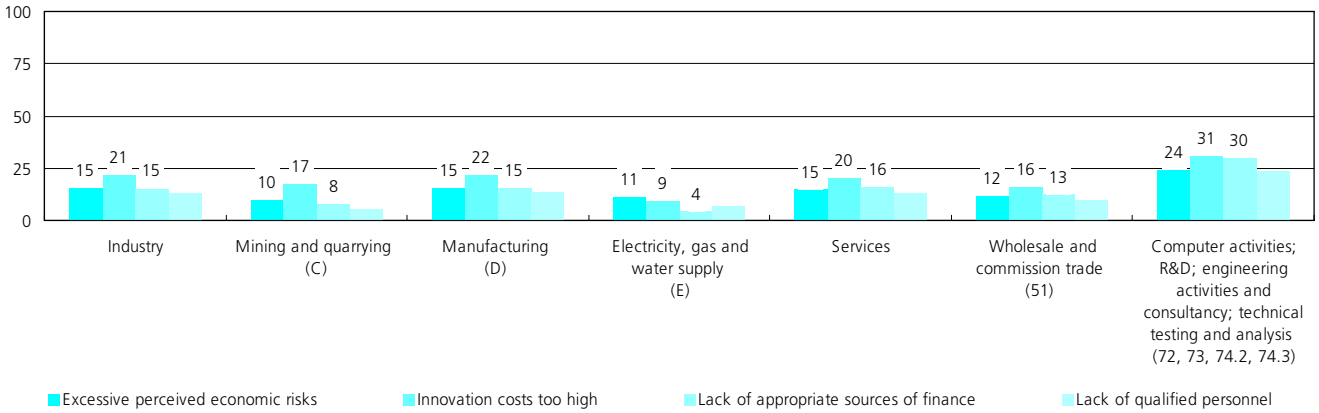
FACTORS HAMPERING INNOVATION ACTIVITY

The results presented in this section deal with all enterprises (i.e. those with and without innovation activity) with respect to the factors that hamper innovation activity. The figures presented refer to the proportion of enterprises that classified the hampering factors studied in CIS3 as 'highly important'.

Economic factors were the most common hampering factors in the majority of economic sectors. Indeed, in the EU, the perception that innovation costs were too high was the factor most commonly regarded as highly important, cited by 21 % of all enterprises: 21 % of industrial enterprises and 20 % of services enterprises (see figure 3.4.2 and table 3.4.2). Among the economic sectors presented in figure 3.4.2, the EU's business services sector consistently recorded the highest values. The electricity, gas and water supply sector was an

Figure 3.4.2

Proportion of enterprises that regarded selected hampering factors that they had experienced as highly important, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 3.4.2

Proportion of enterprises that regarded selected hampering factors that they had experienced as highly important, EU, 1998-2000 (%)

	Economic factors			Internal factors				Other factors	
	Excessive perceived economic risks	Innovation costs too high	Lack of appropriate sources of finance	Organisa-tional rigidities within the enterprise	Lack of qualified personnel	Lack of information on technology	Lack of information on markets	Insufficient flexibility of regulations or standards	Lack of customer responsive-ness to new goods or services
Total	15	21	15	6	13	5	5	9	7
Industry	15	21	15	5	13	5	5	8	7
Mining and quarrying (C)	10	17	8	3	6	3	2	10	6
Manufacturing (D)	15	22	15	5	13	5	5	8	7
Electricity, gas and water supply (E)	11	9	4	4	7	1	2	16	6
Services	15	20	16	6	13	4	4	12	8
Wholesale and commission trade (51)	12	16	13	7	10	5	4	8	8
Transport and communication, and financial intermediation (I and J)	14	20	13	5	11	4	4	15	7
Computer activities; R&D; engineering and consultancy; technical testing and analysis (72, 73, 74.2, 74.3)	24	31	30	5	24	3	5	13	8

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

exception in that high costs were not seen as the most important hampering factor, with a greater proportion of enterprises regarding excessive perceived economic risks as highly important.

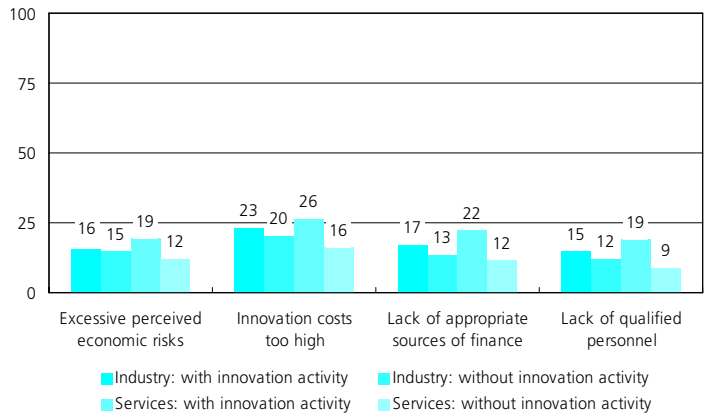
The lack of appropriate sources of finance and excessive perceived economic risks were the second and third most commonly cited factors hampering innovation across the EU. In business services, respectively around 30 % and 24 % of enterprises regarded both of these factors as highly important; the highest percentages recorded within any of the economic activities studied.

Apart from economic factors, a lack of qualified personnel was perceived as a highly important hampering factor by 13 % of all enterprises in the EU's business economy, a share that rose to 24 % within the business services sector. In the two smaller industrial sectors, namely mining and quarrying, and electricity, gas and water supply, only 6 % and 7 % of enterprises regarded this factor as being highly important.

Insufficient information concerning technology or markets did not seem to be a highly important factor for many enterprises. Indeed, a lack of information on these subjects was considered to be a highly important hampering factor by around 5 % of all enterprises in the EU (see table 3.4.2 on the previous page). The manufacturing sector recorded the same proportion of enterprises (5 %) that considered that a lack of information on these subjects was highly important, while the other two industrial sectors recorded lower proportions (3 % or less).

Figure 3.4.3

Proportion of enterprises that regarded selected hampering factors that they had experienced as highly important, by type of enterprise, EU, 1998-2000 (%)



Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

While economic factors and the lack of qualified personnel were the most commonly cited hampering factors among enterprises with and without innovation activity (see figure 3.4.3), they were systematically less often cited by enterprises without innovation activity. The difference between enterprises with and without innovation activity in terms of the perceived importance of hampering factors was generally smaller within the industrial sector than within the services sector.

Table 3.4.3 presents information at a more detailed NACE level and for a greater range of hampering factors. A large difference in the proportion of enterprises citing most hampering factors between enterprises with and without innovation activity was evident within the business services sector. For example, 30 % of enterprises in the business services sector with innovation activity regarded a lack of qualified personnel as a highly important factor, compared to 12 % of those without.

A lack of customer responsiveness to new goods or services and a lack of information on technology were the only hampering factors cited as highly important by a greater proportion of enterprises without innovation activity. With respect to a lack of customer responsiveness, this was mainly a reflection of the situation in manufacturing, whereas for the lack of information on technology it was a reflection of the situation in wholesale trade and in the transport and communications and financial intermediation sectors.

Enterprises with innovation activity generally cited a higher proportion of highly important hampering factors compared to enterprises without innovation activity. For the mining and quarrying, and electricity, gas and water supply sectors the only exceptions were a lack of information on technology, which was cited by equal shares (2 %) and a lack of customer responsiveness (cited by 7 % of enterprises without innovation activity compared to 3 % of those with). Within the wholesale trade sector, equal shares were reported for a lack of customer responsiveness (8 %), while a lack of information on technology was cited by 5 % of enterprises without innovation activity compared to 4 % of those with. In the transport and communication and financial intermediation sector, a lack of information on technology was again the only hampering factor that was experienced by a higher proportion of enterprises without innovation activity (4 % compared to 3 %), while there were equal shares for a lack of customer responsiveness (7 %). An equal share of enterprises with and without innovation activity reported that a lack of information on technology (3 %) and a lack of customer responsiveness (8 %) were highly important hampering factors within the business services sector.

Table 3.4.3

Proportion of enterprises that regarded selected hampering factors that they had experienced as highly important, by innovative status, EU, 1998-2000 (%)

	Excessive perceived economic risks	Inno-vation costs too high	Lack of appropriate sources of finance	Organi-sational rigidities within the enterprise	Lack of qualified personnel	Lack of information on tech-nology	Lack of information on markets	Insufficient flexibility of regulations or standards	Lack of customer responsive-ness to new goods or services
Total									
Enterprises with innovation activity	17	24	19	6	16	4	5	11	6
Enterprises without innovation activity	14	19	13	5	11	5	4	8	8
Industry									
Enterprises with innovation activity	16	23	17	5	15	5	5	9	5
Enterprises without innovation activity	15	20	13	5	12	5	5	7	8
Mining and quarrying, and electricity, gas and water supply (C and E)									
Enterprises with innovation activity	17	16	10	6	7	2	2	14	3
Enterprises without innovation activity	7	12	4	2	6	2	1	12	7
Manufacturing (D)									
Enterprises with innovation activity	16	23	17	5	15	5	5	9	5
Enterprises without innovation activity	15	20	14	6	12	5	5	7	8
Services									
Enterprises with innovation activity	19	26	22	7	19	4	5	15	8
Enterprises without innovation activity	12	16	12	5	9	4	4	9	8
Wholesale and commission trade (51)									
Enterprises with innovation activity	15	19	17	8	14	4	6	10	8
Enterprises without innovation activity	11	15	10	6	8	5	4	7	8
Transport and communication, and financial intermediation (I and J)									
Enterprises with innovation activity	15	24	15	6	14	3	5	22	7
Enterprises without innovation activity	14	18	12	4	9	4	4	12	7
Computer activities; R&D; engineering activities and consultancy; technical testing and analysis (72, 73, 74.2, 74.3)									
Enterprises with innovation activity	30	38	36	6	30	3	6	15	8
Enterprises without innovation activity	14	18	18	3	12	3	3	10	8

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

4. SPECIAL FEATURES ON INNOVATION

DATA NOTES:
For this chapter, the EU aggregate excludes Ireland, Luxembourg and the United Kingdom for all tables and figures.
Figures are rounded separately and therefore may not sum up exactly.
The industrial sector is defined as NACE Sections C to E.
The services sector is defined as NACE Division 51, Sections I and J, Divisions 72 and 73, and Groups 74.2 and 74.3.
The total (otherwise referred to as the business economy) is defined as the sum of industry and services.

4. Special features on innovation

This chapter brings together a number of different topics of special interest. It includes specific information on product innovations, information on the employment characteristics of enterprises with innovation activity, as well as a section on the most important geographical markets for enterprises with innovation activity.

4.1 IMPACT OF PRODUCT INNOVATIONS ON TURNOVER

This subchapter focuses on product innovators, in other words innovators that introduced new or significantly changed goods or services (product innovations) to the market [(1)]. The analysis looks at the composition of turnover, detailing the proportion of turnover accounted for by product innovations. By definition this analysis is not appropriate for process innovations. Although the introduction of a process, for example, a new piece of software, is defined as an innovative activity, CIS3 does not measure in value terms the impact of such an activity on the performance of the enterprise. New software in an accounts department may have little effect on an enterprise's turnover, however, it is likely to have an effect on operating costs and labour productivity, and hence ultimately on profits. More generally process innovations are likely to result in changes within the factors of production used in each enterprise with innovation activity. CIS3 does not quantify the impact, effects or success of process innovations. Hence the statistics presented in this subchapter focus exclusively on product innovations.

[(1)] See the methodological notes in part three for a more detailed definition of product innovators).

Although innovation is often considered as an important element in growth and competitiveness, the vast majority of enterprises generate the largest proportion of their turnover through products that are unchanged or only marginally modified. Enterprises that introduce a relatively high number of new products may do so because the markets in which they operate are rapidly changing (for example, a manufacturer of sports shoes or mobile telephone handsets). Enterprises that derive a high proportion of their turnover from new products are probably those that are more flexible in adapting their manufacturing processes or those that pay closer attention to changes in customer demand. Failure to innovate and introduce new products may result, over time, in a declining market share.

On the other hand, in more mature markets that are less characterised by product differentiation, enterprises may operate for a lengthy period of time generating turnover (and profits) from one or more long-established innovations. In other words, such mature markets are characterised by lengthier product life-cycles.

The share of total turnover derived from new products is probably more relevant to an analysis of product life-cycles, rather than measuring the impact of innovation outputs. It is unlikely that the main goal of enterprises with innovation activity is to have a high share of their turnover derived from new products, rather they are more concerned with the effects of these new products as regards profitability and market share. CIS3 provides a breakdown of turnover generated by product innovators into:

- turnover from unchanged or only marginally modified products (goods or services);
- turnover from new or significantly improved products;
- turnover from new or significantly improved products, not only new for the enterprise but also new for the enterprise's market.

Table 4.1.1 shows data for the three different categories of innovation. Looking at all product innovations in the EU, regardless of whether they were new to the market or not, they accounted for just over one quarter (27 %) of total turnover. An analysis by sector shows a significant difference, with this proportion rising to nearly one third of turnover in industry (33 %) compared to one fifth in services (20 %).

A further analysis, distinguishing between product only innovators and enterprises with both product and process innovations indicates a different situation between industry and services. While industrial product only innovators derived a significantly smaller share of their turnover from product innovations (25 %) than industrial enterprises that were product and process innovators (34 %), there was very little difference for this indicator between these two types of innovators in the services sector.

Table 4.1.1

Proportion of turnover derived from different types of products, by type of innovator, EU, 2000 (%)

	All product innovators	Product only innovators	Product and process innovators
Turnover from product innovations (introduced during the period 1998-2000)			
Total	27	23	28
Industry	33	25	34
Services	20	21	20
Turnover from unchanged or marginally changed products (during the period 1998-2000)			
Total	72	76	72
Industry	67	73	66
Services	79	79	79

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

4.2 NEW PRODUCTS

This subchapter looks at the importance of product innovations in relation to turnover growth. Again it is restricted to product innovators, including product only innovators and enterprises that were both product and process innovators. The growth of turnover is based on the period from 1998 to 2000 and is a simple growth rate over the whole period, rather than an annualised rate. The interest in this analysis is to see whether there is a relationship between a high proportion of turnover coming from product innovations and large increases in turnover growth. Turnover of product innovators in the EU rose by 19 % between 1998 and 2000.

In the EU as a whole, product innovators in services derived a lower proportion of total turnover from product innovations (20 %) than in industry (33 %) - see table 4.2.1 - while both industry and services recorded similar turnover growth rates between 1998 and 2000 (respectively 18 % and 19 %).

When comparing product only innovators with product and process innovators, on the basis of EU figures, product only innovators recorded a slightly lower rate of turnover growth between 1998 and 2000, at 16 % compared to 19 % for product and process innovators. In 2000, product only innovators recorded 23 % of their turnover coming from new products, while the corresponding share for product and process innovators was 28 % (see table 4.2.2).

Table 4.2.1

All product innovators: turnover growth between 1998 and 2000 and proportion of turnover derived from product innovations, by sector, EU, 2000 (%)

	Total	Industry	Services
Turnover growth, 1998-2000 (%)	19	19	18
Proportion of turnover derived from product innovations, 2000 (%)	27	33	20

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 4.2.2

Turnover growth between 1998 and 2000 and proportion of turnover derived from product innovations, by type of product innovator, EU, 2000 (%)

	All product inno-vators	Product only inno-vators	Product and process inno-vators
Turnover growth, 1998-2000 (%)	19	16	19
Proportion of turnover derived from product innovations, 2000 (%)	27	23	28

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

4.3 EMPLOYMENT GROWTH AND INNOVATION

Human capital is an essential factor for economic growth based on science and technology. More specifically the accumulation and use of knowledge within the workforce of an enterprise is an important aspect of innovation activity. The aim of the next three subchapters is to present and analyse different aspects of innovation through the study of the level of employment among enterprises with and without innovation activity. The interest is first to highlight the change in the level of employment between two periods (1998 and 2000), and then to examine the characteristics of employment, including employment characteristics by different types of innovators, different enterprise size-classes, and different sectors of activity (for enterprises with innovation activity). The final section focuses on employees with higher levels of education.

As many of the figures presented show the absolute level of employment, the limited nature of the size-class coverage of CIS3 should be kept in mind. Very small enterprises (with less than 10 employees) were not covered and these account for a large proportion (approximately 18 % excluding financial intermediation) of all employment in the business economy as covered by CIS3. As such, all levels of employment reported in this chapter only relate to a part of the workforce.

The analysis starts by focusing on the number of employees and its change between 1998 and 2000, for different types of enterprises. An overview of the level of employment in enterprises with innovation activity in the EU shows that in all the sectors covered by CIS3, there were about 23.4 million employees in 1998 and 25.3 million by 2000. When looking at enterprises without innovation activity, there were approximately 9.6 million employees in 1998 and 10.0 million by 2000.

The level of employment was much higher among enterprises with innovation activity than it was among enterprises without. Given the fact that there were more enterprises without innovation activity, the higher level of employment was due to enterprises with innovation activity having a higher average number of employees than enterprises without innovation activity.

Enterprises that were both product and process innovators were the largest single category in employment terms with around 16.3 million employees in 1998 and 17.7 million employees in 2000 (see table 4.3.1). This was approximately half of total employment in both years.

Comparing the level of employment between enterprises with innovation activity and those without in 2000, there were, for every 100 employees in enterprises without innovation activity, some 253 employees in enterprises with innovation activity. In percentage terms, just over 70 % of total employment was located in enterprises with innovation activity in 2000.

Table 4.3.1

Number of employees, by type of enterprise, EU (thousands)

	Total	Enterprises with innovation activity	Product only innovators	Product and process innovators	Enterprises without innovation activity
1998	32 999	23 359	3 646	16 284	9 639
2000	35 284	25 279	3 937	17 746	10 006

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 4.3.2 provides information regarding the change in the absolute number of employees between 1998 and 2000. In the EU, a net gain in employment was registered between the two periods in the business economy of some 2.3 million employees. Of these, the net increase accounted for by enterprises with innovation activity was 1.9 million employees.

In the industrial sector of the EU, a net gain of 1.1 million employees was registered between 1998 and 2000, resulting mainly from an increase of 972 000 employees among enterprises with innovation activity. In the services sector, the total number of employees increased by 1.2 million in the EU between 1998 and 2000. Most of this increase (948 000 employees) could be attributed to enterprises with innovation activity.

In percentage terms, the total number of employees grew by 7 % in the EU (see table 4.3.3) between 1998 and 2000. The number of employees among enterprises without innovation activity rose by 4 %, while the proportion working in enterprises with innovation activity rose by 8 %.

In industry, total employment in the EU grew between 1998 and 2000 by 5 %. When looking at the different types of enterprises in this sector, enterprises with innovation activity registered an increase of 7 % in their number of employees, as did successful innovators, while enterprises without innovation activity registered growth of 2 %. In services, total employment in the EU grew by 9 % between 1998 and 2000, with higher growth reported by enterprises with innovation activity (11 %) compared to those without (6 %).

Table 4.3.2

Change in the number of employees between, by sector, by type of enterprise, EU, 1998-2000 (thousands)

	Total	Industry	Services
All enterprises	2 286	1 110	1 176
Enterprises with innovation activity	1 919	972	948
Successful innovators	:	962	:
Product only innovators	291	127	164
Process only innovators	:	69	:
Product and process innovators	1 462	766	695
Enterprises with only on-going and/ or abandoned innovation activity	:	10	:
Enterprises without innovation activity	366	138	228

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 4.3.3

Employment growth, by sector, by type of enterprise, EU, 1998-2000 (%)

	Total	Industry	Services
All enterprises	7	5	9
Enterprises with innovation activity	8	7	11
Successful innovators	:	7	:
Product only innovators	8	5	14
Process only innovators	:	4	:
Product and process innovators	9	8	11
Enterprises with only on-going and/ or abandoned innovation activity	:	2	:
Enterprises without innovation activity	4	2	6

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 4.4.1

Enterprises with innovation activity: number of employees, by sector, by size, EU (thousands)

	Total	Industry	Services
All enterprises			
1998	23 359	14 632	8 727
2000	25 279	15 604	9 675
Small enterprises			
1998	2 833	1 792	1 040
2000	3 074	1 930	1 143
Medium-sized enterprises			
1998	4 560	3 355	1 205
2000	4 952	3 571	1 381
Large enterprises			
1998	15 965	9 485	6 480
2000	17 247	10 103	7 144

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 4.4.2

Enterprises with innovation activity: change in the number of employees, by sector, by size, EU, 1998-2000 (thousands)

	Total	Industry	Services
All enterprises	1 919	972	948
Small enterprises	241	138	103
Medium-sized enterprises	392	216	176
Large enterprises	1 281	618	664

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

4.4 EMPLOYMENT AND INNOVATION: SIZE-CLASS EFFECTS

This subchapter presents a breakdown of employment and innovation activity between small, medium-sized and large enterprises. It looks at where employment is concentrated, and whether employment growth is higher in certain size-classes.

As a general rule, employment in the EU's business economy is mainly concentrated in large enterprises. In 1998 and 2000, among enterprises with innovation activity, 68 % of employees were working for large enterprises. Among the activities covered by CIS3, industry was the dominant sector: as in 2000, the industrial sector accounted for 62 % of the total number of employees in enterprises with innovation activity (see table 4.4.1).

Employees working in medium-sized industrial enterprises with innovation activity represented 72 % of the total number of employees working in medium-sized enterprises with innovation activity in the EU in 2000. This was a higher share than accounted for by industrial enterprises in either the small (63 %) or the large (59 %) enterprise size-classes.

For every 100 employees in small enterprises with innovation activity in 1998 there were 564 employees working in large enterprises with innovation activity, a ratio that was more or less unchanged in 2000 (561). In services, the concentration of employment in the large enterprise size-class was even higher as the same ratio stood at 623 employees in 1998 and 625 employees in 2000, while in industry the ratio also remained relatively stable (between 520 and 530 employees). Note that the CIS3 survey covers only enterprises with 10 or more employees and not the whole enterprise population.

The level of employment increased in the EU between 1998 and 2000 in enterprises with innovation activity. When looking at the different enterprise size-classes, the level of employment grew most among large enterprises. Within large enterprises the net increase in the number of employees was 1.3 million (see table 4.4.2), almost equally split between industry and services. In medium-sized enterprises the number of employees rose from 4.6 million to 5.0 million, while in small enterprises employment went from 2.8 million to 3.1 million.

4.5 EMPLOYMENT AND INNOVATION: ACROSS ECONOMIC ACTIVITIES

CIS3 shows there was a higher number of employees in the EU's industrial sector in both 1998 and 2000. Note that the survey only covers fragmented parts of the services sector, whereas all economic activities in industry (as covered by NACE Sections C to E) were surveyed. Nonetheless, when looking at the development of employment between these two years, the services sector recorded somewhat higher growth rates.

As stated in the previous subchapter, the industrial sector represented 62 % of the 25.3 million employees working within enterprises with innovation activity in the EU in 2000. The industrial sector was dominated by manufacturing (NACE Section D) which accounted for 59 % of total employment in enterprises with innovation activity in 2000 with around 14.8 million employees (see table 4.5.1). Mining and quarrying (NACE Section C), and electricity, gas and water supply (NACE Section E) together accounted for the remaining 3 % of industrial employment.

Among services, wholesale trade (NACE Division 51) contributed 9 % to total employment in 2000 and business services (NACE Divisions 72 and 73 and Groups 74.2 and 74.3) a further 5 %. The two largest services sectors were transport and communication (NACE Section I) and financial intermediation (NACE Section J). Together they contributed 24 % of employment among enterprises with innovation activity, with the transport and communications sector the larger of the two.

Table 4.5.1

Enterprises with innovation activity: number of employees, by activity, EU (thousands)

	Total	Industry	Mining and quarrying, and electricity, gas and water supply (C and E)	Manufacturing (D)	Services	Wholesale and commission trade (51)	Transport and communication, and financial intermediation (I and J)	Computer activities; R&D; engineering and consultancy; technical testing and analysis (72, 73, 74.2, 74.3)
1998	23 359	14 632	880	13 752	8 727	2 200	:	:
2000	25 279	15 604	810	14 794	9 675	2 298	6 070	1 307

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

4.6 EDUCATION LEVELS AND INNOVATION ACTIVITY

Knowledge is an essential element in the innovation process. Indeed, it is one of the key measures used to analyse human resources, in particular by looking at the stock of employees with a higher education. It is therefore possible to use CIS3 data to look at the relative importance of employees with a higher education among enterprises with and without innovation activity.

Table 4.6.1 provides evidence that enterprises with innovation activity are generally more likely to have a higher share of employees with a higher education that those without innovation activity. Indeed, some 13 % of employees in the EU had completed a higher education, while the proportion was 14 % among enterprises with innovation activity, and 9 % among enterprises without innovation activity.

When looking at industry and services a similar pattern was observed, as 9 % of employees working in the industrial sector in the EU had completed a higher education among enterprises with innovation activity, compared to just 5 % among enterprises without. In the services sector, the share of employees with a higher education rose to 21 % among those enterprises with innovation activity and 16 % for enterprises without.

No matter what type of innovator was studied, enterprises in the services sector consistently reported a higher share of employees with a higher education. Across all enterprises the difference was 12 percentage points, with 20 % of those employed in services having a higher education (compared to 8 % for industry). The gap was identical when considering the proportion of employees working in enterprises that were both product and process innovators, where 22 % of those employed in services had a higher education (compared to 10 % in industry). Finally, as regards enterprises without innovation activity, those in the services sector again recorded a higher proportion of employees with a higher education (16 %), some 11 points above the industry average (5 %).

Table 4.6.1

Proportion of employees with a higher education, by sector, by type of enterprise, EU, 2000 (%)

	Total	Industry	Services
All enterprises	13	8	20
Enterprises with innovation activity	14	9	21
Successful innovators	:	9	:
Product only innovators	15	:	:
Process only innovators	:	:	:
Product and process innovators	15	10	22
Enterprises with only on-going and/or abandoned innovations	:	8	:
Enterprises without innovation activity	9	5	16

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

4.7 ENTERPRISES' MARKETS

WHERE ARE THE MOST SIGNIFICANT MARKETS FOR ENTERPRISES WITH INNOVATION ACTIVITY?

As part of the general information that was collected by CIS3, all enterprises were asked to indicate their most significant market. The questionnaire asked respondents to choose the most appropriate alternative from:

- local/regional markets (within a distance of 50 km) within the same country;
- markets (within a distance of 50 km) within a neighbouring country;
- national markets (with a distance of more than 50 km);
- international markets (with a distance of more than 50 km).

Clearly the specific location of an enterprise has some bearing on the list of possible answers for respondents, for example, the arbitrary 50 km divide between local/regional markets and national/international markets usually extends beyond the national borders of Luxembourg, given the relatively small size of this country. Alternatively, local/regional markets within a neighbouring country within 50 km simply do not exist in Iceland. Furthermore, one could imagine that countries with a large, land mass are likely to report a greater significance for local/regional markets and national markets compared to countries where there are relatively short distances to travel before reaching an international border.

Table 4.7.1

Proportion of enterprises with innovation activity, by most significant market, EU, 2000 (%) (1)

	Total	Industry	Services
Enterprises with innovation activity			
Local/regional (within 50 km) in own country	22	18	29
Local/regional (within 50 km) in neighbouring countries	8	9	7
National (more than 50 km)	44	44	45
International (more than 50 km)	25	29	19
Enterprises without innovation activity			
Local/regional (within 50 km) in own country	37	34	41
Local/regional (within 50 km) in neighbouring countries	12	13	9
National (more than 50 km)	39	39	39
International (more than 50 km)	13	14	11

(1) Proportions are calculated as a share of all positive responses and exclude non-response.
Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table 4.7.1 shows that enterprises with innovation activity tended to be more focused on national/international markets, while enterprises without innovation activity tended to be more focused on local/regional markets (see also figure 4.7.1). Within the EU, almost half (49 %) of all enterprises without innovation activity reported that their most significant market was local or regional (irrespective of whether or not it was in the same or a neighbouring country). The same ratio among enterprises with innovation activity shows that less than one third (30 %) reported their most significant market as being local or regional. Some 25 % of enterprises with innovation activity indicated that their most significant market was an international market, compared to 13 % for enterprises without innovation activity. For both kinds of enterprises (with and without innovation activity) the national market was the most common market, accounting for 44 % and 39 % of respondents.

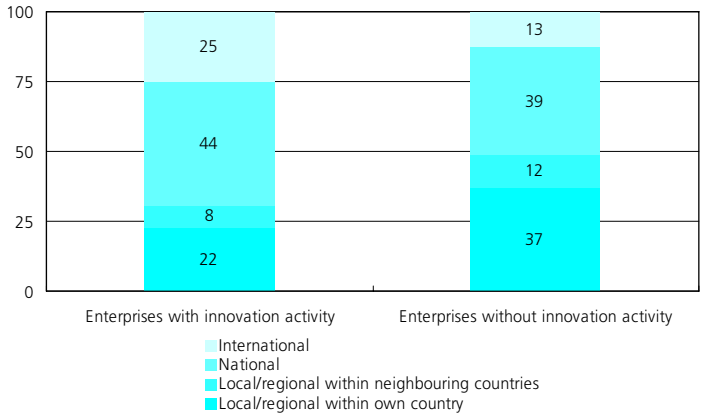
A breakdown by activity shows a slightly different pattern for industrial and services sectors. Some 47 % of industrial enterprises without innovation activity and 27 % of those with innovation activity reported that their most significant market was local or regional. Within the services sector the proportion of enterprises reporting that their most significant market was local or regional was somewhat higher for both enterprises without and with innovation activity (50 % and 36 % respectively).

Comparing the industrial and services sectors in the EU (as shown in figure 4.7.2), enterprises with innovation activity in both sectors were most active on national markets in 2000, 44 % in industry and 45 % in services. Differences between the two sectors in terms of the most significant market appeared when comparing international and regional/local markets. In services some 29 % of enterprises with innovation activity viewed the local/regional market within their own country as the most significant market, 11 percentage points higher than the corresponding share for industry. Conversely, 29 % of enterprises with innovation activity in industry perceived international markets to be their main focus, compared to 19 % for services.

In part the differences between industry and services may be explained by the non-transportable nature of some service products. Whereas all but the most perishable manufactured goods can be transported, this is not true of all services, and some services have to be consumed at the place of provision.

Figure 4.7.1

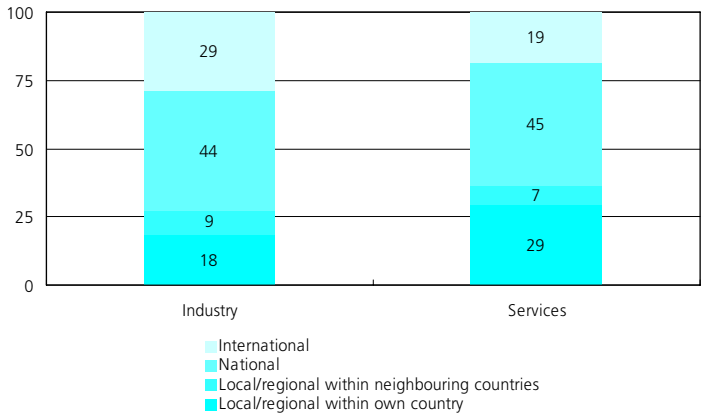
Proportion of enterprises, by most significant market, EU, 2000 (%) (1)



(1) Proportions are calculated as a share of all positive responses and exclude non-response.
Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Figure 4.7.2

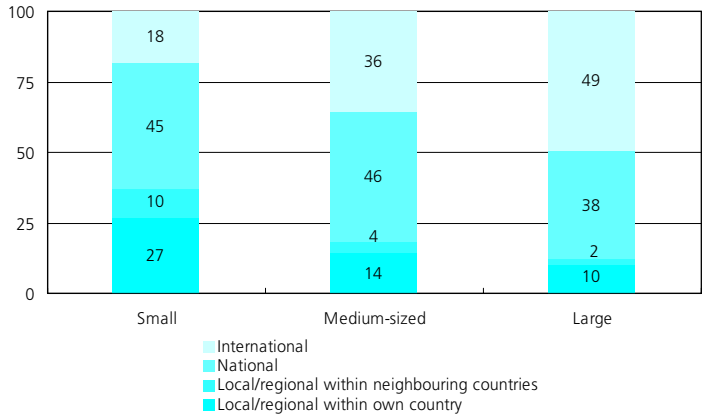
Proportion of enterprises with innovation activity, by most significant market, by sector, EU, 2000 (%) (1)



(1) Proportions are calculated as a share of all positive responses and exclude non-response.
Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Figure 4.7.3

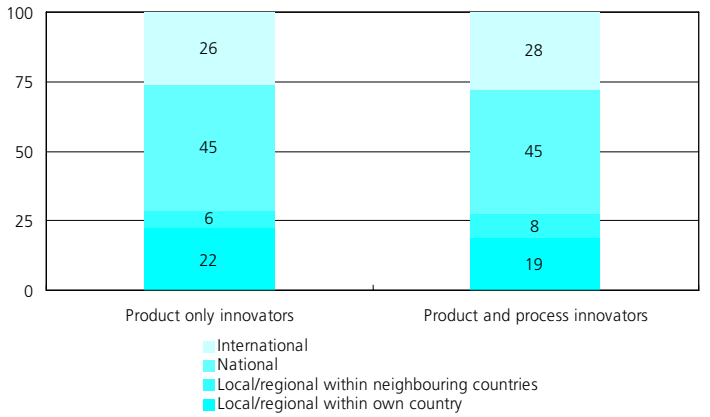
Proportion of enterprises with innovation activity, by most significant market, by size, EU, 2000 (%) (1)



(1) Proportions are calculated as a share of all positive responses and exclude non-response.
Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Figure 4.7.4

Proportion of enterprises with innovation activity, by most significant market, by type of product innovator, EU, 2000 (%) (1)



(1) Proportions are calculated as a share of all positive responses and exclude non-response.
Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

MARKETS FOR ENTERPRISES WITH INNOVATION ACTIVITY: SIZE-CLASS EFFECTS

Figure 4.7.3 shows the importance of the four identified markets broken down by enterprise size-class for enterprises with innovation activity. Most notable was the increase in the proportion of enterprises with innovation activity that regarded international markets as their most significant market as average enterprise size increased. This proportion rose from 18 % among small enterprises to 36 % among medium-sized enterprises and rose again to 49 % among large enterprises. Another difference was evident between small enterprises on the one hand and medium-sized enterprises on the other, as a lower proportion of medium-sized enterprises regarded local/regional markets (whether national or international) as their most significant market. Between medium-sized enterprises and large enterprises there was an 8 percentage point difference in the proportion of enterprises with innovation activity that perceived their national market as being their most significant.

Figure 4.7.4 shows the importance of these markets according to a breakdown by type of enterprise. As can be seen, there is very little difference between the two types of product innovators with national markets being the most significant for 45 % of product only innovators as well as product and process innovators. International markets (both less than and greater than 50 km) were the most significant market for 28 % of product and process innovators (compared to 26 % of product only innovators), while local/regional markets in neighbouring countries were the most significant market for 8 % of both product and process innovators (compared to 6 % of product only innovators).

COUNTRY CHAPTERS

Belgium

Table BE.1A

Number of enterprises, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of enterprises (units)										
All enterprises	13 355	6 319	68	6 227	24	7 035	3 634	2 142	421	838
Enterprises with innovation activity	6 691	3 709	18	3 680	12	2 982	1 688	541	161	591
Successful innovators	6 676	3 698	18	3 668	12	2 978	1 685	541	161	591
Product only innovators	2 552	1 196	4	1 188	5	1 356	867	152	84	253
Process only innovators	1 293	800	0	797	4	493	278	150	12	53
Product and process innovators	2 831	1 701	15	1 684	3	1 129	540	239	66	284
Enterprises with only on-going and/or abandoned innovations	15	12	0	12	0	4	4	0	0	0
Enterprises without innovation activity	6 664	2 610	50	2 548	13	4 054	1 946	1 601	260	247
Proportion of all enterprises (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	50	59	26	59	48	42	46	25	38	71
Successful innovators	50	59	26	59	48	42	46	25	38	71
Product only innovators	19	19	5	19	21	19	24	7	20	30
Process only innovators	10	13	0	13	15	7	8	7	3	6
Product and process innovators	21	27	21	27	13	16	15	11	16	34
Enterprises with only on-going and/or abandoned innovations	0	0	0	0	0	0	0	0	0	0
Enterprises without innovation activity	50	41	74	41	52	58	54	75	62	29

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.1B

Number of enterprises, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of enterprises (units)												
All enterprises	10 242	2 467	645	4 479	1 422	418	4 416	1 404	407	5 763	1 045	227
Enterprises with innovation activity	4 612	1 585	493	2 376	991	343	2 367	980	333	2 237	594	151
Successful innovators	4 601	1 585	490	2 364	991	343	2 355	980	333	2 237	594	147
Product only innovators	1 902	544	106	777	371	48	777	367	43	1 125	173	58
Process only innovators	1 003	224	67	646	104	51	646	101	51	357	119	16
Product and process innovators	1 696	818	317	941	516	244	933	512	239	755	302	72
Enterprises with only on-going and/or abandoned innovations	12	0	4	12	0	0	12	0	0	0	0	4
Enterprises without innovation activity	5 630	882	152	2 104	431	75	2 049	424	74	3 526	451	77
Proportion of all enterprises (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	45	64	76	53	70	82	54	70	82	39	57	66
Successful innovators	45	64	76	53	70	82	53	70	82	39	57	65
Product only innovators	19	22	16	17	26	11	18	26	11	20	17	26
Process only innovators	10	9	10	14	7	12	15	7	12	6	11	7
Product and process innovators	17	33	49	21	36	58	21	36	59	13	29	32
Enterprises with only on-going and/or abandoned innovations	0	0	1	0	0	0	0	0	0	0	0	2
Enterprises without innovation activity	55	36	24	47	30	18	46	30	18	61	43	34

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.2A

Number of employees, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of employees (thousands)										
All enterprises	1 045	590	4	579	8	455	135	126	146	48
Enterprises with innovation activity	754	472	2	463	7	281	71	59	112	39
Enterprises without innovation activity	291	118	2	116	0	173	63	67	34	9
Proportion of total number of employees (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	72	80	47	80	94	62	53	47	77	81
Enterprises without innovation activity	28	20	53	20	6	38	47	53	23	19

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.2B

Number of employees, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of employees (thousands)												
All enterprises	233	257	554	106	154	330	104	152	322	128	103	224
Enterprises with innovation activity	110	173	472	58	113	302	:	111	:	52	60	170
Enterprises without innovation activity	124	85	83	48	42	29	:	41	:	76	43	54
Proportion of total number of employees (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	47	67	85	55	73	91	:	73	:	40	58	76
Enterprises without innovation activity	53	33	15	45	27	9	:	27	:	60	42	24

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.3A

Turnover, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Turnover (EUR million)										
All enterprises	376 321	168 290	:	163 693	:	208 031	56 867	22 853	107 156	21 155
Enterprises with innovation activity	272 955	146 250	:	142 929	:	126 705	32 113	13 915	:	:
Enterprises without innovation activity	103 366	22 040	:	20 764	:	81 326	24 755	8 938	:	:
Proportion of total turnover (%)										
All enterprises	100	100	:	100	:	100	100	100	100	100
Enterprises with innovation activity	73	87	:	87	:	61	56	61	:	:
Enterprises without innovation activity	27	13	:	13	:	39	44	39	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.3B

Turnover, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Turnover (EUR million)												
All enterprises	77 570	75 398	223 353	23 262	37 544	107 484	22 857	34 886	105 950	54 308	37 854	115 870
Enterprises with innovation activity	47 992	53 672	171 291	15 028	:	:	14 992	27 859	100 078	32 964	:	:
Enterprises without innovation activity	29 578	21 726	52 062	8 234	:	:	7 865	7 027	5 872	21 344	:	:
Proportion of total turnover (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	62	71	77	65	:	:	66	80	94	61	:	:
Enterprises without innovation activity	38	29	23	35	:	:	34	20	6	39	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.4A

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators	45	45	:	46	:	44	35	49	43	65
Product only innovators	37	36	:	37	:	38	32	30	33	66
Product and process innovators	52	52	:	52	:	51	39	61	55	65

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.4B

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators	41	49	61	41	49	64	41	49	64	42	49	55
Product only innovators	34	48	52	30	50	36	30	50	40	36	43	65
Product and process innovators	50	50	64	49	48	69	50	48	69	51	53	46

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.5A

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators										
From unchanged or marginally modified products	78	82	:	82	:	74	:	:	:	:
From new or significantly improved products, not new to the market	14	10	:	10	:	17	:	:	:	:
From new or significantly improved products, new to the market	8	8	:	8	:	8	:	:	:	:
Product only innovators										
From unchanged or marginally modified products	86	87	:	86	:	85	87	:	:	:
From new or significantly improved products, not new to the market	10	8	:	8	:	11	11	:	:	:
From new or significantly improved products, new to the market	5	6	:	6	:	4	1	:	:	:
Product and process innovators										
From unchanged or marginally modified products	76	81	:	81	:	69	:	71	:	11
From new or significantly improved products, not new to the market	15	11	:	11	:	21	:	4	:	70
From new or significantly improved products, new to the market	9	8	:	8	:	10	:	25	:	19

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.5B

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators												
From unchanged or marginally modified products	55	79	84	:	85	:	84	85	81	:	73	:
From new or significantly improved products, not new to the market	36	10	9	:	7	:	12	7	11	:	13	:
From new or significantly improved products, new to the market	9	11	7	:	8	:	4	8	8	:	14	:
Product only innovators												
From unchanged or marginally modified products	85	81	89	:	86	:	86	86	86	:	76	:
From new or significantly improved products, not new to the market	13	11	7	:	5	:	11	5	12	:	17	:
From new or significantly improved products, new to the market	2	8	4	:	9	:	3	9	2	:	7	:
Product and process innovators												
From unchanged or marginally modified products	41	78	83	83	84	81	83	84	80	22	71	89
From new or significantly improved products, not new to the market	46	9	9	12	8	11	12	8	11	61	10	7
From new or significantly improved products, new to the market	13	13	7	5	8	9	5	8	9	16	19	5

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.6A

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Intramural R&D	59	74	53	74	70	42	28	39	71	75
Extramural R&D	26	29	6	29	26	22	15	42	37	16
Acquisition of machinery and equipment	58	67	42	67	26	47	47	47	45	44
Acquisition of other external knowledge	19	11	19	10	70	29	24	30	46	36
Training	49	49	42	49	70	50	40	47	64	79
Market introduction of innovations	37	35	19	35	26	39	41	19	55	47
Design, other preparations for production/deliveries	27	35	47	35	0	17	14	16	36	23

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.6B

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Intramural R&D	54	69	74	71	77	83	:	77	:	37	54	56
Extramural R&D	22	29	46	25	31	52	:	31	:	20	26	30
Acquisition of machinery and equipment	52	71	65	62	74	76	:	75	:	42	65	39
Acquisition of other external knowledge	17	21	30	7	12	32	:	12	:	27	35	27
Training	41	67	74	38	65	75	:	65	:	44	69	74
Market introduction of innovations	32	46	51	27	47	52	:	47	:	37	44	46
Design, other preparations for production/deliveries	24	33	37	33	36	40	:	36	:	13	29	32

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.7A

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Product oriented effects										
Increased range of goods or services	33	32	0	33	0	34	34	11	61	46
Increased market or market share	24	26	0	26	0	21	16	22	35	30
Improved quality in goods or services	43	43	28	43	0	42	40	47	33	43
Process oriented effects										
Improved production flexibility	20	21	28	21	26	19	18	28	19	12
Increased production capacity	23	28	22	28	0	17	20	19	12	11
Reduced labour costs per produced unit	15	16	0	16	0	14	15	15	21	10
Reduced materials and energy per produced unit	6	6	22	6	0	5	3	9	0	6
Other effects										
Improved environmental impact or health and safety aspects	17	19	53	19	30	14	14	26	4	5
Met regulations or standards	16	18	6	18	74	13	14	14	16	11

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.7B

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Product oriented effects												
Increased range of goods or services	29	44	36	27	44	37	:	45	:	31	43	35
Increased market or market share	19	36	25	22	36	27	:	36	:	16	37	22
Improved quality in goods or services	44	38	40	46	36	40	:	36	:	42	42	39
Process oriented effects												
Improved production flexibility	18	23	23	20	22	20	:	22	:	17	25	28
Increased production capacity	24	22	23	30	24	24	:	24	:	17	20	19
Reduced labour costs per produced unit	14	18	25	13	22	26	:	22	:	15	11	23
Reduced materials and energy per produced unit	5	4	13	5	6	17	:	5	:	6	2	2
Other effects												
Improved environmental impact or health and safety aspects	16	16	27	18	19	29	:	19	:	14	11	21
Met regulations or standards	15	16	24	17	18	22	:	18	:	13	11	29

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.8A

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity	23	29	0	29	70	15	11	15	10	29
Successful innovators	:	29	0	29	70	:	:	15	:	29
Enterprises with only on-going and/or abandoned innovations	:	34	~	34	~	:	:	~	:	~

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.8B

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity	23	19	32	30	24	40	:	24	:	16	12	14
Successful innovators	:	19	:	:	24	:	30	24	39	:	12	:
Enterprises with only on-going and/or abandoned innovations	:	~	:	:	~	:	:	~	:	:	~	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.9A

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All partners	22	24	33	24	70	19	13	23	29	28
National	19	20	11	20	70	17	11	23	20	25
EU/EFTA	13	15	28	15	26	11	4	16	20	22
Candidate countries	2	2	0	2	0	2	1	8	0	2
United States	5	5	22	5	0	4	1	8	0	10
Japan	2	2	0	2	0	1	1	0	6	2
Others	3	4	0	4	0	2	2	6	0	2

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.9B

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All partners	17	27	46	18	27	57	18	27	55	16	28	21
National	15	23	39	16	21	47	16	22	45	14	26	21
EU/EFTA	9	18	34	9	19	44	9	18	44	9	16	12
Candidate countries	1	3	7	1	2	10	1	2	10	2	4	1
United States	2	9	14	2	8	18	2	8	19	3	9	5
Japan	0	4	6	0	4	8	0	4	8	0	4	0
Others	3	4	4	2	7	5	2	7	5	3	1	1

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.10A

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Internal sources										
Within the enterprise	51	53	47	53	57	48	42	46	65	62
Other enterprises within the enterprise group	17	13	47	13	0	23	28	8	26	21
Market sources										
Suppliers of equipment, materials, components or software	27	29	6	29	26	25	29	6	21	31
Clients or customers	28	26	0	26	0	31	30	43	19	27
Competitors and other enterprises from the same industry	12	10	19	10	26	15	18	12	22	8
Institutional sources										
Universities or other higher education institutes	5	5	0	5	0	4	4	0	0	9
Government or private non-profit research institutes	2	3	0	3	0	1	1	2	0	3
Other sources										
Professional conferences, meetings, journals	10	8	0	8	30	11	10	13	7	16
Fairs, exhibitions	15	16	0	16	0	14	17	14	4	7

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.10B

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Internal sources												
Within the enterprise	47	59	60	49	59	58	:	58	:	44	58	64
Other enterprises within the enterprise group	14	23	35	7	20	34	:	19	:	21	28	39
Market sources												
Suppliers of equipment, materials, components or software	27	24	39	29	27	40	:	27	:	26	19	36
Clients or customers	28	30	28	23	31	30	:	32	:	33	27	22
Competitors and other enterprises from the same industry	12	14	14	8	14	12	:	14	:	15	14	19
Institutional sources												
Universities or other higher education institutes	4	7	7	5	6	6	:	6	:	2	9	9
Government or private non-profit research institutes	1	5	4	2	4	5	:	4	:	0	6	0
Other sources												
Professional conferences, meetings, journals	9	11	12	6	12	12	:	11	:	12	11	10
Fairs, exhibitions	14	19	13	13	25	13	:	26	:	16	7	13

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.11A

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Seriously delayed	23	26	47	25	26	20	16	22	22	31
Prevented to be started	6	8	0	8	70	3	3	0	3	6
Burdened/encumbered with other serious problems	22	23	53	23	26	20	20	14	24	23

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.11B

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Seriously delayed	23	27	19	27	24	19	:	23	:	18	32	19
Prevented to be started	5	7	10	8	6	12	:	6	:	2	7	6
Burdened/encumbered with other serious problems	21	21	25	24	21	26	:	22	:	19	21	24

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.12A

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	4	5	0	4	43	4	3	7	0	7
Innovation costs too high	10	13	0	13	0	7	8	4	7	7
Lack of appropriate sources of finance	10	13	0	13	0	8	6	8	4	13
Internal factors										
Organisational rigidities within the enterprise	3	3	22	3	0	4	3	0	4	8
Lack of qualified personnel	11	10	0	10	0	12	8	22	10	17
Lack of information on technology	2	2	19	2	0	3	2	6	0	3
Lack of information on markets	2	3	0	3	0	2	2	0	0	4
Other factors										
Insufficient flexibility of regulations or standards	8	6	0	6	43	9	7	23	0	4
Lack of customer responsiveness to new goods or services	5	4	0	4	0	5	5	7	7	6

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.12B

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	4	4	11	3	5	16	:	5	:	5	2	2
Innovation costs too high	10	9	11	15	8	12	:	8	:	6	10	7
Lack of appropriate sources of finance	11	9	10	14	9	11	:	10	:	7	8	7
Internal factors												
Organisational rigidities within the enterprise	3	4	1	2	4	2	:	4	:	4	4	0
Lack of qualified personnel	12	9	9	12	7	8	:	7	:	12	13	11
Lack of information on technology	3	1	2	2	0	3	:	0	:	3	3	0
Lack of information on markets	3	2	1	4	2	1	:	2	:	2	3	0
Other factors												
Insufficient flexibility of regulations or standards	9	5	4	8	3	6	:	3	:	10	9	0
Lack of customer responsiveness to new goods or services	6	2	3	5	3	4	:	3	:	7	2	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.13A

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	3	4	0	4	0	2	1	3	0	10
Innovation costs too high	5	10	0	10	0	2	3	1	0	3
Lack of appropriate sources of finance	6	9	0	9	0	5	8	1	0	10
Internal factors										
Organisational rigidities within the enterprise	2	2	0	2	0	1	3	0	0	1
Lack of qualified personnel	6	9	0	9	0	3	2	5	0	5
Lack of information on technology	1	0	0	0	0	1	1	2	0	0
Lack of information on markets	0	0	0	0	0	0	0	0	0	0
Other factors										
Insufficient flexibility of regulations or standards	3	3	0	4	0	3	2	5	5	5
Lack of customer responsiveness to new goods or services	4	7	0	7	32	3	3	3	0	3

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.13B

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	3	1	0	5	2	0	:	2	:	3	0	0
Innovation costs too high	6	4	0	12	2	0	:	2	:	2	6	0
Lack of appropriate sources of finance	6	7	4	9	7	8	:	7	:	4	6	0
Internal factors												
Organisational rigidities within the enterprise	2	1	0	2	0	0	:	0	:	1	2	0
Lack of qualified personnel	6	1	0	10	2	0	:	2	:	4	1	0
Lack of information on technology	1	0	0	0	0	0	:	0	:	2	0	0
Lack of information on markets	0	0	0	0	0	0	:	0	:	0	0	0
Other factors												
Insufficient flexibility of regulations or standards	4	3	0	4	0	0	:	1	:	3	4	0
Lack of customer responsiveness to new goods or services	5	2	2	7	4	4	:	4	:	3	0	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.14A

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All enterprises	8	10	0	10	0	6	9	1	4	10
Enterprises with innovation activity	15	16	0	16	0	13	16	6	7	14
Enterprises without innovation activity	1	1	0	1	0	1	2	0	2	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.14B

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All enterprises	5	14	25	5	18	32	5	18	32	6	9	14
Enterprises with innovation activity	11	22	31	9	25	37	:	25	:	12	16	18
Enterprises without innovation activity	1	0	5	1	0	4	:	0	:	1	0	6

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.15A

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Registration of design patterns	14	14	0	14	0	14	18	11	4	7
Trademarks	22	24	6	24	0	18	20	15	7	21
Copyright	8	5	0	5	0	10	9	7	7	17
Secrecy	30	35	28	35	0	25	19	34	16	38
Complexity of design	15	18	6	18	0	12	11	4	10	21
Lead-time advantage on competitors	34	38	28	38	0	29	25	20	26	49
Enterprises without innovation activity										
Registration of design patterns	1	3	0	3	0	0	0	1	2	0
Trademarks	6	8	2	9	0	4	6	2	4	1
Copyright	1	1	0	1	0	1	1	0	2	5
Secrecy	4	4	0	4	0	4	3	5	4	12
Complexity of design	2	4	0	4	0	2	1	1	2	6
Lead-time advantage on competitors	6	6	0	6	0	5	3	8	4	9

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.15B

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Registration of design patterns	11	20	18	8	24	24	:	24	:	15	14	4
Trademarks	18	30	32	18	35	38	:	35	:	18	22	18
Copyright	6	11	11	2	12	13	:	12	:	10	11	4
Secrecy	23	46	48	26	47	58	:	47	:	20	44	24
Complexity of design	13	19	27	15	21	32	:	21	:	10	16	14
Lead-time advantage on competitors	28	45	53	32	47	60	:	47	:	25	41	39
Enterprises without innovation activity												
Registration of design patterns	1	4	5	3	5	4	:	5	:	0	3	6
Trademarks	5	8	25	6	14	38	:	14	:	4	3	11
Copyright	1	1	3	2	0	0	:	0	:	1	3	6
Secrecy	3	8	15	3	6	20	:	7	:	4	9	11
Complexity of design	2	2	29	2	3	53	:	3	:	2	1	6
Lead-time advantage on competitors	5	5	26	4	7	41	:	8	:	5	4	11

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.16A

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Strategy	38	37	100	37	43	40	36	33	68	49
Management	32	32	0	32	100	32	28	33	43	38
Organisation	51	53	100	53	43	49	46	37	67	62
Marketing	33	30	53	30	70	37	36	28	56	40
Aesthetic or other subjective changes	35	38	75	38	0	31	35	16	28	32
Enterprises without innovation activity										
Strategy	21	20	2	20	72	22	20	22	38	22
Management	15	11	17	11	0	17	13	17	33	24
Organisation	29	26	2	27	72	30	26	31	60	32
Marketing	15	13	0	13	32	16	17	12	29	25
Aesthetic or other subjective changes	10	11	42	11	0	10	11	6	19	17

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table BE.16B

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Strategy	34	44	63	32	40	62	:	40	:	35	51	66
Management	27	39	54	28	32	58	:	32	:	25	52	46
Organisation	48	58	63	51	54	65	:	54	:	44	63	57
Marketing	29	41	45	27	35	42	:	35	:	32	52	51
Aesthetic or other subjective changes	32	41	39	35	44	43	:	44	:	29	35	32
Enterprises without innovation activity												
Strategy	20	24	42	19	18	40	:	19	:	21	30	43
Management	13	21	29	10	16	19	:	17	:	15	26	39
Organisation	27	42	37	26	27	24	:	27	:	27	57	49
Marketing	14	22	34	12	14	55	:	14	:	15	30	13
Aesthetic or other subjective changes	9	14	29	10	15	38	:	15	:	9	13	19

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Denmark

Table DK.1A

Number of enterprises, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of enterprises (units)										
All enterprises	10 255	5 071	64	4 883	124	5 184	2 611	1 433	345	795
Enterprises with innovation activity	4 546	2 654	24	2 574	56	1 892	938	361	162	432
Successful innovators	4 273	2 508	24	2 454	31	1 765	915	315	133	403
Product only innovators	1 617	894	4	888	3	723	385	115	14	208
Process only innovators	524	291	0	265	26	234	100	67	34	32
Product and process innovators	2 132	1 323	20	1 300	2	809	430	132	84	163
Enterprises with only on-going and/or abandoned innovations	273	146	0	120	26	127	24	46	29	29
Enterprises without innovation activity	5 709	2 417	40	2 310	68	3 292	1 673	1 073	183	363
Proportion of all enterprises (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	44	52	38	53	45	37	36	25	47	54
Successful innovators	42	49	38	50	25	34	35	22	39	51
Product only innovators	16	18	6	18	2	14	15	8	4	26
Process only innovators	5	6	0	5	21	5	4	5	10	4
Product and process innovators	21	26	32	27	2	16	16	9	24	20
Enterprises with only on-going and/or abandoned innovations	3	3	0	2	21	2	1	3	8	4
Enterprises without innovation activity	56	48	62	47	55	63	64	75	53	46

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.1B

Number of enterprises, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of enterprises (units)												
All enterprises	7 773	2 016	466	3 690	1 111	270	3 536	1 085	263	4 083	905	196
Enterprises with innovation activity	3 143	1 093	310	1 723	718	213	1 655	708	211	1 420	375	97
Successful innovators	2 907	1 062	304	1 610	691	207	1 568	682	204	1 298	371	97
Product only innovators	1 115	423	80	584	253	58	584	246	58	530	171	22
Process only innovators	429	68	26	233	33	24	208	33	24	196	35	2
Product and process innovators	1 364	570	198	792	406	125	776	402	123	571	165	73
Enterprises with only on-going and/or abandoned innovations	236	31	6	113	26	6	87	26	6	123	5	0
Enterprises without innovation activity	4 629	923	156	1 967	393	57	1 881	377	52	2 662	530	99
Proportion of all enterprises (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	40	54	67	47	65	79	47	65	80	35	41	49
Successful innovators	37	53	65	44	62	77	44	63	78	32	41	49
Product only innovators	14	21	17	16	23	21	17	23	22	13	19	11
Process only innovators	6	3	6	6	3	9	6	3	9	5	4	1
Product and process innovators	18	28	42	21	37	46	22	37	47	14	18	37
Enterprises with only on-going and/or abandoned innovations	3	2	1	3	2	2	2	2	2	3	1	0
Enterprises without innovation activity	60	46	33	53	35	21	53	35	20	65	59	51

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.2A

Number of employees, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of employees (thousands)										
All enterprises	818	389	3	380	6	429	134	136	96	64
Enterprises with innovation activity	523	281	1	277	2	242	62	62	72	47
Enterprises without innovation activity	295	108	1	103	4	187	72	74	24	17
Proportion of total number of employees (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	64	72	50	73	37	56	46	45	75	73
Enterprises without innovation activity	36	28	50	27	63	44	54	55	25	27

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.2B

Number of employees, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of employees (thousands)												
All enterprises	163	194	461	79	110	200	77	107	197	84	85	260
Enterprises with innovation activity	71	109	342	40	72	169	:	71	:	32	37	174
Enterprises without innovation activity	92	85	118	39	37	32	:	36	:	53	48	87
Proportion of total number of employees (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	44	56	74	50	66	84	:	67	:	38	43	67
Enterprises without innovation activity	56	44	26	50	34	16	:	33	:	62	57	33

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.3A

Turnover, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Turnover (EUR million)										
All enterprises	162 464	60 348	343	54 091	5 915	102 116	49 018	16 697	30 064	6 337
Enterprises with innovation activity	107 536	46 493	132	43 229	3 133	61 043	19 976	8 644	27 025	5 398
Enterprises without innovation activity	54 928	13 855	211	10 862	2 782	41 073	29 042	8 053	3 039	939
Proportion of total turnover (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	66	77	38	80	53	60	41	52	90	85
Enterprises without innovation activity	34	23	62	20	47	40	59	48	10	15

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.3B

Turnover, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Turnover (EUR million)												
All enterprises	37 011	40 112	85 342	7 207	15 771	37 371	6 348	14 647	33 096	29 804	24 340	47 971
Enterprises with innovation activity	24 910	23 747	58 879	4 260	11 236	30 997	:	10 579	:	20 651	12 511	27 882
Enterprises without innovation activity	12 101	16 364	26 463	2 947	4 535	6 373	:	4 068	:	9 154	11 830	20 089
Proportion of total turnover (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	67	59	69	59	71	83	:	72	:	69	51	58
Enterprises without innovation activity	33	41	31	41	29	17	:	28	:	31	49	42

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.4A

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators	62	56	:	57	:	69	:	31	:	63
Product only innovators	54	46	:	46	:	65	:	28	:	45
Product and process innovators	67	64	:	64	:	73	82	34	60	86

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.4B

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators	57	69	75	51	63	76	:	:	:	66	80	71
Product only innovators	54	56	53	46	44	50	:	:	50	62	74	61
Product and process innovators	60	78	83	54	75	89	:	:	:	69	86	75

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.5A

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators										
From unchanged or marginally modified products	64	61	:	59	:	66	:	66	:	62
From new or significantly improved products, not new to the market	25	24	:	25	:	26	:	27	:	23
From new or significantly improved products, new to the market	11	15	:	16	:	8	:	7	:	15
Product only innovators										
From unchanged or marginally modified products	66	54	:	53	:	76	:	18	:	61
From new or significantly improved products, not new to the market	25	39	:	39	:	15	:	80	:	28
From new or significantly improved products, new to the market	9	8	:	8	:	9	:	2	:	12
Product and process innovators										
From unchanged or marginally modified products	63	64	:	61	:	62	66	80	55	62
From new or significantly improved products, not new to the market	25	17	:	19	:	31	24	12	41	22
From new or significantly improved products, new to the market	12	19	:	20	:	7	10	8	4	16

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.5B

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators												
From unchanged or marginally modified products	67	67	61	50	53	65	:	:	:	70	80	57
From new or significantly improved products, not new to the market	23	23	27	35	34	19	:	:	:	22	12	35
From new or significantly improved products, new to the market	9	10	12	15	13	16	:	:	:	8	8	7
Product only innovators												
From unchanged or marginally modified products	68	70	62	55	41	61	:	:	61	71	87	64
From new or significantly improved products, not new to the market	19	24	29	34	52	32	:	:	32	16	7	25
From new or significantly improved products, new to the market	12	6	9	11	7	7	:	:	7	13	6	11
Product and process innovators												
From unchanged or marginally modified products	67	64	61	46	61	67	:	:	:	69	68	56
From new or significantly improved products, not new to the market	25	21	27	36	22	14	:	:	:	24	20	38
From new or significantly improved products, new to the market	8	15	12	17	17	19	:	:	:	7	13	6

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.6A

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Intramural R&D	64	71	95	71	54	55	45	50	59	82
Extramural R&D	32	37	100	36	54	26	19	13	34	47
Acquisition of machinery and equipment	51	55	95	55	9	46	40	44	41	63
Acquisition of other external knowledge	21	18	9	17	46	26	32	17	38	16
Training	27	27	70	27	4	28	26	25	41	28
Market introduction of innovations	32	27	70	27	4	39	52	24	36	25
Design, other preparations for production/deliveries	77	80	95	81	54	72	64	69	88	88

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.6B

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Intramural R&D	56	80	88	64	81	89	:	81	:	47	78	86
Extramural R&D	26	45	53	31	47	57	:	46	:	20	42	43
Acquisition of machinery and equipment	45	62	69	50	60	70	:	59	:	39	66	65
Acquisition of other external knowledge	21	21	28	19	13	24	:	13	:	23	35	36
Training	30	19	27	32	15	27	:	15	:	28	26	27
Market introduction of innovations	38	19	23	32	17	23	:	17	:	45	22	23
Design, other preparations for production/deliveries	71	88	93	76	87	93	:	87	:	66	91	92

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.7A

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Product oriented effects										
Increased range of goods or services	17	15	5	15	0	21	21	16	24	23
Increased market or market share	14	12	5	12	0	17	23	12	14	10
Improved quality in goods or services	20	15	5	16	0	27	29	17	36	27
Process oriented effects										
Improved production flexibility	10	10	0	10	0	11	15	3	15	10
Increased production capacity	12	14	0	15	0	10	9	7	28	6
Reduced labour costs per produced unit	12	12	0	12	0	12	19	5	18	2
Reduced materials and energy per produced unit	7	5	0	4	46	11	13	4	11	10
Other effects										
Improved environmental impact or health and safety aspects	7	9	5	10	0	5	6	7	2	2
Met regulations or standards	12	9	5	9	0	16	25	10	5	4

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.7B

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Product oriented effects												
Increased range of goods or services	15	20	36	12	14	34	:	15	:	17	31	40
Increased market or market share	13	12	29	12	7	28	:	7	:	16	21	29
Improved quality in goods or services	20	19	24	16	12	24	:	12	:	26	31	23
Process oriented effects												
Improved production flexibility	9	12	23	7	14	21	:	14	:	11	8	28
Increased production capacity	12	11	20	15	10	18	:	11	:	8	12	22
Reduced labour costs per produced unit	12	9	28	12	8	31	:	8	:	12	10	23
Reduced materials and energy per produced unit	7	5	14	4	4	15	:	4	:	12	6	14
Other effects												
Improved environmental impact or health and safety aspects	8	4	14	10	5	16	:	5	:	5	4	10
Met regulations or standards	13	8	12	11	3	12	:	3	:	16	17	12

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.8A

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity	7	8	0	8	2	7	2	8	0	18
Successful innovators	7	8	0	:	:	7	:	9	:	18
Enterprises with only on-going and/or abandoned innovations	5	5	~	:	:	4	:	0	:	17

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.8B

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity	6	8	20	6	8	23	:	8	:	6	9	13
Successful innovators	6	:	:	6	:	:	:	7	:	6	:	:
Enterprises with only on-going and/or abandoned innovations	2	:	:	0	:	:	:	30	:	3	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.9A

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.9B

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.10A

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Internal sources										
Within the enterprise	34	25	5	26	0	47	62	7	61	42
Other enterprises within the enterprise group	:	:	:	:	:	:	:	:	:	:
Market sources										
Suppliers of equipment, materials, components or software	17	16	0	16	46	19	28	12	9	7
Clients or customers	35	27	0	28	2	47	63	23	35	36
Competitors and other enterprises from the same industry	14	9	0	9	46	22	19	14	38	27
Institutional sources										
Universities or other higher education institutes	4	5	0	5	0	4	2	2	4	7
Government or private non-profit research institutes	2	3	0	3	0	1	1	0	0	4
Other sources										
Professional conferences, meetings, journals	6	7	0	7	2	6	3	3	5	16
Fairs, exhibitions	13	16	0	17	0	8	10	1	2	11

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.10B

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Internal sources												
Within the enterprise	34	29	51	24	23	49	:	23	:	47	43	56
Other enterprises within the enterprise group	:	:	:	:	:	:	:	:	:	:	:	:
Market sources												
Suppliers of equipment, materials, components or software	19	10	28	17	10	30	:	10	:	21	11	22
Clients or customers	39	23	43	28	20	45	:	20	:	52	30	37
Competitors and other enterprises from the same industry	15	10	22	8	9	21	:	9	:	24	11	24
Institutional sources												
Universities or other higher education institutes	5	3	6	6	1	5	:	1	:	3	6	9
Government or private non-profit research institutes	3	1	3	4	0	2	:	0	:	1	1	6
Other sources												
Professional conferences, meetings, journals	5	9	14	6	8	11	:	8	:	4	11	20
Fairs, exhibitions	14	10	11	19	12	12	:	12	:	8	7	10

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.11A

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.11B

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.12A

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.12B

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.13A

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.13B

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.14A

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All enterprises	7	8	0	9	0	5	5	0	3	14
Enterprises with innovation activity	14	15	0	15	0	13	12	2	6	24
Enterprises without innovation activity	1	1	0	1	0	0	0	0	0	1

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.14B

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All enterprises	4	10	28	5	13	35	5	13	36	4	6	17
Enterprises with innovation activity	10	17	40	9	20	44	:	20	:	11	12	33
Enterprises without innovation activity	1	1	2	1	1	2	:	1	:	0	1	1

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.15A

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Registration of design patterns	14	14	0	14	2	14	24	2	15	2
Trademarks	25	20	5	21	2	32	48	5	26	23
Copyright	7	6	0	6	0	7	11	0	3	7
Secrecy	17	18	0	18	2	15	15	9	12	21
Complexity of design	12	10	0	11	0	13	15	6	6	18
Lead-time advantage on competitors	27	25	0	25	2	29	36	21	6	31
Enterprises without innovation activity										
Registration of design patterns	4	3	0	4	0	4	8	0	7	0
Trademarks	8	4	0	4	0	10	20	0	8	0
Copyright	1	1	0	1	0	2	3	0	0	0
Secrecy	2	4	0	4	0	1	2	1	0	1
Complexity of design	1	3	0	3	0	0	1	0	0	0
Lead-time advantage on competitors	4	3	0	3	0	5	8	4	0	1

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.15B

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Registration of design patterns	15	10	19	13	14	19	:	14	:	17	3	21
Trademarks	21	31	41	15	25	44	:	25	:	29	43	34
Copyright	6	5	21	5	5	20	:	5	:	7	4	23
Secrecy	14	20	33	14	23	33	:	23	:	14	15	34
Complexity of design	10	14	19	8	13	19	:	14	:	12	16	19
Lead-time advantage on competitors	23	33	38	23	25	37	:	25	:	24	48	41
Enterprises without innovation activity												
Registration of design patterns	4	3	19	4	2	8	:	2	:	4	3	25
Trademarks	6	12	24	2	11	15	:	12	:	9	13	30
Copyright	1	3	18	1	5	2	:	5	:	1	2	27
Secrecy	2	2	17	4	4	4	:	4	:	1	1	25
Complexity of design	1	1	7	2	3	2	:	3	:	0	0	9
Lead-time advantage on competitors	4	5	19	2	5	4	:	5	:	4	5	27

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.16A

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Strategy	31	28	0	28	2	36	41	19	45	36
Management	11	11	0	11	4	13	13	7	25	12
Organisation	31	22	5	22	4	43	60	19	41	29
Marketing	28	27	0	28	2	30	39	14	29	25
Aesthetic or other subjective changes	22	21	0	21	0	25	34	10	28	17
Enterprises without innovation activity										
Strategy	13	13	72	13	4	13	12	13	16	20
Management	5	3	7	3	2	7	7	6	6	14
Organisation	12	9	7	9	4	14	16	11	14	15
Marketing	10	10	72	9	2	10	11	8	6	16
Aesthetic or other subjective changes	5	6	72	5	0	5	7	2	2	8

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DK.16B

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Strategy	28	36	44	24	32	40	:	33	:	33	43	51
Management	10	10	28	9	10	25	:	10	:	12	11	35
Organisation	27	40	40	19	26	35	:	26	:	36	69	52
Marketing	26	33	34	26	27	32	:	28	:	26	45	39
Aesthetic or other subjective changes	21	28	24	17	29	21	:	29	:	24	26	29
Enterprises without innovation activity												
Strategy	11	23	36	11	21	31	:	21	:	10	26	39
Management	4	11	21	2	5	12	:	5	:	5	15	27
Organisation	8	27	33	7	18	23	:	18	:	9	35	39
Marketing	8	16	29	10	8	27	:	7	:	7	23	31
Aesthetic or other subjective changes	4	9	20	5	8	8	:	7	:	4	9	26

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Germany

Table DE.1A

Number of enterprises, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of enterprises (units)										
All enterprises	117 539	51 684	556	49 519	1 609	65 855	21 721	20 348	3 592	20 194
Enterprises with innovation activity	71 581	34 013	282	32 935	796	37 568	11 312	8 041	2 679	15 535
Successful innovators	63 023	30 862	183	29 955	724	32 161	10 137	6 478	2 545	13 001
Product only innovators	23 129	11 856	101	11 471	285	11 272	3 274	2 087	661	5 249
Process only innovators	13 410	6 390	42	6 189	159	7 020	2 275	2 497	290	1 958
Product and process innovators	26 484	12 616	40	12 296	280	13 869	4 587	1 894	1 594	5 794
Enterprises with only on-going and/or abandoned innovations	8 558	3 151	100	2 980	72	5 407	1 175	1 563	135	2 534
Enterprises without innovation activity	45 958	17 671	274	16 583	813	28 287	10 409	12 306	913	4 659
Proportion of all enterprises (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	61	66	51	67	49	57	52	40	75	77
Successful innovators	54	60	33	60	45	49	47	32	71	64
Product only innovators	20	23	18	23	18	17	15	10	18	26
Process only innovators	11	12	8	12	10	11	10	12	8	10
Product and process innovators	23	24	7	25	17	21	21	9	44	29
Enterprises with only on-going and/or abandoned innovations	7	6	18	6	4	8	5	8	4	13
Enterprises without innovation activity	39	34	49	33	51	43	48	60	25	23

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.1B

Number of enterprises, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of enterprises (units)												
All enterprises	83 137	25 999	8 041	29 944	16 425	5 315	28 694	15 772	5 052	53 193	9 573	2 726
Enterprises with innovation activity	45 712	18 606	6 950	17 425	11 879	4 709	16 863	11 563	4 509	28 287	6 728	2 241
Successful innovators	38 888	17 368	6 454	15 259	11 179	4 424	14 796	10 914	4 245	23 629	6 189	2 030
Product only innovators	15 896	5 807	1 425	6 692	4 115	1 050	6 396	4 034	1 040	9 205	1 693	375
Process only innovators	9 001	3 756	653	3 398	2 523	469	3 398	2 352	438	5 602	1 233	185
Product and process innovators	13 991	7 805	4 376	5 169	4 541	2 905	5 002	4 527	2 766	8 822	3 264	1 470
Enterprises with only on-going and/or abandoned innovations	6 824	1 239	496	2 166	700	285	2 066	649	264	4 658	539	211
Enterprises without innovation activity	37 425	7 392	1 091	12 519	4 547	605	11 831	4 209	543	24 907	2 846	485
Proportion of all enterprises (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	55	72	86	58	72	89	59	73	89	53	70	82
Successful innovators	47	67	80	51	68	83	52	69	84	44	65	74
Product only innovators	19	22	18	22	25	20	22	26	21	17	18	14
Process only innovators	11	14	8	11	15	9	12	15	9	11	13	7
Product and process innovators	17	30	54	17	28	55	17	29	55	17	34	54
Enterprises with only on-going and/or abandoned innovations	8	5	6	7	4	5	7	4	5	9	6	8
Enterprises without innovation activity	45	28	14	42	28	11	41	27	11	47	30	18

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.2A

Number of employees, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of employees (thousands)										
All enterprises	11 199	6 485	119	6 082	284	4 713	1 604	1 342	1 275	492
Enterprises with innovation activity	9 593	5 601	100	5 297	204	3 992	1 288	1 101	1 198	405
Enterprises without innovation activity	1 606	884	19	785	80	722	316	242	77	87
Proportion of total number of employees (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	86	86	84	87	72	85	80	82	94	82
Enterprises without innovation activity	14	14	16	13	28	15	20	18	6	18

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.2B

Number of employees, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of employees (thousands)												
All enterprises	1 480	2 158	7 553	677	1 473	4 335	652	1 382	4 048	803	685	3 218
Enterprises with innovation activity	845	1 572	7 170	402	1 077	4 122	389	1 038	3 870	442	495	3 049
Enterprises without innovation activity	635	586	383	275	396	214	263	345	177	360	191	169
Proportion of total number of employees (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	57	73	95	59	73	95	60	75	96	55	72	95
Enterprises without innovation activity	43	27	5	41	27	5	40	25	4	45	28	5

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.3A

Turnover, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Turnover (EUR million)										
All enterprises	3 071 531	1 410 202	13 108	1 295 143	101 951	1 661 329	594 578	184 300	824 196	58 255
Enterprises with innovation activity	2 620 204	1 238 953	10 503	1 156 542	71 909	1 381 251	441 762	148 510	741 675	49 304
Enterprises without innovation activity	451 326	171 249	2 605	138 601	30 043	280 077	152 816	35 789	82 521	8 951
Proportion of total turnover (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	85	88	80	89	71	83	74	81	90	85
Enterprises without innovation activity	15	12	20	11	29	17	26	19	10	15

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.3B

Turnover, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Turnover (EUR million)												
All enterprises	385 831	516 151	2 168 881	94 427	233 962	1 081 813	86 397	207 786	1 000 960	291 404	282 189	1 087 069
Enterprises with innovation activity	214 346	369 459	2 035 833	48 383	161 609	1 028 961	45 706	148 747	962 089	165 963	207 850	1 006 872
Enterprises without innovation activity	171 486	146 692	133 049	46 044	72 353	52 852	40 690	59 039	38 872	125 441	74 340	80 197
Proportion of total turnover (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	56	72	94	51	69	95	53	72	96	57	74	93
Enterprises without innovation activity	44	28	6	49	31	5	47	28	4	43	26	7

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.4A

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators	42	48	:	49	:	40	39	22	42	47
Product only innovators	37	44	:	45	:	30	18	14	29	44
Product and process innovators	50	52	19	52	63	48	53	30	47	49

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.4B

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators	41	46	54	41	52	60	41	53	61	41	34	43
Product only innovators	33	44	51	36	53	54	38	54	55	31	23	42
Product and process innovators	50	47	55	47	52	61	46	52	63	51	40	43

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.5A

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators										
From unchanged or marginally modified products	71	57	:	56	:	83	88	81	81	72
From new or significantly improved products, not new to the market	21	34	:	35	:	10	6	13	12	15
From new or significantly improved products, new to the market	8	9	:	9	:	7	6	6	7	13
Product only innovators										
From unchanged or marginally modified products	82	77	:	77	:	87	91	86	87	71
From new or significantly improved products, not new to the market	11	14	:	15	:	8	6	12	8	16
From new or significantly improved products, new to the market	7	9	:	9	:	5	3	2	5	13
Product and process innovators										
From unchanged or marginally modified products	69	53	92	53	59	82	87	80	81	73
From new or significantly improved products, not new to the market	23	37	7	38	28	11	6	13	12	14
From new or significantly improved products, new to the market	8	9	1	9	14	7	7	7	7	13

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.5B

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators												
From unchanged or marginally modified products	60	75	71	72	71	54	72	71	54	58	78	88
From new or significantly improved products, not new to the market	25	16	22	15	17	37	16	16	37	28	15	7
From new or significantly improved products, new to the market	14	9	7	13	13	9	12	13	9	15	7	6
Product only innovators												
From unchanged or marginally modified products	78	80	84	73	73	80	71	73	80	80	89	89
From new or significantly improved products, not new to the market	13	10	11	16	12	15	18	12	16	12	7	6
From new or significantly improved products, new to the market	9	11	5	11	15	5	10	16	4	8	4	4
Product and process innovators												
From unchanged or marginally modified products	52	72	70	71	68	52	72	69	52	49	74	88
From new or significantly improved products, not new to the market	31	19	23	14	22	39	15	20	39	33	18	7
From new or significantly improved products, new to the market	17	8	7	14	10	9	13	11	9	18	8	6

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.6A

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Intramural R&D	50	57	7	59	29	43	35	29	35	58
Extramural R&D	21	24	14	24	27	17	17	32	15	10
Acquisition of machinery and equipment	72	75	78	74	79	70	75	79	52	66
Acquisition of other external knowledge	23	20	4	20	17	26	21	27	33	28
Training	57	54	29	54	56	60	55	63	64	62
Market introduction of innovations	51	52	4	52	51	50	53	45	51	50
Design, other preparations for production/deliveries	57	58	30	58	61	57	64	47	70	55

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.6B

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Intramural R&D	46	51	73	52	57	78	53	58	80	42	41	62
Extramural R&D	17	22	42	18	24	50	18	24	50	16	20	25
Acquisition of machinery and equipment	71	74	80	73	75	82	72	75	83	69	74	75
Acquisition of other external knowledge	23	22	30	19	17	31	20	17	30	25	31	28
Training	55	62	61	49	58	61	48	59	60	58	69	61
Market introduction of innovations	49	52	58	48	54	60	48	55	60	49	49	54
Design, other preparations for production/deliveries	54	59	70	56	56	71	56	57	70	53	65	70

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.7A

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Product oriented effects										
Increased range of goods or services	29	31	38	31	13	27	30	8	24	34
Increased market or market share	22	24	26	24	9	19	22	10	20	22
Improved quality in goods or services	33	37	28	38	27	30	26	32	41	30
Process oriented effects										
Improved production flexibility	18	25	3	26	11	12	17	13	11	9
Increased production capacity	17	26	12	26	18	9	15	5	7	7
Reduced labour costs per produced unit	12	18	4	18	18	7	5	11	9	5
Reduced materials and energy per produced unit	7	10	4	10	17	4	5	6	3	2
Other effects										
Improved environmental impact or health and safety aspects	7	9	3	9	23	6	9	8	1	3
Met regulations or standards	12	11	3	11	7	12	16	11	10	10

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.7B

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Product oriented effects												
Increased range of goods or services	27	32	35	26	36	36	27	37	36	27	24	32
Increased market or market share	21	22	27	23	24	29	23	25	28	20	17	24
Improved quality in goods or services	32	36	37	38	36	38	38	37	39	28	35	34
Process oriented effects												
Improved production flexibility	17	21	22	27	23	25	28	23	26	11	18	13
Increased production capacity	14	21	23	26	26	25	26	26	25	7	13	19
Reduced labour costs per produced unit	10	16	17	17	19	19	17	20	20	5	10	12
Reduced materials and energy per produced unit	5	10	11	10	10	14	9	10	14	2	10	4
Other effects												
Improved environmental impact or health and safety aspects	6	8	11	9	7	15	9	7	14	4	10	4
Met regulations or standards	11	12	11	13	8	11	14	8	11	10	20	10

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.8A

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity	20	26	13	27	16	14	14	8	1	19
Successful innovators	22	28	:	28	:	16	14	9	1	23
Enterprises with only on-going and/or abandoned innovations	6	11	:	12	:	3	10	1	0	1

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.8B

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity	17	23	28	23	28	33	24	28	33	14	14	17
Successful innovators	20	24	30	26	29	34	26	28	34	16	15	19
Enterprises with only on-going and/or abandoned innovations	4	16	9	7	24	16	7	26	15	3	5	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.9A

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All partners	17	17	5	17	16	17	16	8	16	24
National	17	16	5	16	15	17	16	8	16	23
EU/EFTA	4	5	3	5	7	3	2	3	2	5
Candidate countries	1	1	0	1	0	0	0	0	1	1
United States	2	2	1	2	3	2	2	0	1	4
Japan	1	1	0	1	0	1	0	0	1	1
Others	1	1	0	1	2	1	0	1	1	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.9B

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All partners	13	21	34	11	19	36	12	19	35	15	26	31
National	13	20	33	11	17	34	11	17	34	14	25	31
EU/EFTA	2	5	19	3	4	19	3	4	19	2	6	18
Candidate countries	0	1	3	0	1	4	0	1	4	0	1	2
United States	2	2	9	1	2	10	1	2	9	2	1	8
Japan	0	0	4	1	0	4	1	0	4	0	0	6
Others	0	1	5	0	0	5	0	0	5	0	2	4

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.10A

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Internal sources										
Within the enterprise	33	36	69	36	25	30	37	20	37	29
Other enterprises within the enterprise group	9	8	73	7	18	10	19	5	19	4
Market sources										
Suppliers of equipment, materials, components or software	16	19	4	20	5	14	18	12	9	13
Clients or customers	35	37	32	37	36	33	37	29	22	33
Competitors and other enterprises from the same industry	15	14	3	14	41	15	11	19	20	15
Institutional sources										
Universities or other higher education institutes	7	7	28	7	6	7	5	4	1	11
Government or private non-profit research institutes	2	2	0	2	10	2	2	0	0	4
Other sources										
Professional conferences, meetings, journals	17	15	1	15	15	19	15	15	18	23
Fairs, exhibitions	20	25	0	26	2	16	20	15	5	14

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.10B

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Internal sources												
Within the enterprise	30	34	48	32	37	46	31	38	47	28	29	52
Other enterprises within the enterprise group	5	14	22	4	9	19	3	9	19	6	21	30
Market sources												
Suppliers of equipment, materials, components or software	16	16	20	21	16	21	21	17	21	13	17	18
Clients or customers	33	39	38	30	44	43	29	45	43	34	29	29
Competitors and ther enterprises from the same industry	14	15	18	13	15	17	12	15	16	14	16	20
Institutional sources												
Universities or ther higher education institutes	7	6	9	6	6	11	6	6	11	8	5	5
Government or private non-profit research institutes	2	2	3	2	3	4	2	2	3	3	2	1
Other sources												
Professional conferences, meetings, journals	17	15	15	15	14	14	16	13	13	18	18	18
Fairs, exhibitions	21	20	16	27	24	18	28	25	19	17	11	10

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.11A

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total	Industry	Mining and quarrying	Manufacturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communication	Financial intermediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Seriously delayed	59	56	24	56	27	62	76	52	81	53
Prevented to be started	35	38	3	39	11	31	33	38	27	28
Burdened/encumbered with other serious problems	23	24	20	25	3	23	26	34	15	16

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.11B

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Seriously delayed	53	68	72	47	62	72	48	62	72	56	79	74
Prevented to be started	34	33	39	40	35	39	42	35	40	31	30	40
Burdened/encumbered with other serious problems	23	23	27	23	25	29	23	25	30	23	21	22

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.12A

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manufacturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communication	Financial intermediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	23	24	26	24	21	23	24	19	9	26
Innovation costs too high	32	33	14	33	12	32	29	32	23	35
Lack of appropriate sources of finance	24	23	0	23	3	25	25	20	5	30
Internal factors										
Organisational rigidities within the enterprise	7	7	0	7	6	8	13	5	10	5
Lack of qualified personnel	24	24	0	24	9	25	22	16	24	31
Lack of information on technology	3	3	0	3	0	3	5	3	1	2
Lack of information on markets	5	4	0	5	2	5	6	7	1	4
Other factors										
Insufficient flexibility of regulations or standards	17	14	3	13	20	20	16	35	21	16
Lack of customer responsiveness to new goods or services	6	5	13	6	2	7	10	10	3	4

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.12B

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	25	19	22	28	20	22	28	20	22	24	18	20
Innovation costs too high	33	32	23	37	30	23	38	30	22	31	35	24
Lack of appropriate sources of finance	28	20	8	28	20	8	29	21	7	27	18	9
Internal factors												
Organisational rigidities within the enterprise	7	8	6	7	7	5	7	7	5	7	10	8
Lack of qualified personnel	24	27	19	23	26	17	24	27	17	25	27	21
Lack of information on technology	3	3	2	4	3	2	4	3	2	3	3	2
Lack of information on markets	6	3	3	5	3	3	6	3	3	6	3	1
Other factors												
Insufficient flexibility of regulations or standards	20	15	7	18	10	6	18	10	5	20	24	10
Lack of customer responsiveness to new goods or services	6	9	5	4	8	5	4	8	4	6	12	5

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.13A

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	21	23	10	24	9	20	19	23	4	18
Innovation costs too high	24	25	23	26	7	23	21	25	11	22
Lack of appropriate sources of finance	18	17	3	18	0	18	21	15	1	26
Internal factors										
Organisational rigidities within the enterprise	8	10	0	10	0	7	12	3	11	4
Lack of qualified personnel	18	24	0	25	12	14	14	12	21	21
Lack of information on technology	4	4	4	4	0	5	6	4	0	5
Lack of information on markets	5	5	0	5	0	5	6	5	1	3
Other factors										
Insufficient flexibility of regulations or standards	16	12	21	11	29	18	15	22	5	16
Lack of customer responsiveness to new goods or services	10	11	13	11	10	9	12	6	4	12

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.13B

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	22	22	11	25	18	17	26	18	19	20	28	5
Innovation costs too high	24	23	15	28	19	21	28	20	22	22	29	7
Lack of appropriate sources of finance	18	17	7	17	16	12	18	17	13	18	20	2
Internal factors												
Organisational rigidities within the enterprise	8	8	6	10	10	6	10	10	6	7	6	6
Lack of qualified personnel	18	21	5	25	22	8	26	23	9	14	20	2
Lack of information on technology	5	3	0	5	2	0	5	2	0	5	4	0
Lack of information on markets	5	4	1	6	3	2	6	3	2	5	6	0
Other factors												
Insufficient flexibility of regulations or standards	17	9	5	14	8	7	13	7	6	19	9	2
Lack of customer responsiveness to new goods or services	10	9	8	11	10	14	11	10	15	10	9	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.14A

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All enterprises	11	17	2	17	11	7	7	1	0	14
Enterprises with innovation activity	17	24	4	25	22	11	13	1	0	17
Enterprises without innovation activity	1	3	0	3	0	1	0	0	0	3

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.14B

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All enterprises	7	16	36	10	20	48	10	21	50	6	9	12
Enterprises with innovation activity	13	21	41	15	26	54	15	27	55	11	11	15
Enterprises without innovation activity	1	4	5	2	4	8	2	4	9	0	4	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.15A

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Registration of design patterns	16	19	4	19	3	13	21	1	3	15
Trademarks	17	18	13	18	16	17	24	2	13	20
Copyright	7	4	4	4	3	9	8	5	5	13
Secrecy	31	34	31	34	28	28	25	12	20	41
Complexity of design	19	16	6	17	3	21	15	12	16	31
Lead-time advantage on competitors	39	41	34	42	11	38	41	16	29	48
Enterprises without innovation activity										
Registration of design patterns	2	4	0	4	0	1	1	0	3	3
Trademarks	5	5	0	6	1	4	6	1	3	9
Copyright	1	2	0	2	1	1	0	0	0	4
Secrecy	5	7	0	7	0	3	2	1	4	11
Complexity of design	2	3	0	3	0	2	0	0	0	9
Lead-time advantage on competitors	6	9	0	10	1	4	4	1	3	14

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.15B

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Registration of design patterns	11	19	36	10	21	43	11	22	44	12	15	20
Trademarks	14	19	34	12	20	38	12	19	38	15	19	25
Copyright	5	8	13	1	6	10	1	6	10	8	12	18
Secrecy	26	35	52	25	38	57	25	39	57	27	28	41
Complexity of design	18	18	27	13	17	27	13	18	28	21	20	27
Lead-time advantage on competitors	34	43	58	33	45	62	33	46	63	36	39	50
Enterprises without innovation activity												
Registration of design patterns	1	5	10	2	7	13	2	8	15	1	3	6
Trademarks	3	12	12	3	10	20	3	10	21	3	14	2
Copyright	1	1	4	2	1	7	2	1	7	1	0	0
Secrecy	4	9	7	5	10	10	6	11	12	3	5	4
Complexity of design	2	4	6	2	5	8	3	5	9	2	2	4
Lead-time advantage on competitors	5	9	13	8	10	17	9	11	17	4	6	10

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.16A

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Strategy	50	46	37	46	46	54	59	48	53	53
Management	46	45	42	44	72	47	51	40	46	48
Organisation	60	59	42	60	48	61	64	62	62	58
Marketing	47	44	9	45	53	50	50	39	44	56
Aesthetic or other subjective changes	44	40	0	40	38	48	46	48	39	51
Enterprises without innovation activity										
Strategy	24	25	13	25	47	23	23	19	43	27
Management	23	27	18	26	54	20	21	18	25	20
Organisation	34	38	26	38	43	32	28	32	34	40
Marketing	23	26	13	25	44	21	19	19	32	28
Aesthetic or other subjective changes	21	21	7	21	25	21	20	22	4	23

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table DE.16B

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Strategy	50	48	58	46	44	53	47	43	53	52	55	69
Management	42	50	57	40	47	57	39	48	56	44	54	57
Organisation	58	64	64	57	62	63	58	62	62	59	67	66
Marketing	48	44	48	42	46	47	43	46	46	52	41	49
Aesthetic or other subjective changes	46	40	44	39	39	44	40	39	44	50	43	44
Enterprises without innovation activity												
Strategy	22	29	34	25	25	42	24	24	40	21	35	25
Management	20	35	28	25	34	28	24	31	28	18	36	27
Organisation	32	46	37	34	48	41	34	48	39	30	44	32
Marketing	22	26	31	26	24	40	25	23	38	20	30	19
Aesthetic or other subjective changes	20	21	35	20	20	43	20	19	43	21	23	25

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Greece

Table EL.1A

Number of enterprises, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of enterprises (units)										
All enterprises	8 744	7 165	64	7 099	2	1 579	544	367	347	322
Enterprises with innovation activity	2 458	1 942	5	1 937	0	516	166	82	76	193
Successful innovators	2 385	1 881	5	1 875	0	504	159	80	72	193
Product only innovators	819	634	0	634	0	185	48	24	28	85
Process only innovators	719	575	4	571	0	144	53	47	22	21
Product and process innovators	846	672	1	670	0	175	57	9	22	87
Enterprises with only on-going and/or abandoned innovations	73	61	0	61	0	12	7	1	4	0
Enterprises without innovation activity	6 286	5 223	59	5 163	2	1 063	378	285	271	129
Proportion of all enterprises (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	28	27	8	27	11	33	30	22	22	60
Successful innovators	27	26	8	26	11	32	29	22	21	60
Product only innovators	9	9	0	9	0	12	9	7	8	26
Process only innovators	8	8	6	8	0	9	10	13	6	7
Product and process innovators	10	9	2	9	11	11	10	2	6	27
Enterprises with only on-going and/or abandoned innovations	1	1	0	1	0	1	1	0	1	0
Enterprises without innovation activity	72	73	92	73	89	67	70	78	78	40

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.1B

Number of enterprises, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of enterprises (units)												
All enterprises	6 703	1 785	256	5 424	1 530	212	5 375	1 514	210	1 280	255	44
Enterprises with innovation activity	1 775	567	116	1 387	460	95	1 383	459	95	388	107	21
Successful innovators	1 726	545	114	1 343	442	95	1 340	441	95	382	103	18
Product only innovators	618	180	21	464	153	16	464	153	16	153	27	5
Process only innovators	546	153	19	428	130	17	424	130	17	118	23	2
Product and process innovators	562	212	73	451	158	62	451	157	62	111	53	11
Enterprises with only on-going and/or abandoned innovations	49	22	2	43	18	0	43	18	0	5	4	2
Enterprises without innovation activity	4 929	1 218	140	4 037	1 070	117	3 993	1 055	115	892	147	23
Proportion of all enterprises (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	26	32	45	26	30	45	26	30	45	30	42	47
Successful innovators	26	31	44	25	29	45	25	29	45	30	40	41
Product only innovators	9	10	8	9	10	8	9	10	8	12	10	11
Process only innovators	8	9	8	8	8	8	8	9	8	9	9	5
Product and process innovators	8	12	29	8	10	29	8	10	30	9	21	25
Enterprises with only on-going and/or abandoned innovations	1	1	1	1	1	0	1	1	0	0	2	6
Enterprises without innovation activity	74	68	55	74	70	55	74	70	55	70	58	53

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.2A

Number of employees, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of employees (thousands)										
All enterprises	465	386	3	382	2	79	22	20	24	12
Enterprises with innovation activity	179	148	:	146	:	31	7	8	8	8
Enterprises without innovation activity	286	239	:	235	:	48	16	12	16	4
Proportion of total number of employees (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	38	38	:	38	:	39	29	42	34	64
Enterprises without innovation activity	62	62	:	62	:	61	71	58	66	36

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.2B

Number of employees, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of employees (thousands)												
All enterprises	144	172	149	117	148	121	116	:	:	28	23	27
Enterprises with innovation activity	40	57	81	32	47	68	:	:	:	8	10	13
Enterprises without innovation activity	104	115	67	85	101	53	:	:	:	20	14	14
Proportion of total number of employees (%)												
All enterprises	100	100	100	100	100	100	100	:	:	100	100	100
Enterprises with innovation activity	28	33	55	27	32	56	:	:	:	29	42	48
Enterprises without innovation activity	72	67	45	73	68	44	:	:	:	71	58	52

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.3A

Turnover, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Turnover (EUR million)										
All enterprises	70 897	54 987	:	54 234	:	15 910	5 694	2 833	6 391	992
Enterprises with innovation activity	28 268	22 434	:	22 368	:	5 834	2 626	775	1 864	569
Enterprises without innovation activity	42 628	32 553	:	31 866	:	10 076	3 069	2 058	4 527	422
Proportion of total turnover (%)										
All enterprises	100	100	:	100	:	100	100	100	100	100
Enterprises with innovation activity	40	41	:	41	:	37	46	27	29	57
Enterprises without innovation activity	60	59	:	59	:	63	54	73	71	43

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.3B

Turnover, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Turnover (EUR million)												
All enterprises	17 044	30 360	23 492	10 667	26 011	18 308	10 569	:	:	6 377	4 349	5 184
Enterprises with innovation activity	4 431	7 439	16 398	3 307	5 769	13 358	:	:	:	1 124	1 670	3 040
Enterprises without innovation activity	12 613	22 921	7 094	7 360	20 242	4 950	:	:	:	5 253	2 678	2 144
Proportion of total turnover (%)												
All enterprises	100	100	100	100	100	100	100	:	:	100	100	100
Enterprises with innovation activity	26	25	70	31	22	73	:	:	:	18	38	59
Enterprises without innovation activity	74	75	30	69	78	27	:	:	:	82	62	41

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.4A

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators	59	56	:	56	:	70	:	39	:	77
Product only innovators	58	60	~	60	~	53	44	23	77	58
Product and process innovators	60	53	:	53	:	88	:	84	:	95

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.4B

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators	61	56	55	58	50	54	58	50	54	68	79	55
Product only innovators	59	60	30	62	57	32	62	57	32	49	76	24
Product and process innovators	62	53	62	55	44	60	55	43	60	94	81	69

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.5A

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators										
From unchanged or marginally modified products	72	77	:	77	:	51	:	61	:	54
From new or significantly improved products, not new to the market	19	17	:	17	:	26	:	34	:	17
From new or significantly improved products, new to the market	9	5	:	5	:	24	:	5	:	29
Product only innovators										
From unchanged or marginally modified products	74	76	~	76	~	64	77	56	65	52
From new or significantly improved products, not new to the market	19	20	~	20	~	12	3	40	4	27
From new or significantly improved products, new to the market	7	4	~	4	~	24	20	3	31	20
Product and process innovators										
From unchanged or marginally modified products	70	79	:	79	:	43	:	84	:	56
From new or significantly improved products, not new to the market	19	14	:	14	:	33	:	2	:	10
From new or significantly improved products, new to the market	11	7	:	7	:	24	:	14	:	34

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.5B

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators												
From unchanged or marginally modified products	:	75	:	:	82	:	:	82	:	:	50	:
From new or significantly improved products, not new to the market	:	9	:	:	10	:	:	10	:	:	7	:
From new or significantly improved products, new to the market	:	16	:	:	8	:	:	8	:	:	43	:
Product only innovators												
From unchanged or marginally modified products	:	78	:	:	88	:	:	88	:	:	42	:
From new or significantly improved products, not new to the market	:	6	:	:	6	:	:	6	:	:	8	:
From new or significantly improved products, new to the market	:	15	:	:	7	:	:	7	:	:	50	:
Product and process innovators												
From unchanged or marginally modified products	62	70	71	63	75	83	63	75	83	53	57	38
From new or significantly improved products, not new to the market	19	13	21	21	15	12	21	15	12	12	5	44
From new or significantly improved products, new to the market	19	17	8	16	10	5	16	10	5	35	38	18

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.6A

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Intramural R&D	56	53	:	53	:	67	67	40	49	85
Extramural R&D	16	14	:	14	:	26	24	10	44	27
Acquisition of machinery and equipment	78	79	:	79	:	74	63	51	91	86
Acquisition of other external knowledge	17	12	:	12	:	34	20	41	63	33
Training	53	49	:	49	:	66	61	40	61	83
Market introduction of innovations	44	42	:	42	:	54	71	33	38	56
Design, other preparations for production/deliveries	41	38	:	38	:	51	50	40	52	55

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.6B

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Intramural R&D	53	61	79	50	58	80	:	:	:	64	74	78
Extramural R&D	13	23	31	11	20	26	:	:	:	23	33	53
Acquisition of machinery and equipment	78	77	82	80	77	82	:	:	:	73	77	83
Acquisition of other external knowledge	16	18	22	11	15	18	:	:	:	34	35	39
Training	49	61	75	46	55	73	:	:	:	60	83	83
Market introduction of innovations	43	45	55	41	41	50	:	:	:	51	64	75
Design, other preparations for production/deliveries	39	45	41	37	40	35	:	:	:	45	68	66

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.7A

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Product oriented effects										
Increased range of goods or services	41	42	:	42	:	37	33	25	38	44
Increased market or market share	28	26	:	26	:	33	17	37	40	42
Improved quality in goods or services	62	64	:	64	:	55	44	56	47	68
Process oriented effects										
Improved production flexibility	44	46	:	46	:	36	40	26	39	35
Increased production capacity	38	39	:	39	:	35	34	32	33	38
Reduced labour costs per produced unit	17	18	:	18	:	14	9	25	28	7
Reduced materials and energy per produced unit	7	8	:	8	:	4	3	6	11	1
Other effects										
Improved environmental impact or health and safety aspects	26	30	:	30	:	13	24	20	0	5
Met regulations or standards	45	47	:	47	:	38	44	30	20	44

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.7B

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Product oriented effects												
Increased range of goods or services	43	37	37	46	32	35	:	:	:	31	56	44
Increased market or market share	29	24	22	28	22	25	:	:	:	35	31	11
Improved quality in goods or services	64	57	65	67	56	64	:	:	:	52	65	66
Process oriented effects												
Improved production flexibility	45	42	30	49	41	27	:	:	:	32	48	43
Increased production capacity	37	43	29	39	40	29	:	:	:	30	55	27
Reduced labour costs per produced unit	18	16	15	19	17	16	:	:	:	14	13	10
Reduced materials and energy per produced unit	7	8	9	7	9	10	:	:	:	5	0	0
Other effects												
Improved environmental impact or health and safety aspects	26	25	42	29	30	47	:	:	:	15	5	19
Met regulations or standards	46	40	54	49	40	55	:	:	:	38	37	51

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.8A

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity	32	34	:	34	:	24	15	14	0	44
Successful innovators	31	33	:	33	:	24	:	13	:	44
Enterprises with only on-going and/or abandoned innovations	44	49	~	49	~	20	:	:	:	~

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.8B

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity	28	39	51	30	42	55	:	:	:	22	26	34
Successful innovators	:	39	:	:	:	:	:	:	55	:	:	:
Enterprises with only on-going and/or abandoned innovations	:	53	:	:	:	:	:	:	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.9A

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.9B

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.10A

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Internal sources										
Within the enterprise	60	58	:	58	:	69	61	59	83	75
Other enterprises within the enterprise group	:	:	:	:	:	:	:	:	:	:
Market sources										
Suppliers of equipment, materials, components or software	33	36	:	35	:	25	39	11	34	15
Clients or customers	26	25	:	25	:	28	26	32	17	33
Competitors and other enterprises from the same industry	11	12	:	12	:	8	6	15	0	10
Institutional sources										
Universities or other higher education institutes	7	6	:	6	:	11	0	8	11	21
Government or private non-profit research institutes	4	4	:	4	:	5	3	3	6	8
Other sources										
Professional conferences, meetings, journals	21	21	:	21	:	23	33	23	11	19
Fairs, exhibitions	30	34	:	34	:	16	24	17	11	10

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.10B

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Internal sources												
Within the enterprise	60	61	69	57	59	64	:	:	:	68	69	94
Other enterprises within the enterprise group	:	:	:	:	:	:	:	:	:	:	:	:
Market sources												
Suppliers of equipment, materials, components or software	33	33	43	35	35	44	:	:	:	25	22	38
Clients or customers	24	31	22	24	29	25	:	:	:	26	39	10
Competitors and other enterprises from the same industry	9	16	20	10	15	19	:	:	:	4	20	23
Institutional sources												
Universities or other higher education institutes	6	10	9	4	9	9	:	:	:	10	13	9
Government or private non-profit research institutes	3	5	15	2	6	17	:	:	:	6	4	5
Other sources												
Professional conferences, meetings, journals	21	20	24	21	18	21	:	:	:	21	28	35
Fairs, exhibitions	32	26	31	36	29	31	:	:	:	16	13	29

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.11A

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.11B

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.12A

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	**Industry**	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	**Services**	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	26	26	:	26	:	26	30	39	6	25
Innovation costs too high	30	30	:	30	:	31	30	44	6	35
Lack of appropriate sources of finance	33	34	:	34	:	29	24	28	0	45
Internal factors										
Organisational rigidities within the enterprise	8	9	:	9	:	8	1	20	0	12
Lack of qualified personnel	18	19	:	19	:	14	13	7	6	21
Lack of information on technology	7	8	:	8	:	3	6	0	0	3
Lack of information on markets	7	7	:	7	:	4	11	2	0	1
Other factors										
Insufficient flexibility of regulations or standards	16	17	:	17	:	11	8	15	6	14
Lack of customer responsiveness to new goods or services	9	8	:	8	:	14	14	6	0	24

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.12B

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			**Industry**			**Manufacturing**			**Services**		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	28	25	8	27	30	5	:	:	:	32	6	20
Innovation costs too high	31	29	15	30	33	11	:	:	:	36	13	33
Lack of appropriate sources of finance	36	28	17	36	32	16	:	:	:	34	10	23
Internal factors												
Organisational rigidities within the enterprise	8	10	3	8	12	1	:	:	:	8	5	13
Lack of qualified personnel	18	20	9	18	21	12	:	:	:	15	14	0
Lack of information on technology	7	8	5	8	9	6	:	:	:	3	5	0
Lack of information on markets	7	6	9	8	7	7	:	:	:	3	5	17
Other factors												
Insufficient flexibility of regulations or standards	17	13	11	18	13	10	:	:	:	11	9	19
Lack of customer responsiveness to new goods or services	10	9	5	8	9	5	:	:	:	16	10	7

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.13A

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	27	29	:	29	:	19	23	23	13	15
Innovation costs too high	28	30	:	30	:	22	25	28	16	14
Lack of appropriate sources of finance	26	27	:	27	:	20	24	30	8	9
Internal factors										
Organisational rigidities within the enterprise	6	7	:	7	:	4	6	4	2	5
Lack of qualified personnel	9	10	:	10	:	6	10	8	2	1
Lack of information on technology	6	7	:	7	:	4	4	5	6	1
Lack of information on markets	5	5	:	5	:	2	0	5	3	0
Other factors										
Insufficient flexibility of regulations or standards	11	11	:	11	:	7	6	13	2	5
Lack of customer responsiveness to new goods or services	11	11	:	11	:	9	7	4	18	5

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.13B

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	30	17	15	32	17	17	:	:	:	20	16	6
Innovation costs too high	30	23	20	32	23	23	:	:	:	22	23	6
Lack of appropriate sources of finance	28	21	19	29	20	23	:	:	:	20	25	0
Internal factors												
Organisational rigidities within the enterprise	6	5	9	7	5	9	:	:	:	4	3	9
Lack of qualified personnel	10	8	2	10	8	1	:	:	:	7	4	6
Lack of information on technology	6	7	0	7	7	0	:	:	:	4	7	0
Lack of information on markets	5	5	3	5	6	4	:	:	:	2	1	0
Other factors												
Insufficient flexibility of regulations or standards	10	12	2	11	12	0	:	:	:	6	12	9
Lack of customer responsiveness to new goods or services	11	9	15	12	9	13	:	:	:	9	7	29

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.14A

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All enterprises	2	2	0	2	0	1	1	0	0	3
Enterprises with innovation activity	6	7	:	7	:	3	3	0	0	5
Enterprises without innovation activity	0	0	:	0	:	0	0	0	0	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.14B

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All enterprises	2	2	6	2	2	6	2	:	:	1	0	5
Enterprises with innovation activity	7	5	9	7	6	9	:	:	:	3	0	10
Enterprises without innovation activity	0	0	3	0	1	4	:	:	:	0	0	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.15A

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Registration of design patterns	5	5	:	5	:	5	4	0	0	11
Trademarks	23	23	:	23	:	26	20	7	26	39
Copyright	6	4	:	4	:	15	11	3	20	22
Secrecy	13	12	:	12	:	16	7	2	6	35
Complexity of design	9	8	:	8	:	14	13	0	6	24
Lead-time advantage on competitors	2	1	:	1	:	3	0	0	0	9
Enterprises without innovation activity										
Registration of design patterns	1	1	:	1	:	0	0	0	0	0
Trademarks	6	6	:	6	:	2	3	2	0	5
Copyright	1	1	:	1	:	1	1	0	0	1
Secrecy	1	1	:	1	:	0	0	0	0	1
Complexity of design	1	1	:	1	:	0	0	0	0	1
Lead-time advantage on competitors	0	0	:	0	:	0	0	0	0	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.15B

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Registration of design patterns	5	6	13	6	4	10	:	:	:	1	16	26
Trademarks	20	30	35	20	29	34	:	:	:	23	34	38
Copyright	6	7	16	4	3	9	:	:	:	11	25	49
Secrecy	11	12	40	10	11	43	:	:	:	16	14	26
Complexity of design	9	8	15	8	7	16	:	:	:	14	14	10
Lead-time advantage on competitors	1	4	3	1	3	4	:	:	:	1	10	0
Enterprises without innovation activity												
Registration of design patterns	1	0	1	1	0	1	:	:	:	0	0	0
Trademarks	5	6	18	6	6	22	:	:	:	2	4	0
Copyright	1	2	4	1	2	5	:	:	:	0	4	0
Secrecy	1	0	0	1	0	0	:	:	:	0	0	0
Complexity of design	1	1	1	1	1	1	:	:	:	0	0	0
Lead-time advantage on competitors	0	0	0	0	0	0	:	:	:	0	0	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.16A

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Strategy	34	32	:	32	:	40	44	41	15	46
Management	29	29	:	29	:	29	21	39	27	32
Organisation	47	47	:	47	:	49	45	53	34	58
Marketing	40	40	:	40	:	39	44	41	23	41
Aesthetic or other subjective changes	67	70	:	71	:	52	60	25	28	66
Enterprises without innovation activity										
Strategy	14	13	:	13	:	19	17	15	21	26
Management	10	10	:	10	:	12	12	2	17	22
Organisation	20	20	:	20	:	19	19	12	22	28
Marketing	21	21	:	21	:	21	22	12	26	26
Aesthetic or other subjective changes	41	45	:	46	:	17	31	7	6	22

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table EL.16B

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Strategy	31	39	59	28	40	52	:	:	:	39	34	88
Management	25	35	58	26	34	52	:	:	:	23	39	83
Organisation	44	54	66	44	53	64	:	:	:	46	58	74
Marketing	41	39	34	41	40	33	:	:	:	41	32	34
Aesthetic or other subjective changes	68	63	64	72	66	65	:	:	:	52	52	59
Enterprises without innovation activity												
Strategy	12	18	32	11	18	36	:	:	:	19	21	9
Management	9	16	17	8	15	19	:	:	:	11	18	9
Organisation	17	28	39	17	29	44	:	:	:	18	25	15
Marketing	21	22	29	21	22	33	:	:	:	21	23	6
Aesthetic or other subjective changes	42	36	36	47	38	39	:	:	:	16	24	20

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Spain

Table ES.1A

Number of enterprises, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of enterprises (units)										
All enterprises	72 513	45 818	795	44 605	417	26 695	15 161	7 540	1 128	2 866
Enterprises with innovation activity	23 651	17 098	219	16 752	127	6 554	3 158	1 463	544	1 388
Successful innovators	22 958	16 768	202	16 443	123	6 190	2 894	1 392	525	1 379
Product only innovators	7 105	4 842	32	4 766	44	2 263	1 196	336	121	609
Process only innovators	7 258	5 404	111	5 242	50	1 854	897	575	138	244
Product and process innovators	8 595	6 523	59	6 436	29	2 072	801	480	265	526
Enterprises with only on-going and/or abandoned innovations	694	330	17	309	4	364	264	71	20	10
Enterprises without innovation activity	48 861	28 720	577	27 854	290	20 141	12 003	6 077	584	1 478
Proportion of all enterprises (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	33	37	27	38	31	25	21	19	48	48
Successful innovators	32	37	25	37	30	23	19	18	46	48
Product only innovators	10	11	4	11	11	8	8	4	11	21
Process only innovators	10	12	14	12	12	7	6	8	12	9
Product and process innovators	12	14	7	14	7	8	5	6	24	18
Enterprises with only on-going and/or abandoned innovations	1	1	2	1	1	1	2	1	2	0
Enterprises without innovation activity	67	63	73	62	69	75	79	81	52	52

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.1B

Number of enterprises, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of enterprises (units)												
All enterprises	60 214	10 607	1 691	37 610	7 104	1 103	36 638	6 923	1 045	22 604	3 503	587
Enterprises with innovation activity	17 782	4 729	1 141	12 806	3 483	808	12 540	3 433	778	4 976	1 245	333
Successful innovators	17 271	4 556	1 131	12 547	3 419	802	12 290	3 379	774	4 724	1 137	329
Product only innovators	5 738	1 127	240	3 848	829	165	3 782	824	160	1 890	298	75
Process only innovators	5 631	1 371	255	4 211	1 036	157	4 090	1 015	137	1 420	336	98
Product and process innovators	5 902	2 057	636	4 488	1 554	480	4 419	1 540	477	1 414	503	156
Enterprises with only on-going and/or abandoned innovations	511	173	10	258	64	7	250	54	4	252	108	3
Enterprises without innovation activity	42 433	5 879	550	24 804	3 621	295	24 098	3 489	267	17 629	2 258	255
Proportion of all enterprises (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	30	45	67	34	49	73	34	50	74	22	36	57
Successful innovators	29	43	67	33	48	73	34	49	74	21	32	56
Product only innovators	10	11	14	10	12	15	10	12	15	8	9	13
Process only innovators	9	13	15	11	15	14	11	15	13	6	10	17
Product and process innovators	10	19	38	12	22	44	12	22	46	6	14	26
Enterprises with only on-going and/or abandoned innovations	1	2	1	1	1	1	1	1	0	1	3	1
Enterprises without innovation activity	70	55	33	66	51	27	66	50	26	78	64	43

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.2A

Number of employees, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of employees (thousands)										
All enterprises	3 689	2 253	41	2 165	48	1 435	510	486	247	192
Enterprises with innovation activity	1 986	1 264	17	1 221	26	721	124	273	203	121
Enterprises without innovation activity	1 703	989	24	944	22	714	386	213	44	71
Proportion of total number of employees (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	54	56	42	56	55	50	24	56	82	63
Enterprises without innovation activity	46	44	58	44	45	50	76	44	18	37

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.2B

Number of employees, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of employees (thousands)												
All enterprises	1 287	1 003	1 398	821	664	769	800	645	720	466	339	630
Enterprises with innovation activity	410	464	1 112	302	342	620	295	336	589	108	122	492
Enterprises without innovation activity	877	540	286	519	322	148	504	309	131	358	218	138
Proportion of total number of employees (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	32	46	80	37	52	81	37	52	82	23	36	78
Enterprises without innovation activity	68	54	20	63	48	19	63	48	18	77	64	22

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.3A

Turnover, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Turnover (EUR million)										
All enterprises	754 749	388 891	3 473	365 186	20 232	365 858	120 261	71 302	159 832	14 462
Enterprises with innovation activity	508 502	272 691	1 472	254 151	17 068	235 811	34 634	44 553	146 513	10 111
Enterprises without innovation activity	246 247	116 200	2 001	111 035	3 164	130 047	85 627	26 749	13 319	4 351
Proportion of total turnover (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	67	70	42	70	84	64	29	62	92	70
Enterprises without innovation activity	33	30	58	30	16	36	71	38	8	30

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.3B

Turnover, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Turnover (EUR million)												
All enterprises	178 983	155 107	420 659	87 822	95 005	206 065	83 831	91 936	189 419	91 162	60 102	214 594
Enterprises with innovation activity	63 493	77 466	367 543	40 493	51 969	180 229	38 466	50 706	164 979	23 000	25 497	187 313
Enterprises without innovation activity	115 490	77 641	53 116	47 329	43 036	25 835	45 365	41 230	24 441	68 161	34 605	27 281
Proportion of total turnover (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	35	50	87	46	55	87	46	55	87	25	42	87
Enterprises without innovation activity	65	50	13	54	45	13	54	45	13	75	58	13

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.4A

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators	51	49	:	49	:	58	66	:	47	:
Product only innovators	48	44	:	44	:	56	65	:	44	:
Product and process innovators	54	52	23	52	48	61	68	49	49	68

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.4B

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators	51	52	59	:	52	:	47	52	61	:	52	:
Product only innovators	48	46	46	:	46	:	44	47	41	:	44	:
Product and process innovators	53	55	64	49	54	68	49	55	68	64	57	51

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.5A

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators										
From unchanged or marginally modified products	65	66	:	65	:	63	70	:	65	:
From new or significantly improved products, not new to the market	19	20	:	21	:	18	21	:	15	:
From new or significantly improved products, new to the market	16	14	:	14	:	18	9	:	19	:
Product only innovators										
From unchanged or marginally modified products	66	73	:	70	:	53	62	:	79	:
From new or significantly improved products, not new to the market	22	19	:	21	:	28	33	:	16	:
From new or significantly improved products, new to the market	12	8	:	9	:	19	6	:	5	:
Product and process innovators										
From unchanged or marginally modified products	65	64	:	63	:	65	75	65	65	60
From new or significantly improved products, not new to the market	18	20	:	21	:	16	14	26	15	25
From new or significantly improved products, new to the market	17	16	:	16	:	18	11	9	20	15

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.5B

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators												
From unchanged or marginally modified products	70	64	65	:	64	:	67	65	64	:	62	:
From new or significantly improved products, not new to the market	21	29	17	:	28	:	24	27	18	:	31	:
From new or significantly improved products, new to the market	9	7	18	:	7	:	9	8	17	:	7	:
Product only innovators												
From unchanged or marginally modified products	75	64	63	:	69	:	70	71	70	:	49	:
From new or significantly improved products, not new to the market	16	30	22	:	25	:	19	23	20	:	43	:
From new or significantly improved products, new to the market	9	6	16	:	5	:	10	5	10	:	8	:
Product and process innovators												
From unchanged or marginally modified products	65	64	65	65	62	65	65	62	63	66	68	65
From new or significantly improved products, not new to the market	26	28	16	27	30	18	27	29	18	22	25	15
From new or significantly improved products, new to the market	9	8	19	8	9	18	8	9	19	12	7	20

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.6A

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Intramural R&D	34	38	23	38	28	24	7	16	28	70
Extramural R&D	14	15	13	15	21	13	10	18	19	12
Acquisition of machinery and equipment	58	62	49	62	72	48	42	57	41	57
Acquisition of other external knowledge	20	18	10	18	28	27	23	22	25	43
Training	30	30	15	30	29	30	15	27	43	60
Market introduction of innovations	24	23	8	23	32	27	22	21	39	39
Design, other preparations for production/deliveries	18	20	24	20	16	14	11	13	23	16

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.6B

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Intramural R&D	28	47	67	31	52	77	32	52	77	21	33	44
Extramural R&D	11	24	35	11	26	40	11	26	40	11	18	23
Acquisition of machinery and equipment	59	55	59	63	58	60	63	58	60	48	47	56
Acquisition of other external knowledge	20	19	31	17	17	24	18	17	23	27	24	49
Training	27	34	50	27	36	51	27	36	50	29	27	48
Market introduction of innovations	24	23	30	23	24	30	23	24	30	28	22	30
Design, other preparations for production/deliveries	17	20	19	19	23	20	19	23	19	14	11	18

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.7A

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Product oriented effects										
Increased range of goods or services	26	26	12	26	9	25	20	19	43	36
Increased market or market share	19	19	19	19	17	17	14	14	12	30
Improved quality in goods or services	41	42	37	42	33	39	32	39	51	52
Process oriented effects										
Improved production flexibility	21	23	16	23	20	17	16	19	26	15
Increased production capacity	29	33	25	33	27	18	14	18	23	24
Reduced labour costs per produced unit	15	15	12	15	10	16	20	13	15	11
Reduced materials and energy per produced unit	8	9	10	9	11	7	9	5	5	5
Other effects										
Improved environmental impact or health and safety aspects	17	20	42	20	18	8	5	16	0	12
Met regulations or standards	25	28	36	28	28	17	18	15	16	20

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.7B

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Product oriented effects												
Increased range of goods or services	23	32	35	23	35	38	23	35	39	25	25	29
Increased market or market share	17	24	23	17	25	25	17	26	26	17	18	21
Improved quality in goods or services	40	43	44	41	44	45	41	44	45	39	41	42
Process oriented effects												
Improved production flexibility	19	27	27	20	30	28	20	30	28	16	18	24
Increased production capacity	28	33	33	32	36	33	33	36	34	15	25	31
Reduced labour costs per produced unit	15	16	19	14	16	20	14	16	21	16	15	17
Reduced materials and energy per produced unit	7	11	12	8	12	14	8	12	14	7	9	6
Other effects												
Improved environmental impact or health and safety aspects	15	22	22	18	27	27	17	27	27	8	7	11
Met regulations or standards	25	24	27	28	27	31	28	27	31	18	15	17

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.8A

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity	27	31	40	31	42	18	16	17	1	32
Successful innovators	28	31	:	31	:	19	17	:	1	:
Enterprises with only on-going and/or abandoned innovations	8	15	:	15	:	0	0	:	0	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.8B

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity	24	35	44	28	38	49	28	38	48	15	27	31
Successful innovators	25	36	44	:	39	:	28	38	48	:	30	:
Enterprises with only on-going and/or abandoned innovations	6	11	10	:	29	:	12	26	23	:	0	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.9A

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All partners	10	10	2	10	23	9	2	9	9	25
National	9	10	2	10	21	8	2	8	8	24
EU/EFTA	3	3	2	3	12	3	1	1	3	11
Candidate countries	0	0	0	0	0	0	0	0	0	1
United States	1	1	0	1	5	1	0	1	0	2
Japan	0	0	0	0	2	0	0	0	0	0
Others	1	1	0	1	3	1	0	1	1	6

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.9B

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All partners	5	20	37	5	22	40	5	22	39	6	14	30
National	5	19	34	5	21	38	5	21	37	6	14	27
EU/EFTA	1	6	18	1	6	20	1	5	20	2	7	14
Candidate countries	0	0	2	0	0	3	0	0	3	0	1	0
United States	0	1	5	0	1	6	0	1	6	0	1	3
Japan	0	0	2	0	0	3	0	0	3	0	0	0
Others	1	3	5	1	3	7	1	3	7	1	3	2

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.10A

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Internal sources										
Within the enterprise	35	33	29	33	29	39	32	35	56	55
Other enterprises within the enterprise group	11	9	11	8	7	16	12	14	38	17
Market sources										
Suppliers of equipment, materials, components or software	25	24	22	24	24	27	29	28	23	22
Clients or customers	20	19	7	20	6	20	18	14	15	34
Competitors and other enterprises from the same industry	11	10	9	10	7	15	16	10	21	14
Institutional sources										
Universities or other higher education institutes	3	3	2	3	9	3	1	0	0	9
Government or private non-profit research institutes	5	5	7	5	9	4	0	5	0	14
Other sources										
Professional conferences, meetings, journals	10	10	5	10	6	11	11	4	2	19
Fairs, exhibitions	18	19	11	20	2	15	23	3	2	14

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.10B

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Internal sources												
Within the enterprise	30	47	56	28	48	54	28	48	54	37	45	61
Other enterprises within the enterprise group	8	18	28	5	17	30	5	17	30	14	20	25
Market sources												
Suppliers of equipment, materials, components or software	24	25	28	24	23	26	24	24	26	26	28	32
Clients or customers	19	20	27	18	21	27	19	22	28	20	17	27
Competitors and other enterprises from the same industry	11	10	13	10	10	10	10	10	10	16	9	18
Institutional sources												
Universities or other higher education institutes	2	5	7	2	5	8	2	5	7	2	4	4
Government or private non-profit research institutes	4	6	8	4	6	9	4	6	8	4	4	6
Other sources												
Professional conferences, meetings, journals	10	9	12	10	8	12	10	8	11	10	11	12
Fairs, exhibitions	20	14	11	21	16	14	21	16	14	17	7	6

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.11A

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Seriously delayed	14	14	14	14	12	14	12	15	16	16
Prevented to be started	8	8	8	8	11	6	3	9	5	8
Burdened/encumbered with other serious problems	18	19	17	19	19	18	15	15	26	24

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.11B

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Seriously delayed	14	13	13	13	15	14	13	15	14	15	8	10
Prevented to be started	8	7	7	9	7	8	9	7	8	6	5	5
Burdened/encumbered with other serious problems	18	19	19	18	19	18	18	19	18	18	17	21

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.12A

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	20	22	14	22	9	13	10	15	5	21
Innovation costs too high	33	36	29	37	13	24	19	24	23	35
Lack of appropriate sources of finance	20	21	17	21	19	18	17	13	1	31
Internal factors										
Organisational rigidities within the enterprise	6	6	5	6	9	4	4	6	4	2
Lack of qualified personnel	14	15	12	16	5	12	11	15	3	15
Lack of information on technology	8	9	1	9	1	4	3	8	1	3
Lack of information on markets	9	9	6	9	1	9	12	6	4	6
Other factors										
Insufficient flexibility of regulations or standards	11	11	23	11	14	9	8	12	12	8
Lack of customer responsiveness to new goods or services	11	10	9	10	3	14	19	8	7	12

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.12B

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	20	18	15	24	18	16	24	17	16	12	20	12
Innovation costs too high	34	32	22	39	32	23	39	32	23	22	31	18
Lack of appropriate sources of finance	21	18	12	21	19	12	22	19	12	18	17	12
Internal factors												
Organisational rigidities within the enterprise	6	6	5	6	6	5	6	6	5	4	4	4
Lack of qualified personnel	15	14	7	16	14	7	17	14	6	12	12	8
Lack of information on technology	8	6	3	10	7	3	10	7	3	4	6	3
Lack of information on markets	10	6	5	10	7	6	10	7	6	10	6	2
Other factors												
Insufficient flexibility of regulations or standards	11	10	8	12	11	7	12	11	7	9	10	8
Lack of customer responsiveness to new goods or services	12	9	5	11	8	5	11	8	5	15	14	5

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.13A

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	17	20	11	20	2	13	14	13	3	11
Innovation costs too high	24	27	18	28	4	21	22	21	6	14
Lack of appropriate sources of finance	13	15	4	15	3	10	8	13	6	10
Internal factors										
Organisational rigidities within the enterprise	6	6	5	6	2	5	6	5	4	3
Lack of qualified personnel	10	11	9	11	1	9	10	8	4	4
Lack of information on technology	7	8	6	8	1	6	7	5	2	2
Lack of information on markets	6	7	2	7	1	5	6	3	2	3
Other factors										
Insufficient flexibility of regulations or standards	7	7	9	7	11	7	8	5	12	6
Lack of customer responsiveness to new goods or services	9	9	7	9	10	10	10	10	6	7

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.13B

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	17	15	9	20	16	8	21	16	8	13	14	11
Innovation costs too high	25	24	15	27	26	13	28	27	13	21	22	18
Lack of appropriate sources of finance	13	10	9	15	12	4	16	12	4	10	8	15
Internal factors												
Organisational rigidities within the enterprise	6	4	5	6	4	5	6	4	4	6	5	5
Lack of qualified personnel	10	9	4	12	8	5	12	8	5	9	9	3
Lack of information on technology	7	6	5	8	6	4	8	6	4	5	7	6
Lack of information on markets	6	4	2	7	5	2	7	5	2	5	2	3
Other factors												
Insufficient flexibility of regulations or standards	8	5	5	8	6	4	8	5	4	8	3	5
Lack of customer responsiveness to new goods or services	10	8	4	9	8	4	9	8	4	10	8	5

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.14A

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All enterprises	5	6	1	7	3	2	2	1	0	7
Enterprises with innovation activity	12	14	4	14	8	5	4	2	1	15
Enterprises without innovation activity	2	2	0	2	1	1	2	1	0	1

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.14B

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All enterprises	4	8	16	5	11	20	5	11	20	2	3	9
Enterprises with innovation activity	10	16	21	12	18	26	12	18	26	4	8	10
Enterprises without innovation activity	1	3	5	2	4	3	2	4	3	1	1	8

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.15A

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Registration of design patterns	12	15	3	15	7	4	4	3	1	7
Trademarks	15	18	3	18	13	9	9	5	9	15
Copyright	3	3	0	3	1	3	1	3	2	11
Secrecy	18	22	5	22	3	8	2	4	8	24
Complexity of design	17	20	5	20	5	9	3	7	11	26
Lead-time advantage on competitors	19	22	5	22	12	12	7	10	14	24
Enterprises without innovation activity										
Registration of design patterns	2	2	1	2	0	1	2	0	0	2
Trademarks	4	5	2	5	0	3	5	0	0	1
Copyright	1	1	0	1	0	1	1	0	0	1
Secrecy	2	3	1	3	0	1	2	0	0	3
Complexity of design	2	3	0	3	0	1	1	1	4	2
Lead-time advantage on competitors	2	3	0	3	0	2	2	0	4	2

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.15B

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Registration of design patterns	10	16	21	13	20	25	13	20	25	3	6	10
Trademarks	14	18	26	16	22	30	16	22	30	9	8	16
Copyright	2	4	8	2	4	7	2	4	7	2	6	11
Secrecy	15	25	31	19	31	38	19	31	39	7	10	13
Complexity of design	14	24	31	17	28	35	17	29	36	8	12	21
Lead-time advantage on competitors	16	26	33	19	30	35	19	31	36	10	14	27
Enterprises without innovation activity												
Registration of design patterns	2	3	6	2	5	5	2	6	5	1	0	7
Trademarks	4	6	4	4	8	5	5	8	5	3	4	4
Copyright	1	1	0	1	1	0	1	1	0	1	1	0
Secrecy	2	3	4	3	5	5	3	5	5	1	0	3
Complexity of design	2	3	3	3	4	5	3	4	5	1	1	2
Lead-time advantage on competitors	2	3	3	2	4	4	3	5	4	2	1	3

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.16A

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Strategy	34	28	24	28	33	49	51	36	60	54
Management	42	38	33	38	45	50	49	48	64	48
Organisation	52	50	56	50	43	59	60	53	63	60
Marketing	37	33	24	33	30	46	52	33	45	46
Aesthetic or other subjective changes	51	51	37	51	22	50	48	35	67	62
Enterprises without innovation activity										
Strategy	11	8	7	8	14	15	15	14	37	18
Management	16	13	10	13	28	19	20	18	25	21
Organisation	22	20	13	20	34	26	25	25	40	32
Marketing	14	11	4	11	9	17	20	12	30	16
Aesthetic or other subjective changes	18	18	5	19	8	17	18	15	25	16

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table ES.16B

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Strategy	31	40	55	25	36	53	25	36	53	48	52	60
Management	39	47	65	35	45	66	35	45	66	49	52	61
Organisation	51	56	66	48	54	66	48	54	66	58	60	69
Marketing	36	38	41	32	35	38	32	36	38	46	46	50
Aesthetic or other subjective changes	51	49	53	51	50	53	52	51	54	50	47	52
Enterprises without innovation activity												
Strategy	10	17	26	8	12	22	8	12	18	14	26	31
Management	15	24	33	12	20	27	12	20	27	18	29	40
Organisation	21	32	43	19	26	40	19	26	38	24	40	46
Marketing	13	17	19	11	13	15	11	13	15	17	23	24
Aesthetic or other subjective changes	17	20	24	18	20	28	18	21	30	17	19	20

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

France

Table FR.1A

Number of enterprises, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of enterprises (units)										
All enterprises	42 061	25 063	355	24 512	196	16 998	10 338	201	1 536	4 922
Enterprises with innovation activity	17 156	11 404	73	11 285	45	5 752	2 363	83	902	2 403
Successful innovators	14 997	10 078	71	9 963	43	4 919	1 979	80	765	2 095
Product only innovators	6 057	4 239	17	4 214	8	1 818	713	48	159	899
Process only innovators	2 949	1 706	33	1 649	24	1 243	568	7	213	455
Product and process innovators	5 991	4 133	22	4 100	12	1 858	698	25	393	741
Enterprises with only on-going and/or abandoned innovations	2 159	1 325	2	1 322	2	833	385	3	137	308
Enterprises without innovation activity	24 905	13 659	281	13 227	151	11 246	7 975	118	634	2 519
Proportion of all enterprises (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	41	46	21	46	23	34	23	41	59	49
Successful innovators	36	40	20	41	22	29	19	40	50	43
Product only innovators	14	17	5	17	4	11	7	24	10	18
Process only innovators	7	7	9	7	12	7	5	3	14	9
Product and process innovators	14	16	6	17	6	11	7	12	26	15
Enterprises with only on-going and/or abandoned innovations	5	5	1	5	1	5	4	2	9	6
Enterprises without innovation activity	59	54	79	54	77	66	77	59	41	51

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.1B

Number of enterprises, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of enterprises (units)												
All enterprises	26 929	11 869	3 264	13 616	8 958	2 489	13 274	8 801	2 437	13 312	2 911	775
Enterprises with innovation activity	8 466	6 210	2 480	4 568	4 902	1 934	4 518	4 871	1 896	3 898	1 308	547
Successful innovators	7 145	5 496	2 356	3 878	4 365	1 835	3 827	4 334	1 802	3 267	1 131	521
Product only innovators	3 081	2 229	747	1 795	1 822	622	1 785	1 814	615	1 286	407	125
Process only innovators	1 645	1 050	253	779	743	184	749	724	176	867	307	69
Product and process innovators	2 419	2 217	1 355	1 305	1 800	1 029	1 293	1 796	1 011	1 114	418	326
Enterprises with only on-going and/or abandoned innovations	1 321	713	124	690	536	99	690	536	95	631	177	26
Enterprises without innovation activity	18 463	5 659	783	9 048	4 056	555	8 756	3 930	541	9 415	1 603	228
Proportion of all enterprises (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	31	52	76	34	55	78	34	55	78	29	45	71
Successful innovators	27	46	72	28	49	74	29	49	74	25	39	67
Product only innovators	11	19	23	13	20	25	13	21	25	10	14	16
Process only innovators	6	9	8	6	8	7	6	8	7	7	11	9
Product and process innovators	9	19	42	10	20	41	10	20	41	8	14	42
Enterprises with only on-going and/or abandoned innovations	5	6	4	5	6	4	5	6	4	5	6	3
Enterprises without innovation activity	69	48	24	66	45	22	66	45	22	71	55	29

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.2A

Number of employees, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of employees (thousands)										
All enterprises	5 341	3 716	33	3 482	201	1 625	458	:	:	342
Enterprises with innovation activity	3 802	2 712	10	2 516	186	1 090	139	:	:	214
Enterprises without innovation activity	1 539	1 004	23	966	16	535	319	:	:	128
Proportion of total number of employees (%)										
All enterprises	100	100	100	100	100	100	100	:	:	100
Enterprises with innovation activity	71	73	32	72	92	67	30	:	:	63
Enterprises without innovation activity	29	27	68	28	8	33	70	:	:	37

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.2B

Number of employees, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of employees (thousands)												
All enterprises	746	1 226	3 368	448	941	2 328	437	925	2 120	299	286	1 041
Enterprises with innovation activity	248	671	2 884	154	535	2 023	152	532	1 832	93	136	861
Enterprises without innovation activity	499	556	485	293	406	305	284	393	288	205	150	180
Proportion of total number of employees (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	33	55	86	34	57	87	35	57	86	31	48	83
Enterprises without innovation activity	67	45	14	66	43	13	65	43	14	69	52	17

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.3A

Turnover, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Turnover (EUR million)										
All enterprises	1 259 578	829 153	4 834	769 915	54 404	430 425	196 835	29 842	162 574	41 174
Enterprises with innovation activity	925 052	650 268	1 961	600 216	48 092	274 784	79 282	26 792	139 322	29 387
Enterprises without innovation activity	334 526	178 884	2 873	169 699	6 312	155 641	117 553	3 050	23 252	11 787
Proportion of total turnover (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	73	78	41	78	88	64	40	90	86	71
Enterprises without innovation activity	27	22	59	22	12	36	60	10	14	29

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.3B

Turnover, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Turnover (EUR million)												
All enterprises	174 925	269 271	815 382	73 209	151 426	604 517	71 264	145 304	553 348	101 715	117 845	210 865
Enterprises with innovation activity	63 664	146 732	714 656	29 728	88 097	532 444	29 464	87 398	483 354	33 936	58 635	182 213
Enterprises without innovation activity	111 261	122 539	100 726	43 482	63 329	72 073	41 800	57 906	69 994	67 779	59 209	28 653
Proportion of total turnover (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	36	54	88	41	58	88	41	60	87	33	50	86
Enterprises without innovation activity	64	46	12	59	42	12	59	40	13	67	50	14

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.4A

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators	49	52	:	52	:	43	40	:	:	54
Product only innovators	42	45	:	45	:	34	23	23	13	48
Product and process innovators	57	59	:	59	:	52	57	:	:	60

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.4B

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators	44	53	58	46	53	62	46	53	62	40	52	43
Product only innovators	36	48	49	40	48	54	40	48	53	31	48	26
Product and process innovators	53	58	63	55	58	67	55	58	67	51	57	49

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.5A

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators										
From unchanged or marginally modified products	80	82	:	81	:	74	:	:	74	76
From new or significantly improved products, not new to the market	9	8	:	8	:	14	:	:	13	11
From new or significantly improved products, new to the market	9	10	:	10	:	7	:	:	4	12
Product only innovators										
From unchanged or marginally modified products	85	87	:	86	:	82	81	67	92	77
From new or significantly improved products, not new to the market	9	7	:	7	:	13	16	30	6	10
From new or significantly improved products, new to the market	6	6	:	6	:	4	3	2	0	13
Product and process innovators										
From unchanged or marginally modified products	79	81	:	80	:	72	:	:	72	76
From new or significantly improved products, not new to the market	10	8	:	9	:	14	:	:	13	12
From new or significantly improved products, new to the market	10	11	:	12	:	7	:	:	4	12

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.5B

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators												
From unchanged or marginally modified products	77	83	80	87	84	82	87	84	81	69	82	73
From new or significantly improved products, not new to the market	18	9	9	8	8	8	8	8	8	26	11	13
From new or significantly improved products, new to the market	5	7	9	5	8	10	5	8	11	5	7	7
Product only innovators												
From unchanged or marginally modified products	81	85	86	88	88	86	88	88	85	70	81	89
From new or significantly improved products, not new to the market	14	10	8	8	6	7	8	6	7	21	14	9
From new or significantly improved products, new to the market	6	5	6	4	6	7	4	6	7	9	5	1
Product and process innovators												
From unchanged or marginally modified products	74	82	79	84	81	81	84	81	80	68	84	71
From new or significantly improved products, not new to the market	22	9	9	9	10	8	9	10	8	29	7	14
From new or significantly improved products, new to the market	5	9	10	7	10	11	7	10	12	3	9	7

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.6A

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Intramural R&D	58	66	54	66	65	43	20	:	:	60
Extramural R&D	21	24	39	24	25	15	9	:	:	17
Acquisition of machinery and equipment	38	44	60	43	64	27	20	:	:	31
Acquisition of other external knowledge	15	11	11	11	24	22	16	:	:	23
Training	41	43	36	43	67	37	23	:	:	45
Market introduction of innovations	31	34	20	34	17	25	20	:	:	27
Design, other preparations for production/deliveries	25	30	6	30	21	17	17	:	:	16

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.6B

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Intramural R&D	47	66	79	56	69	86	56	69	86	36	56	56
Extramural R&D	15	21	40	18	23	40	18	23	40	12	14	38
Acquisition of machinery and equipment	32	42	49	39	44	52	39	44	53	24	31	36
Acquisition of other external knowledge	14	13	20	8	11	17	8	11	17	21	21	31
Training	35	43	53	37	44	54	36	44	54	34	41	52
Market introduction of innovations	24	32	52	27	33	51	28	33	52	21	27	52
Design, other preparations for production/deliveries	18	29	41	21	32	46	21	32	46	15	17	25

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.7A

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Product oriented effects										
Increased range of goods or services	41	46	21	46	33	33	22	:	:	43
Increased market or market share	41	46	18	47	33	30	23	:	:	39
Improved quality in goods or services	35	38	42	37	41	30	20	0	0	35
Process oriented effects										
Improved production flexibility	17	21	32	21	10	10	5	:	:	12
Increased production capacity	22	25	45	25	7	14	7	:	:	18
Reduced labour costs per produced unit	18	21	48	21	9	12	17	:	:	8
Reduced materials and energy per produced unit	12	14	28	14	11	8	13	0	0	5
Other effects										
Improved environmental impact or health and safety aspects	16	19	53	19	62	9	7	:	:	12
Met regulations or standards	22	24	47	23	57	18	17	:	:	20

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.7B

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Product oriented effects												
Increased range of goods or services	34	45	59	39	47	61	39	47	61	28	38	51
Increased market or market share	35	43	54	42	46	57	42	46	57	28	32	41
Improved quality in goods or services	33	35	43	38	35	43	38	35	44	27	34	43
Process oriented effects												
Improved production flexibility	14	20	21	19	21	24	19	21	24	7	16	14
Increased production capacity	20	23	23	27	25	24	27	25	24	12	16	20
Reduced labour costs per produced unit	16	19	22	19	22	26	18	22	26	14	8	9
Reduced materials and energy per produced unit	11	12	16	12	14	19	11	14	19	10	7	7
Other effects												
Improved environmental impact or health and safety aspects	13	16	24	17	18	28	16	18	27	9	11	11
Met regulations or standards	21	21	26	23	23	28	22	23	28	18	15	19

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.8A

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity	25	29	53	29	29	18	14	:	:	28
Successful innovators	27	30	:	30	:	20	16	:	:	31
Enterprises with only on-going and/or abandoned innovations	14	21	:	21	:	3	0	:	:	8

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.8B

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity	22	29	26	27	30	31	27	30	30	16	27	10
Successful innovators	24	30	27	29	30	32	29	30	32	18	30	10
Enterprises with only on-going and/or abandoned innovations	11	21	8	18	26	9	18	26	10	2	6	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.9A

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All partners	28	33	30	33	76	18	9	16	22	26
National	24	29	30	29	72	15	5	14	22	21
EU/EFTA	11	14	18	14	14	6	3	2	1	10
Candidate countries	4	6	13	6	12	1	0	:	0	1
United States	4	6	13	5	8	2	1	9	1	5
Japan	2	2	:	2	4	1	0	:	0	2
Others	2	3	5	3	4	1	0	1	2	3

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.9B

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All partners	19	33	51	23	34	56	23	34	55	13	28	33
National	15	28	44	20	30	48	20	30	48	10	23	28
EU/EFTA	5	14	26	5	15	32	5	15	32	4	11	6
Candidate countries	2	4	10	3	5	12	3	5	12	0	1	1
United States	2	5	14	2	5	16	2	5	16	1	5	5
Japan	1	1	6	1	1	8	1	1	8	0	2	2
Others	2	2	5	3	2	6	3	2	6	1	3	3

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.10A

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Internal sources										
Within the enterprise	0	0	0	0	0	0	0	:	:	0
Other enterprises within the enterprise group	0	0	0	0	0	0	0	0	0	0
Market sources										
Suppliers of equipment, materials, components or software	0	0	0	0	0	0	0	:	:	0
Clients or customers	0	0	0	0	0	0	0	:	:	0
Competitors and other enterprises from the same industry	0	0	0	0	0	0	0	0	0	0
Institutional sources										
Universities or other higher education institutes	0	0	0	0	0	0	0	:	:	0
Government or private non-profit research institutes	0	0	0	0	0	0	0	0	0	0
Other sources										
Professional conferences, meetings, journals	0	0	:	0	0	0	0	:	:	0
Fairs, exhibitions	0	0	0	0	0	0	0	:	:	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.10B

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Internal sources												
Within the enterprise	38	47	58	42	48	61	41	48	61	34	42	45
Other enterprises within the enterprise group	6	13	27	6	12	24	6	12	24	7	16	40
Market sources												
Suppliers of equipment, materials, components or software	16	17	18	16	16	16	16	16	16	15	22	23
Clients or customers	31	35	44	39	38	48	39	38	48	21	26	33
Competitors and other enterprises from the same industry	12	15	24	14	16	25	14	16	25	10	11	22
Institutional sources												
Universities or other higher education institutes	2	3	3	1	2	3	1	2	3	3	5	2
Government or private non-profit research institutes	2	3	3	2	2	3	2	2	3	3	7	3
Other sources												
Professional conferences, meetings, journals	5	5	4	4	4	4	4	4	4	6	11	6
Fairs, exhibitions	10	9	5	11	9	5	11	9	5	9	6	5

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.11A

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Seriously delayed	31	35	33	35	35	22	17	:	:	31
Prevented to be started	24	28	22	28	34	16	14	:	:	17
Burdened/encumbered with other serious problems	19	23	21	23	15	11	8	:	:	16

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.11B

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Seriously delayed	25	35	37	30	37	42	30	37	42	21	29	20
Prevented to be started	22	25	31	26	28	35	26	28	35	17	14	16
Burdened/encumbered with other serious problems	15	21	27	19	23	31	19	23	31	10	14	14

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.12A

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	6	:	:	:	:	17	12	:	:	25
Innovation costs too high	9	:	:	:	:	27	19	:	:	38
Lack of appropriate sources of finance	8	:	:	:	:	23	12	:	:	37
Internal factors										
Organisational rigidities within the enterprise	2	:	:	:	:	6	6	:	:	5
Lack of qualified personnel	3	:	:	:	:	8	10	:	:	8
Lack of information on technology	1	:	:	:	:	2	1	:	:	2
Lack of information on markets	2	:	:	:	:	5	4	:	:	8
Other factors										
Insufficient flexibility of regulations or standards	4	:	:	:	:	11	10	:	:	9
Lack of customer responsiveness to new goods or services	2	:	:	:	:	6	2	:	:	10

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.12B

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	8	4	4	:	:	:	:	:	:	16	20	17
Innovation costs too high	12	5	7	:	:	:	:	:	:	26	26	31
Lack of appropriate sources of finance	11	5	3	:	:	:	:	:	:	24	24	12
Internal factors												
Organisational rigidities within the enterprise	3	1	2	:	:	:	:	:	:	6	5	10
Lack of qualified personnel	4	2	1	:	:	:	:	:	:	8	11	6
Lack of information on technology	1	:	1	:	:	:	:	:	:	2	:	3
Lack of information on markets	3	1	1	:	:	:	:	:	:	6	4	5
Other factors												
Insufficient flexibility of regulations or standards	5	2	2	:	:	:	:	:	:	11	11	10
Lack of customer responsiveness to new goods or services	3	1	1	:	:	:	:	:	:	6	6	4

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.13A

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	4	:	:	:	:	9	8	:	:	13
Innovation costs too high	7	:	:	:	:	15	14	:	:	17
Lack of appropriate sources of finance	6	:	:	:	:	13	12	:	:	15
Internal factors										
Organisational rigidities within the enterprise	2	:	:	:	:	5	6	:	:	4
Lack of qualified personnel	3	:	:	:	:	6	6	:	:	8
Lack of information on technology	1	:	:	:	:	2	2	:	:	2
Lack of information on markets	1	:	:	:	:	2	2	:	:	3
Other factors										
Insufficient flexibility of regulations or standards	4	:	:	:	:	9	9	:	:	11
Lack of customer responsiveness to new goods or services	2	:	:	:	:	4	3	:	:	5

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.13B

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	5	3	3	:	:	:	:	:	:	9	9	12
Innovation costs too high	8	4	1	:	:	:	:	:	:	15	15	4
Lack of appropriate sources of finance	7	2	3	:	:	:	:	:	:	13	9	10
Internal factors												
Organisational rigidities within the enterprise	3	0	2	:	:	:	:	:	:	6	1	7
Lack of qualified personnel	4	1	0	:	:	:	:	:	:	7	2	1
Lack of information on technology	1	1	:	:	:	:	:	:	:	2	3	:
Lack of information on markets	1	1	:	:	:	:	:	:	:	2	2	:
Other factors												
Insufficient flexibility of regulations or standards	5	3	2	:	:	:	:	:	:	9	9	7
Lack of customer responsiveness to new goods or services	2	1	1	:	:	:	:	:	:	4	3	2

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.14A

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All enterprises	14	17	5	17	9	10	11	:	:	13
Enterprises with innovation activity	27	31	18	31	35	18	21	:	:	21
Enterprises without innovation activity	5	5	1	5	1	6	8	:	:	4

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.14B

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All enterprises	9	18	40	9	20	47	9	20	47	9	14	19
Enterprises with innovation activity	18	29	49	20	31	57	20	31	57	17	20	21
Enterprises without innovation activity	5	7	13	4	6	13	4	6	13	6	9	13

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.15A

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Registration of design patterns	17	20	1	21	4	10	16	:	:	7
Trademarks	34	33	17	33	28	35	43	:	:	26
Copyright	6	5	:	5	5	8	5	:	:	13
Secrecy	18	20	15	20	30	14	8	:	:	22
Complexity of design	18	17	8	17	6	20	13	:	:	31
Lead-time advantage on competitors	28	25	24	25	28	34	37	:	:	39
Enterprises without innovation activity										
Registration of design patterns	4	4	1	4	:	5	6	:	:	2
Trademarks	9	8	2	8	2	12	13	:	:	5
Copyright	2	1	:	1	:	3	3	:	:	5
Secrecy	2	1	:	1	2	2	2	:	:	2
Complexity of design	2	1	:	1	:	3	3	:	:	5
Lead-time advantage on competitors	3	2	:	2	:	5	5	:	:	6

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.15B

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Registration of design patterns	14	17	26	17	20	31	17	20	31	11	8	9
Trademarks	28	35	48	27	32	48	28	32	48	29	44	49
Copyright	6	5	11	4	4	11	4	4	11	7	11	12
Secrecy	13	20	30	15	19	34	15	19	34	11	22	18
Complexity of design	16	19	23	14	17	24	14	17	24	18	25	20
Lead-time advantage on competitors	25	30	34	20	26	36	20	26	36	31	44	30
Enterprises without innovation activity												
Registration of design patterns	3	6	14	3	5	9	3	5	9	3	8	26
Trademarks	8	11	23	7	8	17	7	8	17	10	20	38
Copyright	2	2	6	1	1	3	1	1	3	3	4	11
Secrecy	1	2	6	1	2	6	1	2	6	2	3	8
Complexity of design	2	2	6	1	2	5	1	2	5	3	4	9
Lead-time advantage on competitors	3	4	6	1	2	5	1	2	5	5	7	9

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.16A

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Strategy	35	33	68	33	20	39	29	:	:	43
Management	34	33	23	33	51	37	22	:	:	42
Organisation	15	13	27	13	19	19	15	:	:	24
Marketing	:	:	:	:	:	:	:	:	:	:
Aesthetic or other subjective changes	6	8	7	8	:	3	:	:	:	2
Enterprises without innovation activity										
Strategy	13	11	9	11	14	15	14	:	:	17
Management	8	7	8	7	7	9	6	:	:	13
Organisation	3	3	1	3	1	4	3	:	:	8
Marketing	:	:	:	:	:	:	:	:	:	:
Aesthetic or other subjective changes	2	4	1	4	:	:	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FR.16B

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Strategy	30	38	46	26	36	44	26	36	44	35	45	52
Management	30	36	44	28	34	40	28	34	40	32	42	59
Organisation	13	16	21	10	14	20	10	14	20	17	22	22
Marketing	:	:	:	:	:	:	:	:	:	:	:	:
Aesthetic or other subjective changes	5	7	7	8	8	6	8	8	6	2	1	9
Enterprises without innovation activity												
Strategy	11	17	21	8	15	21	8	15	21	14	24	22
Management	7	10	17	6	9	15	6	9	15	8	12	20
Organisation	3	5	5	3	3	5	3	3	5	3	8	4
Marketing	:	:	:	:	:	:	:	:	:	:	:	:
Aesthetic or other subjective changes	1	4	6	3	5	8	3	5	9	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Ireland

Table IE.1A

Number of enterprises, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of enterprises (units)										
All enterprises	3 500	2 000	0	2 000	0	1 500	1 029	270	71	130
Enterprises with innovation activity	2 283	1 508	:	1 508	:	775	:	:	:	:
Successful innovators	1 568	:	:	982	:	586	:	:	:	:
Product only innovators	:	:	:	:	:	:	:	:	:	:
Process only innovators	:	:	:	:	:	:	:	:	:	:
Product and process innovators	:	:	:	:	:	:	:	:	:	:
Enterprises with only on-going and/or abandoned innovations	715	:	:	526	:	189	:	:	:	:
Enterprises without innovation activity	1 217	:	:	492	:	725	:	:	:	:
Proportion of all enterprises (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	65	75	:	75	:	52	:	:	:	:
Successful innovators	45	:	:	49	:	39	:	:	:	:
Product only innovators	:	:	:	:	:	:	:	:	:	:
Process only innovators	:	:	:	:	:	:	:	:	:	:
Product and process innovators	:	:	:	:	:	:	:	:	:	:
Enterprises with only on-going and/or abandoned innovations	20	:	:	26	:	13	:	:	:	:
Enterprises without innovation activity	35	:	:	25	:	48	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.1B

Number of enterprises, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of enterprises (units)												
All enterprises	2 315	895	290	1 263	564	173	1 263	564	173	1 052	331	117
Enterprises with innovation activity	:	:	:	:	:	:	:	:	:	:	:	:
Successful innovators	:	:	:	:	:	:	:	:	:	:	:	:
Product only innovators	:	:	:	:	:	:	:	:	:	:	:	:
Process only innovators	:	:	:	:	:	:	:	:	:	:	:	:
Product and process innovators	:	:	:	:	:	:	:	:	:	:	:	:
Enterprises with only on-going and/or abandoned innovations	:	:	:	:	:	:	:	:	:	:	:	:
Enterprises without innovation activity	:	:	:	:	:	:	:	:	:	:	:	:
Proportion of all enterprises (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	:	:	:	:	:	:	:	:	:	:	:	:
Successful innovators	:	:	:	:	:	:	:	:	:	:	:	:
Product only innovators	:	:	:	:	:	:	:	:	:	:	:	:
Process only innovators	:	:	:	:	:	:	:	:	:	:	:	:
Product and process innovators	:	:	:	:	:	:	:	:	:	:	:	:
Enterprises with only on-going and/or abandoned innovations	:	:	:	:	:	:	:	:	:	:	:	:
Enterprises without innovation activity	:	:	:	:	:	:	:	:	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.2A

Number of employees, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of employees (thousands)										
All enterprises	164	:	:	80	:	85	:	:	:	:
Enterprises with innovation activity	:	:	:	:	:	:	:	:	:	:
Enterprises without innovation activity	:	:	:	:	:	:	:	:	:	:
Proportion of total number of employees (%)										
All enterprises	100	:	:	100	:	100	:	:	:	:
Enterprises with innovation activity	:	:	:	:	:	:	:	:	:	:
Enterprises without innovation activity	:	:	:	:	:	:	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.2B

Number of employees, 2000

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.3A

Turnover, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Turnover (EUR million)										
All enterprises	169 013	:	:	94 212	:	74 800	:	:	:	:
Enterprises with innovation activity	:	:	:	:	:	:	:	:	:	:
Enterprises without innovation activity	:	:	:	:	:	:	⋮	⋮	⋮	⋮
Proportion of total turnover (%)		:	:		:		:	:	:	:
All enterprises	100	:	:	100	:	100	:	:	:	:
Enterprises with innovation activity	:	:	:	:	:	:	:	:	:	:
Enterprises without innovation activity	:	:	:	:	:	:	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.3B

Turnover, 2000

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.4A

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total			Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators	32	:	:	32	:	30	:	:	:	:
Product only innovators	:	:	:	:	:	:	:	:	:	:
Product and process innovators	:	:	:	:	:	:	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.4B

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.5A

Product innovators: turnover breakdown, 2000 (% of total turnover)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.5B

Product innovators: turnover breakdown, 2000 (% of total turnover)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.6A

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.6B

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.7A

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Product oriented effects										
Increased range of goods or services	28	:	:	32	:	20	:	:	:	:
Increased market or market share	20	:	:	19	:	21	:	:	:	:
Improved quality in goods or services	37	:	:	38	:	35	:	:	:	:
Process oriented effects										
Improved production flexibility	26	:	:	33	:	13	:	:	:	:
Increased production capacity	28	:	:	36	:	14	:	:	:	:
Reduced labour costs per produced unit	16	:	:	17	:	14	:	:	:	:
Reduced materials and energy per produced unit	8	:	:	11	:	2	:	:	:	:
Other effects										
Improved environmental impact or health and safety aspects	15	:	:	18	:	9	:	:	:	:
Met regulations or standards	25	:	:	29	:	18	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.7B

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.8A

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.8B

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.9A

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.9B

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.10A

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Internal sources										
Within the enterprise	56	:	:	50	:	67	:	:	:	:
Other enterprises within the enterprise group	27	:	:	27	:	27	:	:	:	:
Market sources										
Suppliers of equipment, materials, components or software	39	:	:	34	:	47	:	:	:	:
Clients or customers	61	:	:	61	:	60	:	:	:	:
Competitors and other enterprises from the same industry	31	:	:	28	:	36	:	:	:	:
Institutional sources										
Universities or other higher education institutes	5	:	:	5	:	6	:	:	:	:
Government or private non-profit research institutes	4	:	:	4	:	3	:	:	:	:
Other sources										
Professional conferences, meetings, journals	:	:	:	:	:	:	:	:	:	:
Fairs, exhibitions	:	:	:	:	:	:	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.10B

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.11A

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Seriously delayed	18	:	:	20	:	15	:	:	:	:
Prevented to be started	8	:	:	8	:	9	:	:	:	:
Burdened/encumbered with other serious problems	18	:	:	19	:	15	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.11B

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.12A

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	12	:	:	10	:	15	:	:	:	:
Innovation costs too high	17	:	:	16	:	19	:	:	:	:
Lack of appropriate sources of finance	15	:	:	15	:	16	:	:	:	:
Internal factors										
Organisational rigidities within the enterprise	9	:	:	8	:	9	:	:	:	:
Lack of qualified personnel	13	:	:	13	:	13	:	:	:	:
Lack of information on technology	8	:	:	8	:	9	:	:	:	:
Lack of information on markets	9	:	:	7	:	11	:	:	:	:
Other factors										
Insufficient flexibility of regulations or standards	8	:	:	7	:	10	:	:	:	:
Lack of customer responsiveness to new goods or services	11	:	:	9	:	15	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.12B

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.13A

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.13B

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.14A

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All enterprises	11	:	:	17	:	2	:	:	:	:
Enterprises with innovation activity	:	:	:	:	:	:	:	:	:	:
Enterprises without innovation activity	:	:	:	:	:	:	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.14B

Proportion of enterprises that applied for at least one patent, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.15A

Proportion of enterprises that made use of the following protection methods, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.15B

Proportion of enterprises that made use of the following protection methods, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.16A

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IE.16B

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Italy

Table IT.1A

Number of enterprises, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of enterprises (units)										
All enterprises	125 762	93 918	942	92 485	491	31 844	14 041	10 196	2 167	5 440
Enterprises with innovation activity	45 664	37 595	337	37 154	104	8 069	2 853	1 628	901	2 687
Successful innovators	43 499	35 814	327	35 390	97	7 685	2 753	1 544	876	2 513
Product only innovators	10 449	8 236	16	8 212	8	2 213	976	263	126	848
Process only innovators	12 604	10 538	126	10 357	55	2 066	693	696	243	435
Product and process innovators	20 446	17 040	185	16 820	35	3 406	1 084	586	507	1 230
Enterprises with only on-going and/or abandoned innovations	2 165	1 781	9	1 765	7	384	100	84	25	174
Enterprises without innovation activity	80 098	56 323	605	55 331	387	23 775	11 188	8 568	1 265	2 753
Proportion of all enterprises (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	36	40	36	40	21	25	20	16	42	49
Successful innovators	35	38	35	38	20	24	20	15	40	46
Product only innovators	8	9	2	9	2	7	7	3	6	16
Process only innovators	10	11	13	11	11	6	5	7	11	8
Product and process innovators	16	18	20	18	7	11	8	6	23	23
Enterprises with only on-going and/or abandoned innovations	2	2	1	2	1	1	1	1	1	3
Enterprises without innovation activity	64	60	64	60	79	75	80	84	58	51

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.1B

Number of enterprises, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of enterprises (units)												
All enterprises	109 774	13 798	2 190	82 104	10 360	1 453	80 883	10 204	1 398	27 670	3 437	736
Enterprises with innovation activity	36 435	7 667	1 562	30 266	6 206	1 123	29 912	6 149	1 094	6 169	1 460	439
Successful innovators	34 684	7 320	1 495	28 805	5 936	1 073	28 464	5 880	1 046	5 879	1 385	421
Product only innovators	8 350	1 837	262	6 510	1 526	200	6 494	1 521	197	1 840	311	62
Process only innovators	10 686	1 684	234	9 089	1 298	151	8 947	1 267	143	1 598	386	83
Product and process innovators	15 647	3 800	999	13 206	3 111	722	13 024	3 091	705	2 441	689	276
Enterprises with only on-going and/or abandoned innovations	1 752	346	67	1 461	270	49	1 448	269	48	290	76	18
Enterprises without innovation activity	73 339	6 131	628	51 838	4 154	331	50 971	4 055	305	21 501	1 977	297
Proportion of all enterprises (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	33	56	71	37	60	77	37	60	78	22	42	60
Successful innovators	32	53	68	35	57	74	35	58	75	21	40	57
Product only innovators	8	13	12	8	15	14	8	15	14	7	9	8
Process only innovators	10	12	11	11	13	10	11	12	10	6	11	11
Product and process innovators	14	28	46	16	30	50	16	30	50	9	20	38
Enterprises with only on-going and/or abandoned innovations	2	3	3	2	3	3	2	3	3	1	2	2
Enterprises without innovation activity	67	44	29	63	40	23	63	40	22	78	58	40

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.2A

Number of employees, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of employees (thousands)										
All enterprises	5 648	3 705	19	3 557	129	1 943	395	888	452	208
Enterprises with innovation activity	3 446	2 223	8	2 122	93	1 223	121	573	399	130
Enterprises without innovation activity	2 202	1 482	11	1 434	36	720	274	315	53	78
Proportion of total number of employees (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	61	60	41	60	72	63	31	65	88	63
Enterprises without innovation activity	39	40	59	40	28	37	69	35	12	37

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.2B

Number of employees, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of employees (thousands)												
All enterprises	2 003	1 344	2 301	1 508	1 008	1 189	1 485	991	1 081	495	336	1 112
Enterprises with innovation activity	733	768	1 946	611	625	987	604	618	900	122	142	958
Enterprises without innovation activity	1 270	576	356	898	383	202	881	373	181	373	193	154
Proportion of total number of employees (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	37	57	85	40	62	83	41	62	83	25	42	86
Enterprises without innovation activity	63	43	15	60	38	17	59	38	17	75	58	14

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.3A

Turnover, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Turnover (EUR million)										
All enterprises	1 286 168	733 416	2 897	678 914	51 605	552 752	202 331	118 468	207 211	24 743
Enterprises with innovation activity	820 473	494 207	:	449 756	:	326 266	67 081	69 538	172 736	16 911
Enterprises without innovation activity	465 695	239 209	:	229 158	:	226 486	135 250	48 930	34 474	7 832
Proportion of total turnover (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	64	67	:	66	:	59	33	59	83	68
Enterprises without innovation activity	36	33	:	34	:	41	67	41	17	32

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.3B

Turnover, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Turnover (EUR million)												
All enterprises	358 966	332 162	595 040	214 856	196 447	322 113	209 688	192 646	276 581	144 110	135 715	272 927
Enterprises with innovation activity	134 239	188 312	497 922	97 369	124 643	272 195	96 199	123 166	230 391	36 870	63 669	225 727
Enterprises without innovation activity	224 727	143 851	97 117	117 487	71 804	49 918	113 488	69 480	46 190	107 240	72 046	47 199
Proportion of total turnover (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	37	57	84	45	63	85	46	64	83	26	47	83
Enterprises without innovation activity	63	43	16	55	37	15	54	36	17	74	53	17

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.4A

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators	81	82	:	82	:	76	:	:	69	77
Product only innovators	77	80	34	80	35	69	:	:	67	70
Product and process innovators	83	83	:	83	:	80	89	70	70	81

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.4B

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators	81	82	80	82	83	82	82	83	83	75	80	76
Product only innovators	77	80	74	79	81	72	80	81	73	68	75	80
Product and process innovators	83	83	82	83	84	84	83	84	86	80	82	75

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.5A

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators										
From unchanged or marginally modified products	68	65	:	62	:	73	:	:	79	48
From new or significantly improved products, not new to the market	13	14	:	14	:	12	:	:	12	19
From new or significantly improved products, new to the market	19	21	:	23	:	15	:	:	9	33
Product only innovators										
From unchanged or marginally modified products	66	67	87	67	85	65	:	:	74	58
From new or significantly improved products, not new to the market	16	14	12	14	8	19	:	:	19	18
From new or significantly improved products, new to the market	18	19	1	19	6	16	:	:	7	24
Product and process innovators										
From unchanged or marginally modified products	68	64	:	61	:	74	70	66	79	42
From new or significantly improved products, not new to the market	13	14	:	14	:	11	11	5	12	19
From new or significantly improved products, new to the market	19	22	:	25	:	15	19	29	9	38

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.5B

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators												
From unchanged or marginally modified products	58	69	69	62	66	65	:	66	:	49	76	75
From new or significantly improved products, not new to the market	17	12	13	14	14	14	:	14	:	24	7	11
From new or significantly improved products, new to the market	25	19	18	24	20	21	:	20	:	26	17	13
Product only innovators												
From unchanged or marginally modified products	62	73	63	67	69	65	:	69	:	49	81	56
From new or significantly improved products, not new to the market	18	12	17	13	14	15	:	14	:	29	8	27
From new or significantly improved products, new to the market	20	15	20	20	16	20	:	16	:	21	11	18
Product and process innovators												
From unchanged or marginally modified products	56	67	70	58	64	65	58	64	60	49	74	76
From new or significantly improved products, not new to the market	17	11	12	15	14	14	15	14	14	21	6	11
From new or significantly improved products, new to the market	27	21	17	26	22	21	26	22	26	30	19	13

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.6A

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Intramural R&D	35	37	14	37	40	28	19	13	17	51
Extramural R&D	12	12	4	12	28	11	7	8	12	16
Acquisition of machinery and equipment	66	68	81	68	65	60	54	65	70	59
Acquisition of other external knowledge	18	15	16	15	41	29	22	27	52	29
Training	31	28	8	28	40	44	38	27	63	53
Market introduction of innovations	17	16	5	16	9	22	28	7	33	20
Design, other preparations for production/deliveries	18	19	2	19	15	11	14	6	10	10

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.6B

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Intramural R&D	30	54	67	30	61	79	31	61	79	28	28	35
Extramural R&D	9	19	32	9	21	37	9	21	36	10	11	20
Acquisition of machinery and equipment	66	69	71	67	71	73	67	71	73	59	59	67
Acquisition of other external knowledge	16	23	37	14	20	30	14	20	29	25	38	55
Training	27	43	55	24	41	49	24	41	49	40	51	69
Market introduction of innovations	15	25	30	14	24	28	14	25	28	20	25	36
Design, other preparations for production/deliveries	15	27	29	16	31	32	16	31	33	10	10	21

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.7A

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Product oriented effects										
Increased range of goods or services	23	24	22	24	22	20	17	17	37	19
Increased market or market share	20	21	21	21	25	17	18	15	16	16
Improved quality in goods or services	47	48	39	48	19	41	49	28	59	35
Process oriented effects										
Improved production flexibility	20	21	23	21	11	16	8	18	44	14
Increased production capacity	32	34	29	34	25	26	21	28	47	23
Reduced labour costs per produced unit	25	28	19	28	18	12	13	14	20	8
Reduced materials and energy per produced unit	12	13	24	13	15	7	6	11	7	5
Other effects										
Improved environmental impact or health and safety aspects	24	26	34	26	30	13	13	22	17	7
Met regulations or standards	25	26	27	26	36	19	22	16	26	15

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.7B

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Product oriented effects												
Increased range of goods or services	21	32	43	22	33	44	22	33	43	16	28	41
Increased market or market share	17	31	31	18	33	34	18	34	33	15	21	22
Improved quality in goods or services	45	53	51	46	55	53	46	55	54	40	43	45
Process oriented effects												
Improved production flexibility	18	28	29	19	29	25	19	30	26	14	21	38
Increased production capacity	32	31	37	34	32	37	34	33	37	25	26	37
Reduced labour costs per produced unit	25	24	21	28	27	22	28	27	22	12	13	20
Reduced materials and energy per produced unit	11	17	19	12	20	23	11	20	23	6	7	10
Other effects												
Improved environmental impact or health and safety aspects	22	30	27	24	34	33	24	35	32	14	10	11
Met regulations or standards	24	27	32	25	30	36	25	30	35	20	13	22

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.8A

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity	41	44	37	44	44	26	23	31	7	32
Successful innovators	41	44	:	44	:	26	:	:	7	33
Enterprises with only on-going and/or abandoned innovations	35	37	:	37	:	26	:	:	8	27

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.8B

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity	39	46	45	42	51	52	42	52	52	26	24	27
Successful innovators	40	46	44	:	51	:	42	52	52	:	24	:
Enterprises with only on-going and/or abandoned innovations	32	46	60	:	53	:	34	53	57	:	24	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.9A

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All partners	9	8	8	8	36	16	8	12	27	22
National	8	7	7	7	37	14	5	11	26	21
EU/EFTA	3	3	0	3	18	4	4	3	3	6
Candidate countries	1	1	0	1	0	0	0	0	0	0
United States	1	1	0	1	3	2	2	1	1	2
Japan	0	0	0	0	10	1	2	0	0	0
Others	1	1	0	1	0	1	1	1	0	2

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.9B

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All partners	7	14	38	6	13	38	6	13	37	14	17	36
National	6	12	32	5	11	32	5	11	31	12	14	34
EU/EFTA	2	6	21	1	5	24	1	5	23	3	6	15
Candidate countries	0	1	2	0	1	2	0	1	2	0	1	1
United States	1	2	8	0	2	8	0	2	8	1	3	6
Japan	0	1	3	0	1	4	0	1	3	1	1	1
Others	0	2	4	0	2	4	0	2	5	1	2	4

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.10A

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Internal sources										
Within the enterprise	27	27	28	27	27	26	26	28	23	25
Other enterprises within the enterprise group	3	3	0	3	8	6	4	5	11	5
Market sources										
Suppliers of equipment, materials, components or software	18	17	26	17	18	22	26	23	29	15
Clients or customers	15	16	20	16	5	10	5	10	8	15
Competitors and other enterprises from the same industry	7	8	12	8	7	7	6	9	9	5
Institutional sources										
Universities or other higher education institutes	2	2	3	2	7	3	1	1	2	7
Government or private non-profit research institutes	2	2	4	2	7	2	1	2	2	3
Other sources										
Professional conferences, meetings, journals	6	5	12	5	12	9	9	6	6	12
Fairs, exhibitions	12	14	14	14	15	6	10	6	1	5

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.10B

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Internal sources												
Within the enterprise	25	33	42	25	35	47	25	35	48	25	27	30
Other enterprises within the enterprise group	2	7	16	2	6	16	2	6	16	3	12	16
Market sources												
Suppliers of equipment, materials, components or software	18	18	26	17	18	24	17	18	24	22	18	32
Clients or customers	13	22	20	14	24	22	14	25	23	8	13	16
Competitors and other enterprises from the same industry	6	13	9	6	14	9	6	14	9	6	8	8
Institutional sources												
Universities or other higher education institutes	2	4	8	1	4	9	1	4	9	3	3	3
Government or private non-profit research institutes	1	3	7	1	4	8	1	4	8	2	2	3
Other sources												
Professional conferences, meetings, journals	6	7	11	5	7	11	5	7	11	9	8	10
Fairs, exhibitions	12	16	13	13	18	16	13	18	16	6	7	6

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.11A

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Seriously delayed	15	14	15	14	17	17	21	15	14	14
Prevented to be started	16	16	23	16	22	15	19	12	13	14
Burdened/encumbered with other serious problems	26	25	13	26	31	26	26	26	27	26

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.11B

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Seriously delayed	15	15	13	14	15	14	14	15	14	17	16	12
Prevented to be started	16	14	14	16	14	14	16	14	13	16	13	14
Burdened/encumbered with other serious problems	24	31	28	24	33	26	24	33	26	26	25	31

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.12A

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	12	12	12	12	11	12	11	17	8	12
Innovation costs too high	17	18	17	18	9	11	6	15	11	14
Lack of appropriate sources of finance	16	16	19	16	17	15	12	20	2	19
Internal factors										
Organisational rigidities within the enterprise	5	4	1	4	9	5	6	4	8	4
Lack of qualified personnel	11	12	2	12	6	9	10	8	6	9
Lack of information on technology	5	6	7	6	3	5	8	3	4	3
Lack of information on markets	5	5	2	5	1	5	6	3	3	5
Other factors										
Insufficient flexibility of regulations or standards	8	8	16	8	8	8	6	13	5	9
Lack of customer responsiveness to new goods or services	5	5	0	5	0	6	4	4	2	11

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.12B

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	12	12	8	12	12	8	12	12	8	13	12	7
Innovation costs too high	18	15	14	19	15	16	19	16	16	11	12	7
Lack of appropriate sources of finance	17	12	9	17	12	10	17	12	11	17	10	5
Internal factors												
Organisational rigidities within the enterprise	4	5	6	4	5	5	4	5	5	5	5	6
Lack of qualified personnel	11	11	7	12	13	7	12	13	7	10	6	7
Lack of information on technology	5	7	4	5	7	4	5	7	5	5	5	4
Lack of information on markets	5	6	3	4	6	4	4	6	4	5	3	1
Other factors												
Insufficient flexibility of regulations or standards	8	9	5	9	8	5	9	8	5	8	11	5
Lack of customer responsiveness to new goods or services	5	6	4	5	6	4	5	6	4	7	2	4

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.13A

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	12	14	5	14	3	6	5	8	2	6
Innovation costs too high	17	20	14	20	6	11	9	14	5	10
Lack of appropriate sources of finance	12	14	5	14	4	8	7	11	1	9
Internal factors										
Organisational rigidities within the enterprise	5	5	3	5	2	5	6	5	5	2
Lack of qualified personnel	9	11	3	12	1	5	4	6	3	5
Lack of information on technology	5	5	3	6	1	5	7	4	4	4
Lack of information on markets	5	6	2	6	4	3	3	3	3	2
Other factors										
Insufficient flexibility of regulations or standards	7	7	7	7	3	5	3	8	5	3
Lack of customer responsiveness to new goods or services	9	10	7	10	8	9	9	10	5	6

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.13B

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	12	9	5	15	10	5	15	10	6	6	7	4
Innovation costs too high	17	12	5	20	14	6	20	14	6	11	7	4
Lack of appropriate sources of finance	12	8	5	14	8	3	14	8	4	9	6	6
Internal factors												
Organisational rigidities within the enterprise	5	5	4	5	5	5	5	5	6	5	5	2
Lack of qualified personnel	10	8	4	12	9	4	12	9	4	5	6	3
Lack of information on technology	6	5	2	6	5	3	6	5	3	6	4	2
Lack of information on markets	5	4	2	6	5	1	6	5	1	3	2	2
Other factors												
Insufficient flexibility of regulations or standards	7	5	3	7	6	2	7	6	2	5	4	5
Lack of customer responsiveness to new goods or services	10	7	6	10	7	7	10	7	7	9	7	4

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.14A

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All enterprises	6	7	1	7	1	3	4	0	2	5
Enterprises with innovation activity	13	15	2	15	4	8	13	1	3	9
Enterprises without innovation activity	2	2	1	2	0	1	1	0	1	1

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.14B

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All enterprises	4	17	32	5	20	42	5	20	43	2	7	11
Enterprises with innovation activity	10	26	42	10	28	52	10	28	53	6	15	16
Enterprises without innovation activity	1	6	7	1	8	9	1	8	10	1	2	4

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.15A

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Registration of design patterns	10	11	5	11	5	5	8	1	1	6
Trademarks	17	18	1	18	2	11	15	5	12	11
Copyright	3	2	0	2	2	5	6	1	2	9
Secrecy	27	26	9	26	29	33	26	15	34	52
Complexity of design	15	15	12	15	7	13	12	6	7	22
Lead-time advantage on competitors	34	33	33	33	31	36	30	24	25	53
Enterprises without innovation activity										
Registration of design patterns	1	2	0	2	1	1	1	0	0	2
Trademarks	6	7	2	7	1	4	7	1	4	2
Copyright	1	1	0	1	0	1	1	0	1	1
Secrecy	7	7	2	7	4	7	7	4	10	12
Complexity of design	3	3	1	3	2	2	2	2	1	3
Lead-time advantage on competitors	10	11	5	11	6	8	7	7	8	12

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.15B

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Registration of design patterns	7	19	33	8	22	41	8	22	42	4	10	11
Trademarks	14	27	40	15	29	48	15	29	49	9	20	21
Copyright	2	4	8	1	4	8	1	4	8	5	8	9
Secrecy	23	39	55	22	39	59	22	39	59	31	42	43
Complexity of design	13	21	21	13	22	22	14	22	22	13	15	18
Lead-time advantage on competitors	31	45	52	30	45	56	30	45	55	34	42	43
Enterprises without innovation activity												
Registration of design patterns	1	4	6	2	5	9	2	5	10	1	1	2
Trademarks	5	12	14	6	15	21	6	16	23	4	5	6
Copyright	1	2	3	1	2	4	1	2	5	1	2	2
Secrecy	6	14	15	6	15	20	6	16	21	7	10	9
Complexity of design	3	6	4	3	7	6	3	7	7	2	3	2
Lead-time advantage on competitors	9	14	15	10	16	15	10	16	17	7	11	14

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.16A

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Strategy	42	38	26	38	69	57	62	52	77	50
Management	29	28	25	28	40	38	40	29	49	39
Organisation	52	50	35	50	79	61	61	53	83	60
Marketing	35	33	18	33	36	45	53	31	68	37
Aesthetic or other subjective changes	50	52	17	52	12	39	43	22	49	42
Enterprises without innovation activity										
Strategy	16	14	6	14	35	20	20	16	36	25
Management	10	10	6	10	22	13	13	10	20	15
Organisation	22	21	12	21	40	26	25	23	47	32
Marketing	14	12	5	12	21	18	23	12	27	17
Aesthetic or other subjective changes	21	25	6	25	8	13	17	7	13	10

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IT.16B

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Strategy	36	60	73	33	56	70	33	56	70	52	75	79
Management	24	47	60	23	44	59	23	44	60	31	60	61
Organisation	48	66	77	46	63	73	46	63	72	56	78	87
Marketing	31	48	61	29	47	57	29	47	57	41	56	69
Aesthetic or other subjective changes	48	56	58	50	60	62	50	60	63	38	41	50
Enterprises without innovation activity												
Strategy	14	33	49	12	32	57	12	32	56	18	36	40
Management	9	24	37	8	23	43	8	23	42	11	25	30
Organisation	20	42	53	19	42	55	19	42	54	24	43	50
Marketing	13	27	35	11	26	40	11	26	39	17	28	29
Aesthetic or other subjective changes	20	28	27	24	35	40	24	35	43	12	15	12

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Luxembourg

Table LU.1A

Number of enterprises, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of enterprises (units)										
All enterprises	1 393	352	:	339	13	1 041	266	294	307	174
Enterprises with innovation activity	673	173	:	169	5	500	114	104	162	120
Successful innovators	623	165	:	160	5	458	108	100	144	106
Product only innovators	238	59	:	59	0	179	45	36	46	51
Process only innovators	134	44	:	40	5	90	23	25	22	20
Product and process innovators	251	61	:	61	0	190	40	39	77	34
Enterprises with only on-going and/or abandoned innovations	50	8	:	8	0	42	6	4	17	14
Enterprises without innovation activity	720	179	:	170	9	541	152	190	145	54
Proportion of all enterprises (%)										
All enterprises	100	100	:	100	100	100	100	100	100	100
Enterprises with innovation activity	48	49	:	50	35	48	43	36	53	69
Successful innovators	45	47	:	47	35	44	41	34	47	61
Product only innovators	17	17	:	18	0	17	17	12	15	29
Process only innovators	10	13	:	12	35	9	9	8	7	12
Product and process innovators	18	17	:	18	0	18	15	13	25	20
Enterprises with only on-going and/or abandoned innovations	4	2	:	2	0	4	2	1	6	8
Enterprises without innovation activity	52	51	:	50	65	52	57	64	47	31

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.1B

Number of enterprises, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of enterprises (units)												
All enterprises	1 002	319	71	243	72	36	233	70	35	759	247	35
Enterprises with innovation activity	419	187	67	89	50	35	87	49	34	330	138	33
Successful innovators	393	166	64	85	46	35	82	45	34	308	120	30
Product only innovators	179	43	16	43	8	8	43	8	8	136	35	8
Process only innovators	78	46	10	16	21	8	13	20	7	62	25	2
Product and process innovators	136	76	39	26	16	19	26	16	19	110	60	20
Enterprises with only on-going and/or abandoned innovations	26	21	3	4	4	0	4	4	0	22	17	3
Enterprises without innovation activity	584	132	4	154	23	1	147	22	1	429	109	2
Proportion of all enterprises (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	42	59	95	37	68	96	37	69	96	43	56	93
Successful innovators	39	52	91	35	63	96	35	63	96	41	49	86
Product only innovators	18	14	22	18	11	22	19	12	23	18	14	22
Process only innovators	8	14	14	6	29	21	6	29	19	8	10	7
Product and process innovators	14	24	55	11	22	53	11	23	55	14	24	56
Enterprises with only on-going and/or abandoned innovations	3	7	4	2	6	0	2	6	0	3	7	7
Enterprises without innovation activity	58	41	5	63	32	4	63	31	4	57	44	7

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.2A

Number of employees, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of employees (thousands)										
All enterprises	112	34	:	33	1	78	12	24	34	8
Enterprises with innovation activity	85	28	:	:	:	57	7	16	27	6
Enterprises without innovation activity	27	6	:	:	:	21	5	8	6	2
Proportion of total number of employees (%)										
All enterprises	100	100	:	100	100	100	100	100	100	100
Enterprises with innovation activity	76	83	:	:	:	73	56	67	81	80
Enterprises without innovation activity	24	17	:	:	:	27	44	33	19	20

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.2B

Number of employees, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of employees (thousands)												
All enterprises	21	35	56	6	8	21	:	:	21	16	28	34
Enterprises with innovation activity	:	22	:	:	6	:	:	:	:	:	16	:
Enterprises without innovation activity	:	13	:	:	2	:	:	:	:	:	11	:
Proportion of total number of employees (%)												
All enterprises	100	100	100	100	100	100	:	:	100	100	100	100
Enterprises with innovation activity	:	63	:	:	76	:	:	:	:	:	59	:
Enterprises without innovation activity	:	37	:	:	24	:	:	:	:	:	41	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.3A

Turnover, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Turnover (EUR million)										
All enterprises	60 152	8 087	:	7 471	616	52 065	8 693	7 072	35 367	932
Enterprises with innovation activity	45 586	6 937	:	:	:	38 649	4 801	3 600	29 507	741
Enterprises without innovation activity	14 565	1 150	:	:	:	13 415	3 892	3 472	5 860	191
Proportion of total turnover (%)										
All enterprises	100	100	:	100	100	100	100	100	100	100
Enterprises with innovation activity	76	86	:	:	:	74	55	51	83	79
Enterprises without innovation activity	24	14	:	:	:	26	45	49	17	21

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.3B

Turnover, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Turnover (EUR million)												
All enterprises	13 490	15 908	30 754	955	2 475	4 656	:	:	4 397	12 535	13 432	26 097
Enterprises with innovation activity	:	:	:	:	:	:	:	:	:	:	:	:
Enterprises without innovation activity	:	:	:	:	:	:	:	:	:	:	:	:
Proportion of total turnover (%)												
All enterprises	100	100	100	100	100	100	:	:	100	100	100	100
Enterprises with innovation activity	:	:	:	:	:	:	:	:	:	:	:	:
Enterprises without innovation activity	:	:	:	:	:	:	:	:	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.4A

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators	55	54	:	54	~	55	:	:	51	67
Product only innovators	53	61	:	61	~	51	:	:	55	66
Product and process innovators	57	46	:	46	~	60	:	:	49	67

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.4B

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators	57	45	68	44	:	:	44	:	:	60	:	:
Product only innovators	54	46	67	50	:	:	50	:	:	55	:	:
Product and process innovators	60	44	69	34	50	60	34	50	60	66	42	77

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.5A

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators										
From unchanged or marginally modified products	87	:	:	:	~	:	:	:	90	45
From new or significantly improved products, not new to the market	9	:	:	:	~	:	:	:	7	46
From new or significantly improved products, new to the market	4	:	:	:	~	:	:	:	3	9
Product only innovators										
From unchanged or marginally modified products	89	:	:	:	~	:	:	85	91	65
From new or significantly improved products, not new to the market	9	:	:	:	~	:	:	14	8	26
From new or significantly improved products, new to the market	2	:	:	:	~	:	:	1	1	9
Product and process innovators										
From unchanged or marginally modified products	86	79	:	79	~	87	:	:	90	26
From new or significantly improved products, not new to the market	10	17	:	17	~	8	:	:	7	65
From new or significantly improved products, new to the market	5	4	:	4	~	5	:	:	4	9

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.5B

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators												
From unchanged or marginally modified products	70	79	90	84	:	:	84	:	:	69	:	:
From new or significantly improved products, not new to the market	19	14	8	11	:	:	11	:	:	19	:	:
From new or significantly improved products, new to the market	11	7	2	5	:	:	5	:	:	12	:	:
Product only innovators												
From unchanged or marginally modified products	81	77	94	82	:	:	82	:	:	81	:	:
From new or significantly improved products, not new to the market	14	21	6	10	:	:	10	:	:	14	:	:
From new or significantly improved products, new to the market	6	2	1	9	:	:	9	:	:	6	:	:
Product and process innovators												
From unchanged or marginally modified products	52	80	89	87	84	78	87	84	78	50	79	92
From new or significantly improved products, not new to the market	27	11	8	13	16	17	13	16	17	28	11	6
From new or significantly improved products, new to the market	21	9	3	1	1	5	1	1	5	22	10	2

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.6A

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.6B

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.7A

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Product oriented effects										
Increased range of goods or services	36	38	:	:	:	36	35	33	27	50
Increased market or market share	28	28	:	:	:	28	31	31	19	37
Improved quality in goods or services	44	34	:	:	:	48	38	58	43	54
Process oriented effects										
Improved production flexibility	25	26	:	:	:	25	21	25	28	24
Increased production capacity	29	34	:	:	:	28	11	42	34	23
Reduced labour costs per produced unit	10	16	:	:	:	8	1	0	16	9
Reduced materials and energy per produced unit	7	14	:	:	:	5	2	8	3	7
Other effects										
Improved environmental impact or health and safety aspects	13	16	:	:	:	12	13	31	0	10
Met regulations or standards	25	23	:	:	:	25	33	32	14	26

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.7B

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Product oriented effects												
Increased range of goods or services	:	27	:	:	24	:	:	:	:	:	27	:
Increased market or market share	:	22	:	:	0	:	:	:	:	:	30	:
Improved quality in goods or services	:	42	:	:	16	:	:	:	:	:	52	:
Process oriented effects												
Improved production flexibility	:	28	:	:	24	:	:	:	:	:	29	:
Increased production capacity	:	24	:	:	24	:	:	:	:	:	23	:
Reduced labour costs per produced unit	:	9	:	:	16	:	:	:	:	:	7	:
Reduced materials and energy per produced unit	:	9	:	:	16	:	:	:	:	:	7	:
Other effects												
Improved environmental impact or health and safety aspects	:	9	:	:	2	:	:	:	:	:	12	:
Met regulations or standards	:	20	:	:	8	:	:	:	:	:	24	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.8A

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity	15	27	:	:	:	11	8	25	7	8
Successful innovators	16	:	:	:	:	:	:	:	7	10
Enterprises with only on-going and/or abandoned innovations	8	:	:	:	~	:	:	:	0	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.8B

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity	:	15	:	:	18	:	:	:	:	:	13	:
Successful innovators	15	14	26	27	:	45	:	:	:	12	:	3
Enterprises with only on-going and/or abandoned innovations	:	19	:	:	:	:	:	:	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.9A

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All partners	39	36	:	36	50	40	33	33	44	49
National	25	21	:	20	50	27	26	18	29	32
EU/EFTA	35	32	:	33	0	36	25	29	39	46
Candidate countries	4	4	:	4	0	4	0	0	7	7
United States	5	9	:	9	0	4	1	0	5	10
Japan	1	1	:	2	0	1	0	0	0	4
Others	1	1	:	1	0	2	0	0	1	6

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.9B

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All partners	37	42	45	31	41	44	30	42	42	39	42	46
National	24	26	30	21	16	29	20	17	27	25	29	31
EU/EFTA	33	38	38	24	41	38	25	42	39	35	36	38
Candidate countries	3	5	7	0	8	7	0	8	8	3	4	7
United States	2	11	13	0	24	11	0	25	11	2	6	15
Japan	1	1	5	0	0	7	0	0	8	1	1	3
Others	2	1	4	0	0	4	0	0	4	2	1	4

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.10A

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Internal sources										
Within the enterprise	66	64	:	:	:	66	60	69	67	70
Other enterprises within the enterprise group	32	27	:	:	:	34	34	22	40	36
Market sources										
Suppliers of equipment, materials, components or software	30	37	:	:	:	27	39	30	25	17
Clients or customers	33	34	:	:	:	33	31	35	24	47
Competitors and other enterprises from the same industry	16	13	:	:	:	17	11	23	18	14
Institutional sources										
Universities or other higher education institutes	2	3	:	:	:	2	4	0	0	5
Government or private non-profit research institutes	1	1	:	:	:	2	1	0	1	5
Other sources										
Professional conferences, meetings, journals	20	18	:	:	:	20	23	16	20	20
Fairs, exhibitions	14	24	:	:	:	10	15	24	1	6

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.10B

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Internal sources												
Within the enterprise	:	64	:	:	41	:	:	:	:	:	73	:
Other enterprises within the enterprise group	:	40	:	:	49	:	:	:	:	:	37	:
Market sources												
Suppliers of equipment, materials, components or software	:	31	:	:	27	:	:	:	:	:	32	:
Clients or customers	:	26	:	:	33	:	:	:	:	:	24	:
Competitors and other enterprises from the same industry	:	9	:	:	8	:	:	:	:	:	10	:
Institutional sources												
Universities or other higher education institutes	:	2	:	:	8	:	:	:	:	:	0	:
Government or private non-profit research institutes	:	1	:	:	0	:	:	:	:	:	1	:
Other sources												
Professional conferences, meetings, journals	:	19	:	:	10	:	:	:	:	:	22	:
Fairs, exhibitions	:	16	:	:	10	:	:	:	:	:	18	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.11A

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Seriously delayed	14	11	:	:	:	16	18	14	22	7
Prevented to be started	5	5	:	:	:	5	8	4	2	7
Burdened/encumbered with other serious problems	29	19	:	:	:	32	47	19	28	34

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.11B

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Seriously delayed	:	12	:	:	0	:	:	:	:	:	17	:
Prevented to be started	:	4	:	:	8	:	:	:	:	:	3	:
Burdened/encumbered with other serious problems	:	24	:	:	16	:	:	:	:	:	26	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.12A

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	7	14	:	:	:	4	1	9	2	7
Innovation costs too high	11	13	:	:	:	10	8	9	10	13
Lack of appropriate sources of finance	9	11	:	:	:	8	5	9	7	12
Internal factors										
Organisational rigidities within the enterprise	7	4	:	:	:	7	6	4	11	7
Lack of qualified personnel	8	5	:	:	:	9	6	8	4	18
Lack of information on technology	1	2	:	:	:	1	4	0	0	1
Lack of information on markets	3	4	:	:	:	2	4	5	0	2
Other factors										
Insufficient flexibility of regulations or standards	6	1	:	:	:	7	5	18	3	5
Lack of customer responsiveness to new goods or services	5	3	:	:	:	5	5	13	1	5

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.12B

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	:	3	:	:	8	:	:	:	:	:	1	:
Innovation costs too high	:	5	:	:	8	:	:	:	:	:	4	:
Lack of appropriate sources of finance	:	3	:	:	8	:	:	:	:	:	2	:
Internal factors												
Organisational rigidities within the enterprise	:	6	:	:	8	:	:	:	:	:	5	:
Lack of qualified personnel	:	8	:	:	8	:	:	:	:	:	8	:
Lack of information on technology	:	3	:	:	8	:	:	:	:	:	1	:
Lack of information on markets	:	3	:	:	8	:	:	:	:	:	1	:
Other factors												
Insufficient flexibility of regulations or standards	:	4	:	:	0	:	:	:	:	:	6	:
Lack of customer responsiveness to new goods or services	:	3	:	:	0	:	:	:	:	:	4	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.13A

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	3	6	:	:	:	3	6	2	0	3
Innovation costs too high	7	8	:	:	:	6	11	2	4	12
Lack of appropriate sources of finance	4	2	:	:	:	5	8	0	5	11
Internal factors										
Organisational rigidities within the enterprise	5	2	:	:	:	5	7	3	7	5
Lack of qualified personnel	4	5	:	:	:	4	10	2	3	0
Lack of information on technology	2	2	:	:	:	2	6	0	0	0
Lack of information on markets	1	2	:	:	:	0	0	0	0	0
Other factors										
Insufficient flexibility of regulations or standards	1	2	:	:	:	1	0	3	0	3
Lack of customer responsiveness to new goods or services	4	5	:	:	:	4	3	3	7	8

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.13B

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	:	3	:	:	0	:	:	:	:	:	4	:
Innovation costs too high	:	13	:	:	18	:	:	:	:	:	12	:
Lack of appropriate sources of finance	:	6	:	:	18	:	:	:	:	:	3	:
Internal factors												
Organisational rigidities within the enterprise	:	1	:	:	0	:	:	:	:	:	1	:
Lack of qualified personnel	:	7	:	:	0	:	:	:	:	:	9	:
Lack of information on technology	:	0	:	:	0	:	:	:	:	:	0	:
Lack of information on markets	:	0	:	:	0	:	:	:	:	:	0	:
Other factors												
Insufficient flexibility of regulations or standards	:	0	:	:	0	:	:	:	:	:	0	:
Lack of customer responsiveness to new goods or services	:	7	:	:	18	:	:	:	:	:	5	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.14A

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All enterprises	4	6	:	7	0	4	10	0	0	5
Enterprises with innovation activity	8	10	:	:	:	7	22	0	1	8
Enterprises without innovation activity	1	3	:	:	:	0	1	0	0	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.14B

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All enterprises	3	4	22	2	7	36	:	:	37	4	3	7
Enterprises with innovation activity	:	5	:	:	8	:	:	:	:	:	4	:
Enterprises without innovation activity	:	2	:	:	6	:	:	:	:	:	1	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.15A

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Registration of design patterns	10	15	:	:	:	8	16	1	6	9
Trademarks	19	24	:	:	:	17	22	20	12	18
Copyright	11	7	:	:	:	13	13	14	8	18
Secrecy	29	40	:	:	:	25	25	15	31	26
Complexity of design	17	17	:	:	:	17	20	13	14	20
Lead-time advantage on competitors	40	39	:	:	:	40	24	46	45	43
Enterprises without innovation activity										
Registration of design patterns	4	4	:	:	:	4	2	10	0	0
Trademarks	10	3	:	:	:	12	11	17	12	3
Copyright	2	3	:	:	:	2	1	3	0	5
Secrecy	9	5	:	:	:	10	1	10	20	12
Complexity of design	2	0	:	:	:	3	1	3	4	9
Lead-time advantage on competitors	7	2	:	:	:	8	5	5	10	21

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.15B

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Registration of design patterns	:	6	:	:	16	:	:	:	:	:	2	:
Trademarks	:	16	:	:	33	:	:	:	:	:	11	:
Copyright	:	21	:	:	16	:	:	:	:	:	22	:
Secrecy	:	33	:	:	65	:	:	:	:	:	21	:
Complexity of design	:	18	:	:	16	:	:	:	:	:	19	:
Lead-time advantage on competitors	:	38	:	:	49	:	:	:	:	:	35	:
Enterprises without innovation activity												
Registration of design patterns	:	4	:	:	10	:	:	:	:	:	2	:
Trademarks	:	12	:	:	6	:	:	:	:	:	14	:
Copyright	:	2	:	:	6	:	:	:	:	:	1	:
Secrecy	:	10	:	:	0	:	:	:	:	:	12	:
Complexity of design	:	1	:	:	0	:	:	:	:	:	1	:
Lead-time advantage on competitors	:	5	:	:	0	:	:	:	:	:	6	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.16A

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Strategy	63	61	:	:	:	64	66	68	68	53
Management	72	67	:	:	:	73	79	73	72	71
Organisation	69	54	:	:	:	75	82	72	74	71
Marketing	41	49	:	:	:	39	43	41	35	39
Aesthetic or other subjective changes	39	37	:	:	:	40	51	45	28	41
Enterprises without innovation activity										
Strategy	32	9	:	:	:	39	37	40	39	45
Management	46	37	:	:	:	49	54	41	47	67
Organisation	46	31	:	:	:	51	45	50	51	72
Marketing	23	11	:	:	:	27	24	27	26	36
Aesthetic or other subjective changes	17	6	:	:	:	21	18	14	35	13

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table LU.16B

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Strategy	:	63	:	:	57	:	:	:	:	:	66	:
Management	:	80	:	:	84	:	:	:	:	:	78	:
Organisation	:	72	:	:	57	:	:	:	:	:	77	:
Marketing	:	47	:	:	65	:	:	:	:	:	40	:
Aesthetic or other subjective changes	:	32	:	:	33	:	:	:	:	:	32	:
Enterprises without innovation activity												
Strategy	:	48	:	:	6	:	:	:	:	:	57	:
Management	:	54	:	:	40	:	:	:	:	:	57	:
Organisation	:	49	:	:	23	:	:	:	:	:	55	:
Marketing	:	30	:	:	18	:	:	:	:	:	33	:
Aesthetic or other subjective changes	:	20	:	:	0	:	:	:	:	:	25	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

The Netherlands

Table NL.1A

Number of enterprises, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of enterprises (units)										
All enterprises	25 553	10 953	89	10 780	84	14 599	7 118	4 070	1 121	2 290
Enterprises with innovation activity	11 579	5 976	37	5 887	52	5 602	2 836	910	546	1 310
Successful innovators	10 800	5 596	34	5 518	44	5 204	2 664	851	495	1 194
Product only innovators	4 271	1 639	4	1 623	12	2 631	1 509	376	189	558
Process only innovators	1 175	726	11	703	13	448	227	110	85	26
Product and process innovators	5 354	3 230	19	3 192	19	2 124	928	365	221	610
Enterprises with only on-going and/or abandoned innovations	779	380	3	369	8	399	172	59	51	116
Enterprises without innovation activity	13 974	4 977	53	4 893	32	8 997	4 282	3 160	575	980
Proportion of all enterprises (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	45	55	41	55	62	38	40	22	49	57
Successful innovators	42	51	38	51	52	36	37	21	44	52
Product only innovators	17	15	4	15	14	18	21	9	17	24
Process only innovators	5	7	12	7	15	3	3	3	8	1
Product and process innovators	21	29	21	30	23	15	13	9	20	27
Enterprises with only on-going and/or abandoned innovations	3	3	3	3	10	3	2	1	5	5
Enterprises without innovation activity	55	45	59	45	38	62	60	78	51	43

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.1B

Number of enterprises, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of enterprises (units)												
All enterprises	18 705	5 694	1 153	7 491	2 808	655	7 420	2 747	613	11 215	2 886	498
Enterprises with innovation activity	7 300	3 371	908	3 415	2 002	559	3 396	1 969	522	3 885	1 368	349
Successful innovators	6 836	3 125	839	3 218	1 847	530	3 200	1 818	500	3 618	1 277	309
Product only innovators	3 035	1 058	178	963	584	93	961	574	88	2 072	474	85
Process only innovators	800	301	74	501	187	38	496	180	27	299	114	35
Product and process innovators	3 001	1 766	587	1 754	1 077	399	1 743	1 064	385	1 247	689	188
Enterprises with only on-going and/or abandoned innovations	464	246	69	197	155	29	196	151	22	267	91	40
Enterprises without innovation activity	11 405	2 323	245	4 076	806	96	4 024	778	91	7 330	1 518	150
Proportion of all enterprises (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	39	59	79	46	71	85	46	72	85	35	47	70
Successful innovators	37	55	73	43	66	81	43	66	82	32	44	62
Product only innovators	16	19	15	13	21	14	13	21	14	18	16	17
Process only innovators	4	5	6	7	7	6	7	7	4	3	4	7
Product and process innovators	16	31	51	23	38	61	23	39	63	11	24	38
Enterprises with only on-going and/or abandoned innovations	2	4	6	3	6	4	3	6	4	2	3	8
Enterprises without innovation activity	61	41	21	54	29	15	54	28	15	65	53	30

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.2A

Number of employees, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of employees (thousands)										
All enterprises	2 265	1 064	8	1 022	34	1 201	414	386	200	201
Enterprises with innovation activity	1 531	728	5	693	31	803	234	242	178	149
Enterprises without innovation activity	734	336	3	330	3	399	180	144	23	52
Proportion of total number of employees (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	68	68	66	68	90	67	57	63	89	74
Enterprises without innovation activity	32	32	34	32	10	33	43	37	11	26

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.2B

Number of employees, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of employees (thousands)												
All enterprises	436	559	1 270	176	278	610	174	271	577	260	281	659
Enterprises with innovation activity	182	352	998	86	210	433	86	205	402	95	142	565
Enterprises without innovation activity	255	208	272	90	68	177	89	66	175	165	139	95
Proportion of total number of employees (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	42	63	79	49	75	71	49	76	70	37	51	86
Enterprises without innovation activity	58	37	21	51	25	29	51	24	30	63	49	14

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.3A

Turnover, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Turnover (EUR million)										
All enterprises	571 432	195 626	8 865	171 400	15 361	375 806	181 494	58 850	114 188	21 274
Enterprises with innovation activity	408 182	163 749	7 714	142 326	13 709	244 433	78 730	42 299	106 797	16 606
Enterprises without innovation activity	163 250	31 877	1 151	29 074	1 652	131 373	102 763	16 550	7 391	4 668
Proportion of total turnover (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	71	84	87	83	89	65	43	72	94	78
Enterprises without innovation activity	29	16	13	17	11	35	57	28	6	22

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.3B

Turnover, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Turnover (EUR million)												
All enterprises	96 055	149 698	325 679	25 337	56 216	114 073	:	:	:	70 718	93 482	211 606
Enterprises with innovation activity	37 955	78 036	292 191	12 983	42 605	108 161	:	:	:	24 972	35 431	184 030
Enterprises without innovation activity	58 100	71 662	33 488	12 354	13 611	5 912	:	:	:	45 746	58 050	27 576
Proportion of total turnover (%)												
All enterprises	100	100	100	100	100	100				100	100	100
Enterprises with innovation activity	40	52	90	51	76	95				35	38	87
Enterprises without innovation activity	60	48	10	49	24	5				65	62	13

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.4A

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators	49	54	:	54	:	45	51	34	:	:
Product only innovators	41	45	:	46	:	39	43	33	:	:
Product and process innovators	55	58	73	58	14	52	63	35	1	62

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.4B

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators	48	51	56	51	54	64	:	54	:	44	46	42
Product only innovators	39	49	46	42	50	49	:	51	:	37	46	43
Product and process innovators	57	52	59	57	56	68	57	56	69	56	46	41

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.5A

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators										
From unchanged or marginally modified products	78	72	80	71	84	83	77	80	86	81
From new or significantly improved products, not new to the market	16	20	10	21	8	14	14	18	13	13
From new or significantly improved products, new to the market	5	8	10	8	7	3	9	2	1	6
Product only innovators										
From unchanged or marginally modified products	77	72	96	71	93	80	75	80	86	84
From new or significantly improved products, not new to the market	16	21	0	22	5	14	15	14	14	11
From new or significantly improved products, new to the market	6	7	3	7	2	6	11	6	0	5
Product and process innovators										
From unchanged or marginally modified products	79	72	80	71	81	83	79	81	86	79
From new or significantly improved products, not new to the market	17	20	10	21	10	14	13	18	13	15
From new or significantly improved products, new to the market	5	8	10	8	9	2	8	1	1	6

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.5B

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators												
From unchanged or marginally modified products	75	74	80	69	72	72	:	:	:	78	76	84
From new or significantly improved products, not new to the market	17	19	16	24	22	19	:	:	:	14	16	14
From new or significantly improved products, new to the market	8	7	4	7	6	9	:	:	:	9	8	2
Product only innovators												
From unchanged or marginally modified products	74	76	78	75	75	68	:	:	:	79	77	82
From new or significantly improved products, not new to the market	14	17	17	19	19	25	:	:	:	12	15	14
From new or significantly improved products, new to the market	8	7	5	6	6	8	:	:	:	9	8	4
Product and process innovators												
From unchanged or marginally modified products	70	73	80	65	71	73	:	:	:	75	76	85
From new or significantly improved products, not new to the market	21	20	16	27	23	18	:	:	:	16	16	14
From new or significantly improved products, new to the market	9	7	4	8	7	9	:	:	:	9	7	1

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.6A

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Intramural R&D	54	61	64	61	75	47	37	39	52	71
Extramural R&D	26	30	32	30	79	21	20	17	34	20
Acquisition of machinery and equipment	45	44	31	44	38	45	41	55	51	46
Acquisition of other external knowledge	15	12	18	12	17	19	15	20	19	27
Training	37	36	24	36	27	39	34	34	45	51
Market introduction of innovations	36	34	24	34	19	38	34	33	37	49
Design, other preparations for production/deliveries	34	34	24	34	19	35	31	29	36	47

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.6B

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Intramural R&D	47	65	76	52	72	81	52	72	80	42	54	69
Extramural R&D	21	29	50	25	32	58	24	32	56	18	25	36
Acquisition of machinery and equipment	44	45	49	45	42	48	45	42	49	43	49	52
Acquisition of other external knowledge	13	17	23	10	13	17	10	13	17	16	24	34
Training	36	39	41	36	36	38	36	36	39	36	44	46
Market introduction of innovations	34	38	40	33	35	38	33	35	39	35	44	43
Design, other preparations for production/deliveries	33	36	39	33	34	36	33	34	38	33	40	42

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.7A

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Product oriented effects										
Increased range of goods or services	40	40	18	41	18	39	44	27	37	39
Increased market or market share	38	37	3	37	10	39	37	31	42	47
Improved quality in goods or services	45	47	39	48	33	42	36	45	44	53
Process oriented effects										
Improved production flexibility	20	24	8	24	13	15	15	12	21	14
Increased production capacity	33	37	41	37	11	28	28	30	37	24
Reduced labour costs per produced unit	20	24	8	24	13	15	15	12	21	14
Reduced materials and energy per produced unit	11	15	11	15	17	7	8	7	6	4
Other effects										
Improved environmental impact or health and safety aspects	14	18	28	18	39	10	12	12	0	9
Met regulations or standards	13	14	7	14	21	11	9	13	8	14

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.7B

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Product oriented effects												
Increased range of goods or services	39	43	39	39	41	45	40	41	48	38	47	28
Increased market or market share	37	40	35	37	36	39	37	36	41	38	46	29
Improved quality in goods or services	43	50	45	48	47	46	48	47	47	38	53	44
Process oriented effects												
Improved production flexibility	18	23	20	24	23	23	24	23	24	12	23	17
Increased production capacity	33	34	31	39	35	37	39	35	38	27	33	22
Reduced labour costs per produced unit	18	23	20	24	23	23	24	23	24	12	23	17
Reduced materials and energy per produced unit	10	13	14	14	15	19	14	15	19	6	8	6
Other effects												
Improved environmental impact or health and safety aspects	13	16	16	17	19	21	17	18	20	9	13	9
Met regulations or standards	12	12	16	14	13	18	14	13	18	11	10	13

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.8A

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity	32	45	36	45	70	19	19	12	11	26
Successful innovators	33	46	:	45	:	19	20	12	12	26
Enterprises with only on-going and/or abandoned innovations	26	38	:	38	:	14	10	11	4	26

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.8B

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity	25	43	54	36	54	70	36	54	69	15	26	29
Successful innovators	25	43	56	36	54	71	36	55	71	16	27	30
Enterprises with only on-going and/or abandoned innovations	21	35	27	31	48	39	31	47	30	14	13	19

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.9A

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All partners	24	24	27	24	58	24	20	22	24	32
National	19	19	22	18	58	20	17	19	20	28
EU/EFTA	12	13	12	13	19	10	9	11	6	14
Candidate countries	3	3	10	3	0	3	3	1	1	3
United States	5	5	10	5	8	4	4	4	1	7
Japan	2	2	0	2	0	2	1	3	0	2
Others	2	2	12	2	0	3	3	2	0	4

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.9B

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All partners	18	30	48	17	29	53	17	28	52	20	32	41
National	15	24	39	13	22	42	13	22	41	16	27	34
EU/EFTA	8	17	27	8	16	32	8	16	32	7	17	19
Candidate countries	1	4	7	1	4	7	1	4	8	2	5	6
United States	3	6	14	3	6	16	3	5	17	3	7	10
Japan	1	3	4	1	2	5	1	2	5	1	4	2
Others	2	3	5	2	2	7	2	2	7	2	5	2

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.10A

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Internal sources										
Within the enterprise	51	53	62	53	27	49	45	38	65	58
Other enterprises within the enterprise group	12	8	8	8	0	15	19	11	5	15
Market sources										
Suppliers of equipment, materials, components or software	12	11	15	11	10	12	17	10	6	5
Clients or customers	17	18	13	19	2	15	14	19	13	16
Competitors and other enterprises from the same industry	7	8	0	9	2	5	7	2	3	3
Institutional sources										
Universities or other higher education institutes	2	3	0	3	3	1	1	0	1	3
Government or private non-profit research institutes	3	2	0	2	7	3	5	0	2	3
Other sources										
Professional conferences, meetings, journals	5	5	13	5	18	5	6	3	6	4
Fairs, exhibitions	6	6	3	6	4	5	8	3	0	1

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.10B

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Internal sources												
Within the enterprise	50	52	57	52	53	56	52	53	57	47	52	58
Other enterprises within the enterprise group	9	15	19	5	12	19	5	12	20	13	21	20
Market sources												
Suppliers of equipment, materials, components or software	13	10	8	14	8	8	13	8	8	12	12	8
Clients or customers	17	18	16	18	19	19	18	19	20	15	17	11
Competitors and other enterprises from the same industry	7	7	7	9	7	8	9	7	9	4	7	5
Institutional sources												
Universities or other higher education institutes	2	3	3	3	2	4	3	2	4	1	4	1
Government or private non-profit research institutes	3	2	4	2	1	6	2	2	6	4	2	2
Other sources												
Professional conferences, meetings, journals	6	4	4	6	3	6	6	3	4	5	5	1
Fairs, exhibitions	7	4	2	8	4	3	8	4	3	6	3	1

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.11A

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Seriously delayed	25	27	15	27	56	22	16	17	36	34
Prevented to be started	11	13	17	12	40	9	7	7	10	14
Burdened/encumbered with other serious problems	18	19	0	19	31	17	15	9	26	22

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.11B

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Seriously delayed	23	27	36	24	30	36	24	30	34	22	21	34
Prevented to be started	9	13	18	9	16	20	9	15	18	8	9	15
Burdened/encumbered with other serious problems	15	20	32	16	20	33	16	20	34	14	20	30

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.12A

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	6	7	12	7	17	5	4	5	4	8
Innovation costs too high	6	8	7	8	20	5	3	5	7	7
Lack of appropriate sources of finance	7	8	7	8	0	5	2	3	9	13
Internal factors										
Organisational rigidities within the enterprise	4	4	0	4	8	4	5	2	6	2
Lack of qualified personnel	9	11	0	11	20	8	5	3	10	17
Lack of information on technology	3	3	0	3	3	3	1	1	3	7
Lack of information on markets	4	5	0	5	14	2	2	2	1	4
Other factors										
Insufficient flexibility of regulations or standards	3	3	0	3	8	4	3	4	3	4
Lack of customer responsiveness to new goods or services	2	3	0	3	0	2	2	4	0	2

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.12B

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	4	8	12	5	9	13	5	9	12	4	7	11
Innovation costs too high	5	8	11	7	10	11	7	10	10	4	5	12
Lack of appropriate sources of finance	7	8	5	8	9	6	8	9	6	6	5	4
Internal factors												
Organisational rigidities within the enterprise	3	4	7	2	5	9	2	5	8	4	4	5
Lack of qualified personnel	9	10	10	11	11	8	11	11	7	7	9	14
Lack of information on technology	2	3	4	2	3	4	2	3	4	3	2	3
Lack of information on markets	3	5	11	3	6	13	4	6	13	2	3	7
Other factors												
Insufficient flexibility of regulations or standards	3	3	5	4	2	5	4	2	4	3	5	5
Lack of customer responsiveness to new goods or services	2	3	3	2	4	3	2	4	4	2	2	3

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.13A

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	2	3	5	3	0	2	1	5	0	0
Innovation costs too high	2	2	4	2	0	2	2	3	3	0
Lack of appropriate sources of finance	2	4	4	4	0	2	1	2	3	1
Internal factors										
Organisational rigidities within the enterprise	2	2	0	2	0	2	2	2	1	0
Lack of qualified personnel	3	5	0	5	0	2	2	4	4	0
Lack of information on technology	1	0	0	0	0	1	0	3	1	0
Lack of information on markets	2	2	0	2	0	2	1	5	3	0
Other factors										
Insufficient flexibility of regulations or standards	2	1	5	1	0	2	2	2	0	0
Lack of customer responsiveness to new goods or services	1	1	0	1	0	1	0	2	0	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.13B

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	2	3	1	3	3	0	3	3	0	2	3	2
Innovation costs too high	2	3	3	2	3	0	2	3	0	2	3	5
Lack of appropriate sources of finance	2	3	3	4	5	2	4	4	2	1	2	3
Internal factors												
Organisational rigidities within the enterprise	2	2	1	1	3	2	1	3	2	2	2	0
Lack of qualified personnel	3	2	1	5	5	1	5	5	1	3	1	1
Lack of information on technology	1	1	2	0	1	3	0	1	3	1	0	1
Lack of information on markets	2	3	3	2	2	0	2	2	0	2	3	5
Other factors												
Insufficient flexibility of regulations or standards	2	2	1	2	0	1	2	0	1	2	2	1
Lack of customer responsiveness to new goods or services	1	1	1	0	2	3	0	2	3	1	0	1

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.14A

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All enterprises	7	10	10	10	14	4	5	1	0	5
Enterprises with innovation activity	14	18	21	18	20	9	13	3	0	8
Enterprises without innovation activity	1	1	2	1	4	0	1	0	0	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.14B

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All enterprises	4	10	23	6	15	32	6	15	33	3	6	11
Enterprises with innovation activity	10	17	29	13	21	37	13	21	38	8	12	16
Enterprises without innovation activity	1	1	2	1	2	4	1	2	3	0	0	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.15A

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Registration of design patterns	8	10	0	11	2	6	8	2	0	6
Trademarks	15	16	3	16	9	15	19	2	10	17
Copyright	7	4	3	4	8	11	6	1	11	26
Secrecy	14	17	15	17	6	11	7	7	13	23
Complexity of design	22	26	21	26	33	18	12	9	21	36
Lead-time advantage on competitors	41	42	47	42	25	40	37	35	42	50
Enterprises without innovation activity										
Registration of design patterns	3	4	6	4	0	2	4	0	0	2
Trademarks	7	6	0	6	0	8	15	1	5	3
Copyright	3	3	2	3	5	3	2	1	1	13
Secrecy	3	3	2	3	0	4	5	1	4	6
Complexity of design	2	2	0	2	0	2	3	1	0	1
Lead-time advantage on competitors	10	11	0	11	0	9	10	9	1	6

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.15B

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Registration of design patterns	8	8	10	10	10	13	10	10	14	6	6	6
Trademarks	12	21	22	11	20	27	11	20	29	12	22	14
Copyright	7	7	7	4	3	6	4	3	6	10	12	8
Secrecy	12	17	23	15	18	28	15	18	29	9	17	15
Complexity of design	20	24	32	24	26	35	24	26	35	16	21	27
Lead-time advantage on competitors	39	44	50	40	43	53	39	44	54	38	44	46
Enterprises without innovation activity												
Registration of design patterns	3	3	3	4	4	6	4	4	7	2	2	2
Trademarks	7	9	17	5	11	23	5	11	24	8	8	13
Copyright	2	3	10	2	5	18	2	5	19	3	3	5
Secrecy	3	7	5	2	8	8	2	8	8	3	6	4
Complexity of design	2	1	5	2	3	9	2	3	10	2	1	3
Lead-time advantage on competitors	8	16	12	10	18	15	10	19	16	8	15	10

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.16A

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Strategy	49	45	31	45	71	54	52	54	56	59
Management	25	21	18	21	30	29	28	25	24	35
Organisation	36	33	43	32	66	39	37	29	49	45
Marketing	28	25	21	25	39	32	33	24	30	33
Aesthetic or other subjective changes	17	19	15	19	8	15	19	9	14	9
Enterprises without innovation activity										
Strategy	21	18	15	18	26	22	22	22	23	21
Management	11	11	13	11	32	11	14	10	10	9
Organisation	18	17	14	17	50	18	20	14	22	21
Marketing	8	8	4	8	16	8	10	5	8	7
Aesthetic or other subjective changes	6	8	0	9	0	5	6	3	6	4

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NL.16B

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Strategy	44	57	63	39	52	60	39	52	60	49	65	69
Management	22	27	37	17	22	36	17	22	36	26	34	39
Organisation	31	41	55	26	37	56	26	37	55	35	47	52
Marketing	26	29	40	24	23	36	24	23	36	28	38	45
Aesthetic or other subjective changes	15	18	20	19	18	23	18	18	25	13	20	15
Enterprises without innovation activity												
Strategy	18	32	41	16	25	41	16	25	41	19	37	41
Management	11	14	17	10	13	14	10	12	13	11	14	19
Organisation	15	28	46	15	25	40	15	24	39	15	29	50
Marketing	8	10	14	8	11	12	8	11	11	7	9	15
Aesthetic or other subjective changes	5	8	9	8	12	20	8	12	21	4	7	3

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Austria

Table AT.1A

Number of enterprises, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of enterprises (units)										
All enterprises	14 488	7 365	116	7 096	153	7 123	3 181	2 066	833	1 043
Enterprises with innovation activity	7 074	3 878	38	3 783	57	3 196	1 121	474	620	981
Successful innovators	6 227	3 235	38	3 145	52	2 992	1 043	405	608	936
Product only innovators	2 545	1 308	38	1 267	3	1 237	433	184	200	420
Process only innovators	1 211	555	0	530	25	657	359	138	45	114
Product and process innovators	2 471	1 373	0	1 348	24	1 098	250	83	363	402
Enterprises with only on-going and/or abandoned innovations	846	643	0	638	5	204	78	69	13	44
Enterprises without innovation activity	7 414	3 487	78	3 313	96	3 927	2 060	1 592	213	62
Proportion of all enterprises (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	49	53	33	53	37	45	35	23	74	94
Successful innovators	43	44	33	44	34	42	33	20	73	90
Product only innovators	18	18	33	18	2	17	14	9	24	40
Process only innovators	8	8	0	7	16	9	11	7	5	11
Product and process innovators	17	19	0	19	16	15	8	4	44	39
Enterprises with only on-going and/or abandoned innovations	6	9	0	9	3	3	2	3	2	4
Enterprises without innovation activity	51	47	67	47	63	55	65	77	26	6

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.1B

Number of enterprises, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of enterprises (units)												
All enterprises	10 899	2 749	839	5 206	1 529	631	5 087	1 441	568	5 694	1 221	208
Enterprises with innovation activity	4 531	1 795	748	2 178	1 106	594	2 160	1 077	546	2 353	689	154
Successful innovators	3 822	1 688	717	1 631	1 030	574	1 614	1 006	526	2 191	658	143
Product only innovators	1 872	493	180	876	285	147	873	266	128	996	208	33
Process only innovators	755	371	85	282	197	76	272	197	61	473	174	10
Product and process innovators	1 196	824	451	474	547	352	469	543	337	722	276	100
Enterprises with only on-going and/or abandoned innovations	709	107	31	546	76	20	546	72	20	162	30	11
Enterprises without innovation activity	6 368	954	91	3 028	422	37	2 927	364	22	3 341	532	54
Proportion of all enterprises (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	42	65	89	42	72	94	42	75	96	41	56	74
Successful innovators	35	61	85	31	67	91	32	70	93	38	54	68
Product only innovators	17	18	21	17	19	23	17	18	23	17	17	16
Process only innovators	7	14	10	5	13	12	5	14	11	8	14	5
Product and process innovators	11	30	54	9	36	56	9	38	59	13	23	48
Enterprises with only on-going and/or abandoned innovations	7	4	4	10	5	3	11	5	3	3	2	5
Enterprises without innovation activity	58	35	11	58	28	6	58	25	4	59	44	26

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.2A

Number of employees, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of employees (thousands)										
All enterprises	1 205	736	14	663	59	469	147	164	115	44
Enterprises with innovation activity	923	609	:	553	:	313	70	103	100	40
Enterprises without innovation activity	282	126	:	109	:	156	77	60	15	3
Proportion of total number of employees (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	77	83	:	83	:	67	48	63	87	92
Enterprises without innovation activity	23	17	:	17	:	33	52	37	13	8

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.2B

Number of employees, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of employees (thousands)												
All enterprises	233	287	684	114	168	454	112	159	392	120	119	230
Enterprises with innovation activity	102	192	629	52	123	435	52	120	381	50	69	194
Enterprises without innovation activity	131	95	56	62	45	20	60	38	11	70	50	36
Proportion of total number of employees (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	44	67	92	46	73	96	46	76	97	42	58	84
Enterprises without innovation activity	56	33	8	54	27	4	54	24	3	58	42	16

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.3A

Turnover, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Turnover (EUR million)										
All enterprises	314 026	145 732	2 355	127 456	15 921	168 295	67 467	43 757	51 368	5 702
Enterprises with innovation activity	232 096	127 576	:	113 092	:	104 520	37 422	15 123	46 647	5 329
Enterprises without innovation activity	81 930	18 156	:	14 364	:	63 774	30 045	28 634	4 722	373
Proportion of total turnover (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	74	88	:	89	:	62	55	35	91	93
Enterprises without innovation activity	26	12	:	11	:	38	45	65	9	7

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.3B

Turnover, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Turnover (EUR million)												
All enterprises	62 997	75 976	175 053	12 413	29 152	104 167	11 947	26 716	88 794	50 584	46 824	70 886
Enterprises with innovation activity	16 666	52 965	162 466	5 961	21 774	99 841	5 923	20 624	86 545	10 705	31 191	62 625
Enterprises without innovation activity	46 331	23 011	12 587	6 452	7 378	4 326	6 023	6 092	2 248	39 880	15 633	8 261
Proportion of total turnover (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	26	70	93	48	75	96	50	77	97	21	67	88
Enterprises without innovation activity	74	30	7	52	25	4	50	23	3	79	33	12

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.4A

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators	40	53	:	53	:	25	35	41	16	18
Product only innovators	35	46	:	46	:	23	33	32	22	9
Product and process innovators	45	59	~	59	60	27	37	61	12	28

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.4B

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators	29	48	74	42	54	81	42	55	80	20	38	49
Product only innovators	29	47	67	42	46	76	42	49	73	18	48	25
Product and process innovators	30	49	77	42	58	82	42	58	83	22	31	57

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.5A

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators										
From unchanged or marginally modified products	78	74	:	73	:	84	81	85	87	67
From new or significantly improved products, not new to the market	14	17	:	17	:	11	16	7	7	26
From new or significantly improved products, new to the market	8	9	:	10	:	6	3	8	6	6
Product only innovators										
From unchanged or marginally modified products	77	75	:	74	:	81	73	88	87	74
From new or significantly improved products, not new to the market	17	17	:	18	:	17	24	12	10	25
From new or significantly improved products, new to the market	6	8	:	8	:	2	3	1	3	2
Product and process innovators										
From unchanged or marginally modified products	78	73	:	73	:	84	83	82	87	65
From new or significantly improved products, not new to the market	14	17	:	17	:	9	14	4	7	27
From new or significantly improved products, new to the market	8	10	:	10	:	6	3	13	7	8

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.5B

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators												
From unchanged or marginally modified products	68	77	79	62	80	73	62	78	73	72	75	88
From new or significantly improved products, not new to the market	25	17	13	25	13	18	25	13	17	24	21	6
From new or significantly improved products, new to the market	7	6	8	13	8	9	13	8	10	4	4	6
Product only innovators												
From unchanged or marginally modified products	71	69	82	64	66	79	64	66	78	78	71	90
From new or significantly improved products, not new to the market	21	24	13	25	22	15	25	22	16	17	26	9
From new or significantly improved products, new to the market	8	7	5	11	12	6	11	12	7	4	3	1
Product and process innovators												
From unchanged or marginally modified products	64	81	78	58	84	71	58	83	71	66	77	87
From new or significantly improved products, not new to the market	29	14	13	25	10	19	25	10	18	30	19	6
From new or significantly improved products, new to the market	7	5	9	17	7	10	17	7	11	4	4	7

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.6A

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.6B

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.7A

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Product oriented effects										
Increased range of goods or services	17	16	:	16	:	17	18	13	21	16
Increased market or market share	13	12	:	13	:	14	22	6	11	12
Improved quality in goods or services	34	33	:	34	:	35	33	36	43	30
Process oriented effects										
Improved production flexibility	15	21	:	22	:	8	10	0	13	5
Increased production capacity	15	21	:	21	:	7	9	6	5	7
Reduced labour costs per produced unit	8	9	:	10	:	6	8	8	7	2
Reduced materials and energy per produced unit	4	4	:	4	:	3	6	1	1	2
Other effects										
Improved environmental impact or health and safety aspects	9	13	:	13	:	5	11	9	0	0
Met regulations or standards	15	17	:	18	:	13	20	13	5	9

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.7B

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Product oriented effects												
Increased range of goods or services	12	20	34	9	20	33	9	20	35	15	21	35
Increased market or market share	10	16	25	6	18	26	6	19	28	14	13	23
Improved quality in goods or services	31	40	39	30	35	39	30	36	41	31	47	37
Process oriented effects												
Improved production flexibility	15	14	17	24	17	18	24	17	20	7	8	10
Increased production capacity	10	21	28	15	26	30	15	27	33	5	12	18
Reduced labour costs per produced unit	4	13	17	5	13	18	5	13	19	4	14	14
Reduced materials and energy per produced unit	2	6	11	1	6	13	1	6	14	2	5	7
Other effects												
Improved environmental impact or health and safety aspects	5	19	11	8	21	14	7	22	14	2	16	0
Met regulations or standards	13	22	14	15	23	15	15	23	17	10	21	8

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.8A

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity	39	51	:	51	:	26	28	32	1	37
Successful innovators	40	52	:	52	:	26	28	31	:	:
Enterprises with only on-going and/or abandoned innovations	38	43	:	44	:	21	24	35	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.8B

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity	32	47	64	40	59	73	40	59	75	25	27	32
Successful innovators	31	49	65	38	:	:	38	62	75	25	:	:
Enterprises with only on-going and/or abandoned innovations	42	13	39	46	:	:	46	19	61	26	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.9A

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All partners	21	19	100	19	13	23	19	29	14	31
National	19	16	100	15	13	22	16	29	14	31
EU/EFTA	12	15	50	14	9	9	8	14	1	13
Candidate countries	2	1	0	1	0	3	4	8	1	0
United States	3	3	0	3	0	3	3	5	0	5
Japan	0	0	0	0	0	1	0	3	0	0
Others	4	4	0	4	0	3	5	0	0	5

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.9B

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All partners	18	22	39	16	14	41	16	13	41	20	33	30
National	16	18	34	13	10	36	13	8	34	19	31	30
EU/EFTA	10	10	29	12	11	31	12	11	29	8	9	20
Candidate countries	1	2	5	0	2	4	0	2	4	2	2	8
United States	3	1	9	2	1	9	2	1	10	3	2	10
Japan	0	1	2	0	0	2	0	0	3	0	2	0
Others	5	1	3	7	0	2	7	0	2	3	2	9

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.10A

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Internal sources										
Within the enterprise	45	50	:	50	:	39	40	44	28	42
Other enterprises within the enterprise group	13	9	:	9	:	19	26	9	41	2
Market sources										
Suppliers of equipment, materials, components or software	13	15	:	15	:	11	16	14	15	2
Clients or customers	21	24	:	24	:	17	26	14	10	13
Competitors and other enterprises from the same industry	8	5	:	6	:	10	6	13	17	9
Institutional sources										
Universities or other higher education institutes	5	5	:	5	:	5	4	3	0	12
Government or private non-profit research institutes	3	3	:	3	:	2	1	0	1	4
Other sources										
Professional conferences, meetings, journals	11	9	:	9	:	14	9	11	14	21
Fairs, exhibitions	8	9	:	10	:	6	14	8	1	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.10B

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Internal sources												
Within the enterprise	43	47	51	52	45	51	52	46	53	35	49	50
Other enterprises within the enterprise group	9	21	24	3	13	23	3	13	25	14	34	29
Market sources												
Suppliers of equipment, materials, components or software	10	16	24	12	18	23	11	17	24	9	14	28
Clients or customers	17	24	33	19	28	32	20	28	35	15	18	37
Competitors and other enterprises from the same industry	6	10	10	2	9	11	2	9	12	10	13	8
Institutional sources												
Universities or other higher education institutes	6	2	6	6	1	8	7	1	7	6	4	1
Government or private non-profit research institutes	4	0	1	5	1	1	5	1	1	3	0	0
Other sources												
Professional conferences, meetings, journals	11	11	15	7	10	17	7	8	17	15	12	8
Fairs, exhibitions	5	13	14	5	14	16	5	15	17	5	10	5

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.11A

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Seriously delayed	38	44	:	44	:	32	33	29	25	34
Prevented to be started	20	21	:	21	:	19	16	21	6	29
Burdened/encumbered with other serious problems	25	31	:	32	:	16	18	15	14	18

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.11B

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Seriously delayed	35	40	58	39	45	61	39	46	62	31	30	42
Prevented to be started	16	27	25	12	34	28	12	33	29	20	15	16
Burdened/encumbered with other serious problems	17	36	44	19	46	48	19	47	51	15	19	30

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.12A

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	24	25	:	25	:	22	17	10	13	40
Innovation costs too high	29	28	:	28	:	31	27	38	10	45
Lack of appropriate sources of finance	20	17	:	17	:	22	24	24	2	32
Internal factors										
Organisational rigidities within the enterprise	9	11	:	11	:	8	5	2	5	16
Lack of qualified personnel	16	14	:	14	:	18	14	14	10	31
Lack of information on technology	5	6	:	6	:	3	5	0	4	2
Lack of information on markets	7	8	:	8	:	6	4	13	4	4
Other factors										
Insufficient flexibility of regulations or standards	13	18	:	18	:	8	9	19	4	4
Lack of customer responsiveness to new goods or services	5	4	:	4	:	6	7	11	1	7

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.12B

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	25	21	20	27	23	20	27	23	21	24	18	21
Innovation costs too high	32	24	23	30	27	22	30	27	23	35	19	27
Lack of appropriate sources of finance	24	12	11	22	13	12	22	13	8	26	12	9
Internal factors												
Organisational rigidities within the enterprise	11	5	7	14	8	7	14	7	5	9	2	9
Lack of qualified personnel	16	19	10	13	18	10	13	18	11	19	20	9
Lack of information on technology	4	6	3	6	6	3	6	6	4	2	7	2
Lack of information on markets	8	5	3	11	4	4	11	4	4	5	8	0
Other factors												
Insufficient flexibility of regulations or standards	16	10	5	25	10	5	25	10	6	8	10	3
Lack of customer responsiveness to new goods or services	5	5	2	5	2	3	5	2	3	6	10	1

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.13A

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	16	16	:	17	:	16	17	16	7	26
Innovation costs too high	30	35	:	36	:	25	22	31	11	30
Lack of appropriate sources of finance	18	21	:	22	:	15	10	20	4	41
Internal factors										
Organisational rigidities within the enterprise	8	9	:	9	:	7	7	7	8	0
Lack of qualified personnel	14	15	:	15	:	13	10	17	17	0
Lack of information on technology	6	7	:	7	:	5	5	6	6	0
Lack of information on markets	7	7	:	7	:	6	5	8	5	12
Other factors										
Insufficient flexibility of regulations or standards	13	17	:	17	:	10	10	10	10	12
Lack of customer responsiveness to new goods or services	7	8	:	7	:	6	7	5	1	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.13B

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	17	9	13	17	10	21	17	12	35	17	9	8
Innovation costs too high	31	26	20	36	32	28	36	33	47	26	22	15
Lack of appropriate sources of finance	19	10	6	23	12	0	23	14	0	16	8	10
Internal factors												
Organisational rigidities within the enterprise	8	8	5	9	4	6	9	5	10	6	11	4
Lack of qualified personnel	15	11	4	16	10	6	16	12	10	14	12	4
Lack of information on technology	7	4	3	8	1	0	8	1	0	5	7	4
Lack of information on markets	7	7	3	8	4	0	8	5	0	6	9	4
Other factors												
Insufficient flexibility of regulations or standards	15	3	13	19	4	0	19	5	0	11	3	23
Lack of customer responsiveness to new goods or services	7	4	3	8	5	0	8	6	0	6	4	5

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.14A

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All enterprises	9	14	17	14	11	3	5	0	2	8
Enterprises with innovation activity	18	26	:	26	:	7	13	0	2	7
Enterprises without innovation activity	1	1	:	1	:	0	0	0	0	8

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.14B

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All enterprises	5	13	49	7	19	60	7	20	60	2	6	18
Enterprises with innovation activity	11	20	54	16	26	63	16	27	63	6	9	20
Enterprises without innovation activity	0	1	8	1	1	0	1	1	0	0	1	14

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.15A

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Registration of design patterns	16	22	:	22	:	9	17	9	1	5
Trademarks	21	21	:	21	:	20	35	18	11	11
Copyright	10	7	:	7	:	14	14	5	10	22
Secrecy	39	44	:	44	:	34	36	12	10	58
Complexity of design	28	31	:	32	:	23	24	5	8	40
Lead-time advantage on competitors	48	54	:	54	:	40	44	33	22	52
Enterprises without innovation activity										
Registration of design patterns	4	8	:	8	:	1	2	0	0	0
Trademarks	8	9	:	9	:	7	12	1	4	0
Copyright	2	3	:	3	:	2	3	0	0	0
Secrecy	6	7	:	7	:	5	6	3	0	25
Complexity of design	3	3	:	3	:	3	6	1	0	0
Lead-time advantage on competitors	7	8	:	8	:	6	7	5	0	16

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.15B

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Registration of design patterns	11	19	42	15	22	50	15	23	50	7	15	11
Trademarks	14	27	48	11	26	47	11	27	48	16	27	52
Copyright	8	12	20	3	7	20	3	8	18	12	20	21
Secrecy	33	45	67	32	52	72	32	53	73	34	32	48
Complexity of design	25	30	41	27	34	41	28	34	45	22	24	39
Lead-time advantage on competitors	39	58	77	40	68	80	41	67	81	38	43	66
Enterprises without innovation activity												
Registration of design patterns	4	6	5	8	9	6	8	10	10	1	3	4
Trademarks	6	16	10	8	10	13	9	12	23	4	20	8
Copyright	2	4	3	2	5	0	2	6	0	1	3	4
Secrecy	5	8	2	7	7	6	7	8	10	4	9	0
Complexity of design	2	8	3	2	10	0	2	12	0	3	6	5
Lead-time advantage on competitors	7	8	5	8	6	6	9	6	10	6	10	5

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.16A

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Strategy	52	51	:	52	:	52	52	48	62	47
Management	42	41	:	41	:	43	51	41	49	31
Organisation	61	63	:	63	:	58	63	53	63	50
Marketing	48	47	:	47	:	48	49	35	55	48
Aesthetic or other subjective changes	44	48	:	48	:	40	42	52	42	32
Enterprises without innovation activity										
Strategy	22	20	:	19	:	24	30	16	27	25
Management	24	21	:	20	:	27	31	23	19	18
Organisation	30	26	:	24	:	34	37	28	42	26
Marketing	24	19	:	19	:	27	35	19	29	0
Aesthetic or other subjective changes	18	18	:	19	:	18	24	12	13	25

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table AT.16B

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Strategy	50	55	52	51	53	50	51	54	50	50	57	62
Management	35	52	62	28	55	62	28	56	63	40	48	62
Organisation	57	67	67	61	65	67	61	65	68	53	70	69
Marketing	48	42	58	48	41	56	48	41	54	48	45	64
Aesthetic or other subjective changes	46	37	51	55	34	46	56	34	47	37	42	72
Enterprises without innovation activity												
Strategy	20	34	41	17	41	30	17	37	39	23	28	48
Management	22	34	35	19	31	31	19	28	29	25	36	38
Organisation	27	48	56	22	48	45	22	41	53	31	47	63
Marketing	22	34	29	18	32	18	18	28	19	26	36	37
Aesthetic or other subjective changes	17	28	19	18	20	10	18	23	17	16	34	24

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Portugal

Table PT.1A

Number of enterprises, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of enterprises (units)										
All enterprises	23 826	16 617	362	16 194	61	7 209	4 810	1 378	442	578
Enterprises with innovation activity	11 047	7 434	137	7 254	43	3 613	2 268	610	317	418
Successful innovators	10 547	7 039	135	6 862	43	3 508	2 218	599	312	380
Product only innovators	3 140	1 840	0	1 828	12	1 300	990	194	42	73
Process only innovators	3 895	2 666	126	2 527	13	1 229	710	289	98	131
Product and process innovators	3 512	2 533	8	2 506	18	979	517	115	171	176
Enterprises with only on-going and/or abandoned innovations	500	395	3	392	0	105	50	11	5	39
Enterprises without innovation activity	12 779	9 183	225	8 940	18	3 596	2 543	768	126	160
Proportion of all enterprises (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	46	45	38	45	70	50	47	44	72	72
Successful innovators	44	42	37	42	70	49	46	43	70	66
Product only innovators	13	11	0	11	19	18	21	14	10	13
Process only innovators	16	16	35	16	21	17	15	21	22	23
Product and process innovators	15	15	2	15	30	14	11	8	39	30
Enterprises with only on-going and/or abandoned innovations	2	2	1	2	0	1	1	1	1	7
Enterprises without innovation activity	54	55	62	55	30	50	53	56	28	28

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.1B

Number of enterprises, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of enterprises (units)												
All enterprises	18 557	4 505	764	12 512	3 519	586	12 171	3 446	578	6 045	986	178
Enterprises with innovation activity	7 447	3 022	578	4 696	2 297	441	4 563	2 258	433	2 751	725	137
Successful innovators	7 093	2 893	561	4 434	2 181	424	4 302	2 144	416	2 659	712	137
Product only innovators	2 494	550	96	1 348	411	81	1 338	409	81	1 145	139	15
Process only innovators	2 660	1 137	99	1 803	783	80	1 683	767	77	857	353	19
Product and process innovators	1 940	1 206	366	1 283	986	263	1 280	968	258	657	220	103
Enterprises with only on-going and/or abandoned innovations	354	129	17	262	116	17	262	113	17	92	13	0
Enterprises without innovation activity	11 110	1 483	186	7 816	1 222	145	7 607	1 188	145	3 294	261	41
Proportion of all enterprises (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	40	67	76	38	65	75	37	66	75	46	74	77
Successful innovators	38	64	73	35	62	72	35	62	72	44	72	77
Product only innovators	13	12	13	11	12	14	11	12	14	19	14	8
Process only innovators	14	25	13	14	22	14	14	22	13	14	36	11
Product and process innovators	10	27	48	10	28	45	11	28	45	11	22	58
Enterprises with only on-going and/or abandoned innovations	2	3	2	2	3	3	2	3	3	2	1	0
Enterprises without innovation activity	60	33	24	62	35	25	63	34	25	54	26	23

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.2A

Number of employees, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of employees (thousands)										
All enterprises	1 495	980	12	961	7	515	158	152	173	32
Enterprises with innovation activity	1 013	607	4	595	7	407	90	123	168	25
Enterprises without innovation activity	482	373	7	365	0	108	68	29	5	6
Proportion of total number of employees (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	68	62	38	62	94	79	57	81	97	80
Enterprises without innovation activity	32	38	62	38	6	21	43	19	3	20

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.2B

Number of employees, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of employees (thousands)												
All enterprises	415	493	587	290	396	294	283	389	289	124	98	293
Enterprises with innovation activity	173	328	513	115	255	237	112	252	232	58	72	276
Enterprises without innovation activity	242	166	74	176	140	57	171	137	57	66	25	17
Proportion of total number of employees (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	42	66	87	39	65	81	39	65	80	47	74	94
Enterprises without innovation activity	58	34	13	61	35	19	61	35	20	53	26	6

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.3A

Turnover, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Turnover (EUR million)										
All enterprises	194 923	92 148	:	80 732	:	102 775	38 772	12 304	49 271	2 428
Enterprises with innovation activity	147 469	68 793	:	57 774	:	78 676	22 435	9 659	44 596	1 986
Enterprises without innovation activity	47 454	23 355	:	22 959	:	24 099	16 337	2 645	4 675	443
Proportion of total turnover (%)										
All enterprises	100	100	:	100	:	100	100	100	100	100
Enterprises with innovation activity	76	75	:	72	:	77	58	79	91	82
Enterprises without innovation activity	24	25	:	28	:	23	42	21	9	18

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.3B

Turnover, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Turnover (EUR million)												
All enterprises	38 234	54 719	101 970	16 343	26 619	49 186	15 929	26 020	38 783	21 891	28 100	52 784
Enterprises with innovation activity	17 799	40 839	88 831	6 820	17 400	44 573	6 630	16 974	34 170	10 979	23 439	44 258
Enterprises without innovation activity	20 435	13 880	13 139	9 523	9 219	4 613	9 299	9 046	4 613	10 912	4 661	8 526
Proportion of total turnover (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	47	75	87	42	65	91	42	65	88	50	83	84
Enterprises without innovation activity	53	25	13	58	35	9	58	35	12	50	17	16

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.4A

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators	72	72	:	:	:	73	:	43	:	88
Product only innovators	65	62	:	:	:	69	:	31	:	92
Product and process innovators	78	79	100	79	77	78	86	65	51	86

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.4B

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators	66	84	88	63	84	87	63	:	:	70	83	88
Product only innovators	62	75	90	57	72	91	58	:	:	67	86	84
Product and process innovators	71	88	87	70	89	86	70	89	86	75	81	89

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.5A

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators										
From unchanged or marginally modified products	75	68	:	70	:	80	:	83	:	28
From new or significantly improved products, not new to the market	7	6	:	8	:	8	:	11	:	4
From new or significantly improved products, new to the market	18	26	:	22	:	12	:	6	:	68
Product only innovators										
From unchanged or marginally modified products	74	77	:	77	:	70	:	71	:	37
From new or significantly improved products, not new to the market	10	8	:	8	:	13	:	10	:	12
From new or significantly improved products, new to the market	16	14	:	14	:	17	:	19	:	51
Product and process innovators										
From unchanged or marginally modified products	75	66	:	68	:	82	70	84	86	27
From new or significantly improved products, not new to the market	7	6	:	8	:	7	2	11	8	4
From new or significantly improved products, new to the market	18	29	:	24	:	11	27	4	7	69

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.5B

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators												
From unchanged or marginally modified products	:	76	:	:	78	:	67	79	68	:	74	:
From new or significantly improved products, not new to the market	:	6	:	:	8	:	21	8	6	:	4	:
From new or significantly improved products, new to the market	:	18	:	:	14	:	12	14	26	:	22	:
Product only innovators												
From unchanged or marginally modified products	:	79	:	:	83	:	68	83	76	:	77	:
From new or significantly improved products, not new to the market	:	5	:	:	7	:	21	7	4	:	3	:
From new or significantly improved products, new to the market	:	16	:	:	10	:	11	10	19	:	21	:
Product and process innovators												
From unchanged or marginally modified products	68	74	75	65	76	64	65	76	66	70	73	85
From new or significantly improved products, not new to the market	15	6	6	20	8	4	20	8	6	9	5	8
From new or significantly improved products, new to the market	18	20	18	14	16	32	14	16	28	21	22	8

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.6A

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Intramural R&D	38	38	16	39	43	36	34	14	51	74
Extramural R&D	26	18	2	18	36	42	51	20	46	22
Acquisition of machinery and equipment	74	73	99	73	84	76	77	87	58	71
Acquisition of other external knowledge	27	15	16	15	33	50	63	21	27	44
Training	37	31	16	31	33	51	55	23	60	66
Market introduction of innovations	20	16	2	17	20	27	26	12	47	40
Design, other preparations for production/deliveries	12	14	2	14	0	8	8	5	6	18

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.6B

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Intramural R&D	33	41	78	32	44	78	33	44	77	35	34	79
Extramural R&D	24	27	41	14	24	37	14	24	37	43	36	54
Acquisition of machinery and equipment	77	68	73	76	69	71	75	68	70	79	65	79
Acquisition of other external knowledge	27	24	34	10	23	28	10	23	27	56	29	54
Training	36	38	56	26	35	50	27	35	50	51	47	77
Market introduction of innovations	17	22	48	13	20	41	13	20	41	25	27	70
Design, other preparations for production/deliveries	7	20	35	8	21	34	9	21	35	5	15	35

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.7A

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Product oriented effects										
Increased range of goods or services	19	18	2	18	51	22	22	21	21	25
Increased market or market share	17	13	0	13	26	26	26	25	23	28
Improved quality in goods or services	40	42	16	43	33	35	35	35	32	43
Process oriented effects										
Improved production flexibility	24	26	35	26	57	19	16	24	30	17
Increased production capacity	28	30	20	30	47	24	24	26	28	16
Reduced labour costs per produced unit	15	15	18	15	16	16	19	8	18	11
Reduced materials and energy per produced unit	6	6	2	6	20	8	7	16	6	2
Other effects										
Improved environmental impact or health and safety aspects	19	23	19	23	26	11	13	11	1	4
Met regulations or standards	27	29	5	30	30	23	27	17	15	10

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.7B

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Product oriented effects												
Increased range of goods or services	17	21	37	15	22	35	15	21	36	21	20	44
Increased market or market share	17	15	24	10	16	24	10	16	24	29	12	27
Improved quality in goods or services	41	38	44	42	43	41	43	43	41	38	24	54
Process oriented effects												
Improved production flexibility	24	24	25	26	28	26	25	27	26	20	12	22
Increased production capacity	28	29	21	29	32	22	29	32	23	26	16	16
Reduced labour costs per produced unit	16	14	13	15	15	14	15	15	14	18	11	9
Reduced materials and energy per produced unit	6	7	7	5	8	8	5	7	8	9	4	3
Other effects												
Improved environmental impact or health and safety aspects	21	14	21	26	18	25	26	18	26	13	3	8
Met regulations or standards	28	25	25	30	29	26	31	28	25	25	14	21

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.8A

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity	29	36	2	37	54	15	13	28	1	20
Successful innovators	29	37	:	:	:	14	:	27	:	19
Enterprises with only on-going and/or abandoned innovations	38	32	:	:	:	63	:	44	:	28

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.8B

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity	25	36	47	31	44	57	31	44	57	16	13	15
Successful innovators	25	36	48	31	43	58	32	:	:	14	12	15
Enterprises with only on-going and/or abandoned innovations	32	54	34	21	56	34	21	:	:	66	37	#DIV/0!

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.9A

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All partners	17	16	5	16	20	19	17	21	30	23
National	14	13	3	14	20	16	12	19	29	20
EU/EFTA	7	8	2	8	13	6	6	3	10	4
Candidate countries	0	0	0	0	0	0	0	0	1	0
United States	1	1	0	1	10	1	0	1	3	7
Japan	0	0	0	0	0	0	0	0	0	0
Others	2	1	0	1	10	3	4	1	1	1

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.9B

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All partners	11	25	44	8	25	45	9	25	45	16	27	42
National	9	22	39	7	21	39	7	21	38	12	24	40
EU/EFTA	3	12	27	3	13	28	3	13	28	4	8	24
Candidate countries	0	0	1	0	0	1	0	0	1	0	0	0
United States	1	1	5	1	1	4	1	1	3	1	3	8
Japan	0	0	0	0	0	1	0	0	1	0	0	0
Others	1	3	3	0	4	3	0	4	2	4	1	2

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.10A

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Internal sources										
Within the enterprise	35	34	48	33	70	38	37	24	45	57
Other enterprises within the enterprise group	8	6	2	6	23	12	8	18	38	7
Market sources										
Suppliers of equipment, materials, components or software	27	26	56	26	0	27	31	16	24	27
Clients or customers	21	24	2	24	16	17	18	7	7	34
Competitors and other enterprises from the same industry	7	9	0	9	0	4	4	3	4	3
Institutional sources										
Universities or other higher education institutes	4	4	1	4	3	3	2	1	2	10
Government or private non-profit research institutes	2	3	0	3	0	0	0	1	1	2
Other sources										
Professional conferences, meetings, journals	9	7	0	8	3	11	10	5	7	27
Fairs, exhibitions	25	28	0	28	0	20	25	15	0	10

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.10B

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Internal sources												
Within the enterprise	35	34	45	34	31	43	34	31	42	36	45	55
Other enterprises within the enterprise group	4	14	28	2	10	25	2	9	25	6	29	40
Market sources												
Suppliers of equipment, materials, components or software	27	25	34	27	25	31	26	25	32	27	27	43
Clients or customers	24	16	24	26	19	22	27	19	22	19	6	30
Competitors and other enterprises from the same industry	7	7	9	9	8	10	9	8	10	4	2	7
Institutional sources												
Universities or other higher education institutes	4	3	6	4	4	6	5	4	6	3	2	4
Government or private non-profit research institutes	1	4	9	1	5	11	1	5	12	0	1	1
Other sources												
Professional conferences, meetings, journals	8	8	15	7	7	13	8	7	13	9	14	21
Fairs, exhibitions	25	24	22	27	28	27	28	29	28	22	12	7

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.11A

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Seriously delayed	42	45	2	46	54	35	38	25	24	43
Prevented to be started	21	19	42	18	0	26	27	26	12	28
Burdened/encumbered with other serious problems	6	6	0	6	10	7	7	1	9	17

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.11B

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Seriously delayed	47	33	31	52	35	27	53	36	26	37	26	43
Prevented to be started	23	17	16	19	17	20	18	18	20	30	14	4
Burdened/encumbered with other serious problems	3	12	16	1	13	14	1	14	14	7	6	21

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.12A

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	16	16	0	16	3	16	16	28	6	9
Innovation costs too high	26	29	32	29	7	21	20	28	14	22
Lack of appropriate sources of finance	26	27	14	27	3	24	23	34	1	33
Internal factors										
Organisational rigidities within the enterprise	10	12	27	11	0	6	7	5	5	1
Lack of qualified personnel	17	20	27	20	0	9	11	6	4	9
Lack of information on technology	8	10	0	10	0	6	5	14	3	1
Lack of information on markets	9	11	0	11	0	7	9	0	3	6
Other factors										
Insufficient flexibility of regulations or standards	10	11	14	11	0	8	7	15	7	3
Lack of customer responsiveness to new goods or services	8	8	0	9	0	7	7	11	1	7

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.12B

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	19	9	15	18	11	16	19	11	17	19	4	12
Innovation costs too high	29	21	26	31	24	29	31	24	29	24	12	16
Lack of appropriate sources of finance	29	20	16	29	25	17	29	25	18	29	6	11
Internal factors												
Organisational rigidities within the enterprise	11	7	2	15	7	1	15	7	1	4	10	8
Lack of qualified personnel	17	19	8	22	20	11	21	20	11	9	14	0
Lack of information on technology	11	4	6	13	5	8	13	5	8	7	1	0
Lack of information on markets	11	5	9	13	6	7	14	6	7	7	2	13
Other factors												
Insufficient flexibility of regulations or standards	12	6	8	14	5	8	14	6	8	7	9	6
Lack of customer responsiveness to new goods or services	10	3	4	11	4	5	11	4	5	9	1	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.13A

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	21	22	25	22	24	17	15	25	4	10
Innovation costs too high	33	36	47	36	40	24	21	38	12	19
Lack of appropriate sources of finance	23	26	21	26	16	17	13	34	4	19
Internal factors										
Organisational rigidities within the enterprise	9	9	0	9	16	8	8	7	3	7
Lack of qualified personnel	21	23	21	23	16	15	19	5	4	5
Lack of information on technology	11	12	5	12	9	7	9	2	0	4
Lack of information on markets	8	9	0	9	9	5	6	2	3	4
Other factors										
Insufficient flexibility of regulations or standards	9	8	10	8	16	9	8	14	7	16
Lack of customer responsiveness to new goods or services	12	12	0	12	9	12	12	13	6	15

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.13B

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	20	25	11	22	27	12	22	27	12	17	15	11
Innovation costs too high	33	30	27	36	34	25	36	34	25	25	12	32
Lack of appropriate sources of finance	24	19	15	27	20	11	27	21	11	18	9	27
Internal factors												
Organisational rigidities within the enterprise	9	9	11	9	10	11	9	10	11	8	6	11
Lack of qualified personnel	21	19	15	23	21	17	23	20	17	15	13	6
Lack of information on technology	11	8	3	12	10	2	13	10	2	7	1	6
Lack of information on markets	8	5	4	10	5	3	10	5	3	5	5	5
Other factors												
Insufficient flexibility of regulations or standards	9	5	5	9	5	1	9	6	1	10	4	19
Lack of customer responsiveness to new goods or services	13	4	6	13	4	7	14	5	7	13	4	3

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.14A

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All enterprises	4	4	0	4	9	5	5	2	6	6
Enterprises with innovation activity	6	5	0	5	13	7	8	4	8	8
Enterprises without innovation activity	3	3	0	3	0	2	3	0	2	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.14B

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All enterprises	3	7	13	3	6	13	3	6	13	3	11	13
Enterprises with innovation activity	4	9	16	3	7	16	3	7	17	5	13	16
Enterprises without innovation activity	2	4	2	3	4	2	3	5	2	2	4	3

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.15A

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Registration of design patterns	4	4	0	4	13	5	5	1	9	6
Trademarks	18	18	2	18	13	18	17	10	25	28
Copyright	2	2	0	2	0	2	0	1	9	4
Secrecy	17	20	4	20	0	12	11	4	20	21
Complexity of design	11	13	2	13	7	9	8	1	19	20
Lead-time advantage on competitors	20	22	4	22	13	17	14	8	30	36
Enterprises without innovation activity										
Registration of design patterns	1	1	0	1	0	0	0	1	0	0
Trademarks	7	8	0	8	0	7	8	1	4	5
Copyright	0	0	0	0	0	1	0	0	10	5
Secrecy	5	5	0	5	0	5	6	0	0	2
Complexity of design	2	2	0	2	0	2	2	0	4	6
Lead-time advantage on competitors	5	5	5	5	0	5	6	0	4	10

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.15B

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Registration of design patterns	3	4	17	3	5	14	3	4	14	5	3	25
Trademarks	13	26	39	12	26	41	12	27	42	16	24	33
Copyright	1	3	7	2	3	5	2	3	6	1	3	12
Secrecy	15	22	27	16	25	29	17	25	29	12	10	20
Complexity of design	10	14	15	11	15	14	12	15	14	8	10	18
Lead-time advantage on competitors	17	26	33	17	29	35	17	29	36	17	15	24
Enterprises without innovation activity												
Registration of design patterns	0	3	4	0	4	1	0	4	1	0	0	13
Trademarks	6	15	15	6	15	14	7	15	14	6	17	19
Copyright	0	2	0	0	1	0	0	1	0	0	4	0
Secrecy	4	9	11	4	7	14	4	7	14	4	19	0
Complexity of design	2	5	5	2	2	7	2	2	7	0	17	0
Lead-time advantage on competitors	4	12	6	4	11	8	4	10	8	4	19	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.16A

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Strategy	48	47	4	48	43	51	48	63	42	58
Management	42	38	5	38	53	50	49	61	35	56
Organisation	54	49	19	49	87	65	64	68	51	78
Marketing	35	30	4	31	54	44	47	33	36	48
Aesthetic or other subjective changes	41	42	18	43	33	39	42	35	34	38
Enterprises without innovation activity										
Strategy	18	15	7	15	38	26	24	27	35	30
Management	14	11	14	10	22	23	24	19	36	14
Organisation	19	15	9	15	4	30	31	22	42	55
Marketing	15	11	2	12	38	25	29	12	23	20
Aesthetic or other subjective changes	16	16	11	16	4	17	22	2	21	9

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table PT.16B

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Strategy	43	58	63	39	60	63	40	60	64	51	53	60
Management	38	47	62	31	47	61	32	47	61	50	48	66
Organisation	50	62	67	42	61	67	42	61	67	65	65	67
Marketing	33	38	46	27	35	43	28	35	43	42	47	55
Aesthetic or other subjective changes	36	52	59	35	54	61	36	54	62	37	45	51
Enterprises without innovation activity												
Strategy	16	30	28	12	27	27	13	27	27	24	43	34
Management	12	28	31	8	26	26	8	25	26	22	38	49
Organisation	17	32	36	12	29	25	13	29	25	28	49	75
Marketing	14	20	24	10	17	20	11	17	20	24	30	39
Aesthetic or other subjective changes	14	28	33	13	30	26	13	31	26	16	14	58

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Finland

Table FI.1A

Number of enterprises, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of enterprises (units)										
All enterprises	7 381	4 203	33	3 955	215	3 178	1 247	1 152	:	779
Enterprises with innovation activity	3 308	2 042	18	1 955	69	1 266	538	299	:	429
Successful innovators	2 987	1 803	16	1 733	53	1 184	508	277	:	398
Product only innovators	1 251	635	3	619	13	616	300	95	:	221
Process only innovators	399	301	5	277	19	98	20	62	:	17
Product and process innovators	1 336	867	8	837	21	470	188	120	:	161
Enterprises with only on-going and/or abandoned innovations	321	240	2	221	16	82	30	21	:	31
Enterprises without innovation activity	4 073	2 161	15	2 000	146	1 913	709	853	:	350
Proportion of all enterprises (%)										
All enterprises	100	100	100	100	100	100	100	100	:	100
Enterprises with innovation activity	45	49	55	49	32	40	43	26	:	55
Successful innovators	40	43	50	44	25	37	41	24	:	51
Product only innovators	17	15	10	16	6	19	24	8	:	28
Process only innovators	5	7	14	7	9	3	2	5	:	2
Product and process innovators	18	21	25	21	10	15	15	10	:	21
Enterprises with only on-going and/or abandoned innovations	4	6	5	6	8	3	2	2	:	4
Enterprises without innovation activity	55	51	45	51	68	60	57	74	:	45

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.1B

Number of enterprises, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of enterprises (units)												
All enterprises	5 411	1 537	433	2 930	977	295	2 758	923	274	2 481	560	137
Enterprises with innovation activity	2 155	834	319	1 250	538	254	1 205	513	237	904	296	65
Successful innovators	1 944	758	285	1 104	466	233	1 070	444	219	840	292	52
Product only innovators	880	302	70	387	189	60	376	185	57	493	112	11
Process only innovators	278	95	26	208	72	21	196	64	16	70	23	5
Product and process innovators	786	361	188	509	205	152	497	194	146	277	157	36
Enterprises with only on-going and/or abandoned innovations	211	76	34	146	72	21	135	69	18	65	4	13
Enterprises without innovation activity	3 257	703	114	1 680	439	41	1 553	410	37	1 577	263	72
Proportion of all enterprises (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	40	54	74	43	55	86	44	56	86	36	53	47
Successful innovators	36	49	66	38	48	79	39	48	80	34	52	38
Product only innovators	16	20	16	13	19	20	14	20	21	20	20	8
Process only innovators	5	6	6	7	7	7	7	7	6	3	4	4
Product and process innovators	15	24	44	17	21	52	18	21	53	11	28	26
Enterprises with only on-going and/or abandoned innovations	4	5	8	5	7	7	5	7	6	3	1	9
Enterprises without innovation activity	60	46	26	57	45	14	56	44	14	64	47	53

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.2A

Number of employees, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of employees (thousands)										
All enterprises	766	493	3	456	34	274	84	137	:	52
Enterprises with innovation activity	550	391	2	363	25	159	22	98	:	39
Enterprises without innovation activity	216	101	1	93	8	115	63	39	:	14
Proportion of total number of employees (%)										
All enterprises	100	100	100	100	100	100	100	100	:	100
Enterprises with innovation activity	72	79	83	80	75	58	26	72	:	74
Enterprises without innovation activity	28	21	17	20	25	42	74	28	:	26

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.2B

Number of employees, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of employees (thousands)												
All enterprises	114	155	497	66	102	325	62	97	297	48	53	172
Enterprises with innovation activity	47	89	414	28	59	304	28	56	280	19	30	110
Enterprises without innovation activity	67	66	83	37	43	21	34	41	18	29	23	63
Proportion of total number of employees (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	41	57	83	43	58	94	44	58	94	39	57	64
Enterprises without innovation activity	59	43	17	57	42	6	56	42	6	61	43	36

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.3A

Turnover, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Turnover (EUR million)										
All enterprises	196 286	120 696	744	103 632	16 320	75 589	53 760	16 496	:	5 334
Enterprises with innovation activity	133 606	105 454	674	90 939	13 841	28 152	11 148	12 849	:	4 155
Enterprises without innovation activity	62 679	15 242	70	12 694	2 479	47 437	42 612	3 647	:	1 178
Proportion of total turnover (%)										
All enterprises	100	100	100	100	100	100	100	100	:	100
Enterprises with innovation activity	68	87	91	88	85	37	21	78	:	78
Enterprises without innovation activity	32	13	9	12	15	63	79	22	:	22

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.3B

Turnover, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Turnover (EUR million)												
All enterprises	29 494	31 909	134 882	9 394	19 091	92 211	7 925	17 770	77 938	20 100	12 818	42 671
Enterprises with innovation activity	11 535	19 138	102 934	4 222	12 161	89 070	3 871	11 439	75 629	7 312	6 976	13 863
Enterprises without innovation activity	17 959	12 771	31 949	5 172	6 929	3 141	4 054	6 331	2 308	12 788	5 842	28 808
Proportion of total turnover (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	39	60	76	45	64	97	49	64	97	36	54	32
Enterprises without innovation activity	61	40	24	55	36	3	51	36	3	64	46	68

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.4A

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators	80	78	:	78	:	82	:	:	:	78
Product only innovators	73	68	:	68	:	78	:	:	:	73
Product and process innovators	87	86	:	86	:	88	89	90	:	85

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.4B

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators	81	79	80	78	78	80	:	78	:	84	79	82
Product only innovators	70	80	81	62	77	78	:	77	:	76	85	100
Product and process innovators	93	78	79	91	80	80	:	80	:	97	75	76

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.5A

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators										
From unchanged or marginally modified products	71	70	:	66	:	78	82	77	:	72
From new or significantly improved products, not new to the market	5	4	:	4	:	8	7	7	:	12
From new or significantly improved products, new to the market	24	26	:	30	:	14	10	17	:	17
Product only innovators										
From unchanged or marginally modified products	47	39	:	38	:	78	82	80	:	62
From new or significantly improved products, not new to the market	3	2	:	2	:	7	8	4	:	12
From new or significantly improved products, new to the market	49	59	:	60	:	15	10	15	:	26
Product and process innovators										
From unchanged or marginally modified products	81	82	:	79	:	78	82	76	:	77
From new or significantly improved products, not new to the market	6	5	:	5	:	8	7	7	:	11
From new or significantly improved products, new to the market	14	13	:	16	:	14	11	17	:	12

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.5B

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators												
From unchanged or marginally modified products	78	79	70	:	78	:	:	78	:	:	81	:
From new or significantly improved products, not new to the market	6	11	4	:	11	:	:	11	:	:	12	:
From new or significantly improved products, new to the market	16	10	27	:	11	:	:	11	:	:	7	:
Product only innovators												
From unchanged or marginally modified products	71	83	37	:	82	:	:	82	:	:	85	:
From new or significantly improved products, not new to the market	11	6	2	:	6	:	:	6	:	:	6	:
From new or significantly improved products, new to the market	18	11	61	:	12	:	:	12	:	:	9	:
Product and process innovators												
From unchanged or marginally modified products	83	77	81	74	76	82	:	76	:	86	79	74
From new or significantly improved products, not new to the market	3	14	5	9	14	4	:	14	:	0	15	9
From new or significantly improved products, new to the market	15	9	14	17	10	14	:	10	:	14	7	17

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.6A

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Intramural R&D	71	79	32	81	45	58	38	49	:	88
Extramural R&D	38	40	32	39	61	35	29	41	:	38
Acquisition of machinery and equipment	54	54	50	55	26	54	54	53	:	53
Acquisition of other external knowledge	25	25	11	26	14	26	28	15	:	30
Training	37	31	19	31	48	46	43	45	:	49
Market introduction of innovations	31	29	15	30	12	34	35	34	:	33
Design, other preparations for production/deliveries	21	22	0	22	6	21	26	18	:	18

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.6B

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Intramural R&D	65	76	95	75	81	94	78	81	95	52	68	97
Extramural R&D	31	47	60	34	43	63	33	42	63	27	54	48
Acquisition of machinery and equipment	56	47	61	56	48	60	57	49	60	56	45	64
Acquisition of other external knowledge	23	24	44	21	25	48	21	25	48	27	21	30
Training	34	35	56	27	29	56	26	29	58	44	47	55
Market introduction of innovations	29	31	47	26	28	46	27	29	46	33	35	50
Design, other preparations for production/deliveries	19	22	38	17	24	38	18	25	40	21	18	39

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.7A

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Product oriented effects										
Increased range of goods or services	13	14	6	14	10	13	8	4	:	26
Increased market or market share	10	10	36	10	2	11	12	0	:	19
Improved quality in goods or services	14	13	25	13	9	16	15	10	:	20
Process oriented effects										
Improved production flexibility	7	7	6	7	0	6	8	5	:	4
Increased production capacity	6	9	25	9	5	2	0	1	:	5
Reduced labour costs per produced unit	7	6	25	6	2	10	15	10	:	3
Reduced materials and energy per produced unit	4	3	19	3	0	6	8	10	:	0
Other effects										
Improved environmental impact or health and safety aspects	5	4	34	4	0	6	8	10	:	1
Met regulations or standards	5	4	19	4	1	6	5	10	:	4

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.7B

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Product oriented effects												
Increased range of goods or services	12	15	18	13	13	18	14	12	18	11	18	22
Increased market or market share	12	7	9	11	8	9	11	7	10	13	7	8
Improved quality in goods or services	15	11	14	14	10	14	13	10	15	17	13	15
Process oriented effects												
Improved production flexibility	7	5	8	8	5	8	8	5	8	6	4	8
Increased production capacity	7	4	7	11	6	9	11	6	9	2	1	2
Reduced labour costs per produced unit	9	3	5	6	4	6	6	4	6	13	2	2
Reduced materials and energy per produced unit	5	2	2	4	1	2	4	2	2	7	2	0
Other effects												
Improved environmental impact or health and safety aspects	6	2	5	5	2	6	4	2	6	8	2	0
Met regulations or standards	5	4	3	5	3	3	5	3	2	6	6	4

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.8A

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity	42	51	51	51	33	27	15	16	:	51
Successful innovators	41	51	:	51	:	26	15	10	:	53
Enterprises with only on-going and/or abandoned innovations	47	49	:	51	:	38	14	95	:	22

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.8B

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity	36	44	75	47	47	79	48	47	78	21	39	59
Successful innovators	35	45	76	:	:	80	47	48	80	:	:	56
Enterprises with only on-going and/or abandoned innovations	47	38	65	:	:	61	56	42	53	:	:	73

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.9A

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All partners	50	51	56	52	42	48	45	42	:	55
National	50	51	56	51	42	48	45	42	:	55
EU/EFTA	25	24	26	24	22	25	30	22	:	21
Candidate countries	4	5	0	6	3	2	0	2	:	4
United States	9	9	0	10	3	9	8	5	:	13
Japan	5	5	0	5	1	5	3	3	:	7
Others	5	7	6	7	1	2	1	4	:	2

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.9B

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All partners	40	64	83	41	60	85	42	59	84	38	71	75
National	40	63	82	41	59	84	42	58	84	38	71	74
EU/EFTA	14	38	63	12	33	69	12	33	70	17	48	38
Candidate countries	2	5	16	3	5	17	3	5	18	0	4	15
United States	4	12	35	3	11	39	3	12	42	7	12	20
Japan	3	4	14	3	3	17	3	3	18	4	6	4
Others	3	6	18	4	6	19	4	6	19	0	5	13

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.10A

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Internal sources										
Within the enterprise	45	46	36	46	43	44	35	35	:	61
Other enterprises within the enterprise group	12	8	11	8	18	18	17	11	:	23
Market sources										
Suppliers of equipment, materials, components or software	10	11	29	11	11	9	5	15	:	10
Clients or customers	26	26	51	26	17	25	16	36	:	30
Competitors and other enterprises from the same industry	4	4	15	4	12	5	4	10	:	2
Institutional sources										
Universities or other higher education institutes	3	3	0	3	3	4	5	0	:	6
Government or private non-profit research institutes	4	5	11	5	9	2	3	0	:	2
Other sources										
Professional conferences, meetings, journals	2	2	0	2	3	3	1	0	:	6
Fairs, exhibitions	5	4	0	4	0	7	12	0	:	5

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.10B

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Internal sources												
Within the enterprise	39	55	57	41	50	59	41	50	60	36	65	50
Other enterprises within the enterprise group	7	18	27	3	11	28	3	10	28	13	31	24
Market sources												
Suppliers of equipment, materials, components or software	9	10	15	9	12	15	9	13	15	10	7	12
Clients or customers	25	24	33	23	28	33	23	29	34	28	17	36
Competitors and other enterprises from the same industry	4	5	5	3	7	5	2	7	5	6	2	3
Institutional sources												
Universities or other higher education institutes	2	5	7	1	4	6	1	4	6	2	9	8
Government or private non-profit research institutes	3	7	8	4	7	10	4	6	8	1	7	0
Other sources												
Professional conferences, meetings, journals	1	4	4	2	3	6	2	3	6	1	7	0
Fairs, exhibitions	5	5	3	4	4	4	4	4	4	8	6	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.11A

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Seriously delayed	53	49	11	50	35	59	56	59	:	62
Prevented to be started	13	13	19	13	5	12	9	7	:	18
Burdened/encumbered with other serious problems	26	28	22	29	8	22	18	20	:	30

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.11B

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Seriously delayed	49	57	63	46	49	64	47	50	64	55	71	62
Prevented to be started	10	13	27	12	10	26	12	10	27	8	19	30
Burdened/encumbered with other serious problems	22	27	48	26	26	47	27	26	48	18	30	50

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.12A

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	10	8	11	9	5	13	11	10	:	17
Innovation costs too high	12	10	10	10	2	16	19	1	:	21
Lack of appropriate sources of finance	8	7	10	7	2	9	8	7	:	14
Internal factors										
Organisational rigidities within the enterprise	3	4	6	4	0	2	0	6	:	0
Lack of qualified personnel	7	6	0	6	1	8	5	4	:	14
Lack of information on technology	4	3	15	3	0	5	7	2	:	5
Lack of information on markets	5	6	19	6	11	3	2	0	:	8
Other factors										
Insufficient flexibility of regulations or standards	3	2	0	2	0	4	7	0	:	2
Lack of customer responsiveness to new goods or services	3	3	0	3	1	3	4	0	:	5

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.12B

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	10	9	15	6	10	16	7	9	17	15	8	10
Innovation costs too high	12	14	8	10	10	8	11	10	8	14	21	11
Lack of appropriate sources of finance	10	6	3	8	7	3	9	7	3	12	4	2
Internal factors												
Organisational rigidities within the enterprise	4	2	3	5	3	4	5	3	4	2	2	0
Lack of qualified personnel	5	10	10	6	6	9	6	6	9	3	19	16
Lack of information on technology	4	3	4	3	3	4	3	3	4	6	4	3
Lack of information on markets	4	7	7	5	7	8	5	7	8	2	7	3
Other factors												
Insufficient flexibility of regulations or standards	3	2	2	2	2	2	2	2	3	5	2	0
Lack of customer responsiveness to new goods or services	3	4	2	3	3	2	3	3	2	2	7	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.13A

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.13B

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.14A

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All enterprises	10	13	3	14	3	6	8	2	:	8
Enterprises with innovation activity	20	24	6	25	8	13	16	9	:	13
Enterprises without innovation activity	2	3	0	3	0	1	3	0	:	2

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.14B

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All enterprises	7	15	36	8	18	46	9	19	47	4	11	15
Enterprises with innovation activity	14	25	48	17	27	52	18	28	53	9	21	33
Enterprises without innovation activity	2	4	2	2	6	7	2	7	7	2	0	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.15A

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Registration of design patterns	12	14	0	14	5	10	18	5	:	4
Trademarks	25	25	11	26	8	26	35	11	:	26
Copyright	11	7	0	7	3	16	11	9	:	29
Secrecy	49	48	32	48	40	50	45	42	:	63
Complexity of design	31	30	17	29	36	32	31	19	:	43
Lead-time advantage on competitors	56	51	32	52	51	63	74	45	:	62
Enterprises without innovation activity										
Registration of design patterns	3	3	0	4	0	2	5	0	:	1
Trademarks	5	6	0	6	1	4	7	1	:	5
Copyright	2	3	0	3	0	2	3	0	:	4
Secrecy	7	9	11	9	5	5	5	1	:	12
Complexity of design	4	5	11	5	0	3	5	0	:	4
Lead-time advantage on competitors	8	11	11	11	5	5	8	2	:	7

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.15B

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Registration of design patterns	9	15	23	10	16	28	10	17	28	9	14	7
Trademarks	18	35	49	16	33	51	17	34	52	21	38	40
Copyright	7	14	25	3	8	24	3	9	24	13	24	31
Secrecy	42	57	70	40	54	72	41	54	75	45	63	64
Complexity of design	28	32	43	27	29	42	27	29	42	29	38	49
Lead-time advantage on competitors	53	60	65	48	53	66	48	54	67	60	73	62
Enterprises without innovation activity												
Registration of design patterns	2	8	4	1	10	11	2	11	12	2	5	0
Trademarks	4	8	16	4	11	20	4	12	19	4	2	13
Copyright	2	3	4	2	4	11	2	4	12	2	1	0
Secrecy	7	8	9	9	10	24	9	10	26	5	5	0
Complexity of design	4	3	1	5	4	4	5	4	4	3	3	0
Lead-time advantage on competitors	8	9	9	11	10	19	11	11	21	5	7	3

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.16A

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Strategy	40	37	21	37	51	45	48	32	:	50
Management	40	37	21	37	47	46	48	36	:	50
Organisation	44	36	17	36	57	56	56	62	:	52
Marketing	30	28	6	28	40	32	31	28	:	36
Aesthetic or other subjective changes	34	33	10	34	12	37	47	24	:	33
Enterprises without innovation activity										
Strategy	15	16	11	15	30	13	21	5	:	20
Management	15	15	0	15	26	13	21	5	:	20
Organisation	22	23	22	23	26	20	32	10	:	22
Marketing	14	12	0	12	13	16	21	13	:	12
Aesthetic or other subjective changes	12	10	0	11	1	14	15	14	:	10

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table FI.16B

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Strategy	37	42	62	31	40	64	31	40	64	44	46	57
Management	37	42	62	31	40	63	30	40	64	45	46	57
Organisation	40	46	64	30	38	64	29	38	65	54	59	64
Marketing	29	28	35	27	27	35	27	27	35	32	31	33
Aesthetic or other subjective changes	33	36	41	31	35	42	32	35	44	36	37	39
Enterprises without innovation activity												
Strategy	13	23	26	14	21	31	13	21	34	11	26	24
Management	12	22	26	14	21	31	13	20	34	11	26	24
Organisation	19	31	46	21	29	48	21	29	49	17	34	46
Marketing	12	20	10	11	12	22	11	12	24	13	33	4
Aesthetic or other subjective changes	11	16	27	8	18	32	9	19	36	13	12	24

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Sweden

Table SE.1A

Number of enterprises, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of enterprises (units)										
All enterprises	15 982	7 756	55	7 457	243	8 227	3 491	2 266	422	2 048
Enterprises with innovation activity	7 476	3 657	13	3 557	87	3 819	1 877	512	203	1 226
Successful innovators	6 331	3 066	5	2 987	74	3 265	1 606	417	187	1 055
Product only innovators	3 112	1 303	0	1 276	28	1 808	1 033	117	64	595
Process only innovators	1 150	693	3	665	25	456	143	105	42	167
Product and process innovators	2 070	1 069	2	1 046	21	1 000	430	195	82	294
Enterprises with only on-going and/or abandoned innovations	1 144	591	8	569	14	554	271	96	16	171
Enterprises without innovation activity	8 507	4 099	42	3 901	156	4 408	1 614	1 753	219	822
Proportion of all enterprises (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	47	47	23	48	36	46	54	23	48	60
Successful innovators	40	40	9	40	30	40	46	18	44	52
Product only innovators	19	17	0	17	11	22	30	5	15	29
Process only innovators	7	9	5	9	10	6	4	5	10	8
Product and process innovators	13	14	3	14	9	12	12	9	19	14
Enterprises with only on-going and/or abandoned innovations	7	8	15	8	6	7	8	4	4	8
Enterprises without innovation activity	53	53	77	52	64	54	46	77	52	40

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.1B

Number of enterprises, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of enterprises (units)												
All enterprises	12 474	2 811	697	5 642	1 679	435	5 447	1 596	414	6 832	1 132	262
Enterprises with innovation activity	5 298	1 676	501	2 287	1 025	344	2 235	997	325	3 011	651	157
Successful innovators	4 521	1 369	441	1 908	858	300	1 864	836	287	2 613	511	141
Product only innovators	2 255	737	119	798	407	98	779	401	96	1 457	330	21
Process only innovators	847	231	71	499	149	45	481	143	42	348	82	26
Product and process innovators	1 418	400	251	611	301	157	605	292	150	807	99	94
Enterprises with only on-going and/or abandoned innovations	778	307	60	379	167	44	371	161	38	398	139	16
Enterprises without innovation activity	7 176	1 135	196	3 355	653	91	3 212	599	89	3 821	482	105
Proportion of all enterprises (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	42	60	72	41	61	79	41	62	78	44	57	60
Successful innovators	36	49	63	34	51	69	34	52	69	38	45	54
Product only innovators	18	26	17	14	24	23	14	25	23	21	29	8
Process only innovators	7	8	10	9	9	10	9	9	10	5	7	10
Product and process innovators	11	14	36	11	18	36	11	18	36	12	9	36
Enterprises with only on-going and/or abandoned innovations	6	11	9	7	10	10	7	10	9	6	12	6
Enterprises without innovation activity	58	40	28	59	39	21	59	38	22	56	43	40

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.2A

Number of employees, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of employees (thousands)										
All enterprises	1 353	748	7	718	22	606	128	288	64	125
Enterprises with innovation activity	984	571	6	550	15	412	72	200	52	89
Enterprises without innovation activity	369	176	1	168	7	193	56	88	13	37
Proportion of total number of employees (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	73	76	81	77	68	68	56	70	80	71
Enterprises without innovation activity	27	24	19	23	32	32	44	30	20	29

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.2B

Number of employees, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of employees (thousands)												
All enterprises	255	278	820	119	170	458	114	163	442	136	108	362
Enterprises with innovation activity	114	179	691	52	113	407	:	110	:	63	66	284
Enterprises without innovation activity	141	99	130	67	57	51	:	53	:	73	41	78
Proportion of total number of employees (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	45	65	84	43	66	89	:	68	:	46	62	78
Enterprises without innovation activity	55	35	16	57	34	11	:	32	:	54	38	22

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.3A

Turnover, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Turnover (EUR million)										
All enterprises	391 695	209 592	1 706	191 150	16 737	182 104	80 733	49 126	33 184	19 060
Enterprises with innovation activity	309 328	179 444	1 375	164 664	13 405	129 883	54 164	33 203	29 232	13 285
Enterprises without innovation activity	82 368	30 148	331	26 485	3 331	52 220	26 570	15 923	3 952	5 775
Proportion of total turnover (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	79	86	81	86	80	71	67	68	88	70
Enterprises without innovation activity	21	14	19	14	20	29	33	32	12	30

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.3B

Turnover, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Turnover (EUR million)												
All enterprises	78 516	74 836	238 344	22 153	34 526	152 913	17 764	30 124	143 261	56 363	40 310	85 431
Enterprises with innovation activity	46 963	53 083	209 282	11 747	22 749	144 949	8 640	:	:	35 216	30 334	64 333
Enterprises without innovation activity	31 553	21 753	29 062	10 406	11 777	7 964	9 124	:	:	21 147	9 975	21 098
Proportion of total turnover (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	60	71	88	53	66	95	49	:	:	62	75	75
Enterprises without innovation activity	40	29	12	47	34	5	51	:	:	38	25	25

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.4A

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators	53	50	:	50	:	56	53	:	:	61
Product only innovators	45	47	~	47	25	44	38	60	45	51
Product and process innovators	66	54	:	54	:	78	89	:	:	82

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.4B

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators	57	40	59	52	43	57	53	43	58	60	34	65
Product only innovators	49	34	42	51	40	43	51	40	44	48	27	38
Product and process innovators	70	50	67	54	48	65	54	48	67	81	56	71

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.5A

Product innovators: turnover breakdown, 2000 (% of total turnover)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.5B

Product innovators: turnover breakdown, 2000 (% of total turnover)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.6A

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.6B

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.7A

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Product oriented effects										
Increased range of goods or services	29	26	0	26	13	31	37	16	21	30
Increased market or market share	26	18	0	19	0	33	44	13	19	25
Improved quality in goods or services	23	22	0	22	0	25	20	29	20	30
Process oriented effects										
Improved production flexibility	12	13	0	13	5	10	9	20	8	9
Increased production capacity	15	18	16	18	0	12	12	22	7	9
Reduced labour costs per produced unit	10	13	8	13	2	6	5	20	6	3
Reduced materials and energy per produced unit	8	8	8	8	5	8	11	11	0	3
Other effects										
Improved environmental impact or health and safety aspects	10	10	8	10	11	9	9	25	1	5
Met regulations or standards	15	14	0	14	23	15	20	18	11	7

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.7B

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Product oriented effects												
Increased range of goods or services	27	32	35	23	30	31	:	31	:	29	36	44
Increased market or market share	26	23	25	18	18	19	:	19	:	33	31	39
Improved quality in goods or services	22	26	30	19	26	26	:	27	:	24	24	38
Process oriented effects												
Improved production flexibility	11	13	12	12	14	14	:	14	:	10	11	7
Increased production capacity	16	12	18	20	12	19	:	12	:	12	11	17
Reduced labour costs per produced unit	9	11	13	13	13	12	:	14	:	6	8	14
Reduced materials and energy per produced unit	8	8	6	7	10	9	:	10	:	9	4	1
Other effects												
Improved environmental impact or health and safety aspects	9	10	10	10	9	12	:	8	:	9	13	5
Met regulations or standards	15	13	16	14	15	19	:	15	:	17	10	11

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.8A

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity	19	20	29	20	16	19	16	18	3	26
Successful innovators	18	19	:	20	:	16	11	17	4	26
Enterprises with only on-going and/or abandoned innovations	29	25	:	25	:	33	43	25	0	24

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.8B

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity	21	14	25	22	14	30	:	14	:	20	15	14
Successful innovators	19	13	23	21	14	28	21	14	26	17	12	14
Enterprises with only on-going and/or abandoned innovations	32	18	35	28	13	43	:	13	:	37	24	11

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.9A

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All partners	32	34	51	34	54	29	20	26	33	44
National	30	32	51	31	50	28	18	26	33	43
EU/EFTA	16	18	51	18	13	15	14	3	5	24
Candidate countries	3	3	0	4	0	2	2	0	0	2
United States	8	9	8	9	4	8	3	2	2	20
Japan	3	3	0	3	0	3	3	0	1	6
Others	5	3	16	3	5	6	7	4	0	7

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.9B

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All partners	28	34	66	28	37	67	28	37	67	28	29	63
National	26	33	62	25	36	62	25	35	63	26	29	60
EU/EFTA	13	17	53	11	21	54	11	21	55	14	9	50
Candidate countries	2	2	10	3	3	12	3	3	13	2	1	7
United States	6	9	38	5	9	36	5	10	37	6	9	42
Japan	2	4	11	1	4	11	1	4	11	3	4	12
Others	5	4	11	3	2	10	3	2	10	6	6	12

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.10A

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Internal sources										
Within the enterprise	50	49	37	50	32	51	34	56	48	74
Other enterprises within the enterprise group	16	9	0	9	13	22	32	13	12	13
Market sources										
Suppliers of equipment, materials, components or software	21	21	0	21	17	22	23	32	14	17
Clients or customers	48	42	22	43	11	54	58	36	24	60
Competitors and other enterprises from the same industry	11	7	0	7	9	14	18	13	9	9
Institutional sources										
Universities or other higher education institutes	7	4	0	4	8	9	11	2	1	11
Government or private non-profit research institutes	3	2	0	2	7	5	6	1	1	5
Other sources										
Professional conferences, meetings, journals	3	4	0	3	12	3	2	6	1	4
Fairs, exhibitions	7	6	0	6	3	7	9	8	0	5

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.10B

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Internal sources												
Within the enterprise	48	51	64	45	54	63	:	55	:	51	44	66
Other enterprises within the enterprise group	13	20	29	5	12	23	:	13	:	19	32	44
Market sources												
Suppliers of equipment, materials, components or software	23	16	15	23	17	17	:	17	:	24	15	10
Clients or customers	51	39	52	42	42	50	:	42	:	58	34	57
Competitors and other enterprises from the same industry	11	10	10	5	12	11	:	12	:	16	6	8
Institutional sources												
Universities or other higher education institutes	5	12	10	2	5	10	:	5	:	6	22	12
Government or private non-profit research institutes	1	9	6	1	2	5	:	2	:	2	20	8
Other sources												
Professional conferences, meetings, journals	2	5	9	3	3	10	:	3	:	2	7	6
Fairs, exhibitions	7	5	6	6	7	7	:	7	:	9	2	3

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.11A

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Seriously delayed	38	44	0	45	34	32	12	29	42	63
Prevented to be started	15	16	0	16	13	14	7	10	23	26
Burdened/encumbered with other serious problems	19	23	0	23	23	16	9	12	20	28

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.11B

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Seriously delayed	36	42	49	43	46	49	:	46	:	31	36	49
Prevented to be started	15	10	26	16	12	22	:	13	:	15	5	35
Burdened/encumbered with other serious problems	19	17	33	23	18	29	:	18	:	15	15	43

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.12A

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	15	17	14	17	18	13	2	21	5	27
Innovation costs too high	14	17	14	17	13	11	2	22	9	19
Lack of appropriate sources of finance	12	13	0	13	10	11	2	10	5	25
Internal factors										
Organisational rigidities within the enterprise	6	6	0	6	3	5	5	6	6	6
Lack of qualified personnel	13	16	0	16	0	10	7	1	7	20
Lack of information on technology	2	3	0	3	0	2	2	0	0	2
Lack of information on markets	4	5	0	5	0	3	3	4	0	4
Other factors										
Insufficient flexibility of regulations or standards	2	3	0	3	0	2	2	3	1	3
Lack of customer responsiveness to new goods or services	5	3	0	2	10	7	8	1	0	7

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.12B

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	16	12	12	19	12	12	:	12	:	13	13	12
Innovation costs too high	15	11	12	19	13	12	:	13	:	11	7	10
Lack of appropriate sources of finance	14	8	6	17	7	7	:	7	:	11	9	5
Internal factors												
Organisational rigidities within the enterprise	6	6	8	6	5	10	:	5	:	5	6	4
Lack of qualified personnel	13	11	16	17	13	11	:	14	:	10	7	27
Lack of information on technology	2	4	0	4	3	0	:	3	:	1	5	0
Lack of information on markets	5	3	3	5	5	4	:	5	:	4	1	3
Other factors												
Insufficient flexibility of regulations or standards	3	2	1	3	2	0	:	2	:	2	2	1
Lack of customer responsiveness to new goods or services	6	2	2	4	1	1	:	1	:	7	4	4

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.13A

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	9	11	0	11	6	8	8	5	4	13
Innovation costs too high	9	12	0	12	6	7	8	4	6	11
Lack of appropriate sources of finance	6	7	0	7	0	6	8	5	0	6
Internal factors										
Organisational rigidities within the enterprise	3	4	0	4	3	2	3	3	0	1
Lack of qualified personnel	7	10	4	11	3	4	5	3	0	4
Lack of information on technology	2	2	0	2	0	2	3	1	0	0
Lack of information on markets	2	3	11	3	0	2	3	2	0	1
Other factors										
Insufficient flexibility of regulations or standards	2	2	11	2	5	2	3	2	2	0
Lack of customer responsiveness to new goods or services	3	4	15	4	0	2	0	4	0	1

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.13B

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	10	7	3	11	10	2	:	10	:	8	3	4
Innovation costs too high	10	7	4	13	9	0	:	9	:	8	4	7
Lack of appropriate sources of finance	6	9	4	7	8	2	:	9	:	6	9	6
Internal factors												
Organisational rigidities within the enterprise	3	5	5	3	7	2	:	7	:	2	3	7
Lack of qualified personnel	6	11	5	10	13	2	:	14	:	3	7	8
Lack of information on technology	1	4	1	2	3	0	:	3	:	1	4	2
Lack of information on markets	2	3	2	3	1	2	:	1	:	1	6	2
Other factors												
Insufficient flexibility of regulations or standards	2	4	3	2	2	0	:	2	:	1	6	5
Lack of customer responsiveness to new goods or services	3	3	4	5	2	4	:	3	:	1	4	5

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.14A

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All enterprises	16	16	4	17	6	16	23	2	0	21
Enterprises with innovation activity	28	29	16	30	11	27	30	11	0	34
Enterprises without innovation activity	5	5	0	5	3	6	16	0	0	0

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.14B

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All enterprises	12	26	42	10	28	50	10	29	51	14	24	28
Enterprises with innovation activity	23	35	56	21	38	61	:	39	:	26	30	45
Enterprises without innovation activity	4	14	6	3	11	10	:	12	:	5	17	2

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.15A

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Registration of design patterns	18	18	14	18	6	17	23	8	6	15
Trademarks	41	39	35	39	28	43	44	23	32	51
Copyright	22	15	0	15	11	27	34	5	11	30
Secrecy	27	26	8	26	11	29	30	12	14	35
Complexity of design	19	18	14	18	11	19	23	7	7	20
Lead-time advantage on competitors	40	38	22	38	19	42	39	35	24	51
Enterprises without innovation activity										
Registration of design patterns	3	3	0	4	0	2	3	1	0	3
Trademarks	15	13	7	13	17	17	32	5	7	18
Copyright	3	4	2	4	0	2	3	1	0	6
Secrecy	4	4	2	4	0	3	6	2	5	3
Complexity of design	3	3	0	3	3	3	6	2	4	2
Lead-time advantage on competitors	5	7	2	8	0	3	3	2	6	3

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.15B

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Registration of design patterns	16	19	33	11	25	39	:	26	:	19	10	21
Trademarks	38	43	65	30	49	65	:	49	:	44	33	64
Copyright	18	29	40	9	23	38	:	23	:	24	38	46
Secrecy	26	25	49	21	29	48	:	29	:	30	19	49
Complexity of design	17	19	29	16	20	27	:	20	:	19	18	34
Lead-time advantage on competitors	39	39	57	32	45	59	:	46	:	44	29	54
Enterprises without innovation activity												
Registration of design patterns	2	6	16	2	9	19	:	9	:	1	3	13
Trademarks	14	22	28	10	23	28	:	24	:	17	19	29
Copyright	2	9	13	2	12	14	:	13	:	2	4	12
Secrecy	3	7	11	3	9	12	:	10	:	3	4	10
Complexity of design	3	7	10	3	8	6	:	8	:	3	5	13
Lead-time advantage on competitors	4	10	11	6	14	15	:	15	:	2	4	8

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.16A

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Strategy	48	44	8	44	46	52	47	48	47	61
Management	13	11	8	11	8	14	7	16	4	25
Organisation	52	51	22	50	63	53	49	48	55	63
Marketing	39	37	8	37	35	41	40	35	37	44
Aesthetic or other subjective changes	30	27	0	28	9	32	32	18	21	41
Enterprises without innovation activity										
Strategy	21	17	15	16	24	25	27	14	24	42
Management	4	3	0	3	8	5	5	1	7	13
Organisation	26	25	7	25	32	28	26	18	35	49
Marketing	20	17	4	17	21	24	31	11	17	37
Aesthetic or other subjective changes	9	7	0	7	5	11	16	4	16	17

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table SE.16B

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Strategy	47	48	56	42	48	49	:	48	:	52	47	73
Management	11	15	25	8	16	20	:	17	:	13	13	36
Organisation	47	63	70	44	60	66	:	60	:	49	68	80
Marketing	35	49	44	32	47	37	:	48	:	37	52	62
Aesthetic or other subjective changes	30	26	39	26	27	34	:	28	:	33	24	49
Enterprises without innovation activity												
Strategy	19	33	32	13	34	25	:	32	:	23	32	38
Management	3	10	13	1	11	10	:	10	:	5	9	15
Organisation	23	45	50	22	40	42	:	40	:	24	52	57
Marketing	19	25	26	16	19	16	:	19	:	22	34	36
Aesthetic or other subjective changes	9	11	23	6	11	19	:	10	:	11	12	26

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

The United Kingdom

Table UK.1A

Number of enterprises, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Compute activities; R&D engineering and consultancy technical testing and analysis
Number of enterprises (units)										
All enterprises	89 210	45 580	470	44 990	120	43 630	18 980	10 650	4 140	9 860
Enterprises with innovation activity	31 920	17 720	110	17 580	40	14 200	5 160	2 630	1 630	4 790
Successful innovators	25 890	14 480	90	14 370	30	11 410	4 090	1 900	1 280	4 140
Product only innovators	10 840	5 240	30	5 210	:	5 600	2 220	890	410	2 080
Process only innovators	6 770	4 080	30	4 040	:	2 680	950	590	540	600
Product and process innovators	8 280	5 160	30	5 130	:	3 120	920	410	330	1 470
Enterprises with only on-going and/or abandoned innovations	6 030	3 240	20	3 210	10	2 800	1 070	730	340	650
Enterprises without innovation activity	57 290	27 860	360	27 410	80	29 430	13 820	8 020	2 510	5 070
Proportion of all enterprises (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	36	39	23	39	33	33	27	25	39	49
Successful innovators	29	32	19	32	25	26	22	18	31	42
Product only innovators	12	11	6	12	:	13	12	8	10	21
Process only innovators	8	9	6	9	:	6	5	6	13	6
Product and process innovators	9	11	6	11	:	7	5	4	8	15
Enterprises with only on-going and/or abandoned innovations	7	7	4	7	8	6	6	7	8	7
Enterprises without innovation activity	64	61	77	61	67	67	73	75	61	51

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.1B

Number of enterprises, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of enterprises (units)												
All enterprises	67 200	17 910	4 100	32 510	10 470	2 590	32 170	10 330	2 480	34 690	7 440	1 510
Enterprises with innovation activity	21 210	8 370	2 340	10 650	5 360	1 710	10 580	5 330	1 670	10 570	3 010	630
Successful innovators	16 540	7 210	2 140	8 360	4 540	1 580	8 230	4 510	1 540	8 180	2 670	560
Product only innovators	7 260	2 900	690	3 060	1 700	490	3 050	1 680	480	4 200	1 200	200
Process only innovators	4 450	1 790	530	2 550	1 130	400	2 520	1 130	390	1 910	650	120
Product and process innovators	4 830	2 530	920	2 760	1 710	690	2 750	1 700	680	2 070	820	240
Enterprises with only on-going and/or abandoned innovations	11 410	4 130	1 270	5 480	2 900	930	5 450	2 880	900	5 930	1 230	340
Enterprises without innovation activity	45 990	9 540	1 760	21 860	5 110	880	21 590	5 000	810	24 120	4 430	880
Proportion of all enterprises (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	32	47	57	33	51	66	33	52	67	30	40	42
Successful innovators	25	40	52	26	43	61	26	44	62	24	36	37
Product only innovators	11	16	17	9	16	19	9	16	19	12	16	13
Process only innovators	7	10	13	8	11	15	8	11	16	6	9	8
Product and process innovators	7	14	22	8	16	27	9	16	27	6	11	16
Enterprises with only on-going and/or abandoned innovations	17	23	31	17	28	36	17	28	36	17	17	23
Enterprises without innovation activity	68	53	43	67	49	34	67	48	33	70	60	58

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.2A

Number of employees, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of employees (thousands)										
All enterprises	7 035	3 576	62	3 420	94	3 459	829	967	777	886
Enterprises with innovation activity	3 820	1 999	23	1 919	57	1 821	277	365	530	650
Enterprises without innovation activity	3 215	1 577	38	1 502	37	1 637	552	601	247	237
Proportion of total number of employees (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	54	56	37	56	61	53	33	38	68	73
Enterprises without innovation activity	46	44	61	44	39	47	67	62	32	27

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.2B

Number of employees, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of employees (thousands)												
All enterprises	1 337	1 780	3 918	680	1 071	1 825	673	1 056	1 691	656	709	2 093
Enterprises with innovation activity	466	873	2 481	244	582	1 174	242	577	1 099	222	292	1 308
Enterprises without innovation activity	871	907	1 437	436	489	652	431	478	592	435	418	786
Proportion of total number of employees (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	35	49	63	36	54	64	36	55	65	34	41	62
Enterprises without innovation activity	65	51	37	64	46	36	64	45	35	66	59	38

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.3A

Turnover, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Turnover (EUR million)										
All enterprises	2 172 899	757 451	19 830	679 165	58 456	1 415 448	441 905	146 052	657 838	169 653
Enterprises with innovation activity	1 348 358	473 633	13 104	426 040	34 489	874 725	117 903	60 341	561 582	134 899
Enterprises without innovation activity	824 541	283 818	6 725	253 126	23 967	540 724	324 002	85 711	96 257	34 754
Proportion of total turnover (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	62	63	66	63	59	62	27	41	85	80
Enterprises without innovation activity	38	37	34	37	41	38	73	59	15	20

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.3B

Turnover, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Turnover (EUR million)												
All enterprises	439 893	467 597	1 265 409	154 108	172 759	430 584	150 307	162 334	366 524	285 784	294 839	834 825
Enterprises with innovation activity	194 468	202 320	951 570	98 686	82 884	292 063	98 020	81 283	246 737	95 782	119 435	659 507
Enterprises without innovation activity	245 424	265 278	313 839	55 422	89 875	138 521	52 287	81 051	119 787	190 003	175 403	175 317
Proportion of total turnover (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	44	43	75	64	48	68	65	50	67	34	41	79
Enterprises without innovation activity	56	57	25	36	52	32	35	50	33	66	59	21

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.4A

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators	27	28	18	28	:	27	28	14	20	36
Product only innovators	:	:	:	:	:	:	:	:	:	:
Product and process innovators	:	:	:	:	:	:	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.4B

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators	27	28	33	28	26	35	28	26	35	26	32	27
Product only innovators	:	:	:	:	:	:	:	:	:	:	:	:
Product and process innovators	:	:	:	:	:	:	:	:	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.5A

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators										
From unchanged or marginally modified products	59	74	68	73	65	55	74	58	47	71
From new or significantly improved products, not new to the market	37	21	28	21	15	42	17	27	52	25
From new or significantly improved products, new to the market	4	4	4	7	0	3	9	15	1	4
Product only innovators										
From unchanged or marginally modified products	:	:	:	:	:	:	:	:	:	:
From new or significantly improved products, not new to the market	:	:	:	:	:	:	:	:	:	:
From new or significantly improved products, new to the market	:	:	:	:	:	:	:	:	:	:
Product and process innovators										
From unchanged or marginally modified products	:	:	:	:	:	:	:	:	:	:
From new or significantly improved products, not new to the market	:	:	:	:	:	:	:	:	:	:
From new or significantly improved products, new to the market	:	:	:	:	:	:	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.5B

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators												
From unchanged or marginally modified products	69	69	57	75	72	74	75	73	72	66	67	51
From new or significantly improved products, not new to the market	24	21	41	19	22	20	19	21	21	26	21	48
From new or significantly improved products, new to the market	8	10	2	7	5	6	7	6	7	8	12	1
Product only innovators												
From unchanged or marginally modified products	:	:	:	:	:	:	:	:	:	:	:	:
From new or significantly improved products, not new to the market	:	:	:	:	:	:	:	:	:	:	:	:
From new or significantly improved products, new to the market	:	:	:	:	:	:	:	:	:	:	:	:
Product and process innovators												
From unchanged or marginally modified products	:	:	:	:	:	:	:	:	:	:	:	:
From new or significantly improved products, not new to the market	:	:	:	:	:	:	:	:	:	:	:	:
From new or significantly improved products, new to the market	:	:	:	:	:	:	:	:	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.6A

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.6B

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.7A

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Product oriented effects										
Increased range of goods or services	22	23	22	23	:	21	17	14	17	29
Increased market or market share	21	21	22	21	:	22	17	14	15	32
Improved quality in goods or services	26	25	33	25	0	27	21	25	25	34
Process oriented effects										
Improved production flexibility	15	18	11	18	:	10	10	5	16	12
Increased production capacity	18	22	22	22	:	12	12	12	17	11
Reduced labour costs per produced unit	11	15	11	15	:	7	9	4	9	7
Reduced materials and energy per produced unit	7	9	11	9	0	3	5	3	2	2
Other effects										
Improved environmental impact or health and safety aspects	8	10	22	10	0	6	8	7	2	6
Met regulations or standards	14	14	11	14	33	13	15	11	16	13

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.7B

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Product oriented effects												
Increased range of goods or services	22	23	23	24	22	23	24	22	22	19	25	25
Increased market or market share	22	21	19	22	20	18	22	20	18	21	23	20
Improved quality in goods or services	28	28	21	27	22	20	27	22	20	28	24	25
Process oriented effects												
Improved production flexibility	14	16	14	18	18	16	18	18	16	10	11	10
Increased production capacity	17	19	19	20	25	20	20	25	20	13	8	13
Reduced labour costs per produced unit	11	12	16	14	16	18	14	16	18	8	6	10
Reduced materials and energy per produced unit	6	7	9	8	11	10	8	11	11	4	1	5
Other effects												
Improved environmental impact or health and safety aspects	7	9	13	8	12	14	8	12	14	6	5	10
Met regulations or standards	14	13	16	13	16	16	13	17	16	15	8	16

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.8A

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity	11	13	18	12	33	8	5	5	2	15
Successful innovators	9	11	18	11	0	7	5	4	1	13
Enterprises with only on-going and/or abandoned innovations	7	7	9	7	33	6	3	4	1	11

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.8B

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity	11	9	13	13	11	14	13	11	14	9	7	8
Successful innovators	9	8	12	11	10	14	11	10	14	8	5	8
Enterprises with only on-going and/or abandoned innovations	7	6	9	7	7	9	7	7	8	6	4	6

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.9A

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All partners	23	23	18	23	50	22	20	14	23	29
National	20	20	18	20	50	20	16	12	22	26
EU/EFTA	:	:	:	:	:	:	:	:	:	:
Candidate countries	:	:	:	:	:	:	:	:	:	:
United States	6	6	9	6	25	6	3	4	5	11
Japan	:	:	:	:	:	:	:	:	:	:
Others	3	3	9	3	0	4	3	2	1	6

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.9B

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All partners	20	24	39	19	26	39	19	26	38	22	21	38
National	18	21	32	16	22	32	16	22	31	19	18	34
EU/EFTA	:	:	:	:	:	:	:	:	:	:	:	:
Candidate countries	:	:	:	:	:	:	:	:	:	:	:	:
United States	4	8	17	3	9	17	3	9	16	5	8	18
Japan	:	:	:	:	:	:	:	:	:	:	:	:
Others	2	4	8	2	4	8	2	4	7	3	5	8

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.10A

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Internal sources										
Within the enterprise	41	42	33	42	33	39	28	27	41	57
Other enterprises within the enterprise group	11	10	11	10	:	12	9	12	13	15
Market sources										
Suppliers of equipment, materials, components or software	23	23	22	23	:	22	19	26	27	20
Clients or customers	21	20	11	20	:	21	20	22	12	26
Competitors and other enterprises from the same industry	7	7	11	7	:	6	6	8	3	6
Institutional sources										
Universities or other higher education institutes	2	2	:	2	33	3	1	1	1	6
Government or private non-profit research institutes	1	1	11	1	:	2	1	:	:	4
Other sources										
Professional conferences, meetings, journals	:	:	:	:	:	:	:	:	:	:
Fairs, exhibitions	:	:	:	:	:	:	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.10B

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Internal sources												
Within the enterprise	39	43	47	41	44	46	41	44	47	0	41	51
Other enterprises within the enterprise group	9	14	21	6	15	20	6	15	20	0	14	25
Market sources												
Suppliers of equipment, materials, components or software	23	21	24	24	22	22	24	22	23	22	21	30
Clients or customers	20	21	25	19	21	26	19	21	26	21	22	21
Competitors and other enterprises from the same industry	7	6	11	8	6	11	8	6	11	6	7	8
Institutional sources												
Universities or other higher education institutes	3	2	4	2	2	4	2	2	3	3	2	3
Government or private non-profit research institutes	1	1	2	1	1	3	1	1	3	2	1	:
Other sources												
Professional conferences, meetings, journals	:	:	:	:	:	:	:	:	:	:	:	:
Fairs, exhibitions	:	:	:	:	:	:	:	:	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.11A

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Seriously delayed	19	19	27	19	50	20	17	17	23	22
Prevented to be started	32	25	36	31	25	33	34	54	21	26
Burdened/encumbered with other serious problems	:	:	:	:	:	:	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.11B

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Seriously delayed	19	20	21	18	21	23	18	21	22	20	18	14
Prevented to be started	36	24	19	27	24	18	36	24	17	36	25	22
Burdened/encumbered with other serious problems	:	:	:	:	:	:	:	:	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.12A

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	19	20	18	20	33	17	19	19	15	15
Innovation costs too high	27	27	9	27	33	26	25	31	24	26
Lack of appropriate sources of finance	21	19	18	19	33	23	14	24	12	36
Internal factors										
Organisational rigidities within the enterprise	6	7	9	7	33	6	6	4	8	5
Lack of qualified personnel	14	13	9	14	:	15	14	16	9	18
Lack of information on technology	5	5	0	5	0	5	6	4	4	5
Lack of information on markets	9	9	0	9	0	8	8	28	5	9
Other factors										
Insufficient flexibility of regulations or standards	19	20	9	20	33	18	15	26	29	15
Lack of customer responsiveness to new goods or services	14	13	9	13	0	15	13	14	11	18

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.12B

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	19	18	16	22	18	16	22	18	15	16	19	16
Innovation costs too high	29	23	22	29	23	23	30	23	23	28	22	20
Lack of appropriate sources of finance	23	16	15	21	15	17	21	16	17	25	17	11
Internal factors												
Organisational rigidities within the enterprise	5	8	11	5	9	11	5	9	10	5	5	:
Lack of qualified personnel	15	12	12	15	12	13	15	12	12	16	12	11
Lack of information on technology	5	5	4	6	4	4	6	4	4	4	6	3
Lack of information on markets	9	9	6	9	10	7	9	10	7	9	7	2
Other factors												
Insufficient flexibility of regulations or standards	21	15	15	23	15	14	23	15	14	20	15	18
Lack of customer responsiveness to new goods or services	14	13	15	13	13	16	13	13	16	16	13	11

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.13A

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	18	22	23	22	:	14	15	14	6	15
Innovation costs too high	23	28	14	28	14	18	18	20	9	18
Lack of appropriate sources of finance	14	18	14	18	:	11	11	12	8	13
Internal factors										
Organisational rigidities within the enterprise	8	9	6	9	:	7	8	8	9	4
Lack of qualified personnel	13	15	11	15	:	11	11	11	7	10
Lack of information on technology	6	7	11	7	:	4	4	5	5	3
Lack of information on markets	6	7	0	7	:	5	5	5	2	5
Other factors										
Insufficient flexibility of regulations or standards	15	17	11	17	29	14	13	16	13	11
Lack of customer responsiveness to new goods or services	11	13	20	13	:	10	10	12	6	9

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.13B

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	18	17	12	23	18	12	23	18	11	14	15	10
Innovation costs too high	24	21	14	29	25	16	29	25	15	18	17	13
Lack of appropriate sources of finance	15	12	10	19	14	11	19	14	11	12	8	10
Internal factors												
Organisational rigidities within the enterprise	8	10	8	9	10	7	9	11	8	7	10	9
Lack of qualified personnel	13	14	4	15	15	2	15	15	3	11	11	4
Lack of information on technology	6	7	2	7	9	1	7	8	1	4	4	3
Lack of information on markets	6	6	3	7	8	1	7	9	1	5	4	4
Other factors												
Insufficient flexibility of regulations or standards	16	11	9	18	15	9	18	15	8	15	7	9
Lack of customer responsiveness to new goods or services	11	12	11	13	14	10	13	14	9	10	10	13

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.14A

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All enterprises	6	9	5	9	:	3	3	0	0	9
Enterprises with innovation activity	14	19	11	19	:	8	7	2	1	15
Enterprises without innovation activity	1	1	3	1	0	1	1	0	0	2

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.14B

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All enterprises	4	11	17	5	15	24	5	15	24	3	6	5
Enterprises with innovation activity	11	20	27	14	26	33	14	26	33	7	10	12
Enterprises without innovation activity	1	3	3	1	3	5	1	3	4	1	2	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.15A

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Registration of design patterns	25	28	22	28	:	22	27	10	16	25
Trademarks	37	36	33	36	:	37	40	19	25	47
Copyright	35	33	:	33	:	37	30	16	32	56
Secrecy	56	57	44	57	67	54	51	33	54	67
Complexity of design	51	53	33	53	33	47	42	26	42	64
Lead-time advantage on competitors	60	63	44	64	33	55	55	32	51	68
Enterprises without innovation activity										
Registration of design patterns	9	10	7	10	:	7	7	5	4	12
Trademarks	14	14	10	14	14	14	16	8	10	17
Copyright	11	12	7	12	14	10	8	4	7	24
Secrecy	17	17	17	17	29	16	14	9	22	29
Complexity of design	13	15	10	15	14	11	9	5	11	21
Lead-time advantage on competitors	18	22	14	22	14	14	15	7	16	22

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.15B

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Registration of design patterns	20	33	44	20	35	48	20	35	49	19	29	33
Trademarks	31	45	55	29	43	58	29	43	58	33	50	47
Copyright	31	40	49	28	36	49	28	36	49	34	47	48
Secrecy	49	64	78	48	65	80	48	66	81	51	60	71
Complexity of design	45	58	71	46	59	75	46	59	76	43	58	57
Lead-time advantage on competitors	55	67	78	58	68	82	58	68	83	52	66	66
Enterprises without innovation activity												
Registration of design patterns	7	13	19	8	15	26	8	16	26	6	11	11
Trademarks	11	22	30	10	23	34	10	24	34	12	20	25
Copyright	9	16	19	10	18	22	10	19	21	9	13	16
Secrecy	13	27	35	13	32	41	13	32	40	14	21	28
Complexity of design	10	21	26	12	25	33	12	26	33	9	16	19
Lead-time advantage on competitors	16	26	34	19	31	38	19	32	39	12	20	27

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.16A

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Strategy	62	60	60	60	67	64	64	51	61	70
Management	52	53	40	53	33	51	53	42	53	54
Organisation	53	52	50	52	100	54	54	41	54	60
Marketing	66	64	50	64	67	69	74	56	61	72
Aesthetic or other subjective changes	:	:	:	:	:	:	:	:	:	:
Enterprises without innovation activity										
Strategy	25	25	18	25	57	25	22	20	34	36
Management	20	21	15	21	29	18	18	14	25	26
Organisation	21	22	18	22	57	21	19	17	30	28
Marketing	31	32	21	32	29	30	31	23	34	38
Aesthetic or other subjective changes	:	:	:	:	:	:	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table UK.16B

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Strategy	57	69	76	53	67	76	53	67	76	61	72	74
Management	47	60	71	46	61	73	46	61	74	48	58	66
Organisation	45	64	78	42	64	78	42	64	78	49	66	75
Marketing	64	70	71	61	68	70	61	69	71	67	72	70
Aesthetic or other subjective changes	:	:	:	:	:	:	:	:	:	:	:	:
Enterprises without innovation activity												
Strategy	21	38	54	21	39	51	21	39	49	21	36	58
Management	17	30	43	17	32	41	18	33	40	16	27	45
Organisation	17	35	54	17	36	51	17	36	51	17	33	57
Marketing	28	40	48	29	43	46	29	44	47	28	37	50
Aesthetic or other subjective changes	:	:	:	:	:	:	:	:	:	:	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Iceland

Table IS.1A

Number of enterprises, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of enterprises (units)										
All enterprises	798	445	3	436	6	353	136	64	51	101
Enterprises with innovation activity	440	241	3	234	5	199	53	34	35	77
Successful innovators	409	222	2	216	5	187	47	31	35	74
Product only innovators	138	72	0	69	3	66	20	5	10	31
Process only innovators	44	30	0	30	0	14	5	4	3	1
Product and process innovators	228	121	2	118	2	107	22	21	22	42
Enterprises with only on-going and/or abandoned innovations	31	20	2	18	0	12	6	3	0	2
Enterprises without innovation activity	358	204	0	202	2	154	83	30	16	25
Proportion of all enterprises (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	55	54	100	54	75	56	39	53	68	75
Successful innovators	51	50	50	49	75	53	34	48	68	73
Product only innovators	17	16	0	16	50	19	14	8	19	31
Process only innovators	5	7	0	7	0	4	4	6	6	1
Product and process innovators	29	27	50	27	25	30	16	33	43	41
Enterprises with only on-going and/or abandoned innovations	4	4	50	4	0	3	5	5	0	2
Enterprises without innovation activity	45	46	0	46	25	44	61	47	32	25

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.1B

Number of enterprises, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of enterprises (units)												
All enterprises	641	124	32	359	68	18	354	65	17	283	56	14
Enterprises with innovation activity	328	86	26	185	44	13	180	42	11	143	43	13
Successful innovators	304	82	23	168	42	12	165	40	10	135	40	11
Product only innovators	108	24	6	54	14	4	54	12	2	54	10	2
Process only innovators	32	9	2	21	7	1	21	7	1	11	2	1
Product and process innovators	164	49	15	93	21	7	90	21	7	71	28	8
Enterprises with only on-going and/or abandoned innovations	24	4	3	16	2	1	15	2	1	8	2	2
Enterprises without innovation activity	314	38	7	174	24	6	174	23	6	140	14	1
Proportion of all enterprises (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	51	70	79	52	64	69	51	65	67	51	76	93
Successful innovators	47	66	70	47	61	63	47	62	60	48	72	79
Product only innovators	17	20	18	15	20	20	15	19	13	19	19	14
Process only innovators	5	7	7	6	11	6	6	11	7	4	4	7
Product and process innovators	26	39	46	26	30	37	25	32	40	25	50	57
Enterprises with only on-going and/or abandoned innovations	4	3	10	5	3	6	4	3	7	3	4	14
Enterprises without innovation activity	49	30	21	48	36	31	49	35	33	49	24	7

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.2A

Number of employees, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of employees (thousands)										
All enterprises	42	20	:	20	:	22	5	8	5	4
Enterprises with innovation activity	30	13	:	12	:	18	:	8	5	:
Enterprises without innovation activity	12	8	:	8	:	4	:	1	1	:
Proportion of total number of employees (%)										
All enterprises	100	100	:	100	:	100	100	100	100	100
Enterprises with innovation activity	72	62	:	61	:	81	:	91	90	:
Enterprises without innovation activity	28	38	:	39	:	19	:	9	10	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.2B

Number of employees, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of employees (thousands)												
All enterprises	13	13	17	7	7	6	7	7	5	5	6	11
Enterprises with innovation activity	7	9	14	4	:	:	4	5	3	3	:	:
Enterprises without innovation activity	6	4	2	3	:	:	3	2	2	2	:	:
Proportion of total number of employees (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	53	72	86	52	:	:	52	67	64	54	:	:
Enterprises without innovation activity	47	28	14	48	:	:	48	33	36	46	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.3A

Turnover, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Turnover (EUR million)										
All enterprises	8 731	3 385	:	3 076	:	5 346	1 968	1 520	1 570	287
Enterprises with innovation activity	6 202	1 968	:	1 675	:	4 234	:	1 410	1 357	:
Enterprises without innovation activity	2 529	1 417	:	1 401	:	1 112	:	111	213	:
Proportion of total turnover (%)										
All enterprises	100	100	:	100	:	100	100	100	100	100
Enterprises with innovation activity	71	58	:	54	:	79	:	93	86	:
Enterprises without innovation activity	29	42	:	46	:	21	:	7	14	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.3B

Turnover, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Turnover (EUR million)												
All enterprises	2 215	2 752	3 764	932	1 284	1 169	918	1 225	933	1 283	1 467	2 595
Enterprises with innovation activity	1 045	2 026	3 131	:	773	:	455	728	492	:	1 253	:
Enterprises without innovation activity	1 170	726	633	:	512	:	464	496	441	:	214	:
Proportion of total turnover (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	47	74	83	:	60	:	50	59	53	:	85	:
Enterprises without innovation activity	53	26	17	:	40	:	50	41	47	:	15	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.4A

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators	25	26	:	26	:	25	:	:	:	:
Product only innovators	21	22	:	23	:	20	0	:	:	31
Product and process innovators	28	28	:	27	:	29	:	14	38	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.4B

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators	24	27	40	26	:	:	26	:	:	21	:	:
Product only innovators	21	17	37	24	:	:	24	:	:	18	:	:
Product and process innovators	26	32	41	28	30	17	27	30	17	23	33	63

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.5A

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators										
From unchanged or marginally modified products	64	45	:	37	:	73	:	:	:	:
From new or significantly improved products, not new to the market	35	53	:	61	:	26	:	:	:	:
From new or significantly improved products, new to the market	1	2	:	2	:	1	:	:	:	:
Product only innovators										
From unchanged or marginally modified products	70	61	:	47	:	75	72	:	:	44
From new or significantly improved products, not new to the market	29	38	:	52	:	24	28	:	:	52
From new or significantly improved products, new to the market	1	1	:	1	:	1	0	:	:	3
Product and process innovators										
From unchanged or marginally modified products	60	32	:	32	:	71	:	75	79	:
From new or significantly improved products, not new to the market	38	65	:	65	:	27	:	24	18	:
From new or significantly improved products, new to the market	2	3	:	3	:	1	:	0	2	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.5B

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators												
From unchanged or marginally modified products	19	50	90	25	:	:	25	:	:	15	:	:
From new or significantly improved products, not new to the market	78	48	10	71	:	:	71	:	:	83	:	:
From new or significantly improved products, new to the market	2	2	1	4	:	:	4	:	:	1	:	:
Product only innovators												
From unchanged or marginally modified products	28	59	98	43	:	:	43	:	:	16	:	:
From new or significantly improved products, not new to the market	71	41	1	54	:	:	54	:	:	83	:	:
From new or significantly improved products, new to the market	2	0	1	3	:	:	3	:	:	1	:	:
Product and process innovators												
From unchanged or marginally modified products	15	43	86	15	45	28	15	45	28	15	42	97
From new or significantly improved products, not new to the market	82	54	13	80	52	71	81	52	71	84	55	2
From new or significantly improved products, new to the market	3	3	1	4	3	2	4	3	2	1	3	1

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.6A

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Intramural R&D	30	26	:	26	:	34	:	31	24	:
Extramural R&D	18	18	:	18	:	18	:	25	21	:
Acquisition of machinery and equipment	17	13	:	14	:	22	:	24	15	:
Acquisition of other external knowledge	7	5	:	5	:	10	:	12	6	:
Training	25	18	:	18	:	32	:	27	24	:
Market introduction of innovations	25	21	:	21	:	29	:	27	18	:
Design, other preparations for production/deliveries	13	14	:	14	:	13	:	12	15	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.6B

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Intramural R&D	26	34	58	25	:	:	25	20	70	27	:	:
Extramural R&D	16	18	41	17	:	:	16	17	40	15	:	:
Acquisition of machinery and equipment	15	18	40	13	:	:	13	12	30	18	:	:
Acquisition of other external knowledge	6	7	24	4	:	:	4	5	20	8	:	:
Training	22	26	49	17	:	:	17	15	50	28	:	:
Market introduction of innovations	23	25	45	22	:	:	22	15	40	24	:	:
Design, other preparations for production/deliveries	12	14	25	13	:	:	12	15	30	11	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.7A

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Product oriented effects										
Increased range of goods or services	15	14	:	14	:	15	:	15	18	:
Increased market or market share	10	9	:	9	:	11	:	3	6	:
Improved quality in goods or services	16	16	:	17	:	16	:	15	6	:
Process oriented effects										
Improved production flexibility	7	8	:	8	:	5	:	3	3	:
Increased production capacity	8	10	:	10	:	5	:	3	3	:
Reduced labour costs per produced unit	4	5	:	5	:	2	:	3	0	:
Reduced materials and energy per produced unit	2	2	:	2	:	1	:	0	0	:
Other effects										
Improved environmental impact or health and safety aspects	4	5	:	6	:	3	:	0	3	:
Met regulations or standards	7	8	:	8	:	5	:	6	0	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.7B

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Product oriented effects												
Increased range of goods or services	12	16	41	13	:	:	13	10	50	11	:	:
Increased market or market share	9	14	4	9	:	:	9	12	0	9	:	:
Improved quality in goods or services	16	12	29	18	:	:	18	5	40	14	:	:
Process oriented effects												
Improved production flexibility	6	5	25	6	:	:	6	5	40	5	:	:
Increased production capacity	8	7	17	9	:	:	9	15	20	6	:	:
Reduced labour costs per produced unit	3	2	17	5	:	:	5	0	30	1	:	:
Reduced materials and energy per produced unit	2	0	4	3	:	:	3	0	0	1	:	:
Other effects												
Improved environmental impact or health and safety aspects	4	4	17	5	:	:	5	2	30	2	:	:
Met regulations or standards	6	7	17	7	:	:	7	7	30	5	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.8A

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity	9	12	:	12	:	5	:	0	0	:
Successful innovators	9	13	:	13	:	5	:	:	0	:
Enterprises with only on-going and/or abandoned innovations	0	0	:	0	:	0	:	:	~	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.8B

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity	8	7	18	11	:	:	11	10	40	5	:	:
Successful innovators	9	:	:	12	:	:	12	:	:	6	:	:
Enterprises with only on-going and/or abandoned innovations	0	:	:	0	:	:	0	:	:	0	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.9A

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All partners	24	22	0	22	33	26	24	12	27	32
National	20	18	0	18	33	22	18	12	27	27
EU/EFTA	11	9	0	9	33	12	12	9	0	18
Candidate countries	2	2	0	2	0	2	0	3	0	3
United States	4	4	0	4	0	4	4	3	0	7
Japan	0	1	0	1	0	0	0	0	0	0
Others	3	1	0	1	0	4	6	3	3	4

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.9B

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All partners	23	23	37	22	16	44	22	17	50	24	29	31
National	19	17	37	18	9	44	18	10	50	21	24	31
EU/EFTA	9	12	25	8	12	26	7	12	30	11	12	23
Candidate countries	2	2	4	2	2	9	2	2	10	2	2	0
United States	3	4	17	3	2	26	3	2	30	4	5	8
Japan	1	0	0	1	0	0	1	0	0	0	0	0
Others	2	4	8	1	2	9	1	2	10	4	5	8

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.10A

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Internal sources										
Within the enterprise	26	23	:	24	:	30	:	22	27	:
Other enterprises within the enterprise group	3	1	:	1	:	4	:	3	3	:
Market sources										
Suppliers of equipment, materials, components or software	7	8	:	7	:	7	:	6	0	:
Clients or customers	16	16	:	16	:	15	:	13	12	:
Competitors and other enterprises from the same industry	4	4	:	4	:	4	:	3	6	:
Institutional sources										
Universities or other higher education institutes	1	0	:	0	:	2	:	0	0	:
Government or private non-profit research institutes	2	3	:	3	:	1	:	0	3	:
Other sources										
Professional conferences, meetings, journals	3	2	:	2	:	4	:	0	6	:
Fairs, exhibitions	5	5	:	5	:	5	:	0	3	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.10B

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Internal sources												
Within the enterprise	25	28	37	24	:	:	25	15	40	26	:	:
Other enterprises within the enterprise group	2	4	8	1	:	:	1	2	0	3	:	:
Market sources												
Suppliers of equipment, materials, components or software	7	5	25	8	:	:	7	0	40	5	:	:
Clients or customers	15	13	34	16	:	:	16	7	50	13	:	:
Competitors and other enterprises from the same industry	4	6	0	4	:	:	4	7	0	4	:	:
Institutional sources												
Universities or other higher education institutes	1	1	4	0	:	:	0	0	10	2	:	:
Government or private non-profit research institutes	2	1	9	2	:	:	2	0	20	1	:	:
Other sources												
Professional conferences, meetings, journals	3	5	0	2	:	:	1	5	0	5	:	:
Fairs, exhibitions	6	5	0	6	:	:	6	2	0	5	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.11A

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Seriously delayed	7	6	:	6	:	9	:	9	6	:
Prevented to be started	11	10	:	10	:	12	:	6	6	:
Burdened/encumbered with other serious problems	9	10	:	10	:	9	:	0	3	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.11B

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Seriously delayed	7	8	12	6	:	:	6	5	10	8	:	:
Prevented to be started	12	8	8	12	:	:	11	2	10	12	:	:
Burdened/encumbered with other serious problems	10	8	4	10	:	:	11	10	10	10	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.12A

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	5	5	:	5	:	5	:	3	0	:
Innovation costs too high	8	7	:	7	:	8	:	0	6	:
Lack of appropriate sources of finance	8	11	:	11	:	4	:	0	0	:
Internal factors										
Organisational rigidities within the enterprise	0	0	:	0	:	0	:	0	0	:
Lack of qualified personnel	3	2	:	2	:	3	:	3	0	:
Lack of information on technology	1	1	:	1	:	1	:	0	3	:
Lack of information on markets	3	3	:	3	:	2	:	0	0	:
Other factors										
Insufficient flexibility of regulations or standards	3	3	:	3	:	3	:	6	0	:
Lack of customer responsiveness to new goods or services	1	1	:	1	:	2	:	0	0	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.12B

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	6	1	0	6	:	:	5	2	0	7	:	:
Innovation costs too high	8	7	0	8	:	:	8	5	0	8	:	:
Lack of appropriate sources of finance	9	2	0	13	:	:	14	2	0	5	:	:
Internal factors												
Organisational rigidities within the enterprise	0	0	0	1	:	:	1	0	0	0	:	:
Lack of qualified personnel	3	2	4	2	:	:	2	2	10	4	:	:
Lack of information on technology	1	1	0	1	:	:	1	0	0	0	:	:
Lack of information on markets	2	4	4	3	:	:	3	2	10	2	:	:
Other factors												
Insufficient flexibility of regulations or standards	3	1	8	3	:	:	3	2	10	3	:	:
Lack of customer responsiveness to new goods or services	1	1	4	1	:	:	1	0	10	2	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.13A

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	1	1	:	1	:	1	:	3	0	:
Innovation costs too high	1	1	:	1	:	1	:	7	0	:
Lack of appropriate sources of finance	0	0	:	0	:	0	:	0	0	:
Internal factors										
Organisational rigidities within the enterprise	0	0	:	0	:	0	:	0	0	:
Lack of qualified personnel	1	1	:	1	:	2	:	7	0	:
Lack of information on technology	0	0	:	0	:	0	:	0	0	:
Lack of information on markets	0	0	:	0	:	0	:	0	0	:
Other factors										
Insufficient flexibility of regulations or standards	1	1	:	1	:	0	:	0	0	:
Lack of customer responsiveness to new goods or services	0	0	:	0	:	0	:	0	0	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.13B

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	1	5	0	1	:	:	1	5	0	1	:	:
Innovation costs too high	1	3	0	1	:	:	1	0	0	1	:	:
Lack of appropriate sources of finance	0	0	0	0	:	:	0	0	0	0	:	:
Internal factors												
Organisational rigidities within the enterprise	0	0	0	0	:	:	0	0	0	0	:	:
Lack of qualified personnel	1	5	0	1	:	:	1	5	0	2	:	:
Lack of information on technology	0	0	0	0	:	:	0	0	0	0	:	:
Lack of information on markets	0	0	0	0	:	:	0	0	0	0	:	:
Other factors												
Insufficient flexibility of regulations or standards	1	0	0	1	:	:	1	0	0	0	:	:
Lack of customer responsiveness to new goods or services	0	0	0	0	:	:	0	0	0	0	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.14A

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All enterprises	3	3	:	3	:	3	0	0	2	9
Enterprises with innovation activity	5	5	:	5	:	5	:	0	3	:
Enterprises without innovation activity	0	0	:	0	:	0	:	0	0	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.14B

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All enterprises	3	2	7	3	3	6	3	3	7	3	2	7
Enterprises with innovation activity	5	4	8	5	:	:	5	5	10	5	:	:
Enterprises without innovation activity	0	0	0	0	:	:	0	0	0	0	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.15A

Proportion of enterprises that made use of the following protection methods, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.15B

Proportion of enterprises that made use of the following protection methods, 2000 (%)

Information for this standard table is not available.

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.16A

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Strategy	44	39	:	39	:	50	:	38	45	:
Management	31	25	:	25	:	38	:	34	33	:
Organisation	45	40	:	40	:	52	:	43	48	:
Marketing	41	35	:	35	:	47	:	46	42	:
Aesthetic or other subjective changes	47	48	:	49	:	46	:	47	45	:
Enterprises without innovation activity										
Strategy	23	20	:	20	:	28	:	39	33	:
Management	17	12	:	13	:	23	:	22	20	:
Organisation	27	26	:	26	:	28	:	36	47	:
Marketing	20	16	:	16	:	27	:	21	40	:
Aesthetic or other subjective changes	14	15	:	15	:	12	:	14	33	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table IS.16B

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Strategy	40	58	50	35	:	:	36	54	40	46	:	:
Management	28	38	46	21	:	:	21	41	30	37	:	:
Organisation	40	61	66	35	:	:	35	56	50	45	:	:
Marketing	38	47	50	33	:	:	34	39	40	44	:	:
Aesthetic or other subjective changes	47	48	45	50	:	:	50	44	50	44	:	:
Enterprises without innovation activity												
Strategy	21	36	49	16	:	:	16	41	40	27	:	:
Management	16	22	34	10	:	:	10	23	40	23	:	:
Organisation	25	41	51	22	:	:	22	50	60	28	:	:
Marketing	20	22	32	16	:	:	16	14	20	25	:	:
Aesthetic or other subjective changes	13	19	32	15	:	:	15	18	20	10	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Norway

Table NO.1A

Number of enterprises, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of enterprises (units)										
All enterprises	9 183	4 282	161	3 884	236	4 901	2 036	1 359	329	1 177
Enterprises with innovation activity	3 340	1 684	65	1 521	97	1 656	716	197	144	599
Successful innovators	2 988	1 515	57	1 391	68	1 473	579	178	140	576
Product only innovators	944	310	20	278	12	634	304	45	30	254
Process only innovators	260	153	12	119	22	107	39	26	11	31
Product and process innovators	1 785	1 053	25	994	34	732	236	107	98	291
Enterprises with only on-going and/or abandoned innovations	352	168	8	130	29	183	137	19	4	24
Enterprises without innovation activity	5 843	2 598	96	2 363	139	3 245	1 320	1 163	185	578
Proportion of all enterprises (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	36	39	40	39	41	34	35	14	44	51
Successful innovators	33	35	35	36	29	30	28	13	43	49
Product only innovators	10	7	13	7	5	13	15	3	9	22
Process only innovators	3	4	7	3	9	2	2	2	3	3
Product and process innovators	19	25	15	26	14	15	12	8	30	25
Enterprises with only on-going and/or abandoned innovations	4	4	5	3	12	4	7	1	1	2
Enterprises without innovation activity	64	61	60	61	59	66	65	86	56	49

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.1B

Number of enterprises, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of enterprises (units)												
All enterprises	7 262	1 531	390	3 192	870	220	2 935	765	184	4 070	661	170
Enterprises with innovation activity	2 399	690	250	1 076	443	165	995	386	140	1 324	247	85
Successful innovators	2 145	612	231	975	387	153	909	349	133	1 170	225	78
Product only innovators	731	168	45	187	94	29	172	81	25	544	74	16
Process only innovators	191	50	19	109	35	9	88	25	6	82	15	10
Product and process innovators	1 223	395	167	680	258	115	649	243	102	543	137	52
Enterprises with only on-going and/or abandoned innovations	254	78	19	100	56	12	86	37	7	154	22	7
Enterprises without innovation activity	4 863	841	140	2 116	427	55	1 940	379	44	2 746	414	85
Proportion of all enterprises (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	33	45	64	34	51	75	34	50	76	33	37	50
Successful innovators	30	40	59	31	44	70	31	46	72	29	34	46
Product only innovators	10	11	12	6	11	13	6	11	14	13	11	9
Process only innovators	3	3	5	3	4	4	3	3	3	2	2	6
Product and process innovators	17	26	43	21	30	52	22	32	55	13	21	31
Enterprises with only on-going and/or abandoned innovations	4	5	5	3	6	5	3	5	4	4	3	4
Enterprises without innovation activity	67	55	36	66	49	25	66	50	24	67	63	50

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.2A

Number of employees, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Number of employees (thousands)										
All enterprises	587	315	33	265	17	273	74	105	43	50
Enterprises with innovation activity	321	197	26	162	10	124	30	33	31	29
Enterprises without innovation activity	267	118	8	103	7	149	44	72	13	21
Proportion of total number of employees (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	55	63	77	61	57	45	41	32	71	58
Enterprises without innovation activity	45	37	23	39	43	55	59	68	29	42

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.2B

Number of employees, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Number of employees (thousands)												
All enterprises	148	154	285	69	89	157	64	78	123	79	65	128
Enterprises with innovation activity	53	72	196	25	47	125	23	41	98	28	25	71
Enterprises without innovation activity	95	82	89	45	42	31	41	37	25	51	41	58
Proportion of total number of employees (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	36	47	69	36	53	80	36	53	79	36	38	55
Enterprises without innovation activity	64	53	31	64	47	20	64	47	21	64	62	45

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.3A

Turnover, 2000

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Turnover (EUR million)										
All enterprises	227 505	124 931	48 215	66 352	10 364	102 574	48 351	27 272	17 381	9 569
Enterprises with innovation activity	153 907	97 437	45 145	45 135	7 157	56 469	24 184	13 280	12 690	6 316
Enterprises without innovation activity	73 598	27 494	3 070	21 217	3 207	46 104	24 168	13 993	4 691	3 253
Proportion of total turnover (%)										
All enterprises	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	68	78	94	68	69	55	50	49	73	66
Enterprises without innovation activity	32	22	6	32	31	45	50	51	27	34

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.3B

Turnover, 2000

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Turnover (EUR million)												
All enterprises	47 022	55 693	124 790	18 264	25 860	80 807	12 628	17 005	36 719	28 758	29 833	43 983
Enterprises with innovation activity	18 561	30 984	104 362	6 921	17 311	73 205	3 920	10 555	30 661	11 640	13 673	31 157
Enterprises without innovation activity	28 461	24 709	20 428	11 343	8 549	7 602	8 708	6 450	6 059	17 118	16 160	12 826
Proportion of total turnover (%)												
All enterprises	100	100	100	100	100	100	100	100	100	100	100	100
Enterprises with innovation activity	39	56	84	38	67	91	31	62	84	40	46	71
Enterprises without innovation activity	61	44	16	62	33	9	69	38	16	60	54	29

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.4A

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators	47	45	31	46	38	49	44	51	:	:
Product only innovators	46	44	43	46	16	47	45	46	:	:
Product and process innovators	48	46	20	46	46	50	42	52	26	65

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.4B

Product innovators: proportion that introduced new or improved products to the market, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators	49	41	49	45	43	51	46	43	53	51	37	44
Product only innovators	49	36	42	49	36	41	51	35	44	49	36	44
Product and process innovators	49	43	51	44	46	54	45	46	55	54	38	44

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.5A

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All product innovators										
From unchanged or marginally modified products	87	89	:	80	:	84	82	90	:	:
From new or significantly improved products, not new to the market	9	8	:	15	:	11	15	5	:	:
From new or significantly improved products, new to the market	3	3	:	5	:	4	3	5	:	:
Product only innovators										
From unchanged or marginally modified products	79	84	:	81	:	74	63	89	:	:
From new or significantly improved products, not new to the market	14	11	:	15	:	17	28	5	:	:
From new or significantly improved products, new to the market	7	5	:	4	:	8	10	6	:	:
Product and process innovators										
From unchanged or marginally modified products	88	89	:	80	:	87	90	91	92	60
From new or significantly improved products, not new to the market	9	8	:	15	:	10	10	5	7	27
From new or significantly improved products, new to the market	3	3	:	5	:	3	1	4	1	13

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.5B

Product innovators: turnover breakdown, 2000 (% of total turnover)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All product innovators												
From unchanged or marginally modified products	76	82	90	78	83	90	77	79	81	76	81	90
From new or significantly improved products, not new to the market	16	13	7	16	11	7	15	15	15	17	15	8
From new or significantly improved products, new to the market	7	5	2	6	6	2	8	6	4	8	4	3
Product only innovators												
From unchanged or marginally modified products	72	80	84	83	86	79	78	84	77	68	67	88
From new or significantly improved products, not new to the market	16	16	11	12	8	17	13	12	18	18	32	6
From new or significantly improved products, new to the market	12	4	5	5	6	4	8	4	4	14	2	6
Product and process innovators												
From unchanged or marginally modified products	79	84	91	77	81	91	77	77	81	79	87	90
From new or significantly improved products, not new to the market	16	11	7	17	13	7	15	16	15	16	8	8
From new or significantly improved products, new to the market	5	5	2	6	6	2	8	7	4	5	5	2

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.6A

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Intramural R&D	55	61	65	62	31	50	34	46	24	76
Extramural R&D	31	38	54	35	70	23	14	27	31	32
Acquisition of machinery and equipment	37	37	31	38	30	36	30	42	45	39
Acquisition of other external knowledge	21	16	15	15	27	27	25	23	54	23
Training	41	40	26	40	45	42	34	38	67	47
Market introduction of innovations	28	26	12	28	6	30	28	26	41	31
Design, other preparations for production/deliveries	22	26	18	27	5	19	19	13	17	21

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.6B

Enterprises with innovation activity: proportion having engaged in specified innovation expenditure activities, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Intramural R&D	51	65	71	53	72	79	54	75	82	49	52	55
Extramural R&D	24	45	62	28	52	68	26	50	66	20	32	51
Acquisition of machinery and equipment	37	36	40	37	37	41	38	38	43	36	36	38
Acquisition of other external knowledge	22	19	22	15	17	20	14	17	20	28	21	27
Training	40	44	45	39	39	46	39	41	46	40	53	44
Market introduction of innovations	27	27	35	25	26	34	26	28	39	29	29	38
Design, other preparations for production/deliveries	22	22	28	25	26	28	26	29	32	19	15	26

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.7A

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Product oriented effects										
Increased range of goods or services	23	21	18	22	0	25	20	25	17	34
Increased market or market share	16	17	17	18	2	15	7	14	12	26
Improved quality in goods or services	26	26	26	27	10	25	14	31	24	37
Process oriented effects										
Improved production flexibility	14	20	23	21	4	8	1	16	14	12
Increased production capacity	16	22	21	23	12	10	3	19	21	13
Reduced labour costs per produced unit	13	19	17	20	6	7	2	15	12	10
Reduced materials and energy per produced unit	5	9	11	9	1	2	0	2	5	2
Other effects										
Improved environmental impact or health and safety aspects	10	14	23	14	5	6	7	11	2	5
Met regulations or standards	11	14	13	14	15	8	6	11	3	10

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.7B

Enterprises with innovation activity: proportion that cited the following effects as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Product oriented effects												
Increased range of goods or services	23	22	21	20	22	21	20	25	24	26	22	21
Increased market or market share	16	16	13	18	16	15	19	17	16	15	16	11
Improved quality in goods or services	27	23	23	28	21	24	29	22	24	25	29	20
Process oriented effects												
Improved production flexibility	14	14	15	23	14	17	24	15	17	7	13	12
Increased production capacity	16	17	22	23	19	24	24	21	23	9	13	18
Reduced labour costs per produced unit	12	14	19	20	17	22	21	18	22	6	9	14
Reduced materials and energy per produced unit	4	8	7	8	9	10	9	10	9	1	5	1
Other effects												
Improved environmental impact or health and safety aspects	10	10	17	14	11	21	15	12	19	6	8	8
Met regulations or standards	11	11	14	15	12	16	14	14	16	7	9	9

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.8A

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity	22	26	37	27	5	18	13	21	5	25
Successful innovators	21	27	40	27	7	16	9	21	:	:
Enterprises with only on-going and/or abandoned innovations	26	20	12	25	0	32	31	17	:	:

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.8B

Proportion of enterprises with innovation activity receiving public funding, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity	20	25	36	21	30	46	22	32	48	18	14	16
Successful innovators	19	26	37	22	32	48	22	32	49	16	15	15
Enterprises with only on-going and/or abandoned innovations	30	17	21	20	21	17	23	30	29	36	4	29

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.9A

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All partners	38	38	49	37	46	37	33	41	49	39
National	33	34	45	33	46	33	29	38	46	32
EU/EFTA	15	18	28	19	4	12	11	12	8	15
Candidate countries	1	2	3	2	0	0	0	1	0	1
United States	6	7	19	7	1	4	2	5	5	7
Japan	1	2	5	2	0	1	1	1	0	1
Others	3	3	5	3	0	4	5	2	1	3

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.9B

Enterprises with innovation activity: proportion with cooperation arrangements on innovation activities, by location of partner, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All partners	33	44	65	30	45	70	30	44	71	36	42	55
National	30	38	58	28	38	62	27	37	61	31	37	51
EU/EFTA	11	23	38	11	26	44	12	27	46	10	19	27
Candidate countries	0	2	4	1	2	5	1	2	6	0	2	2
United States	4	8	20	4	8	23	4	8	22	3	6	15
Japan	1	2	6	1	3	8	1	3	8	1	1	2
Others	2	3	10	1	3	12	1	3	13	3	4	6

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.10A

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Internal sources										
Within the enterprise	47	50	53	52	20	44	26	51	32	65
Other enterprises within the enterprise group	14	12	17	11	11	16	15	15	15	17
Market sources										
Suppliers of equipment, materials, components or software	20	21	17	22	15	19	19	20	29	15
Clients or customers	35	35	31	37	7	36	32	26	18	48
Competitors and other enterprises from the same industry	10	9	9	10	6	11	12	5	14	11
Institutional sources										
Universities or other higher education institutes	3	4	10	4	2	1	1	1	1	2
Government or private non-profit research institutes	5	6	11	5	11	4	7	3	0	2
Other sources										
Professional conferences, meetings, journals	13	10	8	10	11	15	18	9	6	17
Fairs, exhibitions	11	10	2	11	1	12	20	6	2	7

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.10B

Enterprises with innovation activity: proportion citing specified sources of information as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Internal sources												
Within the enterprise	45	51	54	48	53	53	50	56	56	42	49	54
Other enterprises within the enterprise group	12	17	23	8	16	25	8	17	24	15	19	19
Market sources												
Suppliers of equipment, materials, components or software	20	19	25	21	21	25	21	22	23	19	15	26
Clients or customers	36	35	33	35	34	37	37	37	41	36	38	26
Competitors and other enterprises from the same industry	10	9	13	9	8	15	9	9	14	11	9	11
Institutional sources												
Universities or other higher education institutes	2	4	5	4	3	8	4	3	6	1	5	0
Government or private non-profit research institutes	4	7	8	5	7	9	5	6	7	4	6	5
Other sources												
Professional conferences, meetings, journals	13	11	12	10	9	13	10	9	14	16	15	11
Fairs, exhibitions	11	11	6	9	12	7	10	13	9	13	10	4

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.11A

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Seriously delayed	14	15	16	15	8	13	6	15	14	20
Prevented to be started	13	13	23	13	4	13	11	14	9	15
Burdened/encumbered with other serious problems	38	38	33	39	29	37	28	36	29	49

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.11B

Enterprises with innovation activity: proportion that cited the following problems with their innovation activity, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Seriously delayed	13	14	21	13	17	21	13	18	20	13	9	22
Prevented to be started	12	13	20	12	14	19	12	15	19	12	11	21
Burdened/encumbered with other serious problems	36	40	43	37	39	44	38	40	44	36	41	40

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.12A

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	15	17	17	17	5	14	4	13	12	25
Innovation costs too high	16	19	20	19	8	14	6	13	16	24
Lack of appropriate sources of finance	14	13	13	13	4	16	12	11	1	25
Internal factors										
Organisational rigidities within the enterprise	6	6	13	6	13	5	3	6	6	8
Lack of qualified personnel	4	5	3	5	3	3	2	1	1	7
Lack of information on technology	2	2	0	2	6	3	3	0	2	3
Lack of information on markets	3	3	3	3	0	2	0	0	0	5
Other factors										
Insufficient flexibility of regulations or standards	4	3	5	3	1	5	7	1	11	2
Lack of customer responsiveness to new goods or services	4	4	6	5	1	4	2	3	1	7

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.12B

Enterprises with innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	15	16	17	18	14	17	19	15	16	12	20	16
Innovation costs too high	16	18	17	19	18	18	19	19	19	13	17	15
Lack of appropriate sources of finance	15	11	14	12	12	17	13	13	18	18	10	7
Internal factors												
Organisational rigidities within the enterprise	6	6	9	6	7	8	5	6	7	5	4	11
Lack of qualified personnel	5	4	3	6	5	2	6	5	1	3	2	5
Lack of information on technology	2	2	1	2	2	1	2	3	1	3	2	1
Lack of information on markets	2	3	4	3	3	5	3	3	6	2	1	1
Other factors												
Insufficient flexibility of regulations or standards	4	3	3	4	2	2	4	2	1	5	6	4
Lack of customer responsiveness to new goods or services	4	4	4	5	4	5	5	3	5	4	3	2

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.13A

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Economic factors										
Excessive perceived economic risks	8	11	0	12	2	6	4	5	6	13
Innovation costs too high	8	10	3	11	5	6	5	5	6	10
Lack of appropriate sources of finance	5	7	4	7	1	3	1	3	4	8
Internal factors										
Organisational rigidities within the enterprise	2	2	2	2	0	2	3	1	1	2
Lack of qualified personnel	3	3	1	3	0	3	5	1	0	4
Lack of information on technology	1	1	0	1	0	1	0	1	0	1
Lack of information on markets	2	1	0	1	5	2	2	1	0	3
Other factors										
Insufficient flexibility of regulations or standards	2	4	0	4	1	1	0	2	3	1
Lack of customer responsiveness to new goods or services	4	5	7	5	4	4	4	3	2	7

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.13B

Enterprises without innovation activity: proportion that cited the following hampering factors as highly important, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Economic factors												
Excessive perceived economic risks	8	7	4	11	9	5	12	10	7	6	5	2
Innovation costs too high	8	7	1	10	8	2	11	9	0	7	5	1
Lack of appropriate sources of finance	5	4	2	7	7	0	7	7	0	4	1	4
Internal factors												
Organisational rigidities within the enterprise	2	3	3	2	3	4	2	3	5	2	4	2
Lack of qualified personnel	3	2	1	3	4	0	3	4	0	3	1	1
Lack of information on technology	1	2	1	1	2	2	1	3	2	0	2	0
Lack of information on markets	2	1	1	1	1	4	1	2	2	2	0	0
Other factors												
Insufficient flexibility of regulations or standards	2	1	4	4	3	0	4	3	0	1	0	6
Lack of customer responsiveness to new goods or services	5	3	1	5	3	2	5	3	2	4	4	1

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.14A

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
All enterprises	7	9	20	9	1	6	7	2	0	9
Enterprises with innovation activity	18	20	42	20	1	15	19	11	1	15
Enterprises without innovation activity	1	2	5	2	1	1	0	0	0	2

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.14B

Proportion of enterprises that applied for at least one patent, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
All enterprises	5	12	25	5	14	37	5	15	38	5	8	11
Enterprises with innovation activity	14	23	37	13	26	46	14	27	46	14	19	20
Enterprises without innovation activity	1	2	4	1	3	9	1	3	11	0	1	1

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.15A

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Registration of design patterns	10	10	11	11	0	10	15	7	1	6
Trademarks	27	23	23	24	1	31	40	19	15	29
Copyright	14	8	14	8	1	21	23	15	3	24
Secrecy	33	35	43	36	10	31	35	25	9	35
Complexity of design	20	21	18	22	4	19	16	16	9	27
Lead-time advantage on competitors	42	42	52	44	4	42	41	35	18	51
Enterprises without innovation activity										
Registration of design patterns	2	1	1	1	0	2	4	1	1	1
Trademarks	8	7	2	8	3	9	17	2	2	6
Copyright	3	2	1	2	0	3	5	1	3	5
Secrecy	3	5	5	6	1	2	2	1	1	4
Complexity of design	2	3	4	3	0	2	2	1	0	3
Lead-time advantage on competitors	4	5	6	5	2	3	4	2	3	5

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.15B

Proportion of enterprises that made use of the following protection methods, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Registration of design patterns	9	12	12	8	14	15	8	16	15	10	7	6
Trademarks	26	30	34	18	31	36	18	34	39	32	27	29
Copyright	15	12	17	6	9	18	6	10	17	22	17	15
Secrecy	32	34	43	31	37	54	32	39	54	33	28	22
Complexity of design	20	20	21	20	21	24	21	23	24	20	19	16
Lead-time advantage on competitors	41	43	50	39	44	58	41	47	60	43	41	34
Enterprises without innovation activity												
Registration of design patterns	1	2	6	1	3	13	1	3	16	2	2	2
Trademarks	8	10	14	6	11	20	7	12	23	9	10	9
Copyright	2	3	6	1	3	9	2	3	11	3	4	4
Secrecy	3	5	4	5	7	9	5	7	9	2	3	1
Complexity of design	2	4	4	2	5	7	2	6	9	2	3	1
Lead-time advantage on competitors	3	5	5	4	7	7	4	8	9	3	4	4

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.16A

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total	Industry	Mining and quarrying	Manu-facturing	Electricity, gas and water supply	Services	Wholesale and commission trade	Transport and communi-cation	Financial inter-mediation	Computer activities; R&D; engineering and consultancy; technical testing and analysis
Enterprises with innovation activity										
Strategy	42	42	47	41	49	41	29	36	43	57
Management	29	29	34	29	32	30	24	29	26	38
Organisation	51	47	57	46	55	54	48	49	52	64
Marketing	33	31	26	32	15	35	32	30	35	42
Aesthetic or other subjective changes	28	28	9	31	2	27	24	28	20	32
Enterprises without innovation activity										
Strategy	18	18	8	17	38	18	17	12	31	29
Management	10	12	8	12	15	9	8	8	19	12
Organisation	22	22	18	21	45	21	21	14	46	27
Marketing	14	15	8	15	19	13	15	10	18	15
Aesthetic or other subjective changes	7	8	0	8	9	7	9	4	9	6

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

Table NO.16B

Proportion of enterprises that undertook any of the following important strategic or organisational changes, 2000 (%)

	Total			Industry			Manufacturing			Services		
	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large	Small	Medium	Large
Enterprises with innovation activity												
Strategy	41	41	51	41	42	49	40	41	47	41	39	54
Management	30	28	32	29	27	37	29	28	34	30	29	24
Organisation	48	55	69	42	51	67	42	50	66	52	60	72
Marketing	34	30	32	31	30	30	33	31	31	36	30	38
Aesthetic or other subjective changes	29	24	26	30	27	24	32	29	28	28	20	29
Enterprises without innovation activity												
Strategy	17	23	23	17	22	16	17	22	16	17	25	27
Management	9	18	18	11	16	15	11	15	11	7	20	20
Organisation	19	36	43	20	32	40	19	31	43	18	39	45
Marketing	13	18	16	14	17	9	14	16	9	12	19	21
Aesthetic or other subjective changes	7	8	8	8	9	9	8	9	9	6	7	7

Source: Eurostat, NewCronos (theme9/innovat/inn_cis3).

METHODOLOGY

Methodology

THE THIRD COMMUNITY INNOVATION SURVEY (CIS3)

The focus of the Community Innovation Survey (CIS) is the enterprise, conceptually referred to as the 'innovation dynamo' in the Oslo manual [(1)] for innovation statistics. The CIS was designed to overcome seeing innovation as a linear model, whereby innovation follows on from the creative activity of invention. Instead, the data collected from this survey covers and embodies the diffusion of knowledge.

Innovation is a complex process with many interacting components. The CIS3 questionnaire is broken down into 12 different sections:

1. Product innovation;
2. Process innovation;
3. Not yet completed or abandoned innovation activities;
4. Innovation activity and expenditure;
5. Intramural research and experimental development (R&D);
6. Effects of innovation;
7. Public funding of innovation;
8. Innovation co-operation;
9. Sources of information for innovation;
10. Hampered innovation activity;
11. Patents and other protection methods;
12. Other important strategical and organisational changes in the enterprise.

In order to ensure comparability across countries, Eurostat, in close cooperation with the EU Member States, developed a standard core questionnaire, with an accompanying set of definitions and methodological recommendations. Countries participated on the basis of gentleman's agreements and usually applied the harmonised concepts, definitions and methodological recommendations. A copy of the standard questionnaire that was sent to enterprises is provided on page 290.

SCOPE AND COVERAGE

REFERENCE PERIOD

For CIS3 there were three reference periods for the data collected. The first relates to a set of questions for the whole of the period 1998-2000, for example whether the enterprise introduced an innovation at any time during this three-year period. The second set of questions refers uniquely to the reference year 2000, for example, indicators such as innovation expenditure. Finally, a limited number of basic economic indicators were requested for both 1998 and 2000, for example the levels of turnover and employment. Note that for Norway the period 1999 to 2001 was used instead of 1998 to 2000.

It is possible that in the future, innovation surveys will be carried out on a more frequent basis than the current four-yearly cycle and that the collection of data could be integrated within national business surveys or other types of surveys.

EXTRACTION OF DATA

The CIS data presented in this publication was extracted from the NewCronos database at the beginning of January 2004; supplementary information from various other Eurostat sources was extracted during the final quarter of 2003. The accompanying text was written during the final quarter of 2003 and the first quarter of 2004.

NON-AVAILABILITY AND MISSING DATA

The colon (:) is used in tables to represent data that is not available, either because it has not been provided to Eurostat or because it is confidential. For these reasons certain tables are also missing for some countries. In figures (charts), missing information is footnoted as not available. The tilde (~) is used when it is not possible to compute a value (for example, when the denominator of a ratio is zero).

[(1)] The measurement of scientific and technological activities - proposed guidelines for collecting and interpreting technological innovation data. The first version of the Oslo Manual was issued in 1992, and the surveys undertaken using it, notably the CIS, showed that it is possible to develop and collect data on the complex and differentiated process of innovation. The second edition of the manual takes the original framework of concepts, definitions and methodology and updates them to incorporate survey experience and improved understanding of the innovation process and also to take in a wider range of industries. It provides guidelines by which comparable innovation indicators can be developed in OECD countries, and discusses the analytical and policy problems to which the indicators are relevant. The Manual has two objectives: to provide a framework within which existing surveys can evolve towards comparability; and to assist newcomers to this important field.

TARGET POPULATION

The target population of CIS3 is determined by the statistical unit, country, size of enterprise, and principal activity.

NACE - ECONOMIC ACTIVITY[2]

The target population in terms of economic activities is shown in the table below.

Total	Business economy: defined as industry and services (see below)
C, D, E	Industry
C	Mining and quarrying
D	Manufacturing
E	Electricity, gas and water supply
51, I, J, 72, 73, 74.2, 74.3	Services
51	Wholesale trade and commission trade
I	Transport and communication
J	Financial intermediation
72, 73, 74.2, 74.3	Business services (computer activities; R&D; engineering activities and consultancy; technical testing and analysis)

In practice the following exceptions to the target population were made.

Belgium: no data was collected for NACE Divisions 11 and 13 and hence data for Subsections CA and CB, Section C, and the industry and business economy totals do not include these Divisions.

Greece: no data was collected for NACE Division 73 and hence data for the aggregate of Divisions 72, 73 and Groups 74.2 and 74.3, as well as the services and business economy totals do not include this Division.

France: no data was collected for NACE Divisions 13 and 16, Group 51.1, nor Divisions 60 to 63. Hence data for Subsection CB, Section C, and the industry and business economy totals do not include Division 13. Data for Subsection DA, Section D, and the industry and business economy totals do not include Division 16. Data for Division 51 and the services and business economy totals do not include Group 51.1. Data for Section I and the services and business economy totals do not include Divisions 60 to 63.

Luxembourg: no data was collected for NACE Divisions 10 to 14 and hence there is no data for Subsections CA or CB, nor for Section C, and the industrial and business economy totals do not include Section C.

The Netherlands: no data was collected for NACE Division 13 and hence data for Subsection CB, Section C, and the industry and business economy totals do not include this Division.

Austria: no data was collected for NACE Divisions 10 and 11 and hence there is no data for Subsection CA, and furthermore the data for Section C, and the industry and business economy totals do not include these Divisions.

Sweden: no data was collected for NACE Divisions 11, 13, 14 and 37. Hence data for Subsection CA, Section C, and the industry and business economy totals do not include Division 11. There is no data for Subsection CB and furthermore the data for Section C, and the industry and business economy totals do not include Divisions 13 and14. Data for Subsection DN, Section D, and the industry and business economy totals do not include Division 37.

[2] Council Regulation (EEC) No 3037/90 of 9 October 1990 on the statistical classification of economic activities in the European Community, available at:
http://forum.europa.eu.int/irc/dsis/bmethods/info/data/new/legislation/nace.html
The complete NACE list can be found at:
http://forum.europa.eu.int/irc/dsis/bmethods/info/data/new/classifications/nace_en.pdf

SIZE-CLASS COVERAGE

The survey results cover enterprises with 10 or more employees. For the purpose of analysis, the following size-class breakdowns are used:

- small enterprises: with 10 to 49 employees;
- medium-sized enterprises: with 50 to 249 employees;
- large enterprises: with 250 or more employees.

The term SME (small and medium-sized enterprises) covers small and medium-sized enterprises, and as such, for the purpose of this publication, refers to all enterprises employing 10-249 employees.

For the purposes of chapter 2, for the manufacturing sector, an aggregate of the medium-sized and large enterprises was made to ensure consistent coverage between CIS2 and CIS3.

In practice, the following deviations from the standard size coverage were implemented.

France: data for industrial activities (NACE Sections C-E) covered only enterprises with 20 employees or more; for the services sector the coverage was the standard coverage of enterprises with 10 employees or more, except in the activity of research and development (NACE Division 73) and part of architectural and engineering activities, related technical consultancy (NACE Group 74.2), where enterprises of all sizes (i.e. also including those with less than 10 employees) were covered.

STATISTICAL UNIT

The statistical unit is the enterprise, as defined in the Council Regulation on statistical units [(3)].

'The enterprise is the smallest combination of legal units that is an organisational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources. An enterprise carries out one or more activities at one or more locations. An enterprise may be a sole legal unit.

Explanatory note

The enterprise thus defined is an economic entity which can therefore, under certain circumstances, correspond to a grouping of several legal units. Some legal units, in fact, perform activities exclusively for other legal units and their existence can only be explained by administrative factors (e.g. tax reasons), without them being of any economic significance. A large proportion of the legal units with no persons employed also belongs to this category. In many cases, the activities of these legal units should be seen as ancillary activities of the parent legal unit they serve, to which they belong and to which they must be attached to form an enterprise used for economic analysis.'

In practice the following units were used:

Unit	Country
Enterprise	EL, FR, IT, LU, NL, AT, PT, SE, IS, NO
Legal unit/enterprise	BE
Legal unit	DK, DE, FI

GEOGRAPHICAL COVERAGE

The survey was carried out in all 15 EU Member States, Iceland and Norway. Furthermore, several other European countries carried out surveys equivalent to CIS3 but their results are not included in this publication.

Totals and averages for the EU were made from a partial set of country information, excluding Ireland, Luxembourg and the United Kingdom; this definition is used consistently throughout the publication (except in subchapter 1.5).

Some countries did not survey certain activities and as a result the CIS3 results were not compiled for particular activities. In order to ensure the availability of EU aggregates, three additional countries have been excluded from the EU aggregates for specific activities - these are listed in the following table.

NACE	EU aggregate also excludes
Subsection CA	AT
Section J	FI
Division 73	EL

[(3)] Council Regulation (EEC) N° 696/93 of 15 March 1993, OJ N° L76 of 30 March 1993.

SURVEY METHODOLOGY

SAMPLING AND COLLECTION

In practice all Member States and Norway carried out CIS3 by way of a stratified sample, while Iceland used a census. It was recommended that the strata be made for at least 3 size-classes (small, medium-sized and large enterprises) and for each NACE Division (with Groups 74.2 and 74.3 as exceptions). It was also recommended that a regional dimension should be taken into account to check that the regional allocation of sampled units was reasonable compared to the regional distribution of the population, although no regional compilation of results was required.

The following stratification plans were used, and the following response rates were achieved.

Country	Strata criteria	Number of strata	Sample rate	Response rate
BE	NACE, size, region	18 activities, 4 size classes, 3 regions	32%	30%
DK	NACE, size	4 activities, 5 size classes	39%	30%
DE	NACE, size, region	21 activities, 3 size classes, 2 regions	12%	21%
EL	NACE, size, region	20 activities, 3 size classes, 3 regions	30%	62%
FR	NACE, size	Mixed: generally NACE Groups, and from 3 to 5 size classes	12%	82%
IT	NACE, size, region	46 activities, 5 size classes, NUTS level 1	20%	62%
LU	NACE, size	9 activities, 3 size classes	45%	72%-73%
NL	NACE, size	41 activities, 3 size classes	43%	55%
AT	NACE, size, region	16 activities; 5 size classes; 3 regions	22%	43%
PT	NACE, size	42 activities, 3 size classes	19%	46%
FI	NACE, size	23 activities, 4 size classes	35%	50%
SE	NACE, size	37 activities, 6 size classes	27%	48%
IS	Census	Census	Census	93% for a pre-survey by phone, 47% for the postal survey
NO	NACE, size	41 activities, 5 size classes	40%	94%

Note: wherever possible the sample rate and response rate refer to the standard population required for CIS3 and these may differ from rates published nationally where a broader activity coverage has been used. The response rate is normally the final rate achieved after sending reminders, but does not take account of estimations made.

The data collection itself was generally done by voluntary, postal surveys, with several reminders. The practices in each country are indicated below.

Note that in many countries the final telephone reminder was often focussed on the largest enterprises.

Country	Media	Status	Reminders
BE	Postal	Voluntary	2 postal
DK	Postal	Voluntary	3 postal, 1 telephone
DE	Postal	Voluntary	2 to 3 postal
EL	E-mail, fax, post, followed by face to face interviews	Voluntary	Not relevant
FR	Postal	Compulsory	Mixture between sectors: 2 postal; 1 postal, 1 telephone; 1 telephone
IT	Postal	Compulsory	1 postal, 1 telephone/postal, 1 telephone
LU	Face to face interviews	Voluntary	Not relevant
NL	Postal	Voluntary	2 postal, 1 telephone
AT	Postal	Voluntary	2 postal, 1 telephone reminder
PT	Postal	Compulsory	Several telephone and fax
FI	Postal	Voluntary	2 postal, 1 telephone
SE	Postal	Voluntary	3 postal
IS	Telephone pre-survey and then postal	Voluntary	2 postal/e-mail, 1 telephone
NO	Postal	Compulsory	3 postal, 1 telephone

INITIAL DATA PROCESSING

Unit non-response

It was recommended that at least two reminders should be sent in order to try to minimise the unit non-response rate. Furthermore, it was recommended that, if the non-response exceeded 30 % based on the ratio between non-responding and operating enterprises in the sample population as a whole, a non-response analysis should be carried out. Such analysis should aim to make it possible to distinguish enterprises with innovation activity from those without innovation activity: at least a 10 % sample of the non-respondent operating enterprises should have been included. In practice, several countries carried out such a non-response analysis.

Item non-response

Item non-response and partial item non-response should be kept at a minimum by asking enterprises for additional information. Item non-response for variables on general and basic information about the enterprise should not exist as this information should be available in the business registers or from other sources. As far as possible item non-response should have been imputed using auxiliary information.

Editing

The data should also have been checked and corrected for inconsistencies. In principle, quality controls have been done on aggregated and micro data, both nationally and by Eurostat.

WEIGHTING FACTORS

The weighting factors should have been based on the ratio between the number of enterprises or employees in the realised sample and the total number of enterprises or employees in each stratum of the frame population, after correction for enterprises that were no longer existing and for reclassification in terms of size or NACE (and after adjustment for non-response). In cases where a non-response analysis was carried out then the results of the non-response analysis were used in the calculation of weighting factors.

AGGREGATION

The compilation of aggregated results from the micro data was carried out by Eurostat, based on micro data and weights provided by Member States.

COMPARABILITY WITH NATIONAL DATA

Note that the results may vary from national publications, for example, due to different target populations (broader activity or enterprise size coverage) and/or different weighting factors or data processing procedures. This is particularly true for Belgium, Denmark, Spain, Italy, Austria, Sweden, Norway and Iceland.

More information on the sources and methods employed in each country are available for data subscribers from Eurostat's reference database NewCronons (http://europa.eu.int/newcronos/) in Theme 9, Domain innovat, Collection inn_cis3.
Additional methodological notes can be obtained by consulting the Oslo Manual, available at:
http://www.oecd.org/dataoecd/35/61/2367580.pdf

QUESTIONNAIRE

CLASSIFICATION OF ENTERPRISES ACCORDING TO THEIR INNOVATION ACTIVITY

The questionnaire, which is reproduced between pages 290 and 298, provides the definitions of many of the concepts specific to innovation. The main ones are repeated here, in so far as they are used to categorise enterprises as having innovation activity or not, and to determine different kinds of innovators.

Innovation

An innovation is a new or significantly improved product (good or service) introduced to the market or the introduction within an enterprise of a new or significantly improved process. Innovations are based on the results of new technological developments, new combinations of existing technology or the utilisation of other knowledge acquired by the enterprise.

Innovations may be developed by the innovating enterprise or by another enterprise; however, purely selling innovations wholly produced and developed by other enterprises is not included as an innovation activity.

Innovations should be new to the enterprise concerned; for product innovations they do not necessarily have to be new to the market and for process innovations the enterprise does not necessarily have to be the first to have introduced the process.

Product innovation

A product innovation is a product (good or service) which is either new or significantly improved with respect to its fundamental characteristics, technical specifications, incorporated software or other immaterial components, intended uses, or user friendliness. Changes of a solely aesthetic nature are not included.

Product innovations may have the following features:

- the new technology leads to a better performance of the good or service;
- a broadening of the product or service range is accomplished.

Examples are: change of materials in goods, introduction of ecological products, use of chipcard systems, electronic banking and insurance, web-related services and e-commerce (but only creating an information site without on-line services is not an innovation).

Process innovation

A process innovation includes new and significantly improved production technology, methods of supplying services and of delivering products. The outcome (of the process) should be significant with respect to the level of output, quality of products or costs of production and distribution. Purely organisational or managerial changes are not included.

Examples are: order picking, tracking and tracing of shipments, connecting (data) communication and transport, bar-code systems, optical processing of data, expert systems, first use of CAD/CAE. ISO-certification is only an innovation when it is directly related to the introduction of new or improved processes, ordering systems, minimisation systems for stocks, product interchange systems, transport-logistics, computer aided logistics.

Enterprises with innovation activity

Enterprises that have had any kind of innovation activity during the survey period, i.e. have introduced or implemented new products and/or processes, had abandoned innovation activity, or had on-going innovation activity at the end of the reference period.

Successful innovators

Enterprises that introduced or implemented new products and/or processes during the reference period. A further classification of successful innovators can be made to distinguish between:

- those that had only introduced product innovations;
- those that had only implemented process innovations;
- those that had done both, introduced product innovations and implemented process innovations.

In all three of these sub-categories of successful innovators these enterprises may additionally have had on-going and/or abandoned innovation activity.

Enterprises without innovation activity

Those enterprises that had no innovation activity whatsoever during the reference period. These enterprises only answered a limited set of questions from the survey in relation to: the absence of innovation activity; factors hampering innovation; patents and other protection methods; and other important strategic and organisational changes within the enterprise.

Divergences from the standard questionnaire

The Spanish data are based on an earlier version of the questionnaire. Among the other countries, a few added extra questions for national purposes and most countries excluded some or all of the optional questions. In a few cases some countries also excluded some of the compulsory questions. In two cases, countries modified the questions from the standard questionnaire and as a result their results are not comparable. These are listed in the table below.

Country	Question	Difference
FR	The enterprise's most significant market	The distinction of local/regional markets that are within national borders on the one hand, or across national borders on the other hand, was not made in the French questionnaire. Both of these categories were absorbed into the single heading "within your country".
FR	Expenditure	In some sectors, intramural and extramural R&D expenditures were the only items isolated, and innovation expenditure on machinery and equipment, and on other external knowledge, has been classified in the "other" category.
IT	The enterprise's most significant market	The national and international questions were asked in a manner that was quite similar to the standard questionnaire. The local/regional markets were split between: provincial (NUTS 3); inter-provincial (regardless of whether the provinces were belonging to the same region or not); regional (NUTS 2); inter-regional (regardless of whether the regions were in Italy or in neighbouring countries).

The Third Community Innovation Survey

This survey collects information about new or significantly improved products or processes and related activities in manufacturing and service industries during the period 1998-2000. In order to be able to compare enterprises with and without innovative activities, we request all enterprises to respond to all questions, unless otherwise instructed.

If you have any questions or doubts concerning this questionnaire please contact:

Mrs. / Mr. _____
Phone : _____
Fax : _____
e-mail : _____

Name of respondent _____
Job title _____
Phone _____
Fax _____
e-mail _____

General information about the enterprise

An enterprise is defined as the smallest combination of legal units that is an organisational unit producing goods or services. An enterprise carries out one or more activities at one or more locations. An enterprise may be a sole legal unit.

Name of enterprise _____ *ID*
Address[1] _____ *NUTS*
Postal code _____ **Main activity** _____ *NACE*

0.1 Is the enterprise part of an enterprise group?

Yes ❒ =>What is the country of head office of the group?[2] _____ *HO*
No ❒

0.2 Did any of the following significant changes occur to your enterprise during the period 1998-2000?

	Yes	No	
Your enterprise was established	❒	❒	*EST*
Turnover increased by 10 % or more due to merger with another enterprise or part of it	❒	❒	*TURNINC*
Turnover decreased by 10 % or more due to sale or closure of part of the enterprise	❒	❒	*TURNDEC*

OPT. 0.3 Please indicate what is the average lifetime of your enterprise's most important product (good or service) before it is replaced or being significantly modified:

Less than 1 year ❒ 1-3 years ❒ 4-6 years ❒ 7-9 years ❒ More than 9 years ❒ Impossible to answer ❒ *LIFE*

0.4 What is your enterprise's most significant market *Please tick the most appropriate alternative* *SIGMAR*

Local/ regional (within a distance of around 50 km) within your country ❒
Local/ regional (within a distance of around 50 km) within your neighbouring countries ❒
National (with a distance of more than 50 km) ❒
International (with a distance of more than 50 km) ❒

Basic economic information on the enterprise

(Only units located in the country in which you are reporting should be included)

0.5 Total turnover[3] market sales of goods and services Including export and taxes except VAT (in national Currency units)

In year **1998** ☐☐☐☐☐☐☐☐ 000,- TURN98

In year **2000** ☐☐☐☐☐☐☐☐ 000,- TURN

0.6 Exports of goods and services (in national currency units)

In year **1998** ☐☐☐☐☐☐☐☐ 000,- EXP98

In year **2000** ☐☐☐☐☐☐☐☐ 000,- EXP

0.7 Gross investment in tangible goods[4] (in national currency units)

In year **1998 (OPT)** ☐☐☐☐☐☐☐☐ 000,- INVTA98

In year **2000** ☐☐☐☐☐☐☐☐ 000,- INVTA

0.8 Number of employees[5]

	In year **1998**	In year **2000**	**OPT** Expected change for year **2002**
0.8.1 Total number of employees	☐☐☐☐☐ EMP98	☐☐☐☐☐ EMP	**No Change** ❒ **Reduction** ❒ **Increase** ❒ EMPCHG = ☐☐ % PCTEMP
Of which: With Higher education (graduated from tertiary education)			
- 0.8.2 Total		☐☐☐☐☐ EMPHI	**No Change** ❒ **Reduction** ❒ **Increase** ❒ EMPHCHG = ☐☐ % PCTEMPH
- 0.8.3 of which: Female (OPT)		☐☐☐☐☐ EMPHIF	

[3] For Credit institutions: Interests receivable and similar income; for Insurance services: Gross premiums written

[4] Acquisition of machinery and equipment, building and land

[5] Annual average. If not available, number of employees at the end of the year can be used

Innovation

An innovation, as defined in this survey, is a new or significantly improved product (good or service) introduced to the market or the introduction within your enterprise of a new or significantly improved process. The innovation is based on the results of new technological developments, new combinations of existing technology or utilisation of other knowledge acquired by your enterprise.

1. Product innovation

Product innovation is a good or service which is either new or significantly improved with respect to its fundamental characteristics, technical specifications, incorporated software or other immaterial components, intended uses, or user friendliness.
The innovation should be new to your enterprise; it has not necessarily to be new to the market. It does not matter whether the innovation was developed by your enterprise or by another enterprise. Changes of a solely aesthetically nature, and purely selling of innovations wholly produced and developed by other enterprises, shall not be included.
For examples of innovations see Annex.

1.1 During the period 1998-2000, did your enterprise introduce onto the market any new or significantly improved products (goods or services) for your enterprise ?

Yes ❒ => **Who developed these products?** *Please tick the most appropriate alternative* *INPDT*
- Mainly your enterprise or enterprise group ❒
- Your enterprise in co-operation with other enterprises or institutions ❒ *INPDTW*
- Mainly other enterprises or institutions ❒

No ❒ => go to question **2**.

1.2 Please give a short description of what is new or significantly improved with your most important product (good or service) innovation.

_____
_____
_____

1.3 Please estimate how your turnover[6] in 2000 was distributed between

- New or significantly improved products (goods or services) introduced during the period 1998–2000 [ ][ ][ ] % *TURNIN*
- Unchanged or only marginally modified products (goods or services) during the period 1998–2000[7] [ ][ ][ ] % *TURNUNG*

Total turnover in 2000 [1][0][0] %

1.4 During the period 1998-2000, did your enterprise introduce new or significantly improved products (goods or services) not only new for your enterprise, but also new for your enterprise's market?

Yes ❒ =>Please estimate the contribution of these products in total turnover[6] in 2000: [ ][ ][ ] % *TURNMAR*
No ❒ *INMAR*

[6] For Credit institutions: Interests receivable and similar income; for Insurance services: Gross premiums written

[7] Products wholly developed and produced by others shall be included here

2. Process innovation

Process innovation includes new and significantly improved production technology, new and significantly improved methods of supplying services and of delivering products. The outcome should be significant with respect to the level of output, quality of products (goods/services) or costs of production and distribution.
The innovation should be new to your enterprise; your enterprise has not necessarily to be the first to introduce this process. It does not matter whether the innovation was developed by your enterprise or by another enterprise. Purely organisational or managerial changes shall not be included.
For examples of innovations see Annex.

2.1 During the period 1998-2000, has your enterprise introduced any new or significantly improved production processes including methods of supplying services and ways of delivering products?

Yes ❒ => **Who developed these processes?** *Please tick the most appropriate alternative* *INPCS*
- Mainly your enterprise or enterprise group ❒
- Your enterprise in co-operation with other enterprises or institutions ❒ *INPCSW*
- Mainly other enterprises or institutions ❒

No ❒ => go to question **3.**

2.2 Please give a short description of what is new or significantly improved with your most important process innovation.

_____
_____
_____

3. Not yet completed or abandoned innovation activities

3.1 By the end of 2000, did your enterprise have any ongoing activities to develop or introduce new or significantly improved products (goods or services) or processes that were not yet completed, including any R&D activity ?

Yes ❒
No ❒ *INON*

3.2 During the period 1998-2000, did your enterprise have any activities to develop or introduce new or significantly improved products (goods or services) or processes that were abandoned, including any R&D activity?

Yes ❒
No ❒ *INAB*

Enterprises with no recent innovation activity (ie. answered No to each of questions 1.1, 2.1, 3.1 or 3.2), should now go question 10.1b.

4. Innovation activity and expenditure in 2000

4.1 Did your enterprise engage in the following innovation activities in 2000?

Please tick "yes" for the following innovation activities if applied by your enterprise in 2000 by implementing new or significantly improved products (goods/ services) or processes based on science, technology or other knowledge areas. Subsequently, give an estimate of the related expenditures in 2000, including not yet completed or abandoned innovation activities. Tick "no" for activities not undertaken in 2000.

		Yes	No	If yes
				Please estimate innovative expenditure in 2000, incl. personnel and related investment expenditures (no depreciation) – national currency
Intramural research & experimental development (R&D)	All creative work undertaken within your enterprise on a systematic basis in order to increase the stock of knowledge, and the use of this stock of knowledge to devise new applications, such as new and improved products (goods/ services) and processes (including software research)	❒ RRDIN	❒	000,- RRDINX
Acquisition of R&D (extramural R&D)	Same activities as above, but performed by other companies (including other enterprises within the group) or other public or private research organisations	❒ RRDEX	❒	000,- RRDEXX
Acquisition of machinery and equipment	Advanced machinery, computer hardware specifically purchased to implement new or significantly improved products (goods/services) and/or processes	❒ RMAC	❒	000,- RMACX
Acquisition of other external knowledge	Purchase of rights to use patents and non-patented inventions, licenses, know-how, trademarks, software and other types of knowledge from others for use in your enterprise's innovations	❒ ROEK	❒	000,- ROEKX
Training	Internal or external training for your personnel directly aimed at the development and/or introduction of innovations	❒ RTR	❒	
Market introduction of innovations	Internal or external marketing activities directly aimed at the market introduction of your enterprise's new or significantly improved products (goods/services), (may include preliminary market research, market tests and launch advertising, but exclude the building of distribution networks to market innovations)	❒ RMAR	❒	000,- ROTHX
Design, other preparations for production/deliveries	Procedures and technical preparations to realise the actual implementation of products (goods/services) and process innovations not covered elsewhere	❒ RPRE	❒	
Total innovation expenditure in 2000 *(in national currency units)*				000,- RTOT

5. Intramural research and experimental development (R&D)

If you have Intramural R&D-activities:

5.1 How many persons were involved in intramural R&D activities within your enterprise in 2000?

(including persons both inside and outside your R&D department)

(in full time equivalents) : ☐☐☐☐ RDPER

5.2 How did your enterprise engage in R&D during 1998-2000?

Continuously ❒

Occasionally ❒ RDENG

6. Effects of innovation during 1998-2000

The result of innovation activity may have different effects for your enterprise. *For the various alternatives, please indicate the degree of impact at the end of 2000 by innovation activity undertaken by your enterprise during the period 1998-2000.*

		Degree of impact				
		High	Medium	Low	Not relevant	
Product oriented effects	Increased range of goods or services	❒	❒	❒	❒	*ERANGE*
	Increased market or market share	❒	❒	❒	❒	*EMAR*
	Improved quality in goods or services	❒	❒	❒	❒	*EQUA*
Process oriented effects	Improved production flexibility	❒	❒	❒	❒	*EFLEX*
	Increased production capacity	❒	❒	❒	❒	*ECAP*
	Reduced labour costs per produced unit	❒	❒	❒	❒	*ELBR*
	Reduced materials and energy per produced unit	❒	❒	❒	❒	*EMAT*
Other effects	Improved environmental impact or health and safety aspects	❒	❒	❒	❒	*EENV*
	Met regulations or standards	❒	❒	❒	❒	*ESTD*

7. Public funding of innovation

Public funding includes financial support in terms of grants and loans, including a subsidy element, and loan guarantees. Ordinary payments for orders of public customers shall not be included.

7.1 Did your enterprise receive any public financial support for innovation activities during the period 1998-2000?

From	Yes	No	
Local or regional authorities	❒	❒	*FUNLOC*
Central government (including institutions working on behalf of central government)	❒	❒	*FUNGMT*
The European Union	❒	❒	*FUNEU*

7.2. Has your enterprise received funding from the EU's 4th (1994-98) or 5th (1998-2002) Framework Programmes for RTD?

Yes ❒
No ❒ *FUNRTD*

8. Innovation co-operation during the period 1998-2000

Innovation co-operation means active participation in joint R&D and other innovation projects with other organisations (either other enterprises or non-commercial institutions). It does not necessarily imply that both partners derive immediate commercial benefit from the venture. Pure contracting out of work, where there is no active collaboration, is not regarded as co-operation.

8.1 Did your enterprise have any co-operation arrangements on innovation activities with other enterprises or institutions during 1998-2000?

Yes ❒
No ❒ => go to question **9** *Co*

8.2 Please indicate the type of organisation and location

Multiple answers possible

Type of partner	**National**	**EU*/ EFTA****	**EU-CC*****	**US**	**Japan**	**Other**
Other enterprises within your enterprise group	*Co11*	*Co12*	*Co13*	*Co14*	*Co15*	*Co16*
Suppliers of equipment, materials, components or software	*Co21*	*Co22*	*Co23*	*Co24*	*Co25*	*Co26*
Clients or customers	*Co31*	*Co32*	*Co33*	*Co34*	*Co35*	*Co36*
Competitors and other firms from the same industry	*Co41*	*Co42*	*Co43*	*Co44*	*Co45*	*Co46*
Consultants	*Co51*	*Co52*	*Co53*	*Co54*	*Co55*	*Co56*
Commercial laboratories /R&D enterprises	*Co61*	*Co62*	*Co63*	*Co64*	*Co65*	*Co66*
Universities or other higher education institutes	*Co71*	*Co72*	*Co73*	*Co74*	*Co75*	*Co76*
Government or private non-profit research institutes	*Co81*	*Co82*	*Co83*	*Co84*	*Co85*	*Co86*

* : European Union countries(Belgium, Denmark, Germany, Greece, Spain, France, Ireland, Italy, Luxembourg, Netherlands, Austria, Portugal, Finland, Sweden and the United Kingdom)
** European Free Trade Association countries (Iceland, Liechtenstein, Norway, Switzerland)
*** EU Candidate Countries (Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovak Republic, Slovenia Republic and Turkey)

OPT. 8.3 Please indicate the importance of your partners

Type of organisation partner	High	Medium	Low	No partner	
Other enterprises within your enterprise group	❒	❒	❒	❒	CoGrp
Suppliers of equipment, materials, components or software	❒	❒	❒	❒	CoSup
Clients or customers	❒	❒	❒	❒	CoCli
Competitors and other firms from the same industry	❒	❒	❒	❒	CoCom
Consultants	❒	❒	❒	❒	CoCon
Commercial laboratories /R&D enterprises	❒	❒	❒	❒	CoRd
Universities or other higher education institutes	❒	❒	❒	❒	CoUni
Government or private non-profit research institutes	❒	❒	❒	❒	CoGmt

9. Sources of information for innovation during the period 1998-2000

The main sources of information needed for suggesting new innovation projects or contributing to the implementation of existing projects are asked in this question. *Please indicate the degree of importance attached to various alternative information sources*

		If used, importance				
Information source		**High**	**Medium**	**Low**	**Not used**	
Internal sources	Within the enterprise	❒	❒	❒	❒	Sent
	Other enterprises within the enterprise group	❒	❒	❒	❒	SGrp
Market sources	Suppliers of equipment, materials, components or software	❒	❒	❒	❒	SSup
	Clients or customers	❒	❒	❒	❒	SCli
	Competitors and other enterprises from the same industry	❒	❒	❒	❒	SCom
Institutional Sources	Universities or other higher education institutes	❒	❒	❒	❒	SUni
	Government or private non-profit research institutes	❒	❒	❒	❒	SGmt
Other sources	Professional conferences, meetings, journals	❒	❒	❒	❒	SPro
	Fairs, exhibitions	❒	❒	❒	❒	SExb

10. Hampered innovation activity

10.1a. During the period 1998-2000 was any of your innovation activity:

☛	seriously delayed?	Yes ❒	No ❒	HDlay
☛	prevented to be started?	Yes ❒	No ❒	HStar
☛	burdened/cumbered with other serious problems?	Yes ❒	No ❒	HBur

Go to question 10.2

Absence of innovation activity

10.1b. During the period 1998-2000 were any of the following reasons relevant for your firm not having any innovation activity at all:

☛	no need due to prior innovations?	Yes ❒	No ❒	HPrior
☛	no need due to market conditions?	Yes ❒	No ❒	HMar
☛	factors impeding innovation?	Yes ❒	No ❒	HImp

Factors hampering innovation activity

10.2 If your enterprise experienced any hampering factors during the period 1998-2000, please grade the importance of the relevant factors *(you may tick more than one factor if necessary).*

HAMPERING FACTORS		Degree of importance: High	Medium	Low	Not relevant	
Economic factors	Excessive perceived economic risks	❒	❒	❒	❒	HECO
	Innovation costs too high	❒	❒	❒	❒	HCOS
	Lack of appropriate sources of finance	❒	❒	❒	❒	HFIN
Internal factors	Organisational rigidities within the enterprise	❒	❒	❒	❒	HORG
	Lack of qualified personnel	❒	❒	❒	❒	HPER
	Lack of information on technology	❒	❒	❒	❒	HTEC
	Lack of information on markets	❒	❒	❒	❒	HINF
Other factors	Insufficient flexibility of regulations or standards	❒	❒	❒	❒	HFLEX
	Lack of customer responsiveness to new goods or services	❒	❒	❒	❒	HCUS

11. Patents and other protection methods

11.1a During the period 1998-2000, did your enterprise, or enterprise group, apply for at least one patent to protect inventions or innovations developed by your enterprise?

			Total (*Goods /services/ processes*)	Of which: *Goods /services*
Yes	❒ =>	**OPT.** Please indicate the number of patent applications[8]		
No	❒	PAAP	PANB	PANBPDT

11.1b Did your enterprise, or enterprise group, have any valid patents at the end of 2000 protecting inventions or innovations developed by your enterprise?

			Total (*Goods /services/ processes*)	Of which: *Goods /services*
Yes	❒ =>	**OPT.** Please indicate the number of valid patent [8]		
No	❒	PAVAL	PAVNB	PAVNPDT

OPT 11.1c What percentage of your turnover in 2000 was covered by patent applications or patents valid at the end of 2000 owned by your enterprise or enterprise group?

Share of turnover in 2000 ☐☐☐ % (TURNPA) Impossible to answer ❒

11.2 During the period 1998-2000, did your enterprise, or enterprise group, make use of any of these other methods to protect inventions or innovations developed in your enterprise?

		Yes	No	
Formal methods	Registration of design patterns	❒	❒	PROREG
	Trademarks	❒	❒	PROTM
	Copyright	❒	❒	PROCP
Strategic methods	Secrecy	❒	❒	PROSEC
	Complexity of design	❒	❒	PRODES
	Lead-time advantage on competitors	❒	❒	PROTIM

[8] Patent application/patent for the same invention to different patent offices shall only be counted as one patent application/patent

12. Other important strategical and organisational changes in your enterprise

This survey has so far only dealt with new and significantly improved products (goods and services) and processes. This final question refers to other creative improvements that might have been undertaken by your enterprise.

12.1 Did your enterprise during the period 1998-2000 undertake any of the following activities:

		Yes	No	
Strategy	Implementation of new or significantly changed corporate strategies	❒	❒	ACTSTR
Management	Implementation of advanced management techniques within your enterprise	❒	❒	ACTMAN
Organisation	Implementation of new or significantly changed organizational structures	❒	❒	ACTORG
Marketing	Changing significantly your enterprise's marketing concepts/strategies	❒	❒	ACTMAR
Aesthetic change (or other subjective changes)	Significant changes in the aesthetic appearance or design or other subjective changes in at least one of your products	❒	❒	ACTAES