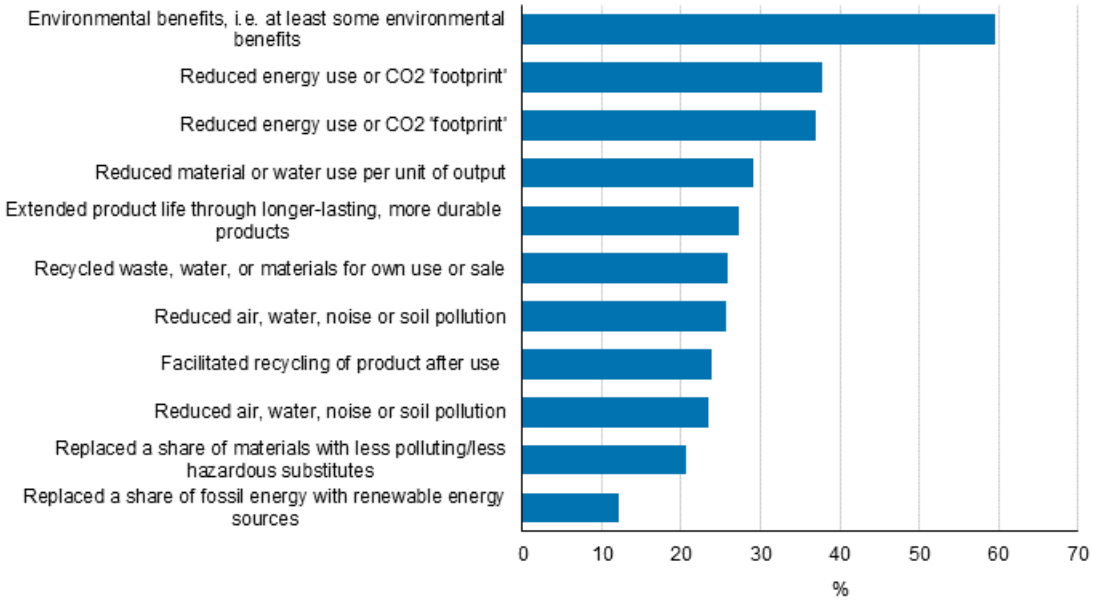
Innovation activity 2014

Innovation Survey final report

Over one-half of innovators reported innovations with environmental benefits

Over one-half of enterprises that adopted innovations in 2012 to 2014 reported that they had adopted innovations with environmental benefits. In manufacturing, the share was 71 per cent and in services, 50 per cent of innovations. The data are based on Statistics Finland's survey on enterprises' innovation activity in 2012 to 2014, which was part of an extensive EU survey.

Environmental benefits produced by innovations in 2012 to 2014, share of those that adopted innovations in 2012 to 2014



Most commonly, enterprises mentioned more efficient energy use and a smaller carbon footprint as the environmental benefits produced by innovations. In practice, environmental benefits during production were reported as often as environmental benefits during end use. The main reasons for adopting innovations with environmental benefits were high energy, water or material costs, environmental regulations and improving the enterprise's reputation.

The total share of enterprises with innovation activity of the examined industries and size categories in 2012 to 2014 was 55 per cent. A majority of them had adopted innovations.

The survey's mapping of the importance of digitalisation in enterprises' business activity proved that digitalisation was clearly more important for enterprises that reported innovation activity than for enterprises that did not report activities related to innovation in 2012 to 2014. Of all surveyed enterprises, around one-third felt that the importance of digital products in business activity was high or moderate. The corresponding share among enterprises that reported innovation activity was 47 per cent and among other enterprises 21 per cent.

A majority of the surveyed enterprises did not feel they had utilised big data or public sector open data in the enterprise's business activity in 2012 to 2014. Seventeen per cent of enterprises considered the importance of data use high or moderate in marketing, while, for example, 15 per cent of enterprises estimated that the use of data in managing the production process was of high or moderate importance.

The survey also asked about the prevalence of public procurement contracts and innovation activity related to their implementation. Altogether, one-third of all enterprises had procurement contracts in 2012 to 2014 to produce products for public sector organisations. Six per cent of them, or two per cent of all enterprises, reported innovation activity related to the implementation of the contracts in cases where the contract required innovations. By contrast, it was somewhat more commonplace that enterprises had innovation activity related to the implementation of the contract without the contract requiring innovation activity. This was reported by seven per cent of all enterprises.

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1. About the Innovation Survey

The Innovation Survey 2014 was part of the joint Community Innovation Survey 2014 (CIS2014) project of the EU Member States coordinated by Eurostat, the Statistical Office of the European Union, which means that a corresponding survey has been conducted in other Member States as well. The objective of the survey that is conducted every second year is to examine the generality of innovation activity and to chart the characteristics and measures related to innovation activity.

In addition to questions from the EU's harmonised survey questionnaire, the survey also included some national questions on topical issues. These were the utilisation of big data and open data in the public sector, as well as the importance of digitalisation in enterprises' business activity. The survey also included questions about the importance of user innovation in enterprises' innovation activity.

The survey targeted a three-year period from 2012 to 2014 and covered enterprises employing at least ten persons in manufacturing (incl. mining and quarrying, electricity, gas and air-conditioning supply, and water supply and waste management) and in certain service industries. A detailed description of the target population is included in the quality description on the home page of the statistics (only in Finnish).

A majority of the survey results can be found on the home page of the statistics (http://tilastokeskus.fi/til/inn/index_en.html) in the database tables (http://pxnet2.stat.fi/PXWeb/pxweb/fi/StatFin/StatFin__ttt__inn/?tablelist=true). Results based on a limited review group and, for example, non-recurring questions can be found in the appendix tables of this review (http://tilastokeskus.fi/til/inn/tau_en.html).

In terms of the long-term time series examination, it should be noted that the scope of the survey was extended from the 2012 survey to cover service industries TOL 59 Motion picture, video and television programme production, sound recording and music publishing activities, TOL 60 Programming and broadcasting activities, TOL 72 Scientific research and development, and TOL 73 Advertising and market research.

2. Prevalence of innovation activity in enterprises in 2010 to 2012

Good one-half of the surveyed enterprises, or 55 per cent, reported that they had innovation activity in 2012 to 2014. This was at the same level as in the previous surveys, as the share was 53 per cent for 2010 to 2012 and 56 per cent for 2008 to 2010.

A majority of those involved in innovation activity had developed or introduced product or process innovations. Now, 48 per cent of the surveyed enterprises reported activities related to product and process innovations, while in the previous surveys, the corresponding shares were 45 and 46 per cent. The share of enterprises that had adopted organisational and marketing innovations remained on level with the previous survey, being 30 and 26 per cent of enterprises. Adoptions of organisational or marketing innovations were most commonly reported by enterprises who also had innovation activity related to products or processes.

The overall picture of the prevalence of innovation activity has remained similar to the results of the previous surveys. Manufacturing enterprises are generally involved in innovation activity related to products and processes more commonly than service industry enterprises. In manufacturing, the share of enterprises that had developed or adopted product or process innovations was 52 per cent, while in the service industries the share was 45 per cent of enterprises. All in all, 58 per cent of manufacturing enterprises and 53 per cent of service industry enterprises had innovation activity.

An examination by size category shows that large enterprises still innovate more commonly than smaller enterprises. Especially in manufacturing, the differences between size categories are clear in reporting of innovation activity. The share of those that had innovated products and processes in the smallest enterprise size category was 46 per cent in manufacturing, while among enterprises employing at least 250 persons, 85 per cent reported innovation activity. In the service industries, the differences are smaller – among smaller size enterprises, 43 per cent had innovation activity related to products and processes, while among bigger enterprises, the share was 59 per cent. Among the smallest examined service industry enterprises, the share of those that reported innovation activity rose so that it was close to the level reported among the smallest manufacturing enterprises.

Figure 1. Prevalence of innovation activity related to products and processes by size category of enterprise in manufacturing and services in 2012 to 2014, share of enterprises

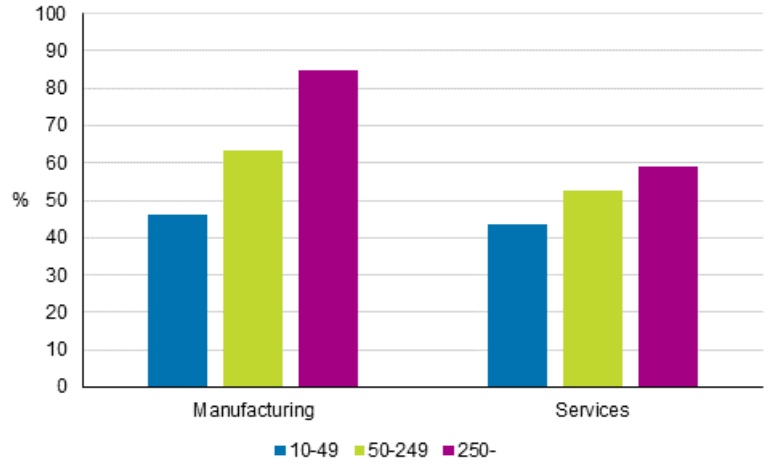
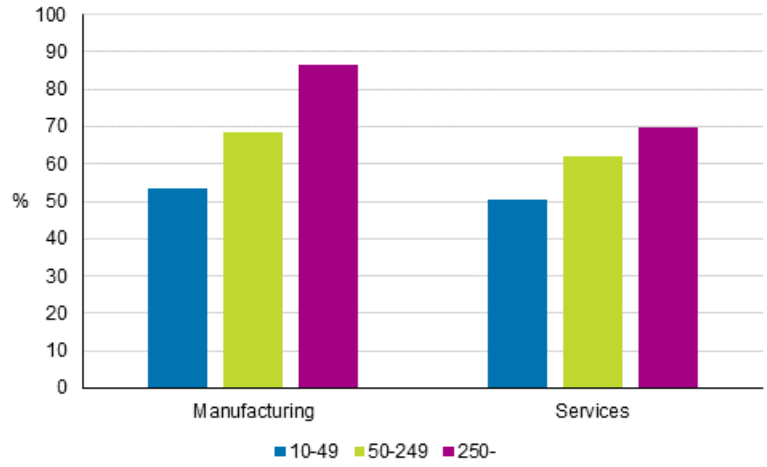


Figure 2. Prevalence of innovation activity (incl. marketing and organisational innovations) by size category of enterprise in manufacturing and services in 2012 to 2014, share of enterprises



In manufacturing, innovation activities were most prevalent in the manufacture of computer, electronic and optical products, manufacture of chemicals and chemical products, and manufacture of textiles. Among these, the share of those involved in innovation activity has also been high in previous surveys for the first mentioned industries.

Correspondingly, in service industries, innovation was reported most among enterprises in software production, operations serving financing and insurance, and information service activities, telecommunications, as well as research and development. These industries were also the industries where innovation activity was most prevalent in the previous survey.

Figure 3. Prevalence of innovation activity by industry in manufacturing in 2012 to 2014, share of enterprises

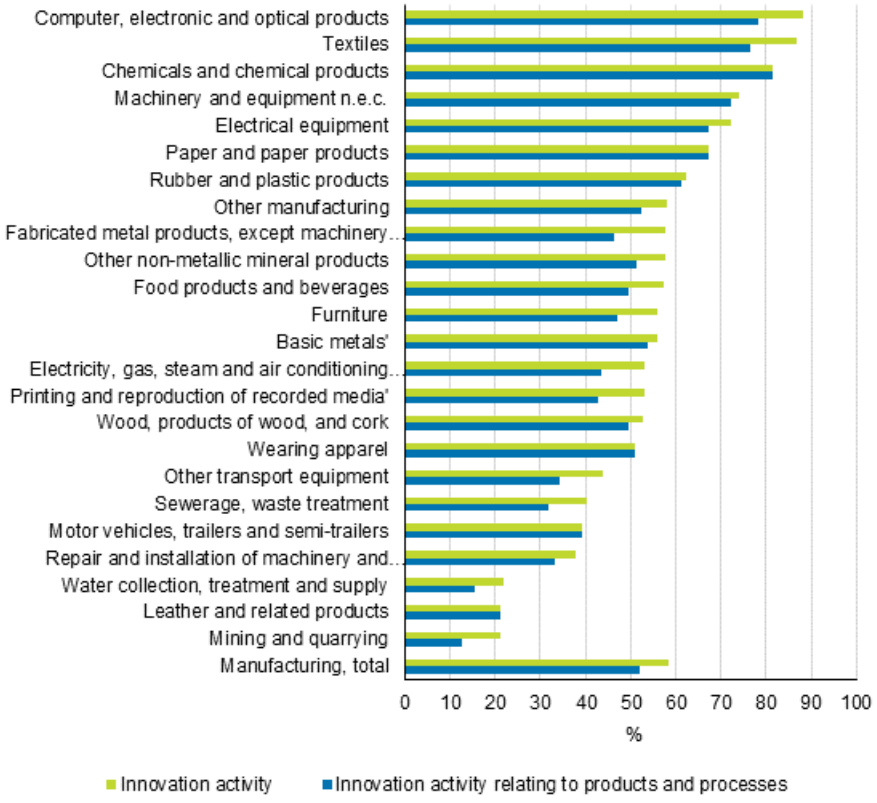
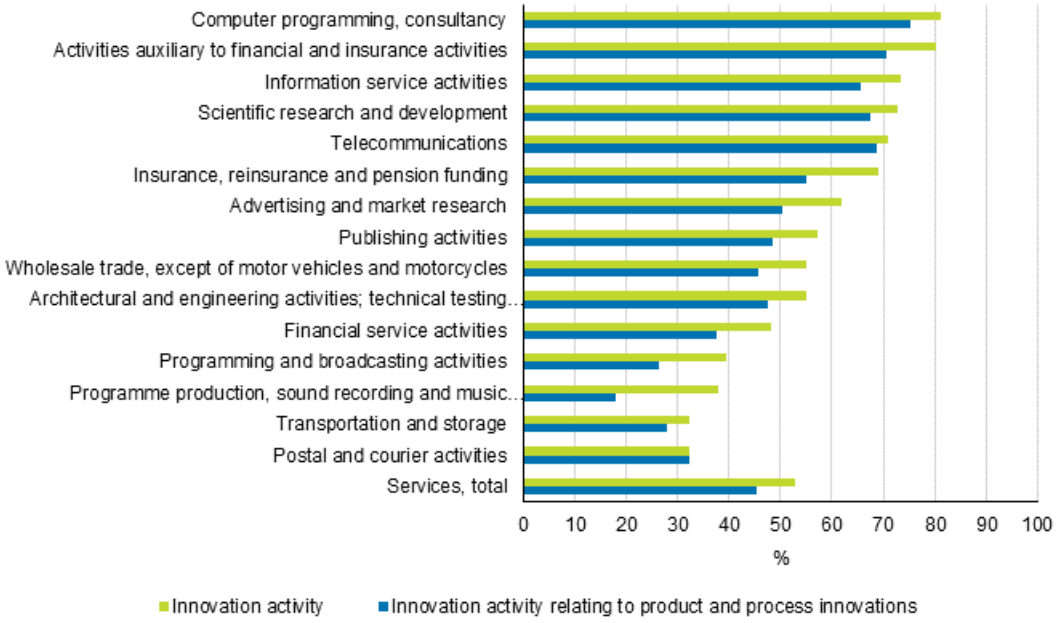
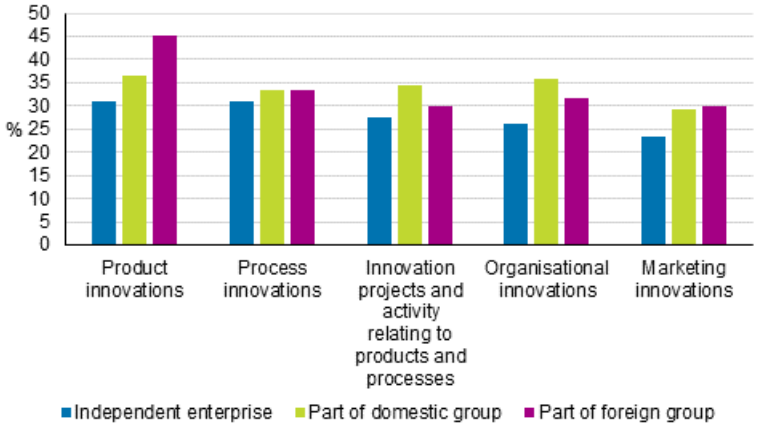


Figure 4. Prevalence of innovation activity by industry in service industries in 2012 to 2014, share of enterprises



In line with previous years, enterprises belonging to groups reported more innovation activity than independent enterprises not belonging to any group in 2012 to 2014. Altogether, 53 per cent of independent enterprises reported innovation activity, for enterprises belonging to Finnish groups the corresponding share was 57 per cent and 61 per cent for enterprises belonging to international groups. Enterprises belonging to international groups stood out particularly in the prevalence of introducing product innovations to the market, as the share of enterprises reporting product innovations was 45 per cent among these, while the share of independent enterprises was 31 per cent and that of enterprises belonging to Finnish groups was 36 per cent.

Figure 5. Prevalence of innovation activity by form of enterprise in 2012 to 2014, share of enterprises



Innovation activity also became more commonplace the wider the geographical markets on which the enterprise sells its products are. Close on 40 per cent of enterprises operating only on the domestic markets, reported innovation activity related to products and processes in 2012 to 2014 and nearly one-third reported adoption of non-technological innovations. Among enterprises that operate on the EU markets, the corresponding shares of enterprises with innovation activity were 55 and 44 per cent. Among enterprises

that sell products and services outside the EU, innovation activity was reported by 64 per cent (innovation activity related to products and processes) and 50 per cent (organisational and marketing innovations).

The results of the survey by various background variables – size of personnel, industry and manufacturing and services total, form of enterprise and geographical market of products – can be found in more detail on the home page of the statistics in database tables and in the appendix tables of this review.

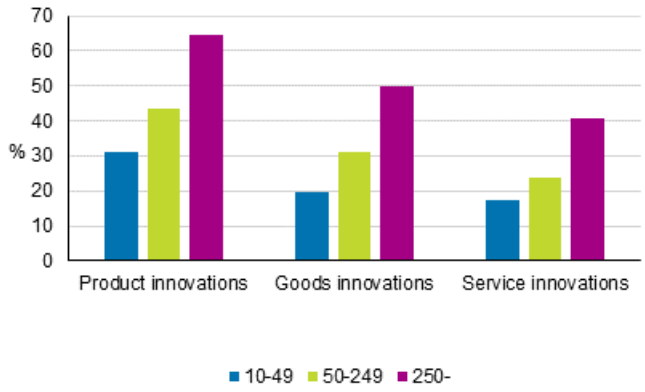
3. Innovation activity related to products and processes in 2012 to 2014

Innovation activity related to products and processes includes the introduction of product innovations to the market and the implementation of process innovations, as well as any measures that aim at developing and implementing a product or process innovation. Forty-eight per cent of enterprises reported that they had had innovation activity related to products and processes in 2012 to 2014. A majority of them also reported they had introduced product innovations to the market and/or implemented process innovations. Fewer enterprises only reported activities aiming at product and process innovations.

Product innovations introduced to the markets

Of the surveyed enterprises, 35 per cent reported that they had introduced product innovations to the markets in 2012 to 2014. In the previous surveys, the proportions were 31 and 33 per cent. Among the smaller enterprises in the survey, i.e. enterprises employing 10 to 49 persons, close on one-third reported new or improved products, 43 per cent of enterprises employing 50 to 249 persons reported innovative products, and among the biggest enterprises, i.e. Those employing at least 250 persons, around two-thirds introduced innovations to the markets.

Figure 6. Introduction of product innovations by size category of enterprise in 2012 to 2014, share of enterprises



Enterprises having brought product innovations to the market accounted for 38 per cent in manufacturing and slightly fewer in service enterprises, 32 per cent. In manufacturing, innovations focused on product innovations, whose implementation 35 per cent of manufacturing enterprises reported. In service industries, 14 per cent of enterprises reported product innovations. However, in service industries, service innovations become emphasised as one in four or enterprises in these industries reported they had introduced service innovations to the markets. The share in manufacturing was 14 per cent.

Product innovations were most commonly reported in the manufacture of computer, electronic and optical products, the manufacture of chemicals and chemical products, and in the software industry.

Figure 7. Introduction of product innovations by industry in manufacturing in 2012 to 2014, share of enterprises

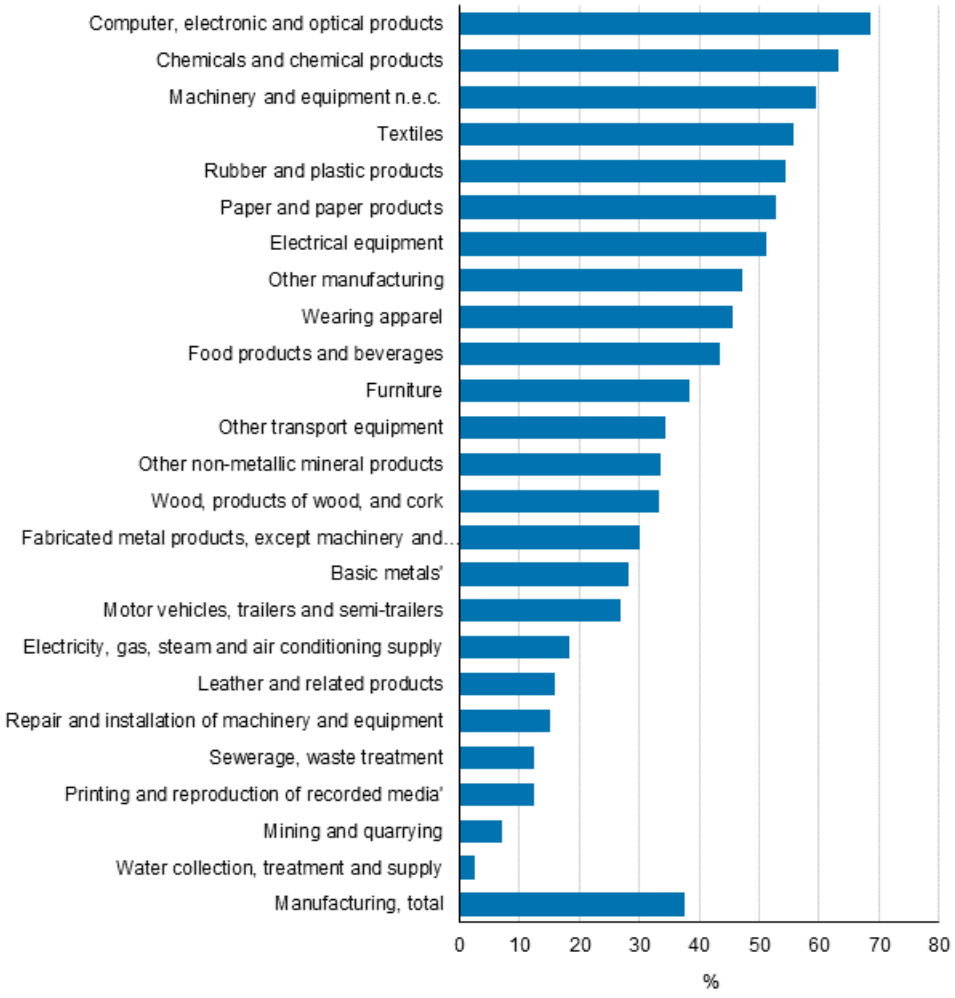
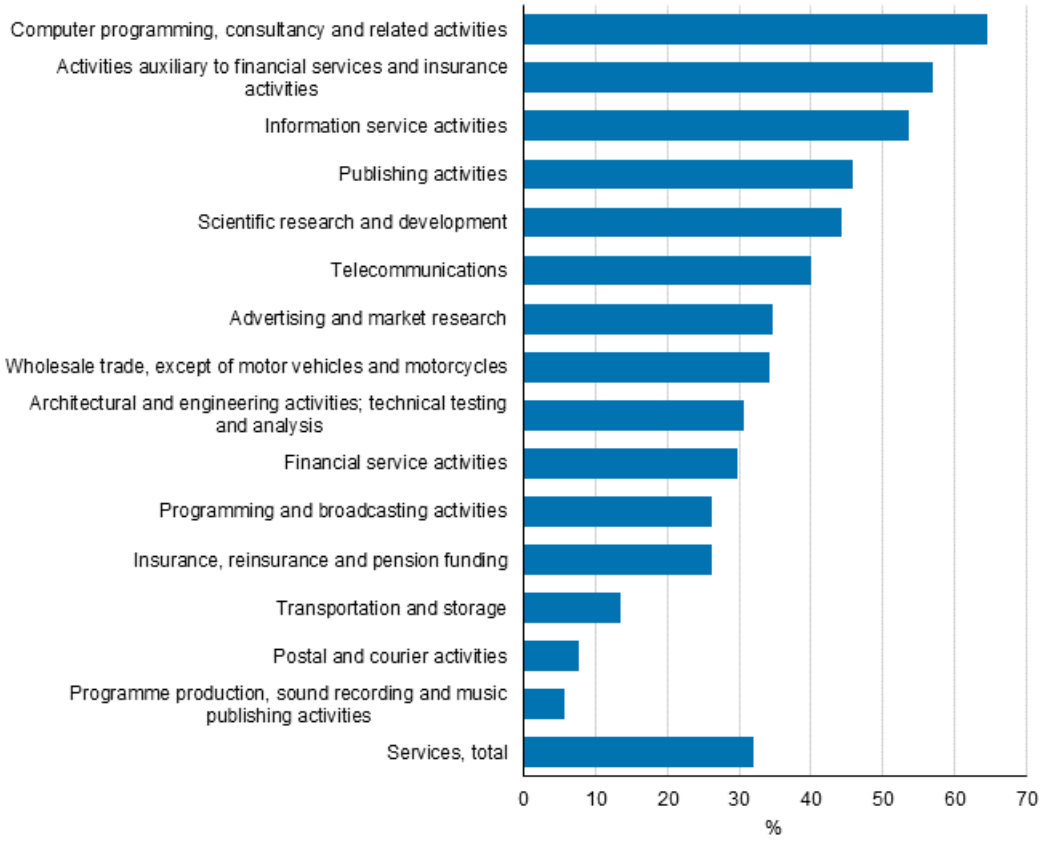


Figure 8. Introduction of product innovations by industry in services in 2012 to 2014, share of enterprises

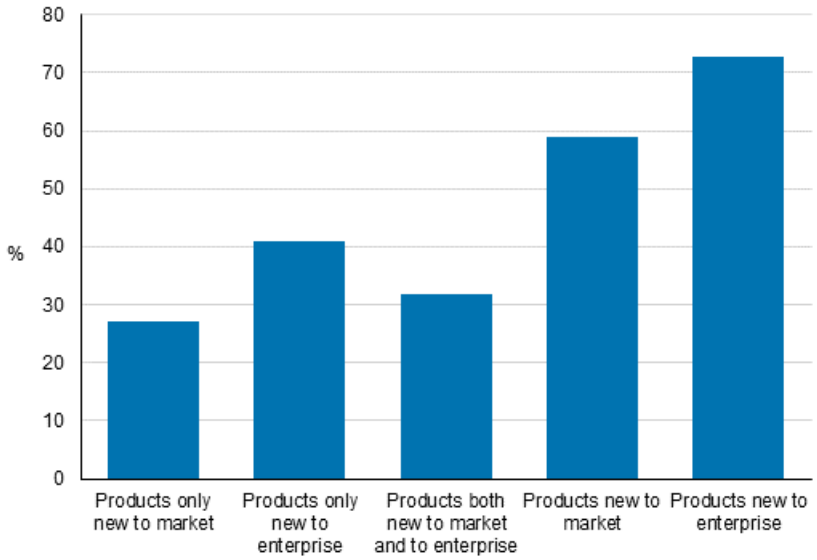


The developer of an innovation is often times the enterprise that introduced the innovation to the markets, at least partially. Of the enterprises that introduced product innovations to the markets, 79 per cent had developed products themselves and 47 per cent together with other enterprises or organisations. Around one in four, or 27 per cent, had remodelled products developed by others and in 15 per cent of innovations, the developer of the innovation was another enterprise or organisation. There can be several developer profiles and methods within one enterprise.

The developer of innovative services is also often the enterprise that introduced the innovation to the markets. Altogether, 77 per cent of those who introduced service innovations to the markets had developed the innovative services themselves, around one-half had developed innovations together with other enterprises or organisations. Good one-quarter had remodelled services developed by others and more than one in ten introduced an innovation to the markets that had been developed by some other enterprise. Thus, the “profile” of service development is in general terms similar to product development.

One-fifth of all surveyed enterprises – 59 per cent of enterprises having introduced product innovations to the markets – launched innovations that were new in terms of the enterprise's markets. Altogether, 73 per cent of enterprises having introduced product innovations to the markets – one in four of the surveyed enterprises – in turn, launched innovations that were new from the enterprise's viewpoint but where similar competitive products already existed on the enterprise's markets.

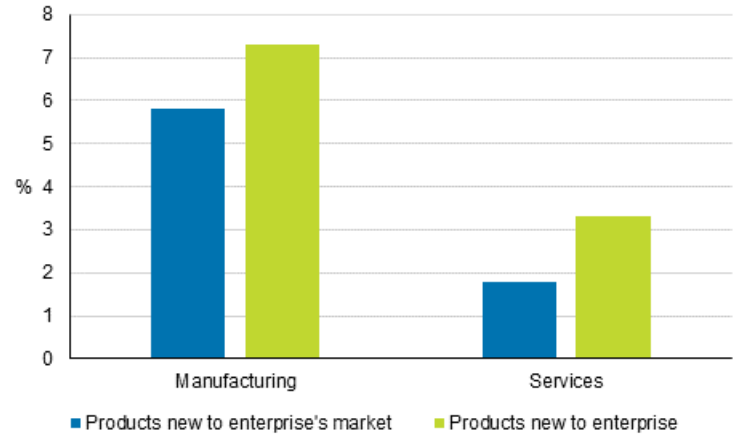
Figure 9. Novelty of product innovations in 2012 to 2014, share of enterprises with product innovations



Of the combined turnover of all surveyed enterprises and size categories in 2014, around nine per cent were accumulated from product innovations launched on the markets in 2012 to 2014. This represented 15 per cent of the total turnover of enterprises that launched innovations. In manufacturing, the corresponding proportions were 13 and 17 per cent and in services five and 11 per cent, so in manufacturing, the role of innovations as accumulators of turnover was still larger than in service industries.

The share of turnover from products launched by enterprises that were only new for the enterprise in question was around five per cent of the total turnover of the surveyed enterprises and nine per cent of the combined turnover of enterprises that introduced product innovations to the markets. The share of the 2014 turnover from new products introduced to the markets by enterprises that were also new for the markets was four per cent of the combined turnover of all enterprises and six per cent of the turnover of enterprises that introduced product innovations to the markets. A few years earlier, manufacturing enterprises reported somewhat larger turnover shares from innovative products.

Figure 10. Importance of product innovations in enterprises turnover in 2014, share of total turnover of all enterprises



Implementation of process innovations

Altogether, 32 per cent of the surveyed enterprises implemented process innovations in 2012 to 2014. In manufacturing, 36 per cent of enterprises reported process innovations and in service industries the share was 29 per cent. Most commonly, enterprises in the manufacture of textiles, manufacture of paper and

paper products, manufacture of chemicals and chemical products, operations serving financing and insurance, and in the software industry, as well as in the manufacture of machinery and equipment reported implementation of innovations.

Figure 11. Implementation of process innovations by industry in manufacturing in 2012 to 2014, share of enterprises

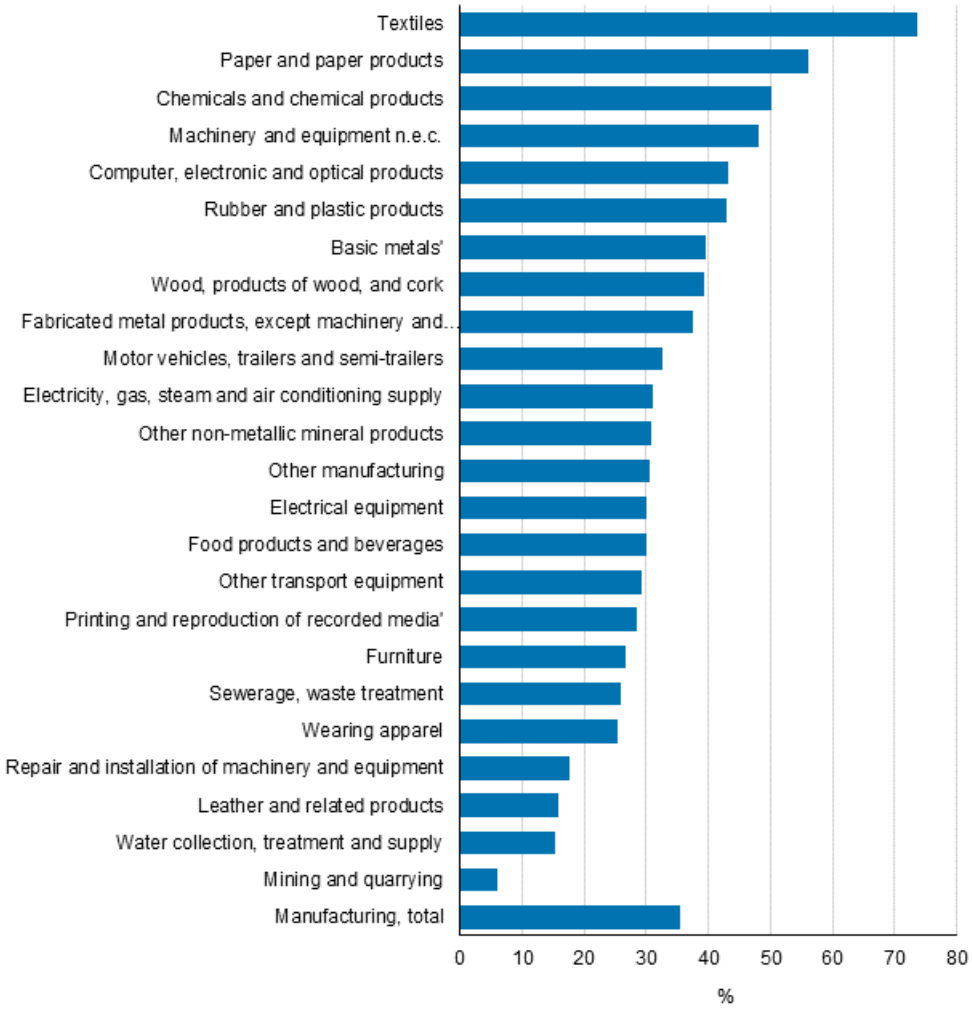
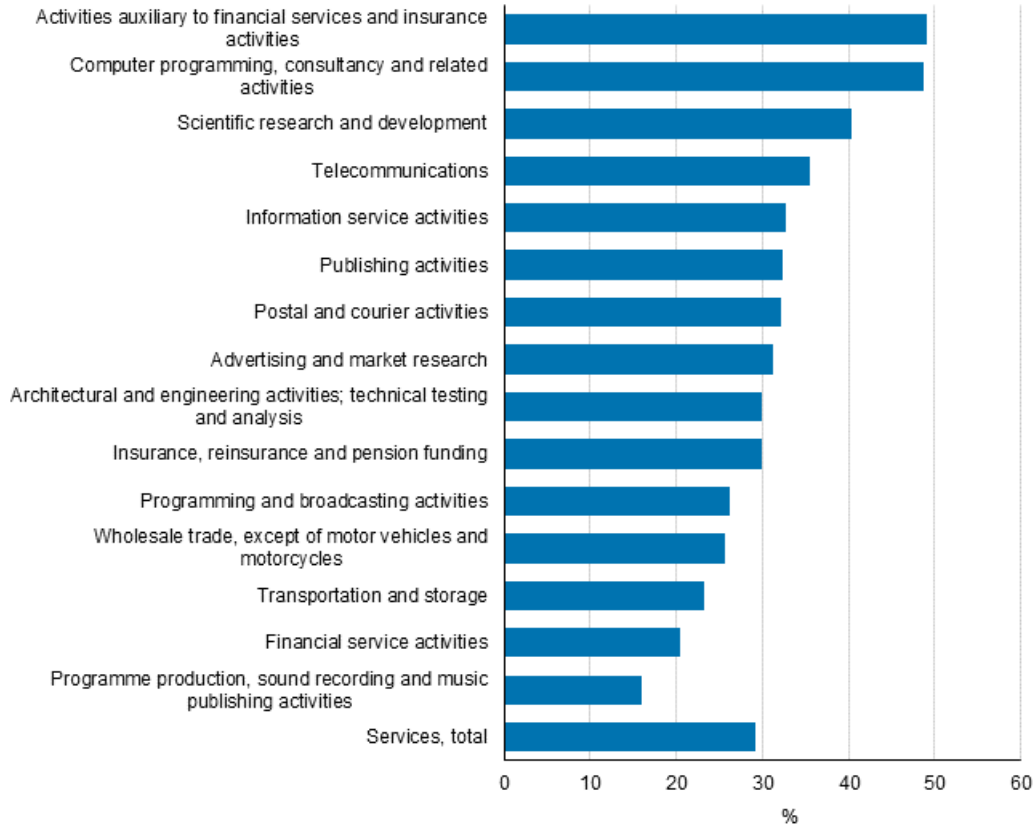
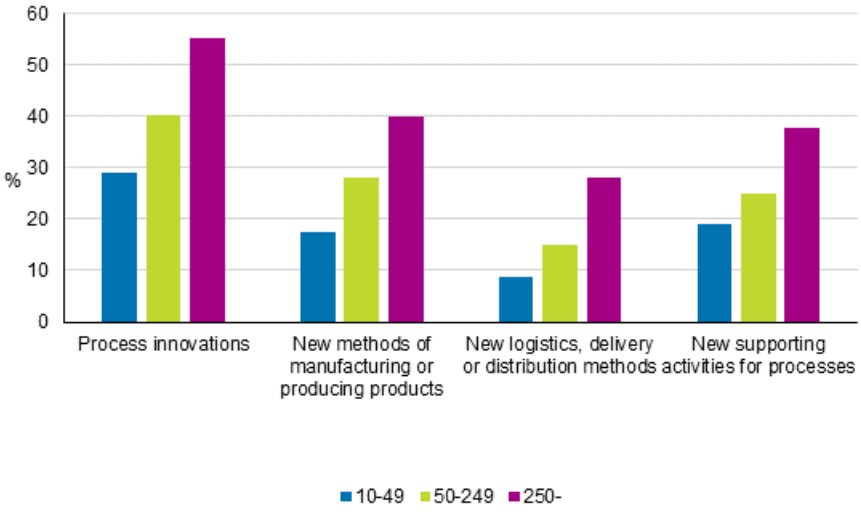


Figure 12. Implementation of process innovations by industry in services in 2012 to 2014, share of enterprises



Process innovations were directed most commonly at the manufacture and production of products, as well as process support functions just as in previous years. One in five enterprises reported implementation of process innovations related to manufacturing, in manufacturing, good one-quarter of enterprises and in service industries, 15 per cent or enterprises. Twenty-one per cent of enterprises reported support functions related innovations, the share being equal in manufacturing and service industries. Eleven per cent of all enterprises had implemented innovations related to logistic solutions or delivery or distribution methods.

Figure 13. Implementation of process innovations by size category of enterprise in 2012 to 2014, share of enterprises



Altogether, 61 per cent of those that had taken process innovations into use had developed the innovations themselves. Around one-half, or 52 per cent, had developed processes together with other enterprises or organisations, and around one in four had adapted or remodelled processes originally developed by others. All in all, 16 per cent of enterprises that implemented process innovations had innovated by taking into use processes developed by other enterprises or organisations.

Projects and activities aiming at product and process innovations

Thirty per cent of enterprises reported projects and activities aiming at product and process innovations that had not yet resulted in innovations during the survey period of 2012 to 2014. The projects has either been discontinued or they were still ongoing at the end of 2014.

In manufacturing, 15 per cent and in services, nine per cent of enterprises reported of innovation projects that had been discontinued before completion in 2012 to 2014. Thirty-two per cent of manufacturing enterprises and 23 per cent of service enterprises reported activities aiming at innovations that were still ongoing at the end of 2014.

Innovation activities, expenditure and public financial support related to innovation activity

Like in the previous survey, three out of four enterprises that had innovated products and processes had their own research and development (R&D) activities in 2012 to 2014. Nearly one-half of these, 47 per cent, had regular R&D activities. Among the smallest surveyed enterprises, 71 per cent of innovators had R&D activities, and among medium-sized enterprises, 84 per cent. Among enterprises employing at least 250 persons and that had developed products or processes, only five per cent reported that they had not had R&D activities in 2012 to 2014.

One-half of enterprises that had developed or implemented product or process innovations had ordered research and development activities from outside the enterprise. In manufacturing, 56 per cent of innovators reported ordered R&D activities and in services, 46 per cent of innovators.

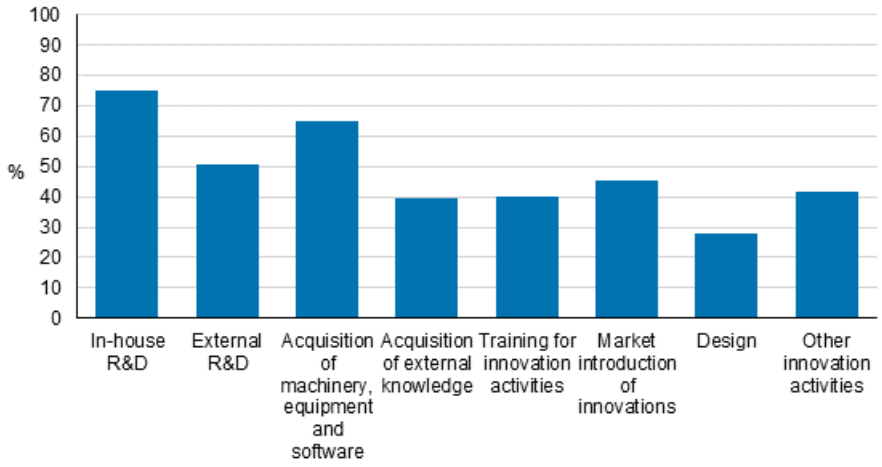
Manufacturing enterprises reported more innovation-related machine and equipment acquisitions (including software and buildings) than service enterprises. In manufacturing, 74 per cent of innovating enterprises had made innovation-related machine and equipment acquisitions, while the corresponding share for service enterprises was 57 per cent. Most commonly, acquisitions were reported by the biggest innovating enterprises in the survey, 78 per cent, while in enterprises employing 10 to 49 persons, 63 per cent reported machine and equipment acquisitions and 69 per cent of medium-sized enterprises.

Around 40 per cent of enterprises involved in innovation activity related to products and processes had acquired existing information from outside of the enterprise to develop innovations. Information acquisition can include acquisition of work protected by copyrights or patented and unpatented inventions. Forty per cent of enterprises with innovation activity had also arranged or acquired personnel training in order to develop and implement product and process innovations. Altogether, 46 per cent of enterprises with innovation activity reported activities related to introducing innovations to the markets. .

Thirty-two per cent of manufacturing enterprises with innovation activity had had design-related activities – either within the enterprise or acquired from elsewhere – within their innovation activities. Correspondingly, 24 per cent of service industry enterprises reported design-related activities. Among the biggest enterprises with innovation activity, good one-half or 55 per cent responded that design had been part of their innovation activity, while among smaller and medium-sized enterprises the corresponding shares were 25 and 29 per cent.

Other innovation activity not included in the above mentioned activities were reported by 42 per cent of enterprises that had developed or implemented products and services.

Figure 14. Prevalence of innovation activities in 2012 to 2014, share of enterprises with innovation activity relating to products and processes



Innovation activity expenditure remained in 2014 pretty much on par with the previous couple of years, when the innovation activity expenditure reported by enterprises totalled EUR 6.2 billion. In 2014, innovation activity expenditure was reported to be around EUR six billion. The share of manufacturing was EUR 4.4 billion and that of service industries EUR 1.6 billion.

A majority of innovation activity expenditure was, just like in previous years, directed at R&D activity and in particular at enterprises' own R&D.

Figure 15. Distribution of innovation expenditure in manufacturing in 2014, %

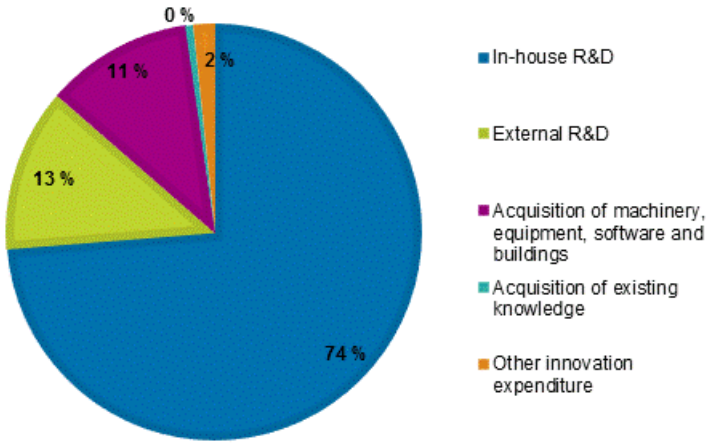
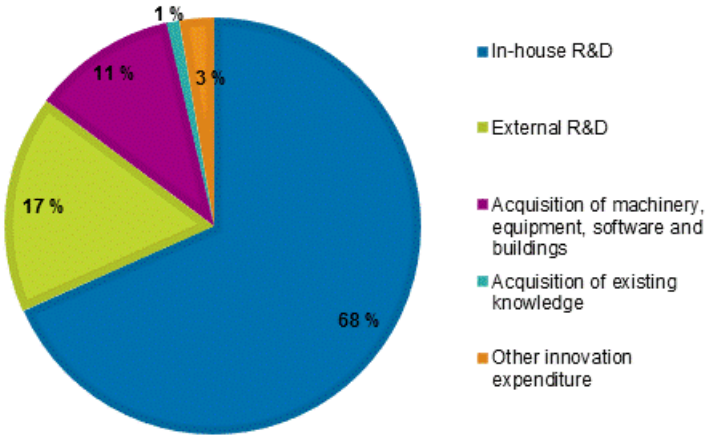


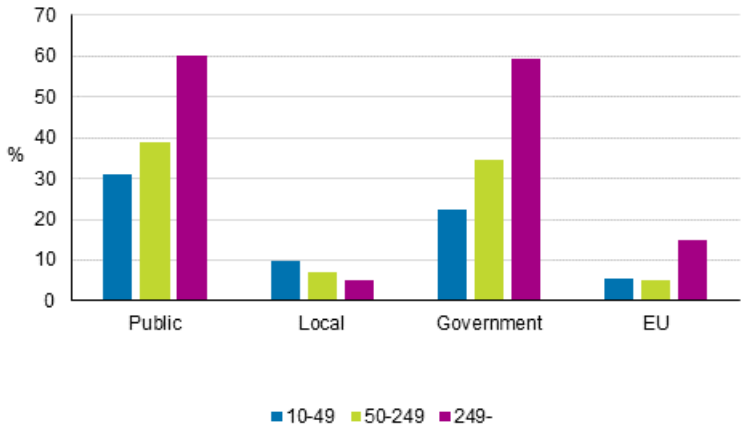
Figure 16. Distribution of innovation expenditure in services in 2014, %



All in all, 35 per cent of enterprises that had developed products or processes received public funding in 2012 to 2014. In manufacturing, 42 per cent had received funding and in service industries, 27 per cent. In the smallest size category, the share of enterprises that had received public funding was 31 per cent, in medium-sized enterprises, 39 per cent and in the largest surveyed enterprises, 60 per cent.

The share of enterprises that had received funding from central government was 27 per cent and the share of enterprises that had received funding from local otr regional authorities was nine per cent among the enterprises with innovation activity. The share of those who had received funding from the EU was six per cent of whom 36 per cent reported they had participated in the European Union's Seventh Framework Programme for Research and Technological Development or the Horizon 2020 Research and Innovation programme.

Figure 17. Public funding for innovation activity in 2012 to 2014, share of those involved in product and process related innovation activity



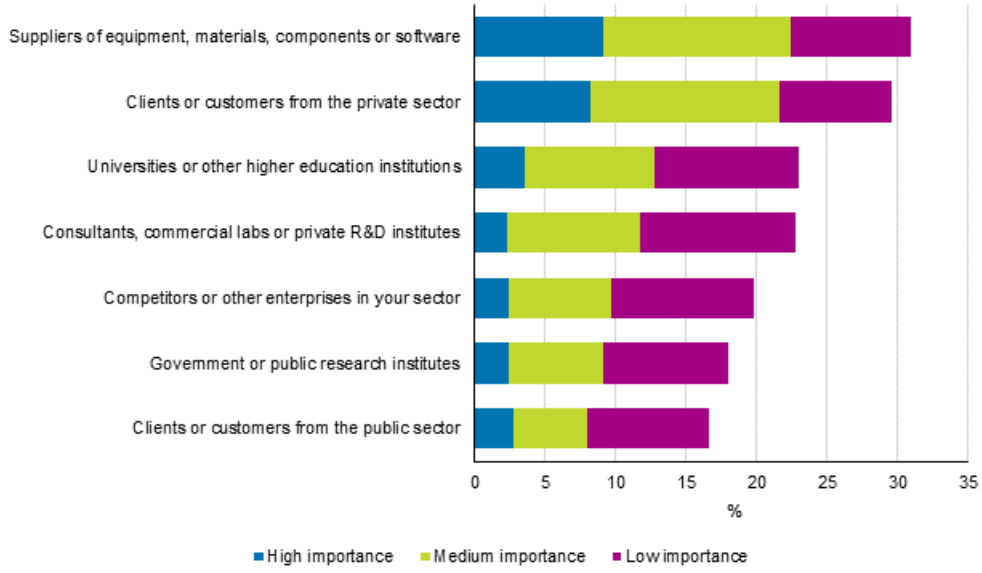
Cooperation related to the development of products and processes

Of enterprises with innovation activity related to products and processes, 38 per cent reported innovation activity-related cooperation. In manufacturing, the share was 41 per cent and in services, 36 per cent. Among the smallest enterprises in the survey, 32 per cent reported cooperation, 47 per cent among medium-sized enterprises and 75 per cent among the largest enterprises with innovation activity.

For enterprises and in case of group enterprises, in addition to intra-group cooperation, the main cooperation partners are found among equipment and material suppliers and customers in the private sector just like

in previous surveys. For example, competitors and universities were now mentioned as cooperation partners less frequently than before.

Figure 18. External cooperation activity of the enterprise/group related to innovation activity by importance in 2012 to 2014, share of those involved in innovation activity related to products and processes



Almost all of the enterprises that had done innovation cooperation had domestic partners. Around two out of three of the enterprises that had done cooperation had partners located in Europe and one in four had partners in the United States. Altogether, 13 per cent reported cooperation in China or India, and 14 per cent reported cooperation partners in other areas.

In practice, when the share of those who had done cooperation is proportioned to all surveyed enterprises, close on one-fifth of the enterprises in the examined industries and size categories have domestic innovation-related cooperation by examined period and, for example, more than one in ten would, according to this, be involved in innovation-related cooperation with partners located in Europe.

4. Implementation of marketing and organisational innovations in 2012 to 2014

Altogether, 38 per cent of the surveyed enterprises had adopted marketing and organisational innovations in 2012 to 2014. In manufacturing, the share was 40 per cent and in services, 37 per cent. In all, 30 per cent of enterprises reported implementation of organisational innovations, in manufacturing 31 per cent and in services 29 per cent. Twenty-six per cent of enterprises reported marketing innovations, both in manufacturing and in services.

In 2012 to 2014, organisational innovations were mainly directed at business practices, the implementation of which good one-fifth or 22 per cent of enterprises reported. The shares in manufacturing and service industries were 24 and 21 per cent. Twenty per cent of enterprises implemented innovations related to the organisation of responsibilities and decision-making, 18 per cent in manufacturing and 20 per cent in service industries. Thirteen per cent of enterprises reported new organisational practices related to external relations.

Marketing innovations, in turn, were most often related to the implementation of a new tool or method in the sales promotion of products. Eighteen per cent of all enterprises reported innovations, the share being equal in manufacturing and services. Around one in ten enterprises reported innovation activity-related design or packaging, product placement or sales channels and pricing.

Figure 19. Prevalence of implementation of organisational innovations by size category of personnel in 2012 to 2014, share of enterprises

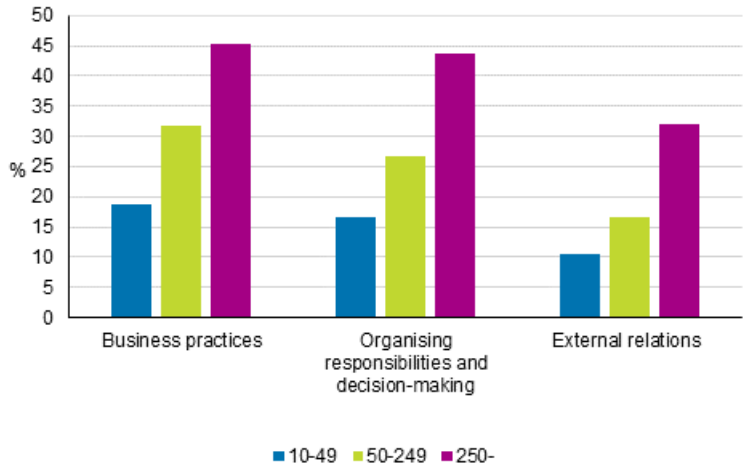
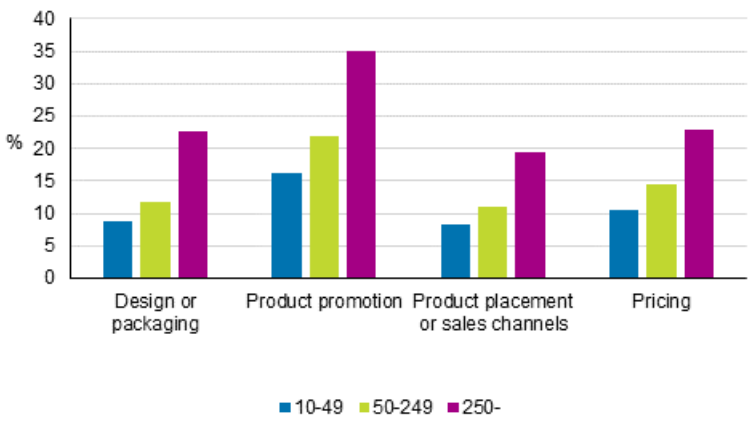


Figure 20. Prevalence of implementation of marketing innovations by size category of personnel in 2012 to 2014, share of enterprises



In 2012 to 2014, the implementation of organisational and marketing innovations was most prevalent in the manufacture of textiles, manufacture of computer, electronic and optical products, in the software industry and in information service activities.

Figure 21. Prevalence of implementation of marketing or organisational innovations by industry in manufacturing in 2012 to 2014, share of enterprises

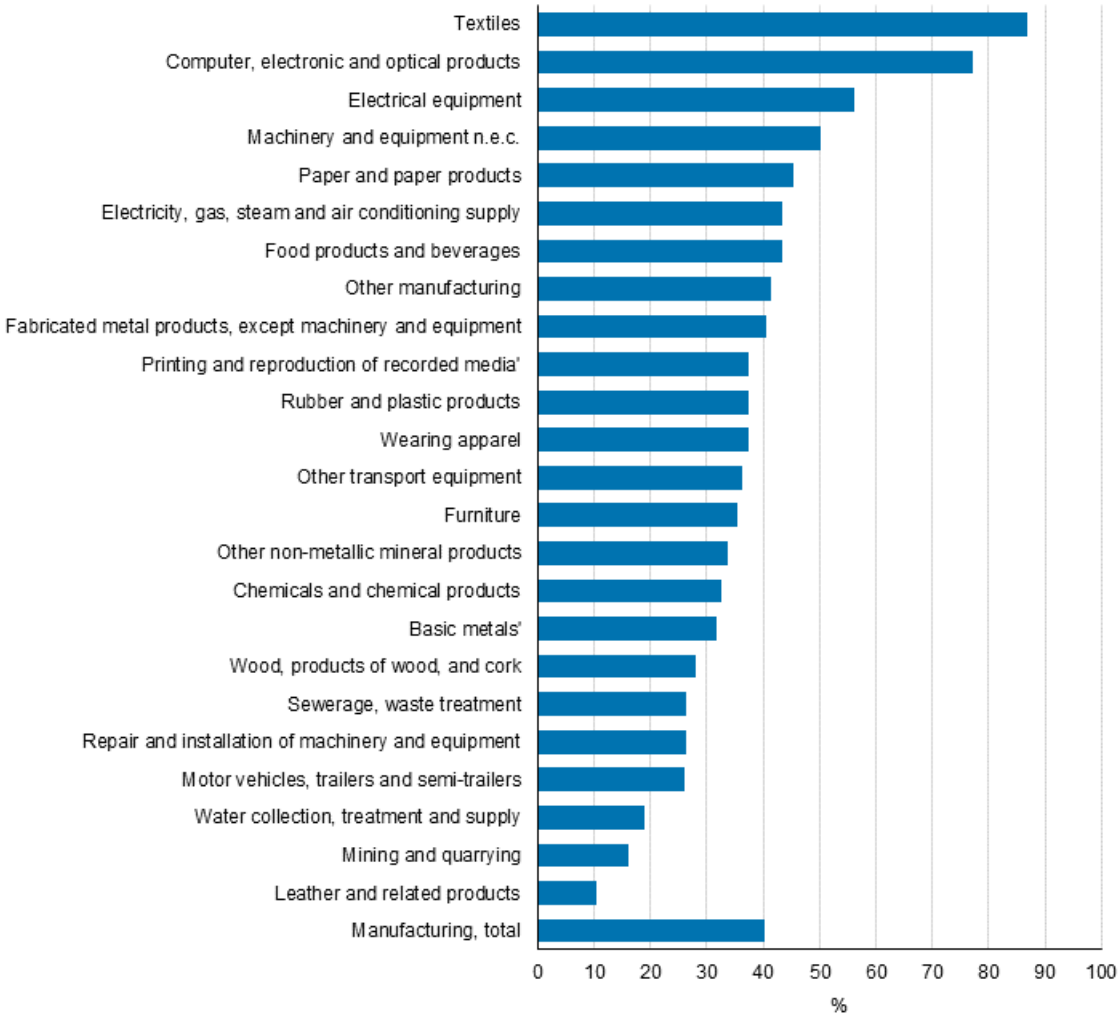


Figure 22. Prevalence of implementation of marketing or organisational innovations by industry in services in 2012 to 2014, share of enterprises

5. Public procurement and innovation activity in 2012 to 2014

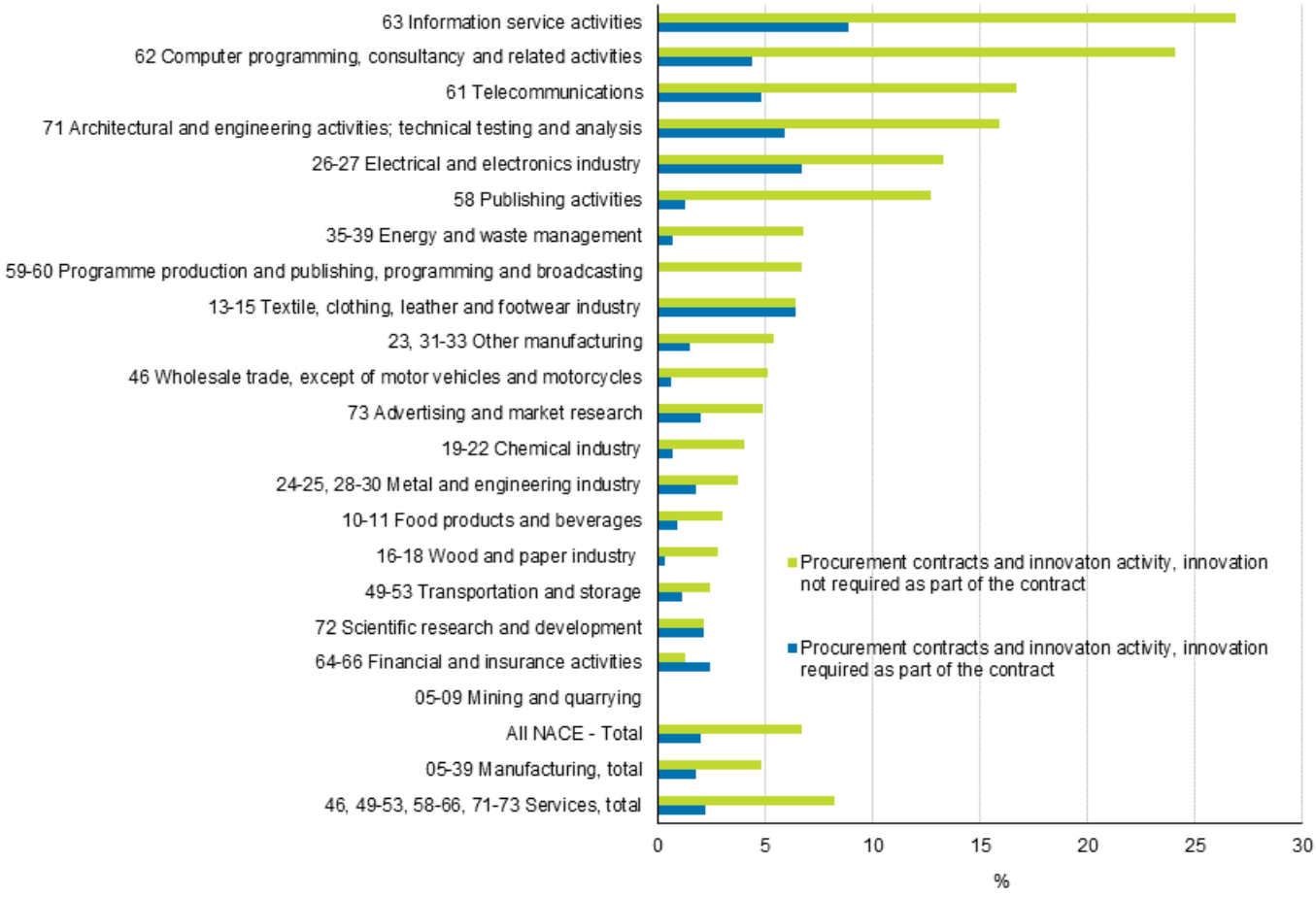
This was the second time enterprises were asked about public procurement. For the first time, questions about them and related innovation activity were asked in the previous corresponding survey concerning enterprises' innovation activity in 2010 to 2012. In general, based on the results, procurement contracts were now reported more commonly and especially in services. Compared with the previous results, innovation activity was not required as often in the contracts but in relative terms more enterprises had been involved in innovation activity as part of completing the contract even if the contract did not require it.

One-third of the enterprises reported having had procurement contracts in 2012 to 2014 to provide products to the public sector. In manufacturing, around one in four enterprises had procurement contracts and in service industries around 40 per cent of enterprises. A majority of these had procurement contracts with domestic public sector organisations. Six per cent reported procurement contracts with foreign public sector organisations. Procurement contracts became more common as the enterprise size grew.

Based on the results, it was not very common that innovation activity would have been a requirement of the contract. However, it was more commonplace that the enterprise had innovation activity related to the implementation of the contract without the contract requiring innovation activity. Two per cent of enterprises reported of innovation activity related to implementing the procurement contract without innovation being required in the contract in 2012 to 2014. Seven per cent of all enterprises, for example, 13 per cent of medium-sized service industry enterprises and 21 per cent of the largest enterprises, reported innovation activity related to the implementation of the contract without the contract requiring innovation activity.

Procurement contracts were reported most commonly in information service activities, architectural and engineering activities (technical testing and analysis) and in the software industry. In these industries, as well as in telecommunications, the electronics industry and publishing activities, innovation activity without any innovation requirement in the contract were reported more frequently than in other industries.

Figure 23. Procurement contracts and innovation activity in 2012 to 2014, share of enterprises



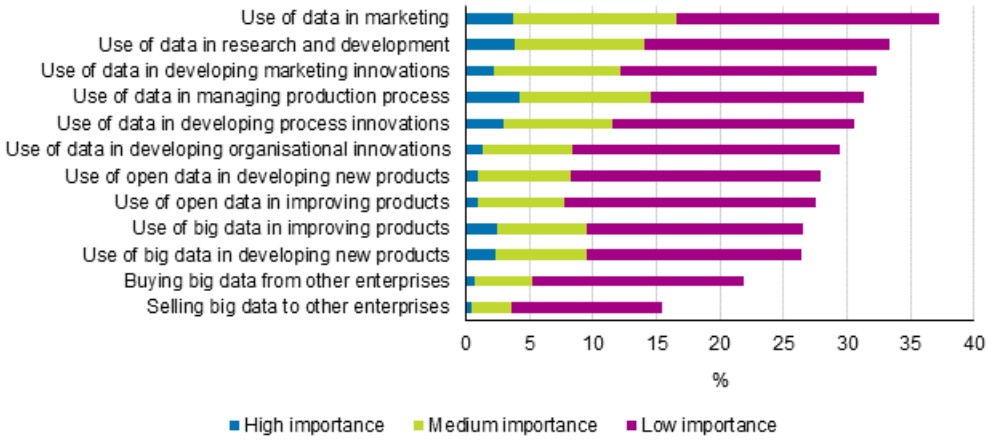
6. Big data and open data in the public sector in enterprises' business activity in 2012 to 2014

In the survey, public sector open data refer to data produced or accumulated by authorities in public administration that are publicly available and can be reused by anyone free of charge, legitimately and in machine readable format.

Here, big data or mass data refer to extremely large data sets that accumulate rapidly and that are in various formats. Devices and applications require huge storage capacity to be able to handle mass data. Big data are generated in electronic activities and machine-to-machine communications.

Of the mentioned uses, the most important for big data and public sector open data (high or moderate importance) were data use in R&D activities, data use in managing the production process and data use in marketing. Around 17 per cent of all enterprises estimated the importance of data as high or moderate in marketing and, for example, for around 15 per cent data were important in managing the production process. Data can also have a great importance for enterprises in developing process and market innovations. The selling or buying of big data was, however, important for fewer enterprises in terms of business activities.

Figure 24. Importance of big data and public sector open data for enterprises' business activity in 2012 to 2014, share of enterprises



One in ten of all enterprises estimated that at least one data use had had high importance for the enterprise and close on one-third of enterprises estimated that at least one data approach was of high or moderate importance. The importance of data seemed to grow as the size of the enterprise grew. Among small-sized enterprises, 11 per cent estimated the importance of data as high or moderate in R&D activities and 15 per cent reported open and big data as important in marketing. Among medium-sized enterprises the corresponding shares were 20 and 22 per cent and among largest enterprises, 36 and 31 per cent.

Even though big data and public sector open data can create valuable potential for business activity, a majority of the surveyed enterprises, however, estimated their importance as low or insignificant in the review period 2012 to 2014.

In many of the uses mentioned in the survey, the use of big data and public sector open data was somewhat more important in service industries than in manufacturing. The use of data in R&D activities was as important in both sectors and the use of data in managing the production process was mentioned slightly more often in manufacturing than in service industries.

Naturally, the use of open and big data varies by industry. For example, in the software industry more than one-half, 56 per cent, of enterprises estimated that at least one of the uses of data was significant, and around one-third felt the importance of data was high or moderate in product development, processes, marketing and R&D activities.

Figure 25. Enterprises that found at least one of the use types related to big data and public sector open data to be of high or medium importance by industry in 2012to 2014, share of enterprises

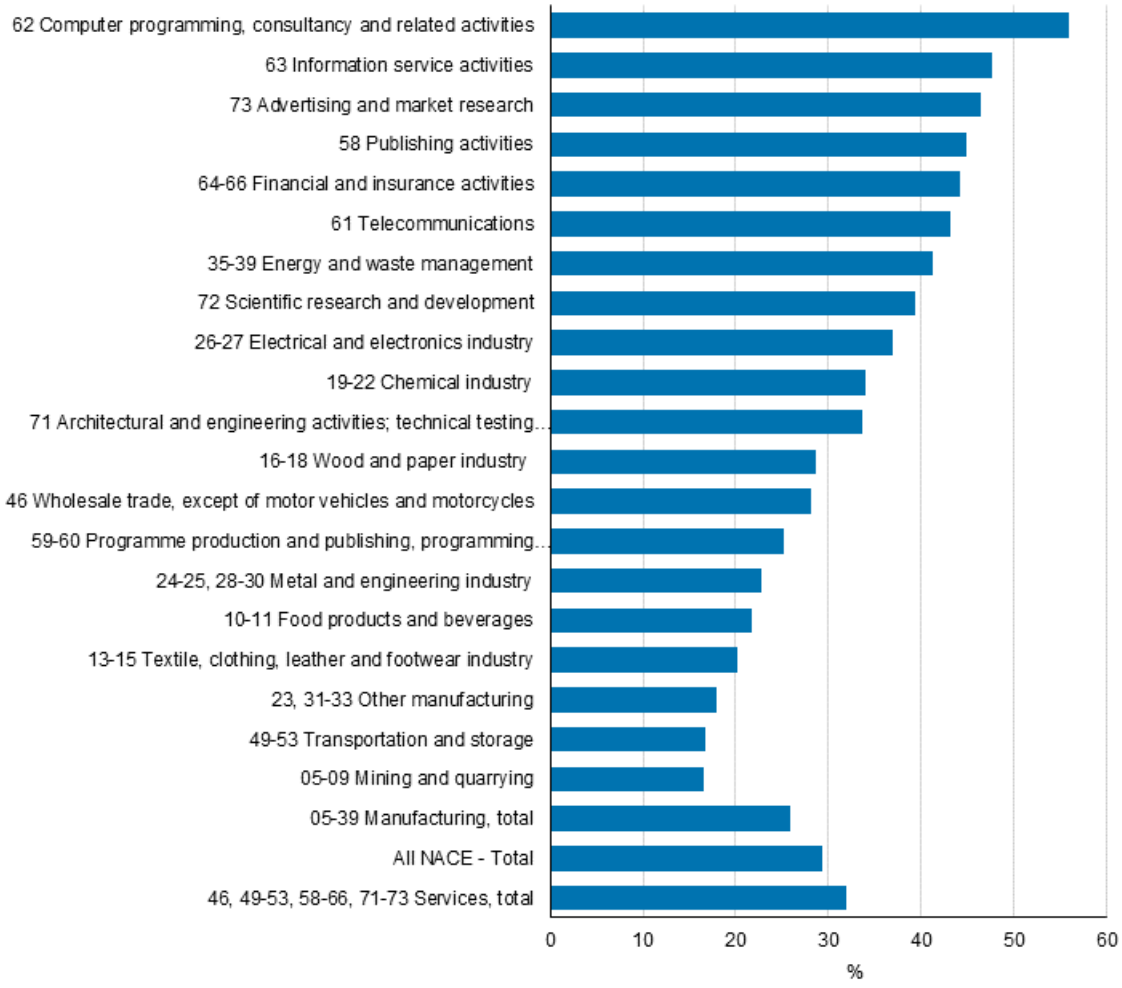
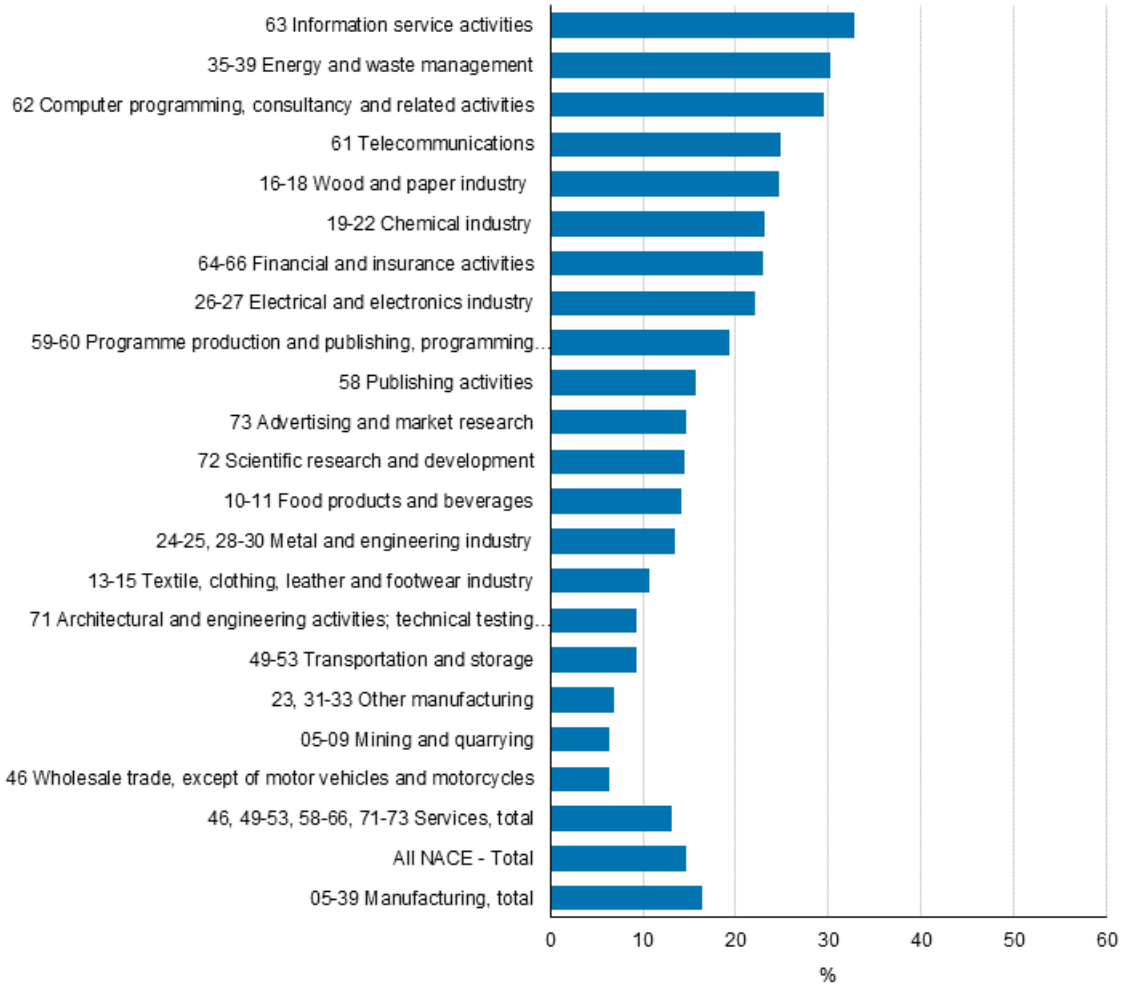


Figure 26. Use of data in managing the production process with high or medium importance by industry in 2012 to 2014, share of enterprises



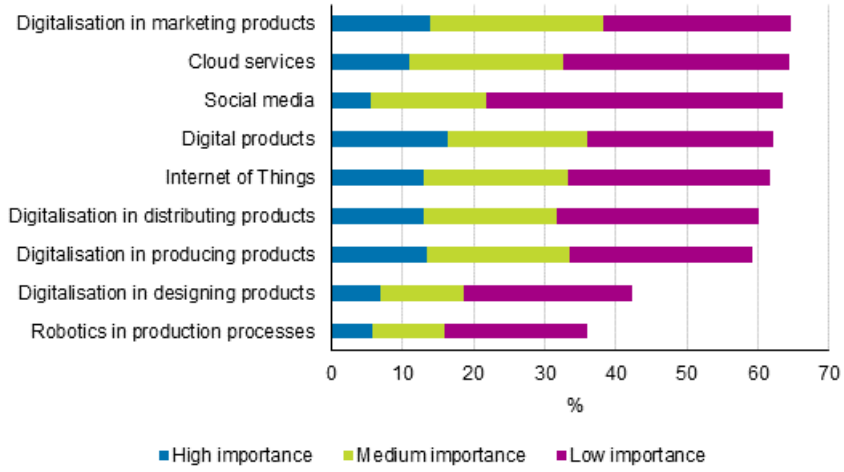
The use of big data and public sector open data was seen as more important in enterprises with innovation activity than in enterprises that had not reported innovation activity in 2012 to 2014. For example, the use of data in managing the production process was of high or moderate importance for around one-fifth and the use of data in marketing for some one-quarter of enterprises with innovation activity. For enterprises with no innovation activity, around six per cent thought the same. It should be noted that some enterprises who had not reported innovation activity did, however, respond that they used data in innovation development or other development activities. This can, for example, be phased development that was not seen as directly resulting in innovations.

7. Digitalisation in enterprises' business activities in 2012 to 2014

For the first time, the survey asked about the importance of digitalisation in enterprises' business activities. Digitalisation refers to transferring goods, services and their production or distribution to electronic format.

In the light of the results, digitalisation can be estimated to have a significant effect on enterprises' activities. All in all, 38 per cent of enterprises saw the importance of digitalisation in marketing as either high or moderate and 36 per cent felt digital products were important for the enterprise's business activity. Around one-third of all enterprises estimated that the role of cloud services, the Internet of things and digitalisation in the production of their products, as well as in the distribution of products, was important.

Figure 27. Importance of digitalisation in enterprises' business activities in 2012 to 2014, share of enterprises



Based on the provided digital viewpoints, digitalisation was more important for service industry enterprises' business activity than for manufacturing enterprises. Close on one-half of service industry enterprises, or 47 per cent, estimated the importance of digital products as high or moderate, and 45 per cent felt that digitalisation was significant in marketing. The respective proportions in manufacturing were 22 and 30 per cent.

Around four out of ten service industry enterprises reported that cloud services and digitalisation were important in product production and distribution. In manufacturing, the importance of these was high or moderate for good one-fifth of enterprises. Robotics, its utilisation in production processes was more important for manufacturing enterprises than for service industry enterprises. One-fifth of manufacturing enterprises estimated the importance as high or moderate, while the share among service industry enterprises was eight per cent.

An examination by industry reveals a more detailed picture of the importance of digitalisation. In nearly all examined industries, a majority or at least a significant share of enterprises said that at least one of the provided digital viewpoints was important for the enterprise's business activity. In some industries, it is common to utilise social media or cloud services, while in others the Internet of things and robotics are more important. Based on the nature of the activities, some industries can utilise the entire potential offered by digitalisation better than others. For example, digital products are important for every fourth enterprise in the wood processing industry and for 85 per cent of enterprises in the software industry. In the food industry, around one-third of enterprises consider digitalisation important for product marketing, while the corresponding share in financial and insurance activities was 65 per cent.

Figure 28. Enterprises that estimated the importance of digital products in their business activity as of high or medium importance by industry in 2012 to 2014, share of enterprises

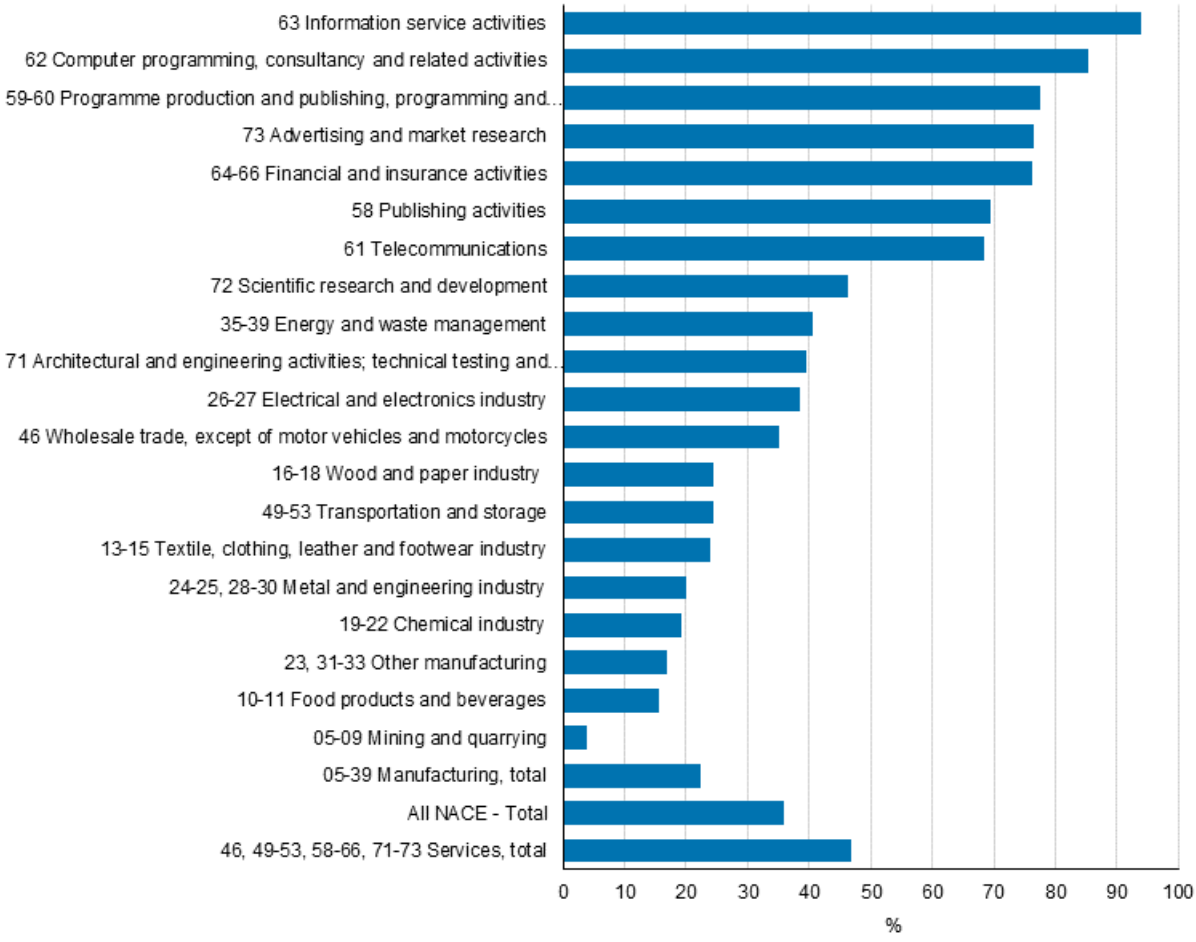
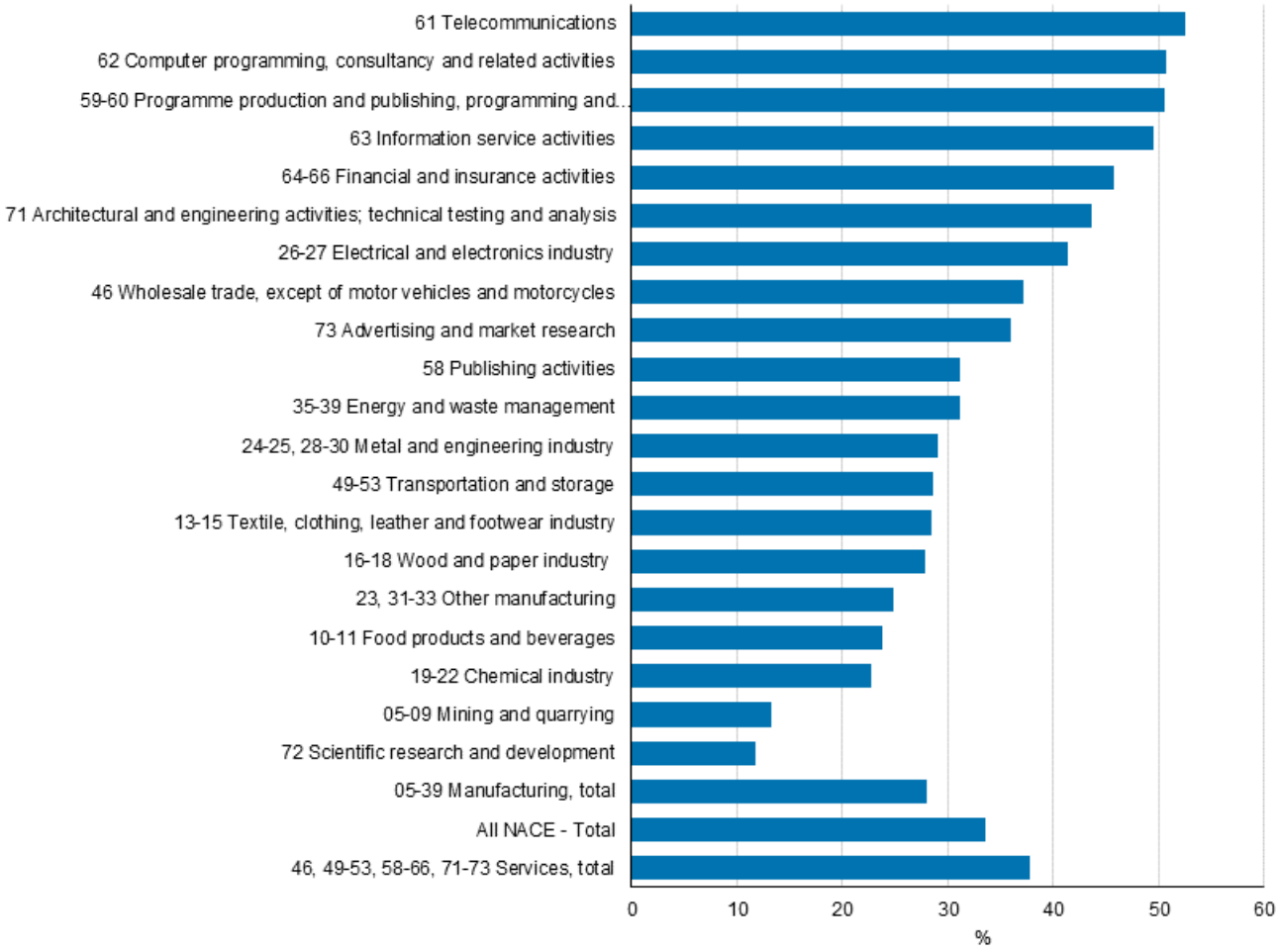


Figure 29. Enterprises that estimated the importance of the Internet of things as of high or medium importance by industry in 2012 to 2014, share of enterprises



Enterprises that reported innovation activity in the survey also reported utilisation of digitalisation and its importance for the enterprise's business activity more often than others. Among those who reported innovation activity, nearly one-half considered the importance of digital products to be high or moderate, while around one in five enterprises without innovation activity thought the same. The corresponding shares for utilising cloud services were 43 and 20 per cent, 51 and 22 per cent for digitalisation in marketing, and 41 and 24 per cent for the Internet of things.

Figure 30. Importance of digitalisation in enterprises who reported innovation activity in 2012 to 2014, share of enterprises with innovation activity

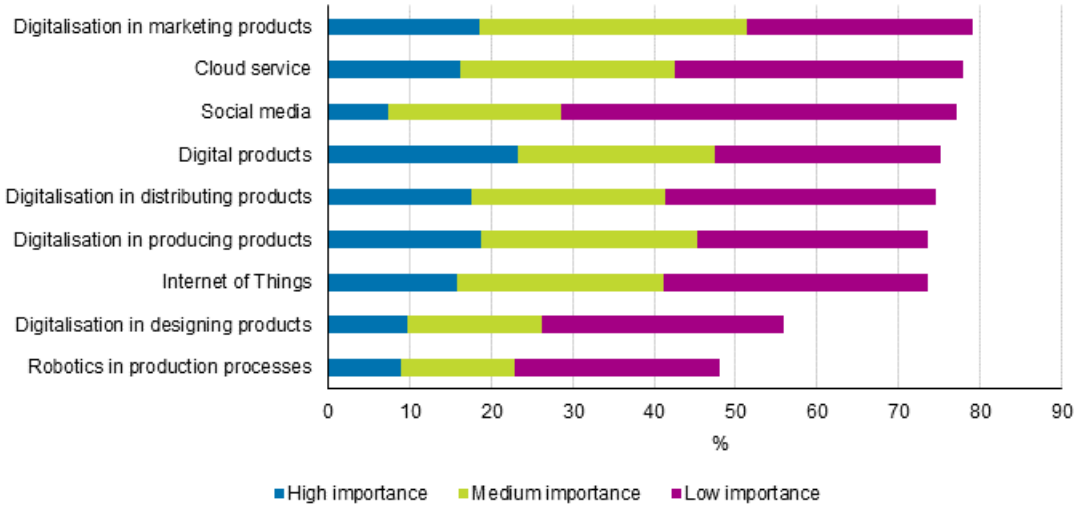
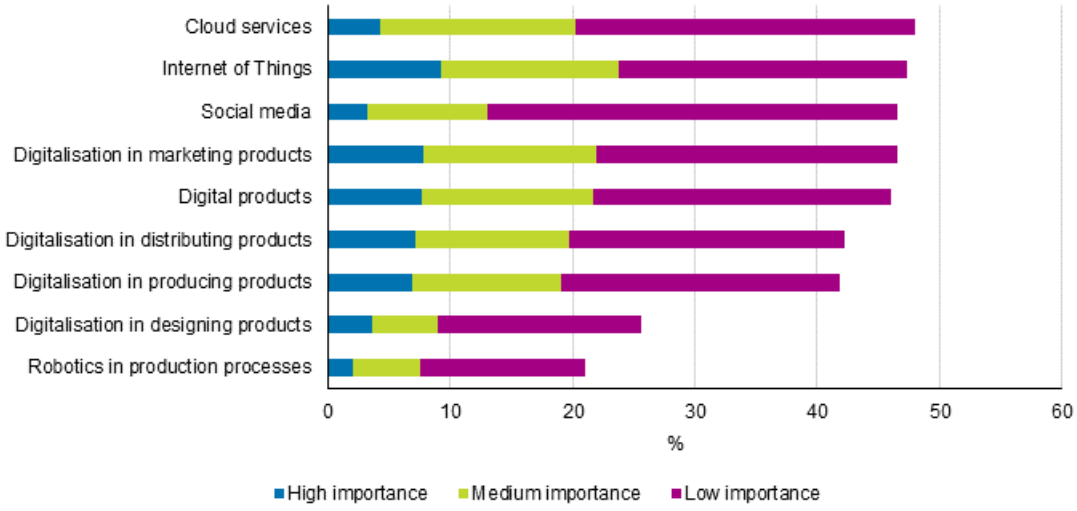


Figure 31. Importance of digitalisation in enterprises who reported no innovation activity in 2012 to 2014, share of enterprises with no innovation activity



8. User orientation in enterprises' innovation activity in 2012 to 2014

The innovation survey 2014 also asked enterprises about the role of user orientation in their innovation activity, i.e. what means and measures of user innovation the enterprise had used in their innovation activity or in the production of innovative products. The mentioned measures cover development together with users as well as integration of the products remodelled and developed by users into the enterprise's production.

Joint brainstorming, development and content production with users can, in practice, mean, for example, development forums and development platforms offered by the enterprise to collect the ideas of users and user communities. It may involve production of software or content or utilising crowdsourcing.

Products remodelled by users here refer to existing products that customers and users have processed further. In practice, the enterprise can be responsible for further processing them and is ultimately responsible for their production and introduction to the markets. When it comes to products developed by users, they are new products specifically developed by users that the enterprise takes into production and introduces to the markets. The enterprise's role may naturally also include finalising development work of the product.

The product user can be either another enterprise or end product user, i.e. consumer.

Based on the results, corporate customers are more often visible as participants in the innovation than private consumers. Of all enterprises with innovation activity, around one-fifth, 22 per cent, viewed the importance of development work in cooperation with corporate users of their products as high or moderate. Around one in ten of enterprises with innovation activity viewed development work with consumers as important (high or moderate importance).

One-fifth of those with innovation activity felt that products remodelled by corporate users were important in their innovation activity and in the production of innovative products. The corresponding result for products remodelled by consumers was nine per cent. Around one in ten estimated that new products developed by enterprises played an important role for the enterprise's innovation activity, and six per cent felt that new products developed by consumers played an important role in their innovation activity.

The importance of user innovation was, as a rule, higher for manufacturing enterprises than for service industry enterprises.

Figure 32. Manufacturing enterprises that integrated user innovation in the innovation activity and production of innovative products by the importance of user innovation in 2012 to 2014, share of enterprises with innovation activity

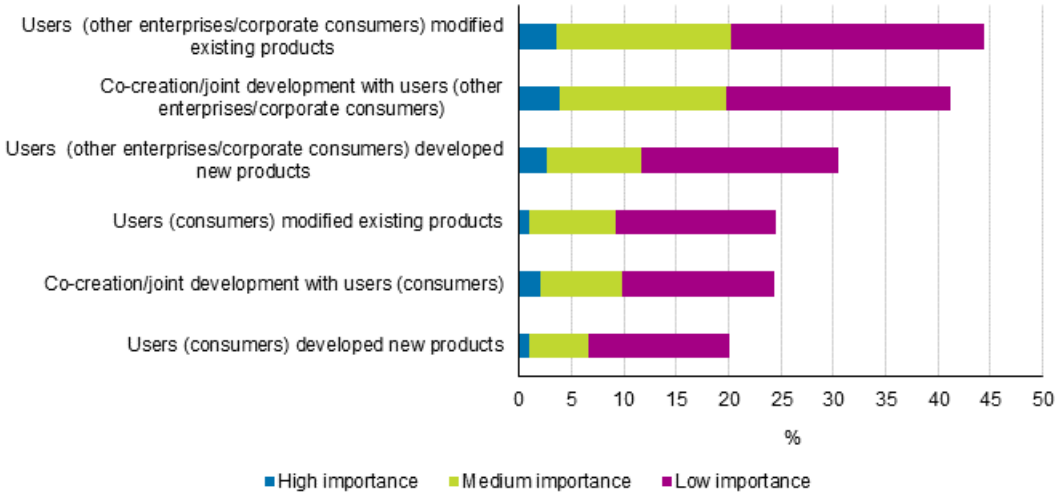
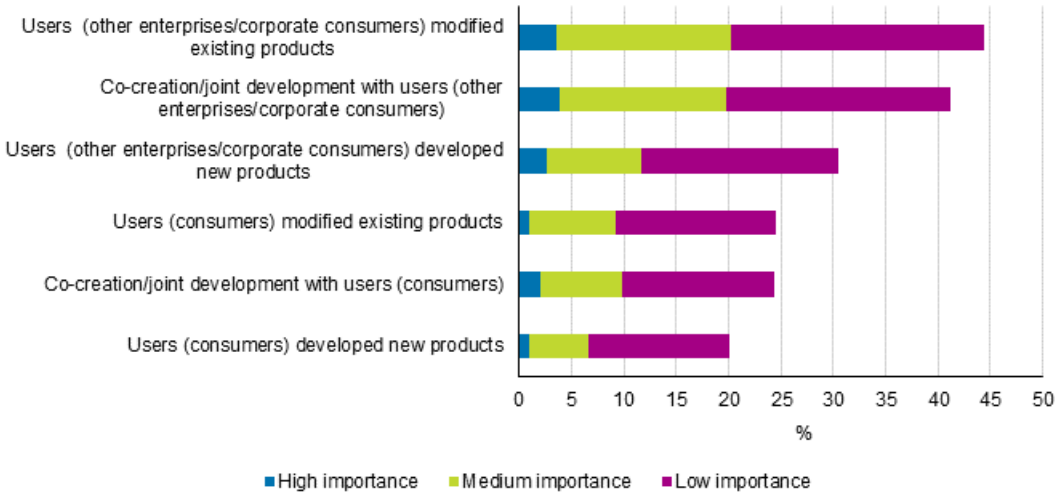


Figure 33. Service industry enterprises that integrated user innovation in the innovation activity and production of innovative products by the importance of user innovation in 2012 to 2014, share of enterprises with innovation activity



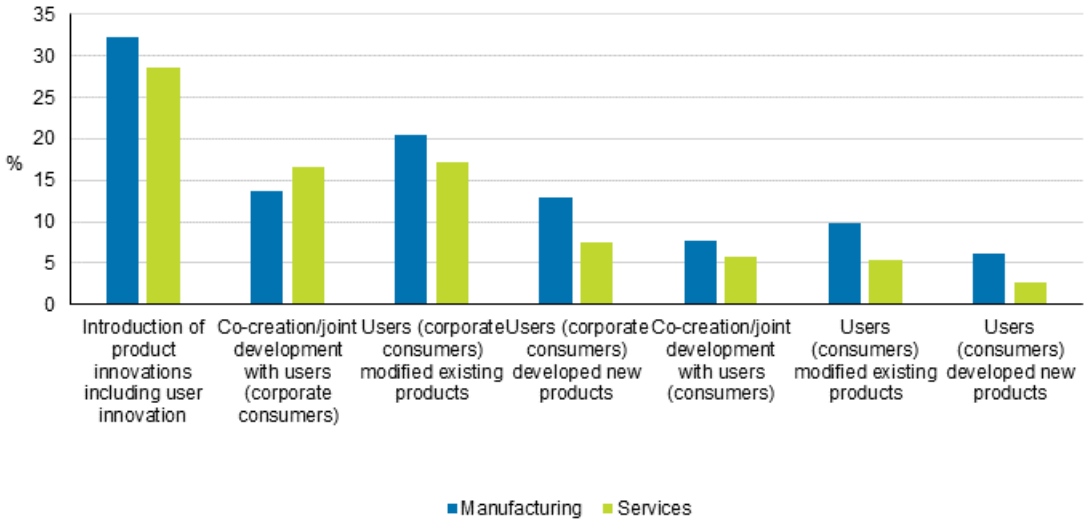
For the developers of product innovations, integrating user orientation into innovation is even more visible than when examining all enterprises with innovation activity. For example, one in four manufacturing enterprises that launched product innovations and one in three service industry enterprises with innovations consider joint development with corporate users to be of high or moderate importance. One in four of the enterprises that launched product innovations to the markets saw products remodelled by corporate users as important for innovation activity. The importance of products remodelled by consumers as seen as high or moderate by 11 per cent of enterprises with product innovations.

Unlike innovation activity that increases as the size of the enterprise grows, cooperation with users and integration of user innovations can be as common in relative terms among small and large enterprises with innovation activity. Development together with other enterprises is visible as highly important more often among large manufacturing enterprises than among small enterprises, but, for example, products developed by users, both other enterprises and consumers, can be part of innovative production as commonly in small and large enterprises.

All in all, 30 per cent of enterprises with innovation activity reported that they had launched product innovations to the markets in 2012 to 2014 that included user innovation. This represented 40 per cent of enterprises that launched product innovations and 17 per cent of all enterprises.

In relative terms, the innovations of larger enterprises included more elements of user innovation than those of smaller enterprises, especially in manufacturing and particularly concerning joint development and products remodelled by users. Products developed by users were, in turn, more commonly used as the basis for innovations of smaller enterprises than of larger enterprises.

Figure 34. Introduction of product innovations including user innovation in 2012 to 2014, share of enterprises with innovation activity



9. Adoption of innovations producing environmental benefits in 2012 to 2014

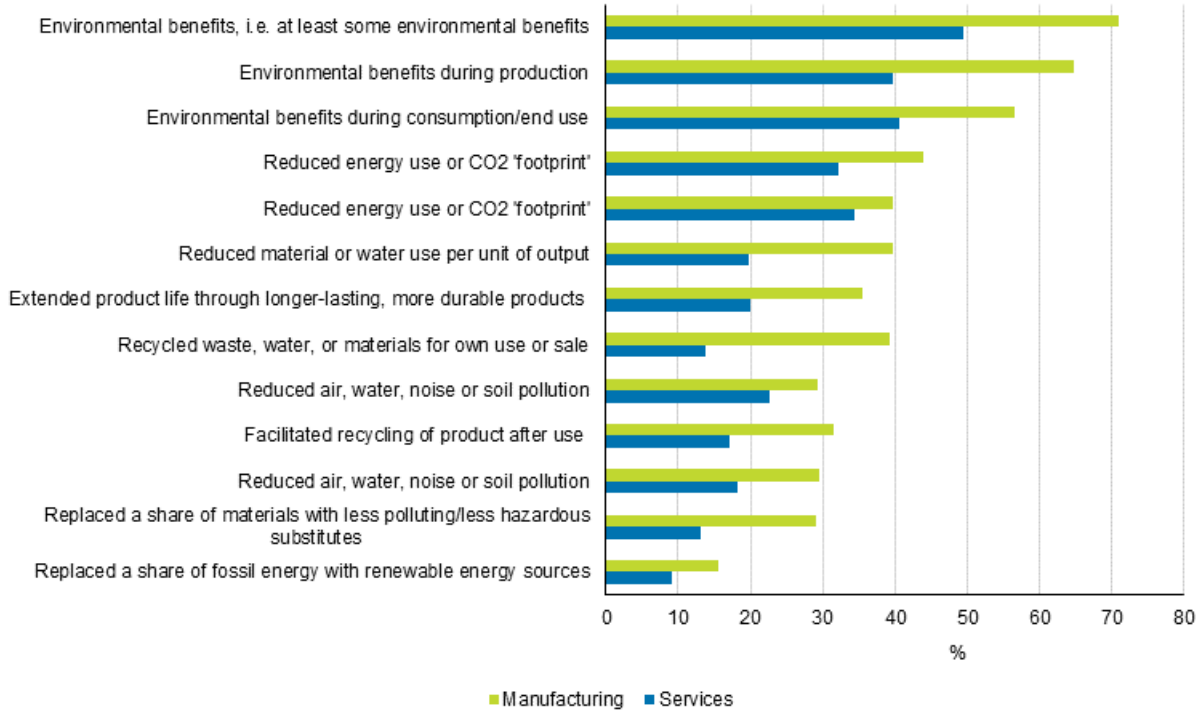
An innovation producing environmental benefits is defined as a new or significantly improved product (good or service), process, organisational method or marketing method that creates environmental benefits compared to alternatives. The environmental benefits can be the primary objective of the innovation or a by-product of other objectives. The environmental benefits of an innovation can occur during the production of a good or service, or during its consumption or use by the end user of a product. The end user can be an individual, another enterprise, or the public sector.

Altogether, 60 per cent of enterprises reported adoption of innovations that had produced environmental benefits. This was 32 per cent of all enterprises. Fifty-two per cent of innovators reported environmental benefits during production and 48 per cent reported environmental benefits from consumption and end product use.

Manufacturing enterprises reported innovation-related environmental benefits more often than service industry enterprises, as the share in manufacturing was 71 per cent of innovations and 50 per cent in service industries.

The most common environmental benefit experienced in innovations was more efficient energy consumption during production and consumption and a smaller carbon footprint. The second most common environmental benefits detected during production were more efficient use of materials or water, recycling for own use or sales and lower pollution levels.

Figure 35. Environmental benefits produced by innovations in manufacturing and services in 2012 to 2014, share of enterprises with innovations



Nearly one-fifth of enterprises that adopted environmental innovations felt that current environmental regulations were important for the enterprise's decision to adopt innovations that produce environmental benefits. Also, for example, improving the enterprise's reputation or high energy, water or material costs are central reasons for adopting innovations that produce environmental benefits. In contrast, of the provided options, the factors that least affected the adoption of environmental innovations were public financing, grants or some other financial incentive and responding to the requirements of public procurement contracts.

Figure 36. Factors influencing the introduction of innovations with environmental benefits by degree of importance in manufacturing in 2012 to 2014, share of enterprises with innovations with environmental benefits

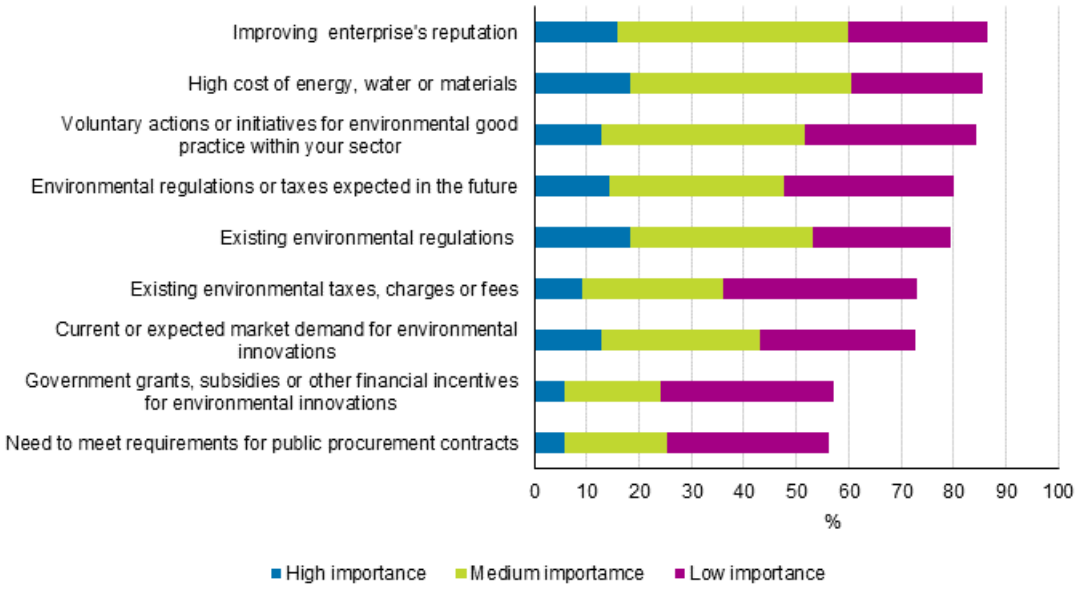
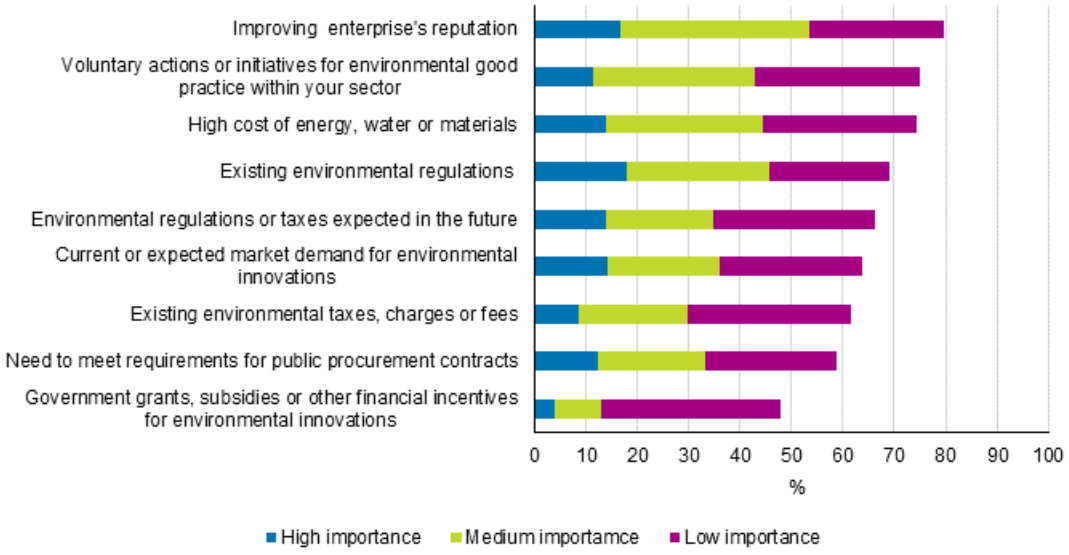


Figure 37. Factors influencing the introduction of innovations with environmental benefits by degree of importance in services in 2012 to 2014, share of enterprises with innovations with environmental benefits



Appendix tabels

Appendix table 1. Prevalence of innovation activity by form of enterprise, 2012-2014, share of enterprises

Industry	Form of enterprise	Number of enterprises	Product innovations (goods and services)	Process innovations	Product or process innovations	Innovation projects	Innovation activity	All elements
			%	%	%	%	%	%
All NACE - Total	Independent enterprise	4812	30.8	30.9	43.0	27.4	45.9	13.6
	Part of domestic group	2541	36.4	33.5	45.9	34.5	50.1	20.0
	Part of foreign group	1222	45.3	33.3	52.4	29.8	54.0	17.2
Manufacturing	Independent enterprise	2175	32.8	34.0	45.8	30.4	48.8	15.8
	Part of domestic group	1202	40.4	36.2	48.7	41.4	53.2	24.4
	Part of foreign group	444	54.2	41.3	61.8	44.1	64.6	22.6
Services	Independent enterprise	2638	29.1	28.4	40.7	24.9	43.5	11.7
	Part of domestic group	1340	32.9	31.1	43.4	28.3	47.3	16.0
	Part of foreign group	779	40.3	28.8	47.1	21.7	48.0	14.1

Appendix table 2. Prevalence of marketing and organisational innovations by form of enterprise, 2012–2014, share of enterprises

Industry	Form of enterprise	Number of enterprises	Organisa-tional innovations	Marketing innovations	Marketing or organisational innovations	Product, process, marketing or organisational innovations	Innovation activity, broadly defined	All elements
			%	%	%	%	%	%
All NACE - Total	Independent enterprise	4812	26.0	23.3	35.3	51.4	53.3	6.3
	Part of domestic group	2541	35.9	29.1	43.2	55.4	56.6	12.5
	Part of foreign group	1222	31.5	29.9	40.9	59.5	60.7	8.7
Manufacturing	Independent enterprise	2175	27.1	22.9	36.3	53.6	55.6	7.4
	Part of domestic group	1202	35.2	30.5	44.8	57.2	58.4	14.1
	Part of foreign group	444	39.0	29.2	46.8	70.1	72.1	8.1

Industry	Form of enterprise	Number of enterprises	Organisa-tional innovations	Marketing innovations	Marketing or organisational innovations	Product, process, marketing or organisational innovations	Innovation activity, broadly defined	All elements
			%	%	%	%	%	%
Services	Independent enterprise	2638	25.1	23.5	34.4	49.6	51.3	5.4
	Part of domestic group	1340	36.4	27.8	41.7	53.8	54.9	11.0
	Part of foreign group	779	27.2	30.3	37.5	53.4	54.1	9.0

Appendix table 3. Prevalence of innovation activity by enterprise's geographic markets 2012-2014, share of enterprises

Industry	Selling of products	Number of enterprises	Product innovations (goods and services)	Process innovations	Product or process innovations	Innovation projects	Innovation activity	All elements
			%	%	%	%	%	%
All NACE - Total	In Finland only	4566	24.5	26.1	36.1	19.6	38.2	10.0
	In other European Union or associated countries, not outside	1477	37.5	36.4	49.4	36.4	55.0	18.9
	Outside European Union or associated countries	2482	51.9	40.9	60.3	45.3	63.7	25.6
	Market not defined	51	3.9	9.2	9.2	3.9	9.2	3.9
Manufacturing	In Finland only	1602	21.0	25.8	34.9	19.2	37.1	7.6
	In other European Union or associated countries, not outside	668	34.1	35.2	45.7	36.1	51.7	19.1
	Outside European Union or associated countries	1537	56.9	46.1	64.5	52.4	68.2	31.8
	Market not defined	13	0.0	0.0	0.0	0.0	0.0	0.0
Services	In Finland only	2964	26.4	26.2	36.7	19.8	38.8	11.3
	In other European Union or associated countries, not outside	809	40.3	37.3	52.5	36.7	57.6	18.7
	Outside European Union or associated countries	945	43.9	32.4	53.4	33.6	56.4	15.5
	Market not defined	38	5.2	12.3	12.3	5.2	12.3	5.2

Appendix table 4. Prevalence of marketing and organisational innovations by enterprise's geographic markets 2012-2014, share of enterprises

Industry	Selling of products	Number of enterprises	Organisational innovations	Marketing innovations	Marketing or organisational innovations	Product, process, marketing or organisational innovations	Innovation activity, broadly defined	All elements
			%	%	%	%	%	%
All NACE - Total	In Finland only	4566	22.5	20.1	30.5	44.7	45.8	4.8
	In other European Union or associated countries, not outside	1477	34.7	30.8	43.8	60.2	62.5	10.5
	Outside European Union or associated countries	2482	40.3	34.2	50.2	67.4	69.2	14.2
	Market not defined	51	14.6	5.4	20.0	20.0	20.0	0.0
Manufacturing	In Finland only	1602	18.6	14.4	25.6	41.9	43.0	3.1
	In other European Union or associated countries, not outside	668	37.1	28.8	44.7	57.7	60.6	9.5
	Outside European Union or associated countries	1537	41.7	37.2	53.8	72.0	74.1	16.5
	Market not defined	13	0.0	0.0	0.0	0.0	0.0	0.0
Services	In Finland only	2964	24.6	23.1	33.1	46.1	47.3	5.7
	In other European Union or associated countries, not outside	809	32.7	32.5	43.1	62.2	64.1	11.4
	Outside European Union or associated countries	945	38.1	29.3	44.2	59.8	61.2	10.4
	Market not defined	38	19.5	7.2	26.6	26.6	26.6	0.0

Appendix table 5. Developers of goods innovations by size category of personnel 2012-2014, share of enterprises with goods innovations

Industry	Size category of personnel	Number of enterprises	Own enterprise by itself	Own enterprise together with others	Own enterprise by adapting or modifying goods developed by others	Other enterprises or institutions
			%	%	%	%
All NACE - Total	10-49	1327	76.5	40.7	26.3	17.1
	50-249	473	83.7	55.7	26.1	9.1
	250-	183	87.8	68.9	31.2	19.8
	Total	**1984**	**79.3**	**46.9**	**26.7**	**15.4**
Manufacturing	10-49	805	87.9	36.7	26.6	8.7
	50-249	376	82.2	56.8	24.6	5.9
	250-	151	89.7	69.1	26.9	16.6
	Total	**1331**	**86.5**	**46.0**	**26.1**	**8.8**
Services	10-49	523	59.0	46.9	25.7	30.0
	50-249	98	89.6	51.6	31.6	21.1
	250-	33	79.1	68.1	50.9	34.7
	Total	**653**	**64.6**	**48.7**	**27.8**	**28.9**

Appendix table 6. Developers of goods innovations by industry 2012–2014, share of enterprises with goods innovations

Industry	Number of enterprises	Own enterprise by itself	Own enterprise together with others	Own enterprise by adapting or modifying goods developed by others	Other enterprises or institutions
		%	%	%	%
05-09 Mining and quarrying	4	72.7	45.5	27.3	0.0
10-12 Food products and beverages	154	96.0	43.4	12.9	5.8
13 Textiles	23	95.0	32.1	40.7	27.1
14 Wearing apparel	16	87.7	31.9	19.6	0.0
15 Leather and related products	..	..	..	..	..
16 Wood, products of wood, and cork	81	90.6	38.6	26.7	11.0
17 Paper and paper products	38	83.7	57.4	55.6	12.1
18 Printing and reproduction of recorded media	16	100.0	36.5	36.5	9.4
19-21 Chemicals and chemical products	80	88.5	46.6	21.8	11.0
22 Rubber and plastic products	90	71.9	53.8	31.3	5.9
23 Other non-metallic mineral products	50	87.1	35.1	41.4	8.5
24 Basic metals	16	82.1	75.0	17.9	17.9
25 Fabricated metal products, except machinery and equipment	210	83.4	40.0	36.1	7.3
26 Computer, electronic and optical products	92	92.3	45.4	14.7	13.8
27 Electrical equipment	61	94.7	75.7	22.3	9.3
28 Machinery and equipment n.e.c.	261	81.9	46.6	21.3	4.9
29 Motor vehicles, trailers and semi-trailers	20	82.2	42.1	14.0	5.1
30 Other transport equipment	19	90.3	74.0	45.0	6.9
31 Furniture	42	97.6	44.9	34.6	4.8
32 Other manufacturing	31	88.9	52.8	24.1	24.1
33 Repair and installation of machinery and equipment	13	63.1	0.0	0.0	36.9
35 Electricity, gas, steam and air conditioning supply	6	17.5	82.5	35.0	17.5
36 Water collection, treatment and supply	-	-	-	-	-
37-39 Sewerage, waste treatment	6	100.0	28.6	28.6	28.6
46 Wholesale trade, except of motor vehicles and motorcycles	389	55.1	42.6	22.9	36.6
49-52 Transportation and storage	37	63.7	59.4	48.2	26.2
53 Postal and courier activities	..	..	..	..	..
58 Publishing activities	26	91.6	62.6	30.9	30.9
59 Programme production, sound recording and music publishing activities	..	..	..	..	..
60 Programming and broadcasting activities	-	-	-	-	-
61 Telecommunications	6	16.3	72.8	100.0	56.5
62 Computer programming, consultancy and related activities	127	88.3	56.5	30.8	10.9
63 Information service activities	-	-	-	-	-
64 Financial service activities	4	100.0	72.6	0.0	0.0
65 Insurance, reinsurance and pension funding	4	75.0	50.0	50.0	50.0
66 Activities auxiliary to financial services and insurance activities	..	..	..	..	..
71 Architectural and engineering activities; technical testing and analysis	43	60.9	48.3	25.2	11.4

Industry	Number of enterprises	Own enterprise by itself	Own enterprise together with others	Own enterprise by adapting or modifying goods developed by others	Other enterprises or institutions
		%	%	%	%
72 Scientific research and development	15	77.4	81.7	45.6	13.7
73 Advertising and market research	-	-	-	-	-
All NACE - Total	**1984**	**79.3**	**46.9**	**26.7**	**15.4**
05-39 Manufacturing, total	**1331**	**86.5**	**46.0**	**26.1**	**8.8**
46, 49-53, 58-66, 71-73 Services, total	**653**	**64.6**	**48.7**	**27.8**	**28.9**

Appendix table 7. Developers of service innovations by size category of personnel 2012-2014, share of enterprises with service innovations

Industry	Size category of personnel	Number of enterprises	Own enterprise by itself	Own enterprise together with others	Own enterprise by adapting or modifying services developed by others	Other enterprises or institutions
			%	%	%	%
All NACE - Total	10-49	1163	79.2	44.0	25.2	12.4
	50-249	362	69.5	57.4	30.1	14.1
	250-	149	75.4	70.1	42.9	19.0
	Total	**1674**	**76.7**	**49.2**	**27.8**	**13.4**
Manufacturing	10-49	308	85.3	38.5	22.7	11.6
	50-249	138	64.5	61.4	23.9	14.3
	250-	79	75.0	64.4	33.3	17.1
	Total	**525**	**78.3**	**48.4**	**24.6**	**13.1**
Services	10-49	855	77.0	46.0	26.1	12.7
	50-249	224	72.5	55.0	34.0	14.0
	250-	70	75.8	76.7	53.9	21.3
	Total	**1148**	**76.0**	**49.6**	**29.3**	**13.5**

Appendix table 8. Developers of service innovations by industry 2012-2014, share of enterprises with service innovations

Industry	Number of enterprises	Own enterprise by itself	Own enterprise together with others	Own enterprise by adapting or modifying services developed by others	Other enterprises or institutions
		%	%	%	%
05-09 Mining and quarrying	..	..	..	..	..
10-12 Food products and beverages	26	84.1	49.3	3.9	3.9
13 Textiles	..	..	..	..	..
14 Wearing apparel	8	59.5	40.5	0.0	40.5
15 Leather and related products	..	..	..	..	..
16 Wood. products of wood. and cork	15	100.0	50.8	23.4	25.4
17 Paper and paper products	16	77.9	93.8	32.8	26.7
18 Printing and reproduction of recorded media	15	100.0	72.1	37.7	9.8
19-21 Chemicals and chemical products	17	64.4	51.0	17.8	11.5
22 Rubber and plastic products	32	68.8	28.5	42.9	15.6
23 Other non-metallic mineral products	21	68.3	62.6	27.2	10.2
24 Basic metals	4	100.0	71.6	28.4	28.4
25 Fabricated metal products, except machinery and equipment	101	82.2	39.0	25.0	19.8
26 Computer, electronic and optical products	44	88.7	37.1	13.6	17.3
27 Electrical equipment	39	67.5	25.5	31.9	2.6
28 Machinery and equipment n.e.c.	82	71.0	61.0	23.9	4.6
29 Motor vehicles, trailers and semi-trailers	5	81.0	0.0	19.0	0.0
30 Other transport equipment	5	100.0	20.0	0.0	0.0
31 Furniture	22	100.0	44.7	0.0	0.0
32 Other manufacturing	11	84.2	50.0	0.0	0.0
33 Repair and installation of machinery and equipment	18	66.2	90.0	56.2	28.1
35 Electricity, gas, steam and air conditioning supply	27	70.6	55.0	40.5	7.4
36 Water collection, treatment and supply	..	..	..	..	..
37-39 Sewerage, waste treatment	11	57.8	51.4	25.7	33.0
46 Wholesale trade, except of motor vehicles and motorcycles	155	76.6	38.8	21.8	12.8
49-52 Transportation and storage	164	67.3	51.6	39.7	17.7
53 Postal and courier activities	4	72.2	72.2	44.4	72.2
58 Publishing activities	59	83.0	83.0	51.1	24.1
59 Programme production, sound recording and music publishing activities	4	66.7	66.7	33.3	0.0
60 Programming and broadcasting activities	4	100.0	100.0	50.0	0.0
61 Telecommunications	26	74.7	67.2	74.7	36.1
62 Computer programming. consultancy and related activities	327	94.7	43.5	26.4	5.0
63 Information service activities	31	72.2	49.9	11.2	0.0
64 Financial service activities	68	27.1	45.2	24.2	46.1
65 Insurance, reinsurance and pension funding	14	43.6	100.0	49.1	21.8

Industry	Number of enterprises	Own enterprise by itself	Own enterprise together with others	Own enterprise by adapting or modifying services developed by others	Other enterprises or institutions
		%	%	%	%
66 Activities auxiliary to financial services and insurance activities	49	65.6	72.3	23.4	18.0
71 Architectural and engineering activities; technical testing and analysis	162	70.3	36.9	21.9	7.7
72 Scientific research and development	16	73.5	67.3	46.9	20.4
73 Advertising and market research	68	79.0	62.0	24.0	7.0
All NACE - Total	**1674**	**76.7**	**49.2**	**27.8**	**13.4**
05-39 Manufacturing, total	**525**	**78.3**	**48.4**	**24.6**	**13.1**
46, 49-53, 58-66, 71-73 Services, total	**1148**	**76.0**	**49.6**	**29.3**	**13.5**

Appendix table 9. Enterprises with product innovations by degree of novelty of innovations and size category of personnel 2012–2014, share of enterprises with product innovations

Industry	Size category of personnel	Number of enterprises	Only new to market	Only new to enterprise	Both new to market and to enterprise	New to market	New to enterprise
			%	%	%	%	%
All NACE - Total	10-49	2068	29.3	42.1	28.5	57.9	70.7
	50-249	657	23.4	44.1	32.4	55.9	76.6
	250-	237	18.7	22.5	58.9	77.5	81.3
	Total	**2962**	**27.2**	**41.0**	**31.8**	**59.0**	**72.8**
Manufacturing	10-49	874	35.0	41.0	24.1	59.0	65.0
	50-249	403	19.8	43.6	36.6	56.4	80.2
	250-	162	20.2	21.1	58.7	78.9	79.8
	Total	**1439**	**29.1**	**39.5**	**31.5**	**60.5**	**70.9**
Services	10-49	1194	25.2	43.0	31.8	57.0	74.8
	50-249	254	29.2	45.0	25.8	55.0	70.8
	250-	76	15.3	25.4	59.3	74.6	84.7
	Total	**1523**	**25.4**	**42.4**	**32.2**	**57.6**	**74.6**

Appendix table 10. Enterprises with product innovations by degree of novelty of innovations and industry 2012-2014, share of enterprises with product innovations

Industry	Number of enterprises	Only new to market	Only new to enterprise	Both new to market and to enterprise	New to market	New to enterprise
		%	%	%	%	%
05-09 Mining and quarrying	5	18.5	22.2	59.3	77.8	81.5
10-12 Food products and beverages	154	28.7	43.2	28.1	56.8	71.3
13 Textiles	23	40.7	27.1	32.1	72.9	59.3
14 Wearing apparel	18	18.0	46.1	36.0	53.9	82.0
15 Leather and related products	..	..	..	..	..	..
16 Wood. products of wood. and cork	82	37.2	40.3	22.5	59.7	62.8
17 Paper and paper products	38	23.6	49.0	27.4	51.0	76.4
18 Printing and reproduction of recorded media	17	8.9	50.9	40.2	49.1	91.1
19-21 Chemicals and chemical products	80	25.9	47.1	27.0	52.9	74.1
22 Rubber and plastic products	103	19.5	53.7	26.8	46.3	80.5
23 Other non-metallic mineral products	51	29.4	34.4	36.2	65.6	70.6
24 Basic metals	16	21.3	53.7	25.0	46.3	78.7
25 Fabricated metal products, except machinery and equipment	232	32.4	34.9	32.7	65.1	67.6
26 Computer. electronic and optical products	92	43.3	33.4	23.3	66.6	56.7
27 Electrical equipment	73	23.5	41.1	35.4	58.9	76.5
28 Machinery and equipment n.e.c.	261	24.1	34.1	41.8	65.9	75.9
29 Motor vehicles, trailers and semi-trailers	20	27.1	31.8	41.1	68.2	72.9
30 Other transport equipment	19	31.4	35.6	32.9	64.4	68.6
31 Furniture	48	44.1	15.9	40.0	84.1	55.9
32 Other manufacturing	31	41.7	40.7	17.6	59.3	58.3
33 Repair and installation of machinery and equipment	31	14.5	69.5	16.0	30.5	85.5
35 Electricity, gas, steam and air conditioning supply	27	25.7	55.0	19.3	45.0	74.3
36 Water collection, treatment and supply	..	..	..	..	..	..
37-39 Sewerage, waste treatment	14	49.3	31.3	19.4	68.8	50.7
46 Wholesale trade, except of motor vehicles and motorcycles	444	25.3	36.4	38.3	63.6	74.7
49-52 Transportation and storage	175	15.1	63.8	21.2	36.2	84.9
53 Postal and courier activities	4	72.2	0.0	27.8	100.0	27.8
58 Publishing activities	73	30.5	52.3	17.2	47.7	69.5
59 Programme production, sound recording and music publishing activities	4	33.3	33.3	33.3	66.7	66.7
60 Programming and broadcasting activities	4	0.0	50.0	50.0	50.0	100.0
61 Telecommunications	26	13.2	36.9	49.9	63.1	86.8
62 Computer programming, consultancy and related activities	363	20.5	43.3	36.2	56.7	79.5
63 Information service activities	31	39.0	33.3	27.8	66.7	61.0
64 Financial service activities	71	27.8	37.1	35.1	62.9	72.2
65 Insurance, reinsurance and pension funding	14	7.3	43.6	49.1	56.4	92.7

Industry	Number of enterprises	Only new to market	Only new to enterprise	Both new to market and to enterprise	New to market	New to enterprise
		%	%	%	%	%
66 Activities auxiliary to financial services and insurance activities	49	27.7	20.5	51.8	79.5	72.3
71 Architectural and engineering activities; technical testing and analysis	172	34.3	39.9	25.8	60.1	65.7
72 Scientific research and development	27	63.8	32.5	3.6	67.5	36.2
73 Advertising and market research	68	31.0	52.0	17.0	48.0	69.0
All NACE - Total	**2962**	**27.2**	**41.0**	**31.8**	**59.0**	**72.8**
05-39 Manufacturing, total	**1439**	**29.1**	**39.5**	**31.5**	**60.5**	**70.9**
46, 49-53, 58-66, 71-73 Services, total	**1523**	**25.4**	**42.4**	**32.2**	**57.6**	**74.6**

Appendix table 11. Proportions of product innovations and unchanged products of turnover by size category of personnel, 2014

Industry	Size category of personnel	Proportions of the total turnover of enterprises with product innovations			Proportions of the total turnover of all enterprises		
		Products new to the market	Products new only to the enterprise	Unchanged products	Products new to the market	Products new only to the enterprise	Unchanged products
		%	%	%	%	%	%
All NACE - Total	10-49	7.2	13.8	79.0	1.7	3.4	94.9
	50-249	5.6	10.4	84.0	2.3	4.3	93.4
	250-	6.5	7.9	85.6	5.4	6.6	88.0
	Total	**6.4**	**8.8**	**84.8**	**3.9**	**5.4**	**90.7**
Manufacturing	10-49	7.4	10.5	82.1	2.4	3.4	94.2
	50-249	4.8	8.8	86.4	2.6	4.8	92.6
	250-	8.1	9.6	82.2	7.6	9.0	83.4
	Total	**7.6**	**9.5**	**82.9**	**5.8**	**7.3**	**86.9**
Services	10-49	7.1	16.4	76.5	1.4	3.3	95.2
	50-249	6.8	13.2	80.0	2.0	3.9	94.1
	250-	2.8	4.2	93.0	1.9	2.9	95.3
	Total	**4.1**	**7.5**	**88.4**	**1.8**	**3.3**	**94.9**

Appendix table 12. Proportions of product innovations and unchanged products of turnover by industry, 2014

Industry	Proportions of the total turnover of enterprises with product innovations			Proportions of the total turnover of all enterprises		
	Products new to the market	Products new only to the enterprise	Unchanged products	Products new to the market	Products new only to the enterprise	Unchanged products
	%	%	%	%	%	%
05-09 Mining and quarrying	2.8	3.3	94.0	0.9	1.1	98.0
10-12 Food products and beverages	1.7	8.4	89.9	1.4	7.2	91.4
13 Textiles	4.9	3.4	91.7	2.2	1.5	96.2
14 Wearing apparel	1.1	62.1	36.8	0.8	45.3	54.0
15 Leather and related products	0.5	3.2	96.2	0.2	1.2	98.7
16 Wood. products of wood. and cork	8.7	10.3	81.0	5.6	6.6	87.8
17 Paper and paper products	7.1	7.3	85.6	6.2	6.4	87.4
18 Printing and reproduction of recorded media	3.9	19.9	76.2	1.0	5.1	94.0
19-21 Chemicals and chemical products	3.3	1.4	95.3	2.9	1.3	95.8
22 Rubber and plastic products	10.8	7.5	81.6	8.5	5.9	85.6
23 Other non-metallic mineral products	4.5	7.1	88.5	2.8	4.3	92.9
24 Basic metals	3.8	3.5	92.7	3.3	3.1	93.7
25 Fabricated metal products, except machinery and equipment	13.8	8.6	77.6	6.4	4.0	89.6
26 Computer. electronic and optical products	11.4	21.6	66.9	10.0	19.0	71.0
27 Electrical equipment	15.3	16.6	68.1	10.8	11.7	77.5
28 Machinery and equipment n.e.c.	10.8	10.7	78.6	9.8	9.7	80.5
29 Motor vehicles, trailers and semi-trailers	10.6	15.1	74.3	5.6	7.9	86.5
30 Other transport equipment	31.8	37.0	31.2	23.2	27.0	49.8
31 Furniture	9.8	5.8	84.4	6.8	4.0	89.1
32 Other manufacturing	5.7	6.1	88.1	3.1	3.3	93.6
33 Repair and installation of machinery and equipment	3.9	2.3	93.8	2.0	1.2	96.8
35 Electricity, gas, steam and air conditioning supply	4.4	1.5	94.1	1.6	0.5	97.9
36 Water collection, treatment and supply	50.0	50.0	.	24.1	24.1	51.8
37-39 Sewerage, waste treatment	3.5	1.5	95.0	1.8	0.8	97.4
46 Wholesale trade, except of motor vehicles and motorcycles	3.5	5.1	91.4	1.3	2.0	96.7
49-52 Transportation and storage	2.3	13.2	84.5	0.7	4.0	95.3
53 Postal and courier activities	4.9	0.0	95.1	4.5	0.0	95.5
58 Publishing activities	3.3	12.1	84.7	2.1	7.7	90.2
59 Programme production, sound recording and music publishing activities	6.5	5.0	88.5	1.9	1.5	96.6
60 Programming and broadcasting activities	18.9	19.4	61.7	1.3	1.3	97.3
61 Telecommunications	0.3	3.0	96.7	0.2	2.8	97.0
62 Computer programming, consultancy and related activities	6.9	16.6	76.5	5.4	13.0	81.6

Industry	Proportions of the total turnover of enterprises with product innovations			Proportions of the total turnover of all enterprises		
	Products new to the market	Products new only to the enterprise	Unchanged products	Products new to the market	Products new only to the enterprise	Unchanged products
	%	%	%	%	%	%
63 Information service activities	4.4	17.0	78.6	2.4	9.4	88.2
64 Financial service activities	2.3	3.1	94.6	0.9	1.2	98.0
65 Insurance, reinsurance and pension funding	2.5	6.0	91.4	0.6	1.5	97.9
66 Activities auxiliary to financial services and insurance activities	13.9	9.6	76.5	9.1	6.2	84.7
71 Architectural and engineering activities; technical testing and analysis	8.4	3.5	88.1	4.1	1.7	94.1
72 Scientific research and development	51.9	36.2	11.9	41.0	28.6	30.5
73 Advertising and market research	1.7	50.4	47.9	0.4	10.9	88.8
All NACE - Total	**6.4**	**8.8**	**84.8**	**3.9**	**5.4**	**90.7**
05-39 Manufacturing, total	**7.6**	**9.5**	**82.9**	**5.8**	**7.3**	**86.9**
46, 49-53, 58-66, 71-73 Services, total	**4.1**	**7.5**	**88.4**	**1.8**	**3.3**	**94.9**

Appendix table 13. Developers of process innovations by size category of personnel, 2012-2014, share of enterprises with process innovations

Industry	Size category of personnel	Number of enterprises	Own enterprise by itself	Own enterprise together with others	Own enterprise by adapting or modifying processes developed by others	Other enterprises or institutions
			%	%	%	%
All NACE - Total	10-49	1931	61.8	46.6	21.3	16.8
	50-249	614	55.2	61.9	28.4	14.2
	250-	202	70.0	75.1	35.8	19.4
	Total	**2747**	**60.9**	**52.1**	**23.9**	**16.4**
Manufacturing	10-49	867	63.4	52.4	19.3	10.8
	50-249	361	64.2	62.6	28.9	12.7
	250-	130	71.6	76.0	37.6	23.0
	Total	**1358**	**64.4**	**57.4**	**23.6**	**12.4**
Services	10-49	1064	60.5	41.9	22.9	21.8
	50-249	253	42.4	60.8	27.6	16.4
	250-	73	67.2	73.6	32.7	12.9
	Total	**1389**	**57.5**	**47.0**	**24.3**	**20.3**

Appendix table 14. Developers of process innovations by industry 2012-2014, share of enterprises with process innovations

Industry	Number of enterprises	Own enterprise by itself	Own enterprise together with others	Own enterprise by adapting or modifying processes developed by others	Other enterprises or institutions
		%	%	%	%
05-09 Mining and quarrying	5	73.9	73.9	52.2	21.7
10-12 Food products and beverages	107	73.3	65.9	16.8	17.2
13 Textiles	31	92.5	44.9	24.3	14.0
14 Wearing apparel	10	79.8	20.2	0.0	0.0
15 Leather and related products	..	..	..	..	..
16 Wood. products of wood. and cork	98	79.1	41.2	23.5	11.7
17 Paper and paper products	40	53.4	72.8	31.2	15.4
18 Printing and reproduction of recorded media	38	81.8	51.4	3.9	0.0
19-21 Chemicals and chemical products	64	82.8	33.5	27.5	8.1
22 Rubber and plastic products	81	47.9	74.6	27.0	4.3
23 Other non-metallic mineral products	47	62.8	51.2	46.2	13.7
24 Basic metals	22	27.8	82.3	12.7	20.3
25 Fabricated metal products. except machinery and equipment	290	65.5	52.6	29.0	11.9
26 Computer, electronic and optical products	58	51.6	53.3	36.1	11.2
27 Electrical equipment	43	74.0	62.5	44.0	15.0
28 Machinery and equipment n.e.c.	211	69.6	60.3	11.4	13.4
29 Motor vehicles. trailers and semi-trailers	24	55.4	51.9	23.3	0.0
30 Other transport equipment	16	56.1	67.4	16.3	0.0
31 Furniture	33	58.5	95.0	22.8	8.0
32 Other manufacturing	20	72.9	64.3	8.6	18.6
33 Repair and installation of machinery and equipment	36	24.9	50.2	33.7	4.8
35 Electricity. gas. steam and air conditioning supply	46	31.7	87.6	14.6	28.5
36 Water collection. treatment and supply	6	17.1	80.0	17.1	20.0
37-39 Sewerage. waste treatment	30	59.4	24.4	14.6	33.0
46 Wholesale trade. except of motor vehicles and motorcycles	332	49.2	49.2	21.4	19.9
49-52 Transportation and storage	299	53.6	44.4	16.2	22.8
53 Postal and courier activities	15	71.6	28.4	24.3	10.8
58 Publishing activities	51	71.1	68.8	32.4	4.3
59 Programme production, sound recording and music publishing activities	12	0.0	24.3	12.2	75.7
60 Programming and broadcasting activities	4	100.0	100.0	50.0	0.0
61 Telecommunications	23	70.3	63.1	56.0	19.1
62 Computer programming. consultancy and related activities	274	76.5	44.8	28.9	14.9
63 Information service activities	19	36.6	45.1	18.3	18.3
64 Financial service activities	48	34.0	52.5	23.1	32.3

Industry	Number of enterprises	Own enterprise by itself	Own enterprise together with others	Own enterprise by adapting or modifying processes developed by others	Other enterprises or institutions
		%	%	%	%
65 Insurance, reinsurance and pension funding	16	50.8	76.2	30.2	6.3
66 Activities auxiliary to financial services and insurance activities	42	61.6	31.9	40.8	36.9
71 Architectural and engineering activities; technical testing and analysis	169	44.9	43.1	17.4	20.5
72 Scientific research and development	25	96.0	17.3	31.6	4.0
73 Advertising and market research	61	68.9	61.1	46.7	31.1
All NACE - Total	**2747**	**60.9**	**52.1**	**23.9**	**16.4**
05-39 Manufacturing, total	**1358**	**64.4**	**57.4**	**23.6**	**12.4**
46, 49-53, 58-66, 71-73 Services, total	**1389**	**57.5**	**47.0**	**24.3**	**20.3**

Appendix table 15. Innovation expenditure, 2014, EUR million

Industry	In-house R&D	External R&D	Acquisition of machinery, equipment, software and buildings	Acquisition of existing knowledge	Other innovation expenditure	Total innovation expenditure
	€ million	€ million	€ million	€ million	€ million	€ million
05-09 Mining and quarrying	11,4	2,3	1,4	0,4	1,4	16,9
10-11 Food products and beverages	68,7	5,1	66,5	1,3	15,9	157,5
13-15 Textile, clothing, leather and footwear industry	10,5	1,0	2,2	0,1	1,3	15,1
16-18 Wood and paper industry	94,0	14,1	36,1	3,9	1,4	149,6
19-22 Chemical industry	316,5	51,6	48,8	1,0	4,3	422,2
24-25, 28-30 Metal and engineering industry	527,4	108,2	141,7	9,8	8,0	795,1
26-27 Electrical and electronics industry	2110,1	260,7	152,5	8,1	36,6	2567,9
23, 31-33 Other manufacturing	36,1	6,0	20,4	0,7	1,1	64,3
35-39 Energy and waste management	45,4	102,9	28,7	0,8	0,4	178,1
46 Wholesale trade, except of motor vehicles and motorcycles	60,9	19,5	36,6	2,8	11,6	131,4
49-53 Transportation and storage	17,1	4,7	74,7	0,4	1,0	97,8
58 Publishing activities	138,2	30,5	5,4	2,5	6,0	182,6
59-60 Programme production and publishing, programming and broadcasting	1,7	0,5	0,5	0,3	0,2	3,0
61 Telecommunications	42,3	4,3	1,5	0,3	0,2	48,5
62 Computer programming, consultancy and related activities	385,2	51,0	9,9	2,8	6,2	455,0
63 Information service activities	19,6	1,2	0,9	0,2	0,6	22,6
64-66 Financial and insurance activities	105,7	103,0	38,2	3,4	10,0	260,2
71 Architectural and engineering activities; technical testing and analysis	75,7	22,2	5,8	1,6	1,5	106,8
72 Scientific research and development	209,1	25,9	4,1	0,9	0,5	240,6
73 Advertising and market research	34,8	7,5	0,5	0,2	4,0	47,0
All NACE - Total	**4310,3**	**822,1**	**676,4**	**41,5**	**112,1**	**5962,4**
05-39 Manufacturing, total	**3220,0**	**551,9**	**498,3**	**26,0**	**70,4**	**4366,7**
46, 49-53, 58-66, 71-73 Services, total	**1090,3**	**270,2**	**178,1**	**15,4**	**41,7**	**1595,7**

Appendix table 16. Co-operation in innovation activity by location of co-operating partner 2012–2014, share of enterprises with innovation activity

Industry	Co-operation partner	Location of co-operation partner						Co-operation
		Finland	Other Europe	United States	China	India	All other countries	
		%	%	%	%	%	%	%
All NACE – Total	Other enterprises within your enterprise group	12.9	10.8	3.0	1.7	0.9	1.6	20.6
	Suppliers of equipment. materials. components or software	24.3	14.4	5.3	1.3	0.6	1.2	30.9
	Clients or customers from the private sector	26.4	11.1	3.6	1.8	1.1	3.3	29.6
	Clients or customers from the public sector	16.0	2.5	0.6	0.3	0.3	0.8	16.6
	Competitors or other enterprises in your sector	15.6	9.2	3.2	1.5	0.3	1.2	19.8
	Consultants. commercial labs or private R&D institutes	20.9	6.7	1.3	0.2	0.2	0.6	22.6
	Universities or other higher education institutions	22.5	4.2	0.9	0.3	0.1	0.4	23.0
	Government or public research institutes	17.3	4.8	1.1	0.5	0.1	0.2	18.0
Manufacturing	Other enterprises within your enterprise group	16.8	14.2	4.1	3.2	1.4	2.4	26.5
	Suppliers of equipment. materials. components or software	28.0	18.7	4.6	1.8	1.0	1.9	35.2
	Clients or customers from the private sector	27.2	15.6	5.1	3.1	1.6	6.0	32.0
	Clients or customers from the public sector	16.2	3.8	0.7	0.3	0.2	0.8	17.0
	Competitors or other enterprises in your sector	16.3	12.2	3.2	2.4	0.2	1.8	22.6
	Consultants. commercial labs or private R&D institutes	25.7	9.0	1.5	0.3	0.3	1.0	27.7
	Universities or other higher education institutions	28.9	6.1	1.5	0.6	0.3	0.8	29.7
	Government or public research institutes	23.8	6.8	1.2	0.8	0.2	0.3	24.6
Services	Other enterprises within your enterprise group	9.8	8.2	2.1	0.6	0.5	0.9	16.0
	Suppliers of equipment. materials. components or software	21.0	10.4	6.0	1.0	0.3	0.6	27.0
	Clients or customers from the private sector	25.6	6.9	2.2	0.7	0.7	0.8	27.3
	Clients or customers from the public sector	15.8	1.3	0.5	0.3	0.3	0.8	16.3
	Competitors or other enterprises in your sector	15.1	6.4	3.2	0.7	0.5	0.7	17.1
	Consultants. commercial labs or private R&D institutes	16.5	4.5	1.2	0.1	0.0	0.3	18.0
	Universities or other higher education institutions	16.5	2.4	0.4	0.0	0.0	0.0	16.8
	Government or public research institutes	11.2	2.9	0.9	0.2	0.0	0.0	11.9

Appendix table 17. Public sector procurement and innovation activity by size category of personnel, 2012-2014, share of enterprises

Industry	Size category of personnel	Number of enterprises	Procurement contracts	Procurement contracts to provide products for domestic public sector organisations	Procurement contracts to provide products for foreign public sector organisations	Innovation activity, innovation was required as part of the contract	Innovation activity, innovation was not required as part of the contract
			%	%	%	%	%
All NACE - Total	10-49	6691	31.5	30.9	4.4	1.5	5.5
	50-249	1518	36.8	36.0	8.0	2.5	9.5
	250-	367	49.0	47.0	18.5	9.0	17.2
	Total	**8576**	**33.2**	**32.5**	**5.7**	**2.0**	**6.7**
Manufacturing	10-49	2785	23.5	22.9	3.9	1.3	3.5
	50-249	830	28.6	27.2	7.6	2.0	6.7
	250-	204	41.9	38.2	22.7	7.4	14.0
	Total	**3820**	**25.6**	**24.6**	**5.7**	**1.8**	**4.8**
Services	10-49	3905	37.3	36.6	4.8	1.7	6.9
	50-249	688	46.7	46.5	8.6	3.0	12.9
	250-	163	57.9	57.9	13.2	11.0	21.1
	Total	**4756**	**39.3**	**38.8**	**5.6**	**2.2**	**8.2**

Appendix table 18. Public sector procurement and innovation activity by industry, 2012-2014, share of enterprises

Industry	Number of enterprises	Procurement contracts	Procurement contracts to provide products for domestic public sector organisations	Procurement contracts to provide products for foreign public sector organisations	Innovation activity, innovation was required as part of the contract	Innovation activity, innovation was not required as part of the contract
		%	%	%	%	%
05-09 Mining and quarrying	75	43.7	43.7	0.0	0.0	0.0
10-11 Food products and beverages	355	24.4	24.4	1.4	0.9	3.0
13-15 Textile, clothing, leather and footwear industry	100	29.0	29.0	7.4	6.4	6.4
16-18 Wood and paper industry	455	22.9	22.7	2.6	0.3	2.8
19-22 Chemical industry	316	18.1	18.1	7.4	0.7	4.0
24-25, 28-30 Metal and engineering industry	1394	16.6	15.0	5.7	1.8	3.7
26-27 Electrical and electronics industry	276	42.4	37.2	20.0	6.7	13.3
23, 31-33 Other manufacturing	547	28.9	28.9	5.8	1.5	5.4
35-39 Energy and waste management	302	53.7	53.7	1.5	0.7	6.8
46 Wholesale trade, except of motor vehicles and motorcycles	1296	31.9	30.7	4.6	0.6	5.1
49-53 Transportation and storage	1332	31.8	31.7	1.5	1.1	2.4
58 Publishing activities	159	31.8	31.8	8.6	1.3	12.7
59-60 Programme production and publishing, programming and broadcasting	86	17.6	17.6	0.0	0.0	6.7

Industry	Number of enterprises	Procurement contracts	Procurement contracts to provide products for domestic public sector organisations	Procurement contracts to provide products for foreign public sector organisations	Innovation activity, innovation was required as part of the contract	Innovation activity, innovation was not required as part of the contract
		%	%	%	%	%
61 Telecommunications	66	55.6	55.6	7.6	4.8	16.7
62 Computer programming, consultancy and related activities	562	60.4	59.5	15.1	4.4	24.1
63 Information service activities	59	65.4	59.5	14.9	8.9	26.9
64-66 Financial and insurance activities	375	31.1	31.1	1.8	2.4	1.3
71 Architectural and engineering activities; technical testing and analysis	563	61.3	61.3	8.9	5.9	15.9
72 Scientific research and development	62	23.4	23.4	5.3	2.1	2.1
73 Advertising and market research	196	39.1	39.1	8.3	2.0	4.9
All NACE - Total	**8576**	**33.2**	**32.5**	**5.7**	**2.0**	**6.7**
05-39 Manufacturing, total	**3820**	**25.6**	**24.6**	**5.7**	**1.8**	**4.8**
46, 49-53, 58-66, 71-73 Services, total	**4756**	**39.3**	**38.8**	**5.6**	**2.2**	**8.2**

Appendix table 19. Utilisation of big data and public sector open data in enterprises 2012-2014, importance of the use of data, share of enterprises

		High importance	Medium importance	Low importance	Not relevant
		%	%	%	%
All NACE - Total	Use of big data in developing new products	2.3	7.2	16.9	73.5
	Use of public sector open data in developing new products	1.0	7.2	19.7	72.0
	Use of big data in improving products	2.4	7.1	17.0	73.5
	Use of public sector open data in improving products	0.9	6.8	19.8	72.6
	Use of data in developing process innovations	3.0	8.6	19.0	69.4
	Use of data in developing organisational innovations	1.3	7.1	21.1	70.5
	Use of data in developing marketing innovations	2.2	10.0	20.1	67.7
	Use of data in research and development	3.9	10.2	19.2	66.8
	Use of data in managing production process	4.2	10.4	16.8	68.6
	Use of data in marketing	3.7	12.9	20.7	62.6
	Selling big data to other enterprises	0.5	3.1	11.8	84.6
	Buying big data from other enterprises	0.7	4.5	16.7	78.1
Manufacturing	Use of big data in developing new products	1.3	4.8	16.0	77.9
	Use of public sector open data in developing new products	0.9	5.9	17.1	76.1
	Use of big data in improving products	1.1	5.8	14.9	78.2
	Use of public sector open data in improving products	0.4	5.6	16.9	77.1
	Use of data in developing process innovations	3.1	7.6	19.0	70.3
	Use of data in developing organisational innovations	1.2	5.7	20.5	72.6
	Use of data in developing marketing innovations	1.7	8.5	19.7	70.1
	Use of data in research and development	3.7	10.1	20.0	66.3
	Use of data in managing production process	4.2	12.2	16.6	67.0
	Use of data in marketing	2.9	11.4	21.3	64.4
	Selling big data to other enterprises	0.1	2.9	10.2	86.8
	Buying big data from other enterprises	0.3	4.7	14.8	80.2
Services	Use of big data in developing new products	3.2	9.0	17.7	70.1
	Use of public sector open data in developing new products	1.1	8.3	21.8	68.7
	Use of big data in improving products	3.4	8.2	18.6	69.8
	Use of public sector open data in improving products	1.2	7.7	22.1	69.0
	Use of data in developing process innovations	3.0	9.3	19.1	68.6
	Use of data in developing organisational innovations	1.4	8.1	21.6	68.8
	Use of data in developing marketing innovations	2.6	11.1	20.5	65.8
	Use of data in research and development	4.0	10.2	18.5	67.3
	Use of data in managing production process	4.1	9.0	16.9	70.0
	Use of data in marketing	4.5	14.0	20.3	61.2
	Selling big data to other enterprises	0.9	3.3	13.0	82.8
	Buying big data from other enterprises	1.1	4.4	18.1	76.4

		High importance	Medium importance	Low importance	Not relevant
		%	%	%	%
Innovation activity	Use of big data in developing new products	3.7	11.0	22.9	62.4
	Use of public sector open data in developing new products	1.6	10.1	26.4	62.0
	Use of big data in improving products	3.9	10.6	22.7	62.9
	Use of public sector open data in improving products	1.2	9.8	25.6	63.5
	Use of data in developing process innovations	5.1	13.5	25.0	56.4
	Use of data in developing organisational innovations	2.1	10.5	28.2	59.2
	Use of data in developing marketing innovations	3.4	15.4	26.3	54.9
	Use of data in research and development	6.5	16.0	24.8	52.7
	Use of data in managing production process	6.4	15.1	21.8	56.7
	Use of data in marketing	5.6	19.9	25.1	49.4
	Selling big data to other enterprises	0.8	4.7	15.0	79.5
	Buying big data from other enterprises	1.1	7.0	22.3	69.6
No innovation activity	Use of big data in developing new products	0.7	2.5	9.5	87.3
	Use of public sector open data in developing new products	0.4	3.7	11.5	84.4
	Use of big data in improving products	0.5	2.9	9.9	86.7
	Use of public sector open data in improving products	0.5	3.1	12.6	83.8
	Use of data in developing process innovations	0.6	2.4	11.6	85.4
	Use of data in developing organisational innovations	0.3	2.8	12.4	84.5
	Use of data in developing marketing innovations	0.7	3.2	12.5	83.5
	Use of data in research and development	0.5	3.0	12.2	84.3
	Use of data in managing production process	1.3	4.6	10.6	83.5
	Use of data in marketing	1.4	4.2	15.4	79.0
	Selling big data to other enterprises	0.1	1.2	7.8	90.9
	Buying big data from other enterprises	0.2	1.5	9.7	88.6

Appendix table 20a. Utilisation of big data and public sector open data by size category of personnel 2012-2014, high or medium importance, share of enterprises

Industry	Size category of personnel	Number of enterprises	At least one of data items with high importance	At least one of data items with high or medium importance	Big data, development of new products	Open data, development of new products	Big data, improvement of products	Open data, improvement of products	Data, development of process innovations
			%	%	%	%	%	%	%
All NACE - Total	10-49	6691	7.6	25.9	7.4	7.1	7.8	6.6	9.4
	50-249	1518	14.6	38.7	15.0	11.8	13.2	10.0	17.2
	250-	367	25.4	52.4	25.2	15.1	25.0	15.8	27.9
	Total	**8576**	**9.6**	**29.3**	**9.5**	**8.3**	**9.5**	**7.6**	**11.6**
Manufacturing	10-49	2785	6.2	21.1	4.1	5.7	5.4	5.1	8.2
	50-249	830	11.5	35.0	9.8	8.6	8.8	7.3	15.0
	250-	204	26.1	54.8	19.3	15.0	20.1	14.0	27.9
	Total	**3820**	**8.4**	**25.9**	**6.1**	**6.8**	**6.9**	**6.0**	**10.7**
Services	10-49	3905	8.6	29.4	9.8	8.1	9.5	7.8	10.3
	50-249	688	18.4	43.2	21.3	15.8	18.6	13.4	19.8
	250-	163	24.6	49.3	32.6	15.4	31.2	18.0	28.0
	Total	**4756**	**10.6**	**32.0**	**12.2**	**9.4**	**11.5**	**8.9**	**12.3**

Appendix table 20b. Utilisation of big data and public sector open data by size category of personnel 2012-2014, high or medium importance, share of enterprises

Industry	Size category of personnel	Number of enterprises	Data, development of organisational innovations	Data, development of marketing innovations	Data in R&D activity	Data in managing the production process	Data in marketing	Selling big data	Buying big data
			%	%	%	%	%	%	%
All NACE - Total	10-49	6691	7.3	10.8	11.4	12.0	14.7	3.4	4.2
	50-249	1518	11.3	15.0	20.1	22.2	21.5	4.4	8.4
	250-	367	15.8	24.4	36.4	30.7	31.1	5.2	11.4
	Total	**8576**	**8.3**	**12.2**	**14.0**	**14.6**	**16.6**	**3.6**	**5.3**
Manufacturing	10-49	2785	5.9	8.4	10.2	12.8	11.5	2.7	3.8
	50-249	830	9.1	13.8	19.5	24.5	19.1	3.7	7.5
	250-	204	11.1	20.6	39.7	33.2	33.0	3.3	11.2
	Total	**3820**	**6.9**	**10.2**	**13.8**	**16.4**	**14.3**	**3.0**	**5.0**
Services	10-49	3905	8.2	12.6	12.3	11.4	17.0	3.9	4.5
	50-249	688	14.0	16.5	20.9	19.4	24.5	5.2	9.4
	250-	163	21.7	29.3	32.4	27.6	28.7	7.6	11.6
	Total	**4756**	**9.5**	**13.7**	**14.2**	**13.1**	**18.5**	**4.2**	**5.5**

Appendix table 21a. Utilisation of big data and public sector open data by industry 2012-2014, high or medium importance, share of enterprises

Industry	Number of enterprises	At least one of data items with high importance	At least one of data items with high or medium importance	Big data, development of new products	Open data, development of new products	Big data, improvement of products	Open data, improvement of products	Data, development of process innovations
		%	%	%	%	%	%	%
05-09 Mining and quarrying	75	5.1	16.6	2.1	11.3	0.0	7.8	5.1
10-11 Food products and beverages	355	4.8	21.7	2.8	4.8	5.6	2.7	5.5
13-15 Textile, clothing, leather and footwear industry	100	3.2	20.1	10.7	1.0	10.7	4.2	9.5
16-18 Wood and paper industry	455	9.9	28.6	10.3	8.1	10.3	7.3	12.7
19-22 Chemical industry	316	8.9	34.0	7.7	7.0	8.9	5.5	16.1
24-25, 28-30 Metal and engineering industry	1394	6.0	22.8	3.6	4.5	4.0	4.6	9.8
26-27 Electrical and electronics industry	276	21.8	37.0	11.2	12.8	13.3	11.1	18.5
23, 31-33 Other manufacturing	547	5.0	17.9	3.1	5.6	4.1	3.9	5.1
35-39 Energy and waste management	302	17.2	41.2	14.1	14.9	14.7	14.4	17.2
46 Wholesale trade, except of motor vehicles and motorcycles	1296	6.5	28.2	6.8	7.3	6.6	7.2	6.9
49-53 Transportation and storage	1332	4.8	16.8	4.8	4.9	4.4	5.1	5.7
58 Publishing activities	159	10.8	44.8	21.5	16.4	22.3	12.6	12.9
59-60 Programme production and publishing, programming and broadcasting	86	5.9	25.2	3.7	3.7	3.7	2.1	7.2
61 Telecommunications	66	7.6	43.2	17.2	23.5	11.9	10.4	17.0
62 Computer programming, consultancy and related activities	562	23.6	56.0	31.2	12.9	28.6	12.1	30.3
63 Information service activities	59	26.9	47.6	17.8	2.9	26.7	8.9	32.8
64-66 Financial and insurance activities	375	19.8	44.1	23.2	14.8	24.5	14.0	15.7
71 Architectural and engineering activities; technical testing and analysis	563	10.7	33.6	9.3	15.4	8.9	15.4	16.0
72 Scientific research and development	62	14.9	39.4	12.8	14.4	7.5	12.2	19.7
73 Advertising and market research	196	17.6	46.4	24.3	10.3	18.0	7.9	15.6
All NACE - Total	**8576**	**9.6**	**29.3**	**9.5**	**8.3**	**9.5**	**7.6**	**11.6**
05-39 Manufacturing, total	**3820**	**8.4**	**25.9**	**6.1**	**6.8**	**6.9**	**6.0**	**10.7**

Industry	Number of enterprises	At least one of data items with high importance	At least one of data items with high or medium importance	Big data, development of new products	Open data, development of new products	Big data, improvement of products	Open data, improvement of products	Data, development of process innovations
		%	%	%	%	%	%	%
46, 49-53, 58-66, 71-73 Services, total	**4756**	**10.6**	**32.0**	**12.2**	**9.4**	**11.5**	**8.9**	**12.3**

Appendix table 21b. Utilisation of big data and public sector open data by industry 2012-2014, high or medium importance, share of enterprises

Industry	Number of enterprises	Data, development of process innovations	Data, development of organisational innovations	Data, development of marketing innovations	Data in R&D activity	Data in managing the production process	Data in marketing	Selling big data	Buying big data
		%	%	%	%	%	%	%	%
05-09 Mining and quarrying	75	5.1	1.6	1.6	6.9	6.4	3.2	0.0	1.6
10-11 Food products and beverages	355	5.5	3.3	10.0	9.1	14.2	11.3	0.3	4.7
13-15 Textile, clothing, leather and footwear industry	100	9.5	7.5	13.2	9.5	10.7	14.4	10.6	6.4
16-18 Wood and paper industry	455	12.7	7.4	16.4	12.9	24.6	18.3	5.5	5.6
19-22 Chemical industry	316	16.1	7.7	12.6	18.0	23.2	20.5	3.7	5.0
24-25, 28-30 Metal and engineering industry	1394	9.8	6.6	8.0	14.0	13.4	11.8	3.0	4.3
26-27 Electrical and electronics industry	276	18.5	13.3	19.4	23.5	22.0	26.1	4.4	6.8
23, 31-33 Other manufacturing	547	5.1	5.5	6.7	7.9	6.8	11.3	2.0	5.2
35-39 Energy and waste management	302	17.2	8.0	7.8	20.1	30.2	14.5	0.0	5.9
46 Wholesale trade, except of motor vehicles and motorcycles	1296	6.9	7.0	14.3	8.6	6.3	19.5	4.4	6.0
49-53 Transportation and storage	1332	5.7	4.5	4.3	5.5	9.3	6.3	0.7	0.7
58 Publishing activities	159	12.9	15.4	22.0	25.8	15.7	24.0	9.5	10.1
59-60 Programme production and publishing, programming and broadcasting	86	7.2	2.1	8.0	10.9	19.4	23.1	0.0	4.2
61 Telecommunications	66	17.0	13.1	14.6	17.0	24.8	20.9	7.8	7.8
62 Computer programming, consultancy and related activities	562	30.3	20.6	29.5	35.9	29.5	35.5	7.5	10.4
63 Information service activities	59	32.8	26.9	26.9	32.7	32.7	29.8	8.9	2.9
64-66 Financial and insurance activities	375	15.7	15.4	17.3	21.6	22.9	29.0	5.8	15.8
71 Architectural and engineering activities; technical testing and analysis	563	16.0	8.1	7.3	12.4	9.3	11.8	2.4	0.7
72 Scientific research and development	62	19.7	0.0	6.9	23.4	14.4	3.2	7.5	0.0
73 Advertising and market research	196	15.6	16.6	34.6	21.5	14.6	39.1	13.2	13.2
All NACE - Total	**8576**	**11.6**	**8.3**	**12.2**	**14.0**	**14.6**	**16.6**	**3.6**	**5.3**
05-39 Manufacturing, total	**3820**	**10.7**	**6.9**	**10.2**	**13.8**	**16.4**	**14.3**	**3.0**	**5.0**
46, 49-53, 58-66, 71-73 Services, total	**4756**	**12.3**	**9.5**	**13.7**	**14.2**	**13.1**	**18.5**	**4.2**	**5.5**

Appendix table 22. The importance of digitalisation for enterprise's business activity 2012-2014, share of enterprises

		High importance	Medium importance	Low importance	Not relevant
		%	%	%	%
All NACE - Total	Importance of digital products for enterprise's business activity	16.3	19.6	26.2	37.9
	Importance of cloud services for enterprise's business activity	10.9	21.7	31.9	35.5
	Importance of social media for enterprise's business activity	5.5	16.2	41.8	36.5
	Importance of the Internet of Things for enterprise's business activity	12.9	20.5	28.4	38.2
	Utilisation of robotics in production processes	5.8	10.2	20.0	64.1
	Importance of digitalisation in producing products	13.5	20.0	25.8	40.7
	Importance of digitalisation in designing products	7.0	11.6	23.7	57.7
	Importance of digitalisation in marketing products	13.8	24.4	26.4	35.5
	Importance of digitalisation in distributing products	12.9	18.9	28.4	39.9
Manufacturing	Importance of digital products for enterprise's business activity	6.0	16.3	31.3	46.3
	Importance of cloud services for enterprise's business activity	5.2	18.1	36.1	40.5
	Importance of social media for enterprise's business activity	2.8	12.5	43.0	41.7
	Importance of the Internet of Things for enterprise's business activity	9.0	19.0	30.3	41.7
	Utilisation of robotics in production processes	9.9	15.6	25.8	48.7
	Importance of digitalisation in producing products	6.5	17.2	32.5	43.7
	Importance of digitalisation in designing products	3.9	10.1	29.5	56.5
	Importance of digitalisation in marketing products	6.8	22.9	30.9	39.4
	Importance of digitalisation in distributing products	3.9	17.1	35.3	43.7
Services	Importance of digital products for enterprise's business activity	24.6	22.2	22.1	31.1
	Importance of cloud services for enterprise's business activity	15.4	24.6	28.5	31.5
	Importance of social media for enterprise's business activity	7.6	19.1	40.8	32.4
	Importance of the Internet of Things for enterprise's business activity	16.0	21.8	26.9	35.3
	Utilisation of robotics in production processes	2.5	5.8	15.3	76.4
	Importance of digitalisation in producing products	19.0	22.3	20.5	38.2
	Importance of digitalisation in designing products	9.4	12.9	19.0	58.7
	Importance of digitalisation in marketing products	19.3	25.6	22.8	32.3
	Importance of digitalisation in distributing products	20.1	20.3	22.8	36.8

		High importance	Medium importance	Low importance	Not relevant
		%	%	%	%
Innovation activity	Importance of digital products for enterprise's business activity	23.3	24.1	27.7	24.8
	Importance of cloud services for enterprise's business activity	16.2	26.4	35.3	22.1
	Importance of social media for enterprise's business activity	7.3	21.3	48.5	22.8
	Importance of the Internet of Things for enterprise's business activity	15.8	25.4	32.3	26.4
	Utilisation of robotics in production processes	8.9	14.0	25.2	51.9
	Importance of digitalisation in producing products	18.8	26.4	28.4	26.5
	Importance of digitalisation in designing products	9.7	16.6	29.5	44.1
	Importance of digitalisation in marketing products	18.6	32.7	27.8	20.9
	Importance of digitalisation in distributing products	17.5	23.9	33.1	25.4
No innovation activity	Importance of digital products for enterprise's business activity	7.7	14.0	24.3	54.0
	Importance of cloud services for enterprise's business activity	4.3	16.0	27.7	52.1
	Importance of social media for enterprise's business activity	3.2	9.9	33.5	53.4
	Importance of the Internet of Things for enterprise's business activity	9.3	14.5	23.5	52.6
	Utilisation of robotics in production processes	2.0	5.5	13.5	79.1
	Importance of digitalisation in producing products	6.9	12.2	22.7	58.2
	Importance of digitalisation in designing products	3.6	5.4	16.6	74.5
	Importance of digitalisation in marketing products	7.8	14.1	24.7	53.4
	Importance of digitalisation in distributing products	7.1	12.6	22.5	57.8

Appendix table 23a. The importance of digitalisation for enterprise's business activity by size category of personnel 2012-2014, high or medium importance, share of enterprises

Industry	Size category of personnel	Number of enterprises	At least one of the items with high importance	At least one of the items with high or medium importance	Digital products	Cloud services	Social media
			%	%	%	%	%
All NACE - Total	10-49	6691	31.6	61.1	34.0	31.1	19.7
	50-249	1518	40.2	73.4	39.4	36.4	26.8
	250-	367	53.3	86.9	56.9	44.7	37.3
	Total	**8576**	**34.0**	**64.4**	**35.9**	**32.6**	**21.7**
Manufacturing	10-49	2785	21.3	53.0	20.1	21.4	12.8
	50-249	830	33.4	70.4	24.0	26.4	19.3
	250-	204	48.8	89.8	46.7	38.4	33.5
	Total	**3820**	**25.4**	**58.7**	**22.4**	**23.4**	**15.3**
Services	10-49	3905	38.9	66.9	43.9	38.0	24.5
	50-249	687	48.4	77.0	57.9	48.5	35.8
	250-	163	59.1	83.2	69.5	52.6	42.1
	Total	**4756**	**41.0**	**69.0**	**46.8**	**40.0**	**26.8**

Appendix table 23b. The importance of digitalisation for enterprise's business activity by size category of personnel 2012-2014, high or medium importance, share of enterprises

Industry	Size category of personnel	Number of enterprises	Internet of Things	Robotics in production processes	Digitalisation in producing products	Digitalisation in designing products	Digitalisation in marketing products	Digitalisation in distributing products
			%	%	%	%	%	%
All NACE - Total	10-49	6691	32.1	11.8	30.8	17.3	36.0	29.7
	50-249	1518	36.2	28.2	39.9	20.9	42.9	36.1
	250-	367	47.6	41.0	56.5	32.2	56.9	51.0
	Total	**8576**	**33.5**	**15.9**	**33.5**	**18.6**	**38.1**	**31.8**
Manufacturing	10-49	2785	25.3	18.4	20.0	11.8	25.5	18.1
	50-249	830	33.1	41.3	30.3	18.1	37.5	25.1
	250-	204	44.2	57.7	47.5	27.7	54.8	44.6
	Total	**3820**	**28.0**	**25.5**	**23.7**	**14.0**	**29.7**	**21.0**
Services	10-49	3905	36.9	7.1	38.5	21.3	43.5	38.0
	50-249	687	39.8	12.4	51.5	24.3	49.4	49.3
	250-	163	51.9	20.0	67.7	37.8	59.7	59.0
	Total	**4756**	**37.8**	**8.3**	**41.4**	**22.3**	**44.9**	**40.4**

Appendix table 24a. The importance of digitalisation for enterprise's business activity by industry 2012-2014, high or medium importance, share of enterprises

Industry	Number of enterprises	At least one of the items with high importance	At least one of the items with high or medium importance	Digital products	Cloud services	Social media
		%	%	%	%	%
05-09 Mining and quarrying	75	2.2	21.7	3.8	8.6	0.0
10-11 Food products and beverages	355	20.4	58.0	15.5	23.0	33.7
13-15 Textile, clothing, leather and footwear industry	100	41.5	62.6	23.8	37.2	37.9
16-18 Wood and paper industry	455	24.1	62.9	24.5	24.0	20.4
19-22 Chemical industry	316	26.6	63.8	19.3	23.7	10.1
24-25, 28-30 Metal and engineering industry	1394	26.4	56.3	20.0	19.1	9.1
26-27 Electrical and electronics industry	276	39.2	69.2	38.5	31.6	16.9
23, 31-33 Other manufacturing	547	20.1	56.2	17.0	23.0	16.0
35-39 Energy and waste management	302	24.9	62.1	40.6	34.6	13.9
46 Wholesale trade, except of motor vehicles and motorcycles	1296	32.1	71.8	35.2	31.4	26.3
49-53 Transportation and storage	1332	18.4	45.8	24.4	23.2	9.7
58 Publishing activities	159	55.6	78.2	69.5	45.8	59.4
59-60 Programme production and publishing, programming and broadcasting	86	65.9	89.9	77.4	61.5	77.7
61 Telecommunications	66	47.3	73.6	68.5	55.2	45.3
62 Computer programming, consultancy and related activities	562	79.4	94.0	85.3	82.1	41.4
63 Information service activities	59	94.0	100.0	94.0	100.0	61.3
64-66 Financial and insurance activities	375	67.3	81.2	76.2	38.8	31.6
71 Architectural and engineering activities; technical testing and analysis	563	36.3	68.8	39.6	41.2	13.5
72 Scientific research and development	62	33.0	62.3	46.3	28.7	5.3
73 Advertising and market research	196	67.8	86.8	76.5	55.7	74.1
All NACE - Total	**8576**	**34.0**	**64.4**	**35.9**	**32.6**	**21.7**
05-39 Manufacturing, total	**3820**	**25.4**	**58.7**	**22.4**	**23.4**	**15.3**
46, 49-53, 58-66, 71-73 Services, total	**4756**	**41.0**	**69.0**	**46.8**	**40.0**	**26.8**

Appendix table 24b. The importance of digitalisation for enterprise's business activity by industry 2012-2014, high or medium importance, share of enterprises

Industry	Number of enterprises	Internet of Things	Robotics in production processes	Digitalisation in producing products	Digitalisation in designing products	Digitalisation in marketing products	Digitalisation in distributing products
		%	%	%	%	%	%
05-09 Mining and quarrying	75	13.2	5.1	2.2	0.0	7.1	3.8
10-11 Food products and beverages	355	23.8	19.7	15.8	13.4	32.1	19.9
13-15 Textile, clothing, leather and footwear industry	100	28.5	6.2	27.5	31.5	49.6	21.7
16-18 Wood and paper industry	455	27.8	25.4	22.8	12.9	31.4	20.6
19-22 Chemical industry	316	22.8	37.6	22.9	13.5	34.1	25.2
24-25, 28-30 Metal and engineering industry	1394	29.0	30.5	21.3	14.4	27.4	16.2
26-27 Electrical and electronics industry	276	41.4	29.8	45.2	28.8	41.6	38.9
23, 31-33 Other manufacturing	547	24.9	22.4	18.0	10.4	26.7	20.4
35-39 Energy and waste management	302	31.1	9.7	41.4	5.6	24.0	29.9
46 Wholesale trade, except of motor vehicles and motorcycles	1296	37.2	10.4	27.0	14.0	49.9	33.6
49-53 Transportation and storage	1332	28.6	2.3	19.9	5.4	17.4	21.0
58 Publishing activities	159	31.2	7.8	62.1	50.0	63.2	54.5
59-60 Programme production and publishing, programming and broadcasting	86	50.5	5.0	80.9	25.9	88.3	83.2
61 Telecommunications	66	52.6	2.5	57.9	19.7	47.6	50.3
62 Computer programming, consultancy and related activities	562	50.7	14.6	80.5	51.3	68.5	69.5
63 Information service activities	59	49.5	14.9	88.2	56.5	83.5	80.5
64-66 Financial and insurance activities	375	45.7	11.6	69.5	35.8	64.6	69.4
71 Architectural and engineering activities; technical testing and analysis	563	43.7	7.2	42.5	25.3	37.5	35.7
72 Scientific research and development	62	11.7	30.4	42.5	12.2	26.5	23.4
73 Advertising and market research	196	36.0	8.3	58.5	43.3	74.1	51.2
All NACE - Total	**8576**	**33.5**	**15.9**	**33.5**	**18.6**	**38.1**	**31.8**
05-39 Manufacturing, total	**3820**	**28.0**	**25.5**	**23.7**	**14.0**	**29.7**	**21.0**
46, 49-53, 58-66, 71-73 Services, total	**4756**	**37.8**	**8.3**	**41.4**	**22.3**	**44.9**	**40.4**

Appendix table 25. Importance of user innovation in enterprises innovation activity 2012-2014, share of enterprises with innovation activity

		Degree of importance				Introduction of innovations with user innovation 2012–2014
		High importance	Medium importance	Low importance	Not relevant	
		%	%	%	%	%
						Other enterprises as customers and product users
All NACE - Total	Joint brainstorming, development and content production with users	5.9	16.0	20.2	58.0	15.4
	Users have modified existing products (enterprise responsible for production and launching on the market)	4.8	15.5	20.5	59.2	18.7
	Users have developed new products (enterprise responsible for production and launching on the market)	2.9	8.0	15.2	73.9	10.0
Manufacturing	Joint brainstorming, development and content production with users	3.9	15.8	21.5	58.8	13.8
	Users have modified existing products (enterprise responsible for production and launching on the market)	3.6	16.6	24.2	55.7	20.5
	Users have developed new products (enterprise responsible for production and launching on the market)	2.6	9.1	18.7	69.6	12.9
Services	Joint brainstorming, development and content production with users	7.7	16.1	19.0	57.2	16.7
	Users have modified existing products (enterprise responsible for production and launching on the market)	5.8	14.6	17.2	62.4	17.2
	Users have developed new products (enterprise responsible for production and launching on the market)	3.2	7.0	12.0	77.8	7.5
						End product users, i.e. consumers as customers and product users
All NACE - Total	Joint brainstorming, development and content production with users	2.3	8.2	13.5	76.0	6.7
	Users have modified existing products (enterprise responsible for production and launching on the market)	1.8	6.9	12.4	78.9	7.4
	Users have developed new products (enterprise responsible for production and launching on the market)	1.3	4.8	11.3	82.5	4.3
Manufacturing	Joint brainstorming, development and content production with users	2.0	7.8	14.5	75.7	7.7
	Users have modified existing products (enterprise responsible for production and launching on the market)	1.0	8.2	15.3	75.5	9.8
	Users have developed new products (enterprise responsible for production and launching on the market)	1.0	5.6	13.5	79.9	6.2
Services	Joint brainstorming, development and content production with users	2.5	8.6	12.7	76.2	5.8
	Users have modified existing products (enterprise responsible for production and launching on the market)	2.6	5.7	9.8	81.8	5.3
	Users have developed new products (enterprise responsible for production and launching on the market)	1.5	4.1	9.5	84.9	2.6

Appendix table 26a. Environmental benefits created by innovations by size category of personnel 2012-2014, share of enterprises with innovations

Industry	Size category of personnel	Number of enterprises	Reduced material or water use per unit of output	Reduced energy use or CO2 footprint in enterprise	Reduced air, water, noise or soil pollution	Replaced a share of materials with less polluting or hazardous substitutes	Replaced a share of fossil energy with renewable energy sources	Recycled waste, water, or materials for own use or sale
			%	%	%	%	%	%
All NACE	10-49	3366	24.4	32.3	20.4	18.1	10.0	23.3
	50-249	961	38.6	48.0	27.8	22.9	15.7	30.2
	250-	284	52.5	66.2	45.6	42.6	26.0	41.0
	Total	**4611**	**29.1**	**37.7**	**23.5**	**20.6**	**12.2**	**25.8**
Manufacturing	10-49	1446	33.6	37.2	25.2	25.3	13.0	36.5
	50-249	545	47.8	51.9	32.3	31.2	17.9	42.2
	250-	174	64.8	75.1	55.8	53.0	30.1	54.0
	Total	**2165**	**39.7**	**44.0**	**29.5**	**29.0**	**15.6**	**39.3**
Services	10-49	1920	17.4	28.6	16.8	12.7	7.7	13.3
	50-249	416	26.5	42.9	21.8	12.0	12.9	14.4
	250-	111	33.1	52.3	29.6	26.2	19.5	20.7
	Total	**2446**	**19.7**	**32.1**	**18.2**	**13.2**	**9.1**	**13.8**

Appendix table 26b. Environmental benefits created by innovations by size category of personnel 2012-2014, share of enterprises with innovations

Industry	Size category of personnel	Number of enter-prises	Reduced energy use or CO2 □footprint□ during consump-tion	Reduced air, water, noise or soil pollution	Facilitated recycling of product after use	Extended product life through longer-lasting, more durable products	Share of enterprises with innovations with environ-mental benefits, i.e. at least some environ-mental benefits	Environ-mental benefits obtained within the enterprise	Environ-mental benefits obtained during the consump-tion or use of a product by the end user
			%	%	%	%	%	%	%
All NACE	10-49	3366	32.6	23.5	21.5	25.7	54.8	46.5	44.0
	50-249	961	44.3	28.1	29.4	29.2	69.2	61.8	55.6
	250-	284	62.6	43.8	34.0	39.0	82.9	76.0	71.3
	Total	**4611**	**36.9**	**25.7**	**23.9**	**27.3**	**59.6**	**51.5**	**48.1**
Manufacturing	10-49	1446	33.3	25.2	29.5	33.5	66.3	60.0	51.7
	50-249	545	47.6	33.7	34.6	36.8	77.5	71.4	62.9
	250-	174	68.6	47.3	38.9	49.2	89.3	84.6	77.4
	Total	**2165**	**39.7**	**29.2**	**31.6**	**35.6**	**70.9**	**64.8**	**56.6**
Services	10-49	1920	32.1	22.2	15.5	19.8	46.2	36.4	38.3
	50-249	416	40.1	20.7	22.5	19.2	58.3	49.1	46.0
	250-	111	53.1	38.3	26.4	23.1	73.0	62.4	61.7
	Total	**2446**	**34.4**	**22.7**	**17.2**	**19.9**	**49.5**	**39.7**	**40.6**

Appendix table 27a. Environmental benefits created by innovations by industry 2012-2014, share of enterprises with innovations

Industry	Number of enterprises	Reduced material or water use per unit of output	Reduced energy use or CO2 footprint in enterprise	Reduced air, water, noise or soil pollution	Replaced a share of materials with less polluting or hazardous substitutes	Replaced a share of fossil energy with renewable energy sources	Recycled waste, water, or materials for own use or sale
		%	%	%	%	%	%
05-09 Mining and quarrying	14	33.7	60.7	66.3	18.3	7.0	26.7
10-12 Food products and beverages	204	35.7	39.0	29.1	26.4	16.9	45.6
13 Textiles	37	0.0	17.4	0.0	23.8	8.7	32.6
14 Wearing apparel	20	37.4	26.3	0.0	16.2	16.2	16.2
15 Leather and related products	4	25.0	75.0	25.0	25.0	0.0	25.0
16 Wood, products of wood, and cork	126	39.5	44.4	24.9	32.0	16.0	39.1
17 Paper and paper products	47	86.9	79.9	45.9	49.6	50.8	62.6
18 Printing and reproduction of recorded media	63	60.0	55.7	40.7	62.6	40.7	60.9
19-21 Chemicals and chemical products	95	53.7	54.4	21.0	41.8	14.2	40.2
22 Rubber and plastic products	118	53.1	51.7	28.4	30.1	9.2	49.9
23 Other non-metallic mineral products	79	47.0	56.6	47.0	29.3	11.3	37.7
24 Basic metals	29	38.0	50.9	45.2	22.9	15.3	30.5
25 Fabricated metal products, except machinery and equipment	435	33.2	37.4	26.4	27.0	7.5	45.6
26 Computer, electronic and optical products	117	32.1	39.8	26.0	27.3	13.1	19.9
27 Electrical equipment	100	37.9	47.0	31.8	37.2	12.1	48.8
28 Machinery and equipment n.e.c.	314	38.1	38.2	26.7	18.5	8.9	27.4
29 Motor vehicles, trailers and semi-trailers	28	59.4	62.9	47.7	32.6	31.0	34.5
30 Other transport equipment	25	48.3	55.8	43.6	50.4	7.6	50.2
31 Furniture	70	50.2	37.0	25.6	29.4	12.3	38.9
32 Other manufacturing	38	47.4	27.8	18.0	18.8	9.8	29.3
33 Repair and installation of machinery and equipment	73	16.8	23.7	23.7	8.2	13.6	6.4
35 Electricity, gas, steam and air conditioning supply	76	31.6	61.7	29.6	35.5	50.8	33.8
36 Water collection, treatment and supply	8	74.0	100.0	100.0	44.0	56.0	56.0
37-39 Sewerage, waste treatment	47	41.6	67.7	60.4	41.8	52.3	74.0
46 Wholesale trade, except of motor vehicles and motorcycles	705	19.6	30.3	16.3	13.0	10.9	20.9
49-52 Transportation and storage	398	25.4	55.2	39.5	24.0	9.1	22.0
53 Postal and courier activities	15	6.8	24.3	13.5	13.5	6.8	13.5
58 Publishing activities	91	25.9	30.5	24.8	11.3	13.8	15.1

Industry	Number of enterprises	Reduced material or water use per unit of output	Reduced energy use or CO2 footprint in enterprise	Reduced air, water, noise or soil pollution	Replaced a share of materials with less polluting or hazardous substitutes	Replaced a share of fossil energy with renewable energy sources	Recycled waste, water, or materials for own use or sale
		%	%	%	%	%	%
59 Programme production, sound recording and music publishing activities	27	5.1	21.0	5.1	0.0	15.9	15.9
60 Programming and broadcasting activities	6	0.0	0.0	0.0	0.0	0.0	0.0
61 Telecommunications	41	28.8	55.2	27.5	23.2	16.0	35.2
62 Computer programming, consultancy and related activities	446	11.5	26.5	12.5	7.0	4.5	4.5
63 Information service activities	43	20.3	32.5	8.2	0.0	0.0	4.0
64 Financial service activities	115	22.4	24.4	6.1	8.8	2.3	3.2
65 Insurance, reinsurance and pension funding	31	40.3	34.7	16.1	9.7	9.7	3.2
66 Activities auxiliary to financial services and insurance activities	67	30.1	30.1	11.5	11.5	10.0	0.0
71 Architectural and engineering activities; technical testing and analysis	299	20.5	26.3	15.2	15.1	15.6	10.7
72 Scientific research and development	42	24.5	26.7	11.0	16.6	11.0	7.9
73 Advertising and market research	121	11.8	9.5	5.6	7.8	1.6	5.6
All NACE - Total	**4611**	**29.1**	**37.7**	**23.5**	**20.6**	**12.2**	**25.8**
05-39 Manufacturing, total	**2165**	**39.7**	**44.0**	**29.5**	**29.0**	**15.6**	**39.3**
46, 49-53, 58-66, 71-73 Services, total	**2446**	**19.7**	**32.1**	**18.2**	**13.2**	**9.1**	**13.8**

Appendix table 27b. Environmental benefits created by innovations by industry 2012-2014, share of enterprises with innovations

Industry	Number of enter-prises	Reduced energy use or CO2 □footprint□ during consump-tion	Reduced air, water, noise or soil pollution	Facilitated recycling of product after use	Extended product life through longer-lasting, more durable products	Share of enterprises with innovations with environmental benefits, i.e. at least some environmental benefits	Environ-mental benefits obtained within the enterprise	Environ-mental benefits obtained during the consump-tion or use of a product by the end user
		%	%	%	%	%	%	%
05-09 Mining and quarrying	14	26.7	42.1	11.2	7.0	83.1	74.7	42.1
10-12 Food products and beverages	204	30.5	22.8	27.1	15.2	70.9	68.3	48.6
13 Textiles	37	17.4	8.7	17.4	38.1	58.7	50.0	46.8
14 Wearing apparel	20	5.1	21.2	21.2	26.3	47.5	42.4	42.4
15 Leather and related products	4	75.0	25.0	0.0	50.0	100.0	75.0	75.0
16 Wood, products of wood, and cork	126	41.1	26.9	45.2	40.1	67.5	63.4	61.4
17 Paper and paper products	47	68.1	56.3	50.8	15.5	89.1	89.1	70.2
18 Printing and reproduction of recorded media	63	62.5	34.0	56.6	32.0	73.6	73.6	62.5
19-21 Chemicals and chemical products	95	38.6	19.9	11.9	20.1	67.2	63.6	49.6
22 Rubber and plastic products	118	44.7	31.1	38.5	50.7	69.1	64.0	59.8
23 Other non-metallic mineral products	79	40.1	33.3	44.3	45.3	78.3	64.7	62.1
24 Basic metals	29	34.3	26.7	32.4	36.2	64.3	58.5	40.0
25 Fabricated metal products, except machinery and equipment	435	28.5	25.0	33.7	34.0	74.1	70.7	52.5
26 Computer, electronic and optical products	117	36.5	18.9	22.9	26.0	52.9	47.6	43.6
27 Electrical equipment	100	57.4	36.2	41.1	62.1	76.8	72.2	68.9
28 Machinery and equipment n.e.c.	314	48.4	34.7	27.4	49.0	71.8	53.0	68.1
29 Motor vehicles, trailers and semi-trailers	28	62.9	66.5	26.5	47.7	87.7	87.7	87.7
30 Other transport equipment	25	50.4	50.4	38.8	28.5	83.7	83.7	76.2
31 Furniture	70	39.3	25.6	29.4	52.6	80.5	72.0	63.5
32 Other manufacturing	38	23.3	27.8	14.3	24.1	71.4	71.4	47.4
33 Repair and installation of machinery and equipment	73	28.5	19.3	16.8	26.1	33.1	28.2	28.5

Industry	Number of enter-prises	Reduced energy use or CO2 □footprint□ during consump-tion	Reduced air, water, noise or soil pollution	Facilitated recycling of product after use	Extended product life through longer-lasting, more durable products	Share of enterprises with innovations with environmental benefits, i.e. at least some environmental benefits	Environ-mental benefits obtained within the enterprise	Environ-mental benefits obtained during the consump-tion or use of a product by the end user
		%	%	%	%	%	%	%
35 Electricity, gas, steam and air conditioning supply	76	41.7	24.0	23.0	22.3	77.4	77.4	51.5
36 Water collection, treatment and supply	8	100.0	100.0	56.0	44.0	100.0	100.0	100.0
37-39 Sewerage, waste treatment	47	56.3	49.1	43.7	31.9	84.8	84.8	58.4
46 Wholesale trade, except of motor vehicles and motorcycles	705	33.5	25.5	24.9	29.3	54.3	40.5	46.2
49-52 Transportation and storage	398	47.4	39.7	24.3	25.8	63.2	58.2	54.4
53 Postal and courier activities	15	13.5	13.5	13.5	6.8	24.3	24.3	13.5
58 Publishing activities	91	34.8	24.8	21.8	15.6	42.0	30.5	39.6
59 Programme production, sound recording and music publishing activities	27	21.0	15.9	15.9	21.0	36.9	36.9	21.0
60 Programming and broadcasting activities	6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
61 Telecommunications	41	55.2	25.1	16.0	16.4	71.9	71.9	63.5
62 Computer programming, consultancy and related activities	446	30.9	14.5	6.1	10.2	39.8	29.8	31.5
63 Information service activities	43	36.7	8.2	4.0	20.3	44.7	36.5	40.7
64 Financial service activities	115	22.7	10.6	11.7	9.4	43.9	37.8	26.5
65 Insurance, reinsurance and pension funding	31	32.3	22.6	9.7	6.5	62.9	53.2	32.3
66 Activities auxiliary to financial services and insurance activities	67	33.1	23.1	13.0	10.0	33.1	31.6	33.1
71 Architectural and engineering activities; technical testing and analysis	299	40.8	23.6	18.2	22.1	53.2	36.3	44.8
72 Scientific research and development	42	15.7	13.4	15.8	22.1	48.1	43.3	32.4
73 Advertising and market research	121	11.1	0.0	0.0	0.0	22.9	22.9	11.1
All NACE - Total	**4611**	**36.9**	**25.7**	**23.9**	**27.3**	**59.6**	**51.5**	**48.1**

Industry	Number of enter-prises	Reduced energy use or CO2 □footprint□ during consump-tion	Reduced air, water, noise or soil pollution	Facilitated recycling of product after use	Extended product life through longer-lasting, more durable products	Share of enterprises with innovations with environmental benefits, i.e. at least some environmental benefits	Environ-mental benefits obtained within the enterprise	Environ-mental benefits obtained during the consump-tion or use of a product by the end user
		%	%	%	%	%	%	%
05-39 Manufacturing, total	**2165**	**39.7**	**29.2**	**31.6**	**35.6**	**70.9**	**64.8**	**56.6**
46, 49-53, 58-66, 71-73 Services, total	**2446**	**34.4**	**22.7**	**17.2**	**19.9**	**49.5**	**39.7**	**40.6**

Appendix table 28. Factors driving decisions to introduce innovations with environmental benefits 2012-2014, importance of factors, share of enterprises with innovations with environmental benefits

		High importance	Medium importance	Low importance	Not relevant
		%	%	%	%
All NACE - Total	Existing environmental regulations	18.2	31.6	25.1	25.1
	Existing environmental taxes, charges or fees	9.0	24.3	34.7	32.0
	Environmental regulations or taxes expected in the future	14.1	27.9	32.0	26.0
	Government grants, subsidies or other financial incentives for environmental innovations	5.1	14.2	33.6	47.0
	Current or expected market demand for environmental innovations	13.5	26.5	28.8	31.2
	Improving your enterprise's reputation	16.4	40.6	26.5	16.5
	Voluntary actions or initiatives for environmental good practice within your sector	12.2	35.5	32.4	19.8
	High cost of energy, water or materials	16.3	37.2	27.1	19.4
	Need to meet requirements for public procurement contracts	8.7	20.2	28.4	42.6
Manufacturing	Existing environmental regulations	18.4	34.7	26.3	20.6
	Existing environmental taxes, charges or fees	9.2	26.7	37.0	27.1
	Environmental regulations or taxes expected in the future	14.3	33.3	32.5	19.9
	Government grants, subsidies or other financial incentives for environmental innovations	5.9	18.3	32.8	43.0
	Current or expected market demand for environmental innovations	12.9	30.2	29.6	27.3
	Improving your enterprise's reputation	16.0	43.9	26.7	13.4
	Voluntary actions or initiatives for environmental good practice within your sector	12.8	38.8	32.6	15.8
	High cost of energy, water or materials	18.2	42.4	24.8	14.6
	Need to meet requirements for public procurement contracts	5.7	19.7	30.7	43.8
Services	Existing environmental regulations	18.0	27.7	23.5	30.8
	Existing environmental taxes, charges or fees	8.7	21.3	31.7	38.4
	Environmental regulations or taxes expected in the future	13.9	21.0	31.3	33.8
	Government grants, subsidies or other financial incentives for environmental innovations	4.1	9.0	34.8	52.1
	Current or expected market demand for environmental innovations	14.2	21.8	27.7	36.2
	Improving your enterprise's reputation	16.9	36.5	26.2	20.4
	Voluntary actions or initiatives for environmental good practice within your sector	11.5	31.4	32.2	24.9
	High cost of energy, water or materials	13.9	30.6	30.0	25.5
	Need to meet requirements for public procurement contracts	12.5	20.8	25.5	41.2

Appendix table 29a. Factors for introducing innovations with environmental benefits, with high or medium importance, by size category of personnel 2012-2014, share of enterprise's with innovations with environmental benefits

Industry	Size category of personnel	Number of enterprises	Existing environmental regulations	Existing environmental taxes, charges or fees	Environmental regulations or taxes expected in the future	Government grants, subsidies or other financial incentives for environmental innovations
			%	%	%	%
All NACE — Total	10-49	1846	46.1	31.4	38.0	19.0
	50-249	665	54.1	34.9	45.9	18.7
	250-	236	66.9	43.1	62.4	23.8
	Total	**2746**	**49.8**	**33.3**	**42.0**	**19.3**
Manufacturing	10-49	958	48.4	33.5	42.9	24.3
	50-249	422	56.9	37.1	49.5	23.4
	250-	155	72.1	47.5	71.5	25.9
	Total	**1535**	**53.1**	**35.9**	**47.6**	**24.2**
Services	10-49	888	43.7	29.2	32.7	13.3
	50-249	242	49.2	31.0	39.5	10.4
	250-	81	56.9	34.7	44.9	19.9
	Total	**1211**	**45.7**	**29.9**	**34.8**	**13.1**

Appendix table 29b. Factors for introducing innovations with environmental benefits, with high or medium importance, by size category of personnel 2012-2014, share of enterprises with innovations with environmental benefits

Industry	Size category of personnel	Number of enterprises	Current or expected market demand for environmental innovations	Improving enterprises reputation	Voluntary actions or initiatives for environmental good practice	High cost of energy, water or materials	Need to meet requirements for public procurement contracts
			%	%	%	%	%
All NACE — Total	10-49	1846	37.4	54.3	45.2	51.8	30.8
	50-249	665	43.0	60.3	50.3	54.6	23.0
	250-	236	52.2	69.2	61.2	63.9	31.1
	Total	**2746**	**40.0**	**57.0**	**47.8**	**53.5**	**28.9**
Manufacturing	10-49	958	40.9	57.5	50.5	59.2	27.5
	50-249	422	43.4	60.5	48.9	60.0	20.5
	250-	155	55.9	73.1	66.2	70.9	26.6
	Total	**1535**	**43.1**	**59.9**	**51.6**	**60.6**	**25.5**
Services	10-49	888	33.5	50.9	39.4	43.8	34.3
	50-249	242	42.2	60.0	52.6	45.2	27.5
	250-	81	45.0	61.6	51.7	50.5	39.9
	Total	**1211**	**36.0**	**53.4**	**42.9**	**44.5**	**33.3**

Appendix table 30a. Factors for introducing innovations with environmental benefits, with high or medium importance, by industry 2012-2014, share of enterprises with innovations with environmental benefits

Industry	Number of enterprises	Existing environmental regulations	Existing environmental taxes, charges or fees	Environmental regulations or taxes expected in the future	Government grants, subsidies or other financial incentives for environmental innovations
		%	%	%	%
05-09 Mining and quarrying	12	91.6	73.0	81.4	8.4
10-12 Food products and beverages	145	51.9	44.2	47.5	29.8
13 Textiles	21	20.3	5.4	5.4	20.3
14 Wearing apparel	9	10.6	0.0	10.6	10.6
15 Leather and related products	4	25.0	0.0	25.0	25.0
16 Wood, products of wood, and cork	85	61.3	58.3	65.8	33.1
17 Paper and paper products	42	61.4	45.0	47.3	23.6
18 Printing and reproduction of recorded media	46	73.5	36.8	58.5	27.7
19-21 Chemicals and chemical products	64	67.4	35.2	64.1	20.5
22 Rubber and plastic products	81	48.6	31.1	40.5	15.1
23 Other non-metallic mineral products	62	68.5	45.7	56.3	21.1
24 Basic metals	19	44.4	47.4	53.3	20.8
25 Fabricated metal products, except machinery and equipment	322	45.9	26.1	36.4	23.2
26 Computer, electronic and optical products	62	52.6	40.1	46.1	32.2
27 Electrical equipment	77	53.5	25.0	42.6	31.1
28 Machinery and equipment n.e.c.	225	46.1	23.8	51.4	21.5
29 Motor vehicles, trailers and semi-trailers	25	36.4	53.7	53.7	21.3
30 Other transport equipment	21	74.1	26.9	65.0	38.2
31 Furniture	56	65.2	49.9	35.3	24.1
32 Other manufacturing	27	26.3	13.7	27.4	0.0
33 Repair and installation of machinery and equipment	24	69.7	62.4	78.8	30.3
35 Electricity, gas, steam and air conditioning supply	58	50.1	58.5	58.5	29.7
36 Water collection, treatment and supply	8	86.0	56.0	86.0	44.0
37-39 Sewerage, waste treatment	40	80.1	53.9	49.0	15.4
46 Wholesale trade, except of motor vehicles and motorcycles	383	53.8	33.3	40.7	7.4
49-52 Transportation and storage	251	62.1	47.9	46.2	18.8
53 Postal and courier activities	4	100.0	0.0	0.0	0.0
58 Publishing activities	38	17.3	17.3	23.0	5.8
59 Programme production, sound recording and music publishing activities	10	13.8	13.8	0.0	0.0
61 Telecommunications	30	10.6	0.0	11.6	11.6
62 Computer programming, consultancy and related activities	177	29.6	19.2	20.2	14.8
63 Information service activities	19	27.2	18.3	18.3	54.9
64 Financial service activities	50	23.9	7.3	10.0	0.0
65 Insurance, reinsurance and pension funding	20	25.6	15.4	25.6	5.1

Industry	Number of enterprises	Existing environmental regulations	Existing environmental taxes, charges or fees	Environmental regulations or taxes expected in the future	Government grants, subsidies or other financial incentives for environmental innovations
		%	%	%	%
66 Activities auxiliary to financial services and insurance activities	22	34.8	34.8	39.4	39.4
71 Architectural and engineering activities; technical testing and analysis	159	56.3	33.1	48.2	18.5
72 Scientific research and development	20	23.1	9.9	16.5	9.9
73 Advertising and market research	28	0.0	0.0	0.0	0.0
All NACE - Total	**2746**	**49.8**	**33.3**	**42.0**	**19.3**
05-39 Manufacturing, total	**1535**	**53.1**	**35.9**	**47.6**	**24.2**
46, 49-53, 58-66, 71-73 Services, total	**1211**	**45.7**	**29.9**	**34.8**	**13.1**

Appendix table 30b. Factors for introducing innovations with environmental benefits, with high or medium importance, by industry 2012-2014, share of enterprises with innovations with environmental benefits

Industry	Number of enterprises	Current or expected market demand for environmental innovations	Improving enterprises reputation	Voluntary actions or initiatives for environmental good practice	High cost of energy, water or materials	Need to meet requirements for public procurement contracts
		%	%	%	%	%
05-09 Mining and quarrying	12	27.0	100.0	76.4	62.8	0.0
10-12 Food products and beverages	145	32.2	65.5	53.7	70.6	26.0
13 Textiles	21	55.4	64.9	55.4	55.4	29.7
14 Wearing apparel	9	10.6	21.3	21.3	21.3	10.6
15 Leather and related products	4	0.0	75.0	75.0	50.0	25.0
16 Wood, products of wood, and cork	85	67.6	71.5	71.5	48.9	24.1
17 Paper and paper products	42	45.3	65.5	63.2	66.1	13.3
18 Printing and reproduction of recorded media	46	55.3	73.7	73.7	72.5	58.7
19-21 Chemicals and chemical products	64	39.4	56.9	54.2	53.5	13.2
22 Rubber and plastic products	81	59.9	59.3	49.5	64.7	11.6
23 Other non-metallic mineral products	62	54.4	59.8	56.4	84.3	41.8
24 Basic metals	19	26.7	41.5	32.6	53.3	14.8
25 Fabricated metal products, except machinery and equipment	322	35.3	57.0	39.3	57.7	22.4
26 Computer, electronic and optical products	62	45.7	71.8	64.6	61.3	24.5
27 Electrical equipment	77	48.1	55.4	54.2	57.0	38.2
28 Machinery and equipment n.e.c.	225	40.9	47.1	37.0	57.0	15.5
29 Motor vehicles, trailers and semi-trailers	25	28.3	51.5	46.3	86.0	32.4
30 Other transport equipment	21	40.7	86.1	86.1	81.9	30.1
31 Furniture	56	56.5	62.4	57.7	44.1	51.7
32 Other manufacturing	27	41.1	46.3	53.7	60.0	20.0
33 Repair and installation of machinery and equipment	24	69.1	52.7	41.2	62.4	45.4
35 Electricity, gas, steam and air conditioning supply	58	39.8	72.0	66.6	66.1	31.8
36 Water collection, treatment and supply	8	44.0	44.0	86.0	44.0	44.0
37-39 Sewerage, waste treatment	40	29.8	73.8	71.2	52.8	28.8
46 Wholesale trade, except of motor vehicles and motorcycles	383	47.6	61.3	52.8	52.1	36.0
49-52 Transportation and storage	251	35.4	63.0	39.6	62.7	38.5
53 Postal and courier activities	4	55.6	100.0	55.6	55.6	27.8
58 Publishing activities	38	11.5	34.5	34.5	54.9	0.0
59 Programme production, sound recording and music publishing activities	10	0.0	13.8	13.8	43.1	0.0
61 Telecommunications	30	5.6	40.5	27.9	37.8	34.9

Industry	Number of enterprises	Current or expected market demand for environmental innovations	Improving enterprises reputation	Voluntary actions or initiatives for environmental good practice	High cost of energy, water or materials	Need to meet requirements for public procurement contracts
		%	%	%	%	%
62 Computer programming, consultancy and related activities	177	23.7	37.9	31.0	24.6	30.0
63 Information service activities	19	54.9	63.8	54.9	36.6	45.5
64 Financial service activities	50	23.9	52.5	41.4	26.7	4.8
65 Insurance, reinsurance and pension funding	20	25.6	35.9	65.4	15.4	5.1
66 Activities auxiliary to financial services and insurance activities	22	39.4	34.8	39.4	65.2	34.8
71 Architectural and engineering activities; technical testing and analysis	159	48.8	57.3	45.8	27.2	44.0
72 Scientific research and development	20	6.6	28.1	37.8	37.6	16.3
73 Advertising and market research	28	0.0	24.3	17.1	41.4	41.4
All NACE - Total	**2746**	**40.0**	**57.0**	**47.8**	**53.5**	**28.9**
05-39 Manufacturing, total	**1535**	**43.1**	**59.9**	**51.6**	**60.6**	**25.5**
46, 49-53, 58-66, 71-73 Services, total	**1211**	**36.0**	**53.4**	**42.9**	**44.5**	**33.3**

Statistics Finland

Suomen virallinen tilasto
Finlands officiella statistik
Official Statistics of Finland

Science, Technology and Information Society 2016

Inquiries

Mervi Niemi 029 551 3263
Heidi Pirkola 029 551 3246
Director in charge:
Mari Ylä-Jarkko

tiede.teknologia@stat.fi
www.stat.fi
Source: Innovation 2014, Statistics Finland

Communication and Information Services, Statistics Finland
tel. +358 29 551 2220
www.stat.fi

Publication orders, Edita Publishing Oy
tel. +358 20 450 05
www.editapublishing.fi

ISSN 1796-0479
= Official Statistics of Finland
ISSN 1797-4399 (pdf)