



THE NATIONAL INSTITUTE OF STATISTICS

Press Office

16, Libertății Avenue, Sector 5, Bucharest

Tel/Fax: 318 18 69; Fax 312 48 75

e-mail: romstat@insse.ro; biroupresa@insse.ro

PRESS RELEASE

No. 171 of July 27, 2012

**THE INNOVATION IN INDUSTRY AND SERVICES
during the period 2008- 2010**

Final data

For the correct interpretation of results, kindly see the methodological note on page 3 of the press release.

During the period 2008-2010, out of the total enterprises market oriented activities, 30.8% innovated in products, processes, organizational or marketing methods.

Over half of the number of employees in the enterprises worked in innovative ones.

The most innovative sector in industry was the manufacturing of basic pharmaceutical products and of pharmaceutical preparations, while the activities of insurance and reinsurance and of pension funds were the most innovative services.

The enterprises innovated in two times more new products for the enterprise than new products for the market.

Over a quarter of the number of innovative enterprises implemented changes in the enterprise structure, in the business practices, in the management methods or in the products sale methods.

Compared to the period 2006-2008, the research-development expenditure for innovation doubled.

The main source of information from enterprises was that within the enterprise itself.

One out of ten enterprises cooperates in order to achieve innovative activities.

The improvement of the quality of products and services was the main objective of the innovative enterprises , during 2008-2010.

The lack of funds was the main factor hampering innovation activities.

The innovative enterprises used in-house employees with skills in the market research and of objects design and employees from external sources for the development of the software, web design and of graphic arts, layout and advertising.

The Macro-region no. 2, consisting of the Regions North-East and South-East, was the most innovative macro-region.

Innovative enterprises

During the three-year period, 2008-2010, only 30.8% of the enterprises in industry and services were innovative enterprises, 2.5 pp less compared to the period 2006-2008.

The innovators are classified in two categories: technological innovators which introduced new or significantly improved products or processes and non-technological innovators which implemented new organizational or marketing methods.

The weight of the technological innovators decreased by 5.4 pp compared to the previous period, 2006-2008.

The weight of the non-technological innovators was 26.5%, enterprises which had also technological innovations included in their total.

Enterprises with technological innovation

The enterprises which introduced only new or significantly improved products had a weight of 2.4% and the enterprises which implemented new or significantly improved processes had a weight of 3.6%, while those which introduced both new or significantly improved products and processes had a weight of 7.8%. The weight of the enterprises which reported ongoing or abandoned innovations remained the same, of only 0.5% of the total enterprises. In the table below, the evolution of the technological innovators, compared to the previous period, 2006-2008, is shown.

	The weight in the total number of enterprises (%)	
	2006-2008	2008-2010
Enterprises with technological innovation	19.7	14.3
Product innovators only	2.4	2.4
Process innovators only	6.6	3.6
Product and process innovators	10.3	7.8
Enterprises with ongoing and/or abandoned innovations	0.5	0.5

Enterprises with non-technological innovation

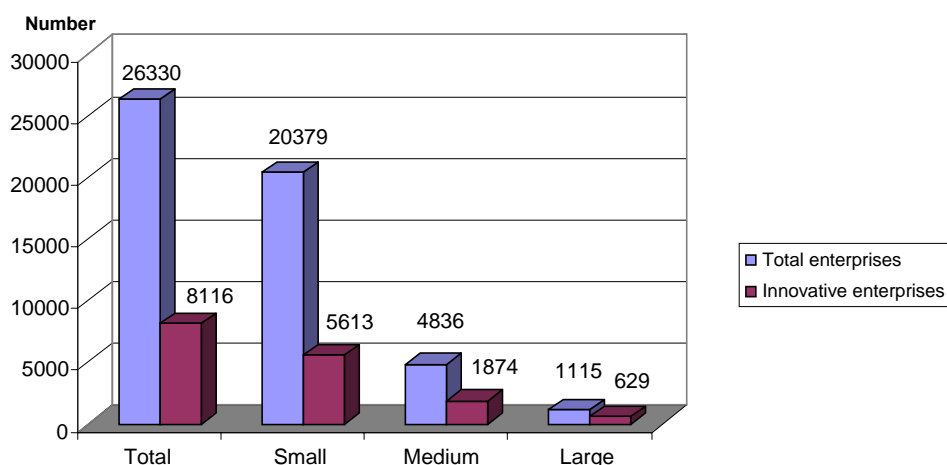
The non-technological innovators are those enterprises which, during 2008-2010, introduced or implemented new organizational methods, such as new business practices, new organizational methods of the responsibilities at the workplace, new organizational methods of the external relations or which introduced new marketing methods, such as significant changes of the aesthetic aspect or of the packaging of a good or service, a new kind of advertising or promotion techniques of the product, new methods for the sale of the product or new methods for determining the prices of goods and services. Non-technological innovators can be technological innovators, too; they can also introduce new or significantly improved products or processes.

The results of the innovation survey, during the period 2008-2010, showed that, out of the total, 26.5% of the enterprises were non-technological innovators, regardless of their product or process innovations. The weight of the enterprises with marketing innovations was of 19.2%, 0.8 pp more compared to that of the enterprises which introduced new organizational methods in the enterprise, of 18.4%. The weight of the non-technological innovators is greater in services, of 28.4%, compared to industry where the weight is of 25.0%.

Large enterprises are the most innovative

The weight of the innovative enterprises varies according to the size class of the enterprise. Out of the total of the large enterprises, 56.4% were innovative ones, while 29.7% of the small and medium enterprises were innovative.

The distribution of the total number of enterprises and of the number of innovative enterprises, by size class of the number of employees



Innovation by the economic activity of the enterprise

In the surveyed period, the services sector was more innovative than that of the industry, the weight of the innovative enterprises, with main activity in the services sector, was of 31.7%, while the weight of the innovative enterprises, with main activity in industry, was of 30.1%, 1.6 pp less. Compared to the period 2006-2008, the services sector kept almost the same weight, of 31.3% during 2006-2008 and 31.7% during 2008-2010, while the industry registered, during the period 2008-2010, a decrease of 4.6 pp compared to the period 2006-2008. The manufacturing of basic pharmaceutical products and of pharmaceutical preparations was the most innovative sector within the industry, of 60.6% and the insurance, reinsurance activities and the pension funds (those in the public system of social security excluded) was the most innovative sector within services, of 60.0%.

The top of the first 10 sectors of innovative activity in industry and services during 2008-2010

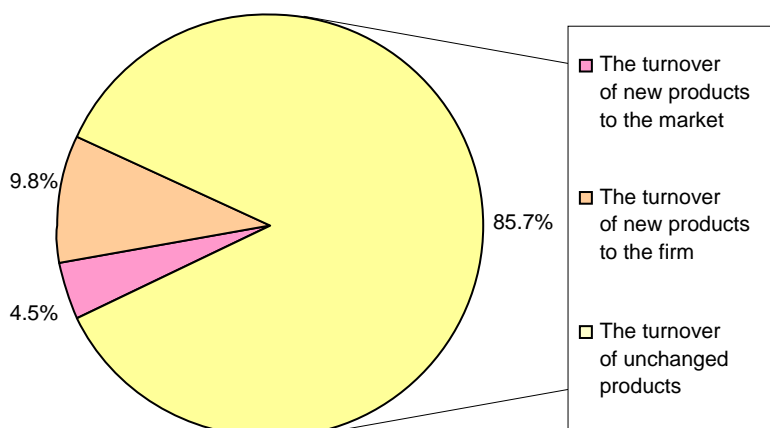
Nr.	Industry		Services	
	Sector of activity	The weight of the innovative enterprises (%)	Sector of activity	The weight of the innovative enterprises (%)
1	Manufacture of basic pharmaceutical products and of pharmaceutical preparations	60.6	Insurance, reinsurance and pension funding, except compulsory social security	60.0
2	Manufacture of tobacco products	50.0	Activities auxiliary to financial services and insurance activities	55.1
3	Manufacture of chemical and chemical products	45.7	Air transport	50.0
4	Manufacture of beverages	44.7	Computer programming, consultancy and related activities	49.9
5	Manufacture of basic metals	42.9	Financial service activities, except insurance and pension funding	43.9
6	Manufacture of other transport equipment	42.3	Publishing activities	39.7
7	Manufacture of motor vehicles, trailers and semi-trailers	39.7	Postal and courier activities	38.5
8	Manufacture of electrical equipment	38.0	Information service activities	35.7
9	Manufacture of rubber and plastic products	37.7	Wholesale trade, except of motor vehicles and motorcycles	30.4
10	Printing and reproduction of recorded media	37.1	Telecommunications	27.9

The main economic indicators of innovative enterprises

In 2010, more than half of the turnover of the enterprises, that is 58.5%, was achieved by the innovative enterprises. The turnover of the enterprises with new or significantly improved products was of 14.3%. The weight of the enterprises with new products to the firm was of 9.8% and that with new products to the market was of 4.5%.

Half of the number of employees in enterprises, that is 50.2%, carries out their activity in the innovative enterprises.

The weight of the turnover of new products in the total turnover of enterprises, in 2010



New products to the firm and to the market

One of the main indicators, that characterises innovation, is the number of enterprises with new products to the firm or for the market. The weight of the enterprises with new products to the firm was two times greater, of 9.8%, than that of the enterprises with new products to the market, of 4.5%.

The most important sale market of the products remains the mentioned local or regional one, of 41.8% of the total enterprises; 33.1% of the enterprises sold their products on the national market, 14.6% on the European Union market and 1.2% of the enterprises sold their products in other countries.

Innovative activities and the expenditure for innovation

The main innovative activities carried out by enterprises were in-house research and development activities, external research and development activities taken from other enterprises or institutions, acquisition of machinery, equipment and software, acquisition of external knowledge (licences, patents, know-how, etc) as well as training for innovative activities, market introduction of innovation, design activities and other preparing activities.

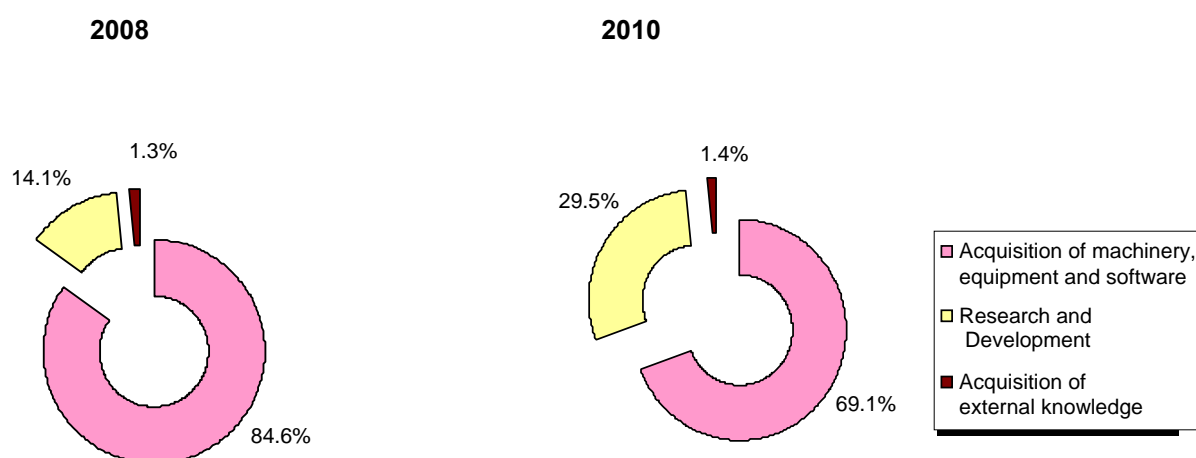
The innovation expenditure and its distribution are closely related to the enterprise strategy. Some enterprises allocate great sums for certain in-house or external research and development activities, while other enterprises invest in the introduction of new technology or other types of acquisitions. All these activities lead towards innovation.

In the statistical survey for the period 2008-2010, the expenditure related to the main innovative activities, research and development expenditure, respectively, and those of acquisition of technology and know-how, were aimed at.

The total value of the innovation expenditure in 2010 was of 3771.6 million lei. The greatest weight of innovation expenditure was for acquisition of machinery, equipment and software of 69.1%. The weight of the research and development expenditure in the total innovation expenditure registered an increase in 2010

compared to 2008. Thus, if in 2008 the weight of the research and development expenditure in the total innovation expenditure was of 14.1%, in 2010 was an increase of 15.4 pp, reaching a weight of 29.5%.

The weight of the innovation expenditure for the main innovative activities



Poor cooperation in the Romanian enterprises for achieving innovative activities

Only 11.2% of the total innovative enterprises had **cooperation** agreements with other non-commercial enterprises or institutions for achieving their innovative activities. The intensity of the cooperation is correlated with the size of the enterprise. Thus, the large enterprises cooperated by a ratio of 26.2%, the medium ones by 12.2% and the small ones had a weight of 9.1%.

The main cooperation partners of the innovative enterprises were the suppliers, by a ratio of 6.7% and the clients and consumers had a weight of 5.1%. The rest of the cooperation partners registered small weights.

The weight of enterprises involved in cooperation, by size class, activities and partners during 2008-2010

Type of partner	percentage					
	Type of enterprise by size class				Type of activity	
	Total	Small	Medium	Large	Industry	Services
Any type of cooperation partner	11.2	9.1	12.2	26.2	11.7	10.4
Other enterprises within the group	1.2	0.3	2.4	5.6	1.8	0.6
Suppliers	6.7	5.7	6.8	14.8	6.6	6.8
Clients or customers	5.1	3.6	6.9	12.7	5.9	4.1
Competitors	3.1	2.4	3.6	8.1	3.6	2.4
Consultants, commercial labs, private R&D institutes	2.9	2.0	3.8	9.1	3.4	2.3
Universities / Higher education institutions	2.9	2.4	2.8	8.4	3.8	1.9
Government or public research institutes	1.7	1.1	1.9	6.0	1.8	1.6

Sources of information for innovation

In order to achieve the innovative activities, the enterprises use various sources of information. These sources are classified in internal sources (within the enterprise), market sources (suppliers, clients, customers, competitors or consultants), institutional sources (universities, governmental institutions or public research and development institutions) and other sources (conferences, fairs, exhibitions, scientific magazines and commercial publications and professional associations).

The main information sources, used by the enterprises in industry and services during the period 2008-2010, were internal sources, with a weight of 20.1%. The large enterprises registered a weight of the

use of internal sources of 38.5%. The institutional sources are used much more less, only 1.7% the universities and 1.2% the governmental institutions or the public research and development institutes.

**The structure of the information sources by type of source and by size class
in the period 2008– 2010**

Source of information	percentage			
	Size class (according to the number of employees):			
	Total	Small	Medium	Large
Internal sources				
Within the enterprise or group of enterprises	20.1	17.3	22.5	38.5
Market sources				
Suppliers of equipment, materials, components or software	15.5	14.1	16.9	23.5
Clients or customers	15.5	14.3	16.4	24.0
Competitors or other enterprises from the same sector of activity	10.7	10.5	9.7	15.1
Consultants, commercial labs or private R&D institutes	3.5	3.0	3.2	8.9
Sources from institutions				
Universities or other higher education institutions	1.7	1.5	1.8	3.5
Government or public research institutes	1.2	0.7	1.7	3.3
Other source				
Conferences, fairs, exhibitions	6.5	4.6	9.3	14.3
Scientific magazines and commercial/technical publications	5.1	3.7	7.0	11.6
Professional associations and organizations	2.3	1.7	2.7	6.2

Innovation objectives

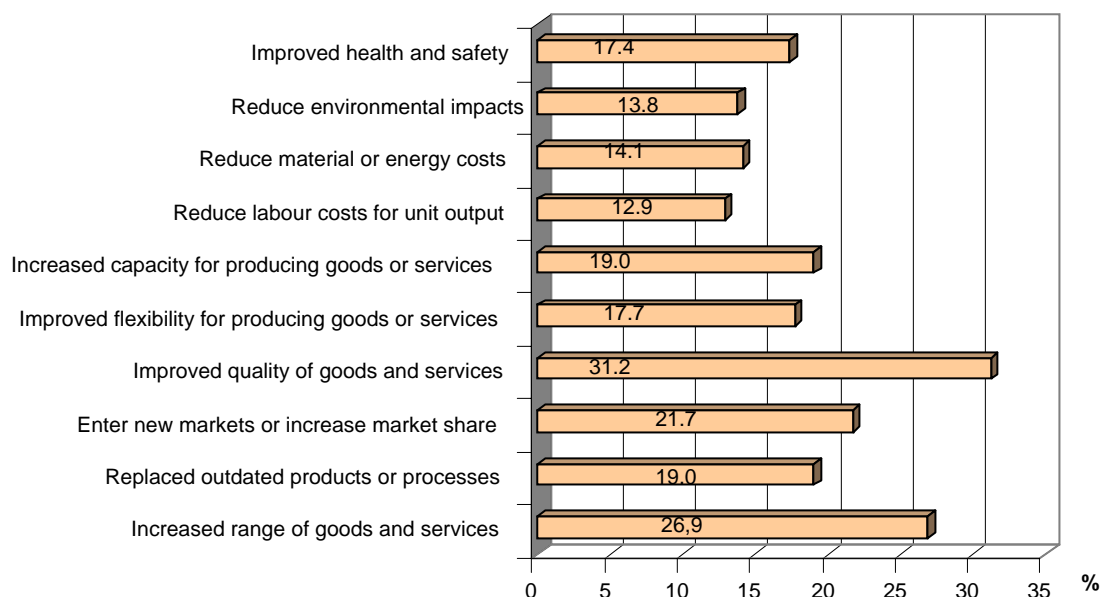
The innovative enterprises have definite objectives in order to obtain better results, to increase productivity and the number of employees. The statistical indicator keeps an eye on these innovation objectives by their degree of importance: high, medium and low.

For the period 2008-2010, the enterprises named a number of 10 objectives with high degree of importance.

Almost one third of the innovative enterprises, that is 31.2%, stated that their main objective in achieving the innovative activities is the improvement of the quality of goods and services, while the enlargement of the range of goods and services was mentioned by 26.9% of the innovative enterprises and the entrance on new markets or the increase of the market weight was mentioned by 21.7% of the innovative enterprises. The less mentioned objective was the reduction of the impact on the environment by 13.8% and the reduction of labour costs per production unit by only 12.9%.

These objectives are shown in the table below.

The weight of enterprises with highly important innovative objectives, in total innovative enterprises, during 2008-2010



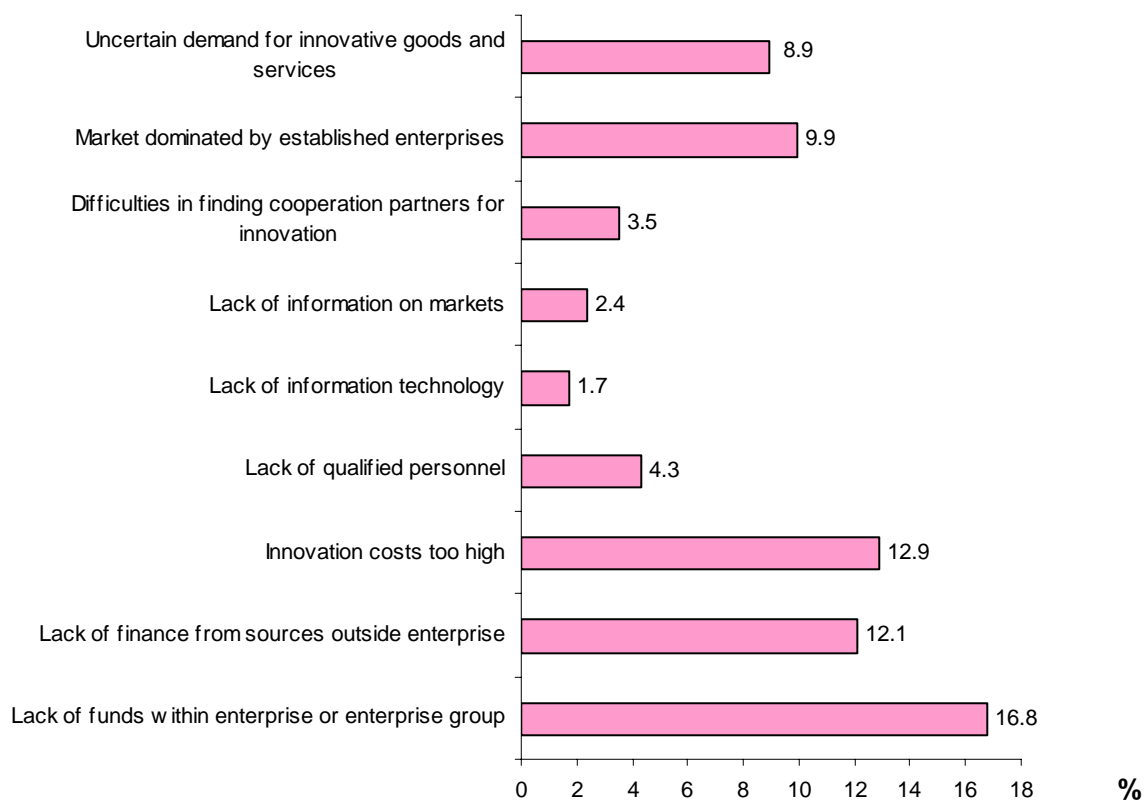
Factors hampering innovation activities

To identify the factors hampering innovation activities is very important for understanding the innovation process and formulates the innovation policy. The measurement of the innovation impact on the enterprise performance is one of the most important indicator but, at the same time, the hardest to obtain. The factors hampering innovation activities vary by innovation type and are classified in cost factors, knowledge factors and market factors.

During 2008-2010, the main hampering factors for the technological innovators were the lack of funds within the enterprise with a weight of 16.8% and lack of funds from sources outside the enterprise with a weight of 12.1%.

Non-innovative enterprises mentioned the same hampering factor of their activities by a ratio of 38.8% and the innovation costs too high, mentioned by 33.6% of the non-innovative enterprises.

**Weight of high importance factors hampering technological innovators,
in total innovative enterprises, during 2008-2010**



The creativity and skills of the employees in the innovative enterprises

In the statistical survey during 2008-2010, new indicators regarding the human capital used in the innovative enterprises were tested.

In order to achieve the innovative activities, the enterprises needed individuals with certain skills. These individuals were in-house employed or individuals obtained from external sources.

The results of the statistical survey show that the most in-house employed individuals were used for the market research, 42.2% and 29.0% for design of objects or services. The employees from external sources were used for the development of software, 32.9%, web design, 24.6% and graphic arts, layout and advertising, 21.6%.

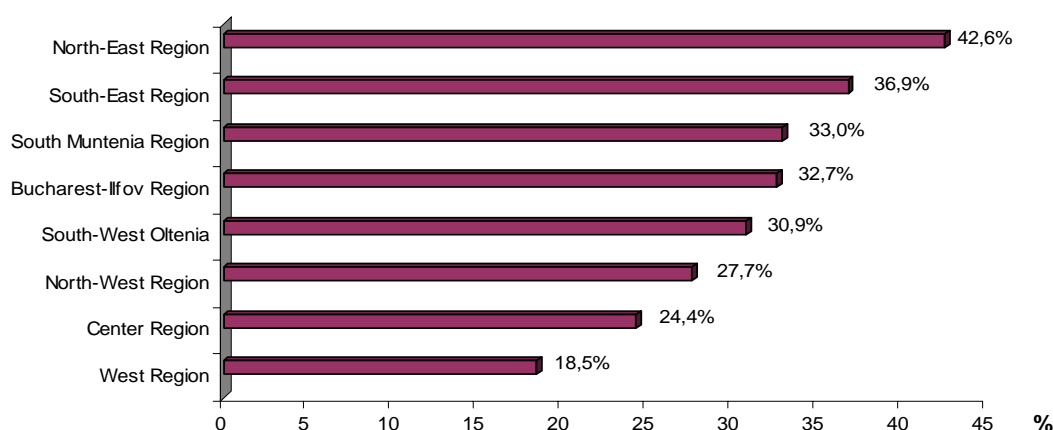
The main success methods, used for stimulating the new ideas or the creativity among employees of the innovative enterprises, were financial incentives, 31.9%, training employees on how to develop new ideas or creativity, 24.8% and non-financial incentives (free time, public recognition, more interesting work) mentioned by 22.3% of the innovative enterprises.

Innovation at regional level

The statistical survey dealt with the enterprises by the address of their headquarters, regardless of the region in which the enterprise or its branch is located.

During the period 2008-2010, the development regions with the most innovative enterprises were as follows: Region North-East with a weight of 42.6%, Region South-East with a weight of 36.9% and Region South-Muntenia with a weight of 33.0%.

The weight of innovative enterprises, by region, during 2008-2010



METHODOLOGICAL NOTE

1. The data source is represented by the "Innovation Statistical Survey" (INOV), based on the European questionnaire "Community Innovation Survey" (CIS) used by all EU Member States according to European Council Regulation no. 1450/2004 regarding the innovation statistics. There is a data collection every two years. At European level, CIS data are the main source of information for the study of the conduct of enterprises as to innovation. The provisional results are based on the harmonised European questionnaire CIS 2010.

2. The statistical survey is a selective type survey. The type of survey used and the procedure of the sample extraction is that of the stratified survey with simple random selection without come back within each stratum, where the economic activity, the size class of the enterprise according to the number of employees and the development region represent the stratification variables.

The statistical survey regards the enterprises with 10 or more employees in the industry and some services (wholesale, transport and storage, information and communications, financial and insurance services, engineering and architectural activities and testing activities and technical analysis). There is a census survey for the enterprises with a hundred or more employees. The size classes according to the number of employees are as follows: 10-49 (small), 50-249 (medium), 250 and over (big). A number of 10469 enterprises represented the statistical population. The base of sample selection ensures representativeness calculated according to the turnover of 95% of the total active units. The maximum admitted error of estimations is of $\pm 3\%$. Response rate is 82.4%.

Since the reference year 2008, the innovation statistics use the new classification of activities in the national economy NACE Rev. 2. The previous statistical surveys were shown in NACE Rev. 1.

3. Vocabulary

An innovation is the introduction of a new or significantly improved product, process, organizational method, or marketing method by your enterprise. It is based on the results of new technologies, of technological development, of new combinations of the present technology or on the use of other knowledge obtained by the enterprise. The innovation must be new to the enterprise, but can be originally developed by other enterprises, too.

The innovative enterprises are the active enterprises that launched new or significantly improved products (goods or services) on the market or introduced new or significantly improved processes or new organisational or marketing methods. The term applies to all types of innovators, innovators of product, of process, of organizational or marketing methods, as well as the enterprises with ongoing or abandoned innovations.

The enterprises with technological innovation are the enterprises with new or significantly improved **products** or **processes**.

The enterprises with non-technological innovation are the enterprises that introduced new or significantly improved **organizational** or **marketing methods**.

The innovation expenditure are done for the following activities:

In-house Research and Development (R&D) includes the creative activities systematically performed within the enterprise in order to increase the volume of knowledge and their use for achieving new and improved products (goods and services) and processes, the software development included.

External Research and Development (R&D) includes the activities performed by other research institutes or enterprises.

Acquisition of machinery, equipment and software includes the acquisition of high performance machinery, equipment, hardware or software in order to obtain new or significantly improved products and/or processes.

Acquisition of other external knowledge includes the acquisition of licences of patents and inventions non-patented, know-how and other types of knowledge from enterprises and organizations.

Sources of information are necessary for initiating new innovation projects or for completing the existing ones.

Cooperation in innovation means active participation with other enterprises or non-commercial institutions on innovation activities. Both partners do not need to commercially benefit. Exclude pure contracting out of work with no active co-operation.

Innovation **objectives** refer to the intention of the enterprise on the innovative activities.

Factors hampering innovation are the factors that determined the enterprise not to perform innovative activities.

Skills of the employees of the innovative enterprises represent their quality of having the skilfulness in new domains such as: graphic arts, layout, advertising, design of objects or services, multimedia, software development, market research, applied sciences engineering, mathematics, statistics and the data base management.

For more information, kindly see the publication "Innovation in industry and services during 2008-2010", date of issue July 31, 2012.