ROMANIA



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# THE INNOVATION IN INDUSTRY AND SERVICES during 2004- 2006

During 2004-2006, 21.1% of the enterprises with 10 or more employees brought a new or significantly improved product on the market or introduced a new or significantly improved process into their own enterprises, 1.2% more compared to the period 2002-2004.

Bigger enterprises are more innovative than small and medium ones. Two out of five big enterprises are innovative and only one out of five small and medium enterprises. On activities, industry is more innovative than services.

The most frequent effect of innovation pointed out by the innovative enterprises was the improvement of the quality of goods and services, mentioned by 41.5% of the enterprises, followed by the improvement of the goods and services field, mentioned by 36.6% of them.

The purchase of machines, equipments and software was the main activity in which the enterprises had been involved for achieving the innovative activities.

During 2004-2006, the weight of the innovative enterprises was of 21.1%. On size classes, the weight of the innovative enterprises with over 250 employees was of 42.1% of the total enterprises, while the weight of the small and medium innovative enterprises was of 19.9%. On activities, out of the innovative enterprises, 63.0% were in industry and 37.0% in services.

**The successful innovators,** that represent the enterprises which introduced or implemented at least one innovative product or process, count 5970. Out of the total innovators, 4276 enterprises developed both innovative products and processes, while the innovators of either products or processes only counted significantly less, 525 and 1169, respectively. The weight of the enterprises with unfinished or abandoned innovations was of only 0.2%.

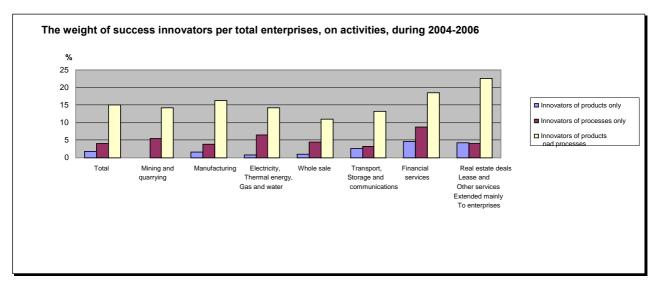
Out of the total innovative enterprises, 14.1% belong to a group of enterprises, more than half of which have their headquarters abroad.

	Number of	The weight compared to the total number	Number of	The weight compared to the total number	
	enterprises	of enterprises	enterprises	of enterprises	
		%		%	
		2002-2004	2004-2006		
Total enterprises	26024	100.0	28488	100.0	
Innovative enterprises	5171	19.9	6013	21.1	
in industry and services					
Success innovators	5136	19.7	5970	21.0	
Innovators of products only	472	1.8	525	1.8	
Innovators of processes only	1203	4.6	1169	4.1	
Innovators of products and processes	3461	13.3	4276	15.0	
Enterprises with unfinished					
and /or abandoned innovations	35	0.1	43	0.2	
Non-innovative enterprises	20853	80.1	22475	78.9	

### The innovators' typology

Note: Due to the decimal round, the sum of the weights may differ from the presented totals

During 2004-2006, compared to the period 2002-2004, a higher interest of enterprises in innovation can be noticed.



### Three quarters of the innovation expense was used to purchase machines, equipments and software

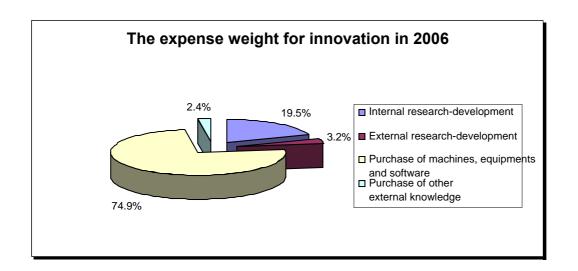
The total value of **the innovation expense** for 2006 was of 6421.7 million lei. Both in industry and services the highest weight of innovation expenses is represented by the purchase of machines, equipments and software.

Service enterprises spend more for research-development than the enterprises in industry.

### Innovation expenses<sup>\*)</sup> per composing elements and activities in 2006

<del>.</del>	million lei in current prices				
Innovation expenses for:	Total	Industry	Services		
Purchase of machines, equipments and software	4811	3563	1248		
Internal research-development	1251	577	674		
External research-development	206	74	132		
Purchase of other external knowledge	154	85	69		

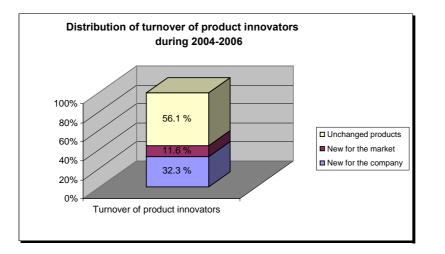
\*) see the methodological definitions



### The innovation intensity was two times greater in industry (1.93%) compared to services (0.90%) The enterprises in Romania tend to innovate products for the company and less for the market

The weight of the turnover of new or significantly improved products in the total turnover of enterprises was of 18.6%. Enterprises with new products for the company had a weight of 13.7%, compared to those with new products for the market with a weight of 4.9%.

Only 8.8% of the total turnover of small and medium enterprises was obtained from achieving new or significantly improved products. In the total turnover of products, the new products for the market have a weight of 11.6%, the new product for the company roughly three times more, 32.3% and unchanged products have a weight of 56.1%.



Of the innovative enterprises, 13.3% got **public funds for innovative activities** from various governmental levels (regional or local administration, central governmental agencies or ministries, The European Union).

### The enterprise or the group of enterprises represented the most used source of information for the support of the innovation process

**The sources of information** for the support of the innovation process have been obtained from the enterprise or the group of enterprises personnel (42.0%) and from the providers of equipments, materials, components or software (34.1%). The institutional sources have been less consulted (4.1% the universities and 3.5% the private or public research institutes).

### Big enterprises cooperate much better, compared to small and medium enterprises

Only 17.3% of the total innovative enterprises have **cooperation** agreements for the achievement of innovative activities. The intensity of cooperation for the achievement of innovation is correlated with size of the enterprise.

The main cooperation partners of the innovative enterprises were the providers (14.3%) and the clients or consumers (11.3%). The cooperation between the innovative enterprises and universities was of only 6.9%.

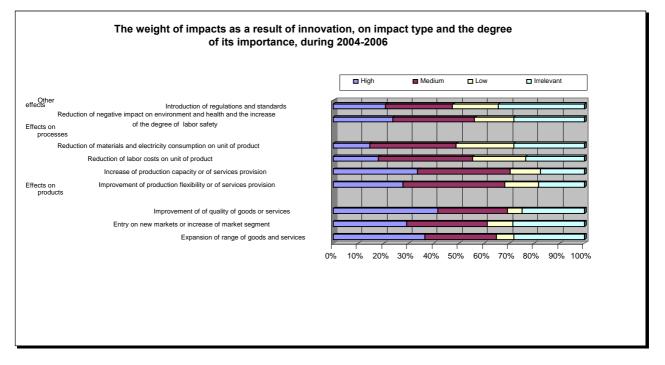
### The weight of enterprises involved in cooperation, on size classes, activities and partners

					1	percentage
Tipul partenerului	Enterprises				Activities	
· · · · · · · · · · · · · · · · · · ·	Total	Small	Medium	Big	Industry	Services
Any kind of cooperation partner	17.3	14.9	17.4	30.6	17.4	17.3
Within the enterprise or the group of enterprises	3.5	2.6	3.5	8.6	3.7	3.2
Providers	14.3	12.4	14.1	25.5	14.4	14.3
Clients or purchasers	11.3	10.4	10.7	18.3	11.2	11.5
Competitors	7.3	6.3	7.4	12.4	6.1	9.3
Consultants	6.9	5.2	6.6	16.5	6.4	7.8
Universities/Higher education institutions	6.9	5.1	7.0	15.6	5.8	8.6
Governmental institutions or public research institutes	5.5	4.7	4.7	11.9	4.8	6.8

### The innovation impact is reflected in the results measured by their degree of importance: high, medium or low

The most frequent effects of innovation shown by the innovative enterprises were the improvement of the quality of goods and services, mentioned by 41.5% of the enterprises and the improvement of the field of goods and services, respectively, mentioned by 36.6% of them.

The decrease of materials and electricity consumption per unit of product, a sustainable development indicator, has been mentioned by 14.6% of the innovative enterprises. Compared to the period 2002-2004, when none of the questioned enterprises showed such effect, a growing interest of companies to develop innovative activities in order to reduce material and electricity consumption can be noticed.



## One third of the innovative enterprises accused the lack of own funds as blocking factor for innovative activities

**The blockage of innovative activities** was equally the result of lack of enterprise own funds and of the funds coming from outside the enterprise, the tow factors being indicated by 30.9% of the innovative enterprises. Non-innovative enterprises pointed out as innovation blockage factor the lack of enterprise own funds (30.4%) but also too high innovation costs (26.8%). Only 5.2% of the non-innovative enterprises accounted for the lack of innovation with prior innovations.

### Big innovative enterprises are more aware of the importance of using the protection methods of intellectual property rights

Of the innovative enterprises, 15.3% requested the registration of trade mark and only 2.5% of the noninnovative ones, while 6.4% of the innovative enterprises requested a patent and only 1.0% of the noninnovative ones did. The weight of big enterprises that ask for protection methods of intellectual property rights was of 27.7% for the registration of a trade mark, 15.0% for the registration of an industrial design 11.2% for the implementation of a patent and 7.0% for copyright. The weight of small and medium enterprises that ask for protection methods of intellectual property rights is half of the big ones.

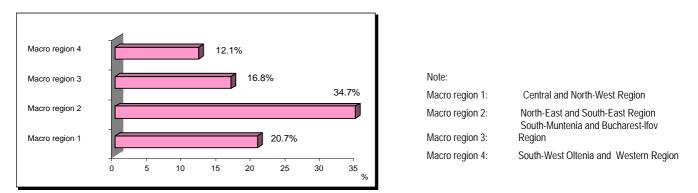
### More than one third of the enterprises had marketing or organisational innovations

Of all the enterprises (innovative and non-innovative), 46.3% developed **marketing or organisational innovations** by implementing new or significant changes in the structure of the enterprise, in the managing methods or by implementing some new or improved sale methods or concepts.

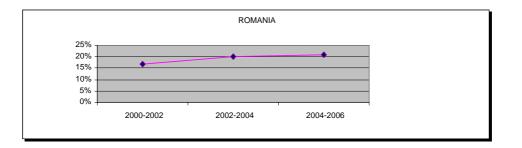
#### Enterprises in macro region 2 are more innovative

At regional level, the greatest weight of innovative enterprises has the macro region 2 that includes the North-East and South-East development regions. Compared to the period 2002-2004, when the greatest innovative weight was represented by the enterprises in the Bucharest-Ilfov Region, during 2004-2006 the greatest innovative weight is represented by the enterprises in the South-East region. The South-East region has the greatest number of enterprises with new products for the company, 950, exceeding the Bucharest-Ilfov Region, which has only 594 enterprises.

### The weight of innovative enterprises at macro region level during 2004-2006



**The innovation potential** in Romania, although low compared to the European average<sup>1</sup>, has kept a positive trend in the last six years.



<sup>&</sup>lt;sup>1</sup> According to the latest data published by Eurostat, the weight of innovative enterprises EU-27 was of 40% during 2002-2004

#### The changes in the world economy led to the apparition of new types of innovations

The new economic tendencies determined the international experts to draft **new indicators** in order to picture innovation. They were tested by all EU Member States in the innovation statistical survey for the period 2004-2006.

The National Institute of Statistics has tested **3 modules** regarding **the management knowledge and marketing and organisational innovations** on a sample of 500 enterprises.

The module regarding the organisational innovations intended to introduce in the enterprises new business practices for the activity organisation, new knowledge management systems and new organisational methods of the working place or of relations with other companies or public institutions.

The module regarding the marketing innovations referred to the implementation of enterprises of some significant changes in the product design, of new methods for the product promotion, of new marketing strategies directed towards groups of clients or market segments and of new methods for product sale or cost.

The module for the knowledge management refers to a series of practices regarding the knowledge management.

The results obtained at European level will be used to define and draft of the next innovation community questionnaire which shall be launched in 2009 for the reference period 2006-2008.

### 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. Data are collected 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.

For the analysis of the period 2004-2006, each Member State chose for the test pilot modules for the implementation of some innovation new concepts, these new modules being included in the mandatory questionnaire or being separately tested.

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 stratification variables are represented by: the economic activity, the size class of the enterprise according to the number of employees and the development region.

The statistical survey is intended for the enterprises with 10 or more employees in the industry and some services (whole sale, transport, storage and communications, financial services, real estate transactions, leases and service activities provided mostly to enterprises). Enterprises with a hundred or more employees are exhaustively surveyed. The size classes according to the number of employees are: 10-49, 50-249, 250 and over. The statistical population was represented by 12,232 enterprises. 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 : 82.9%.

#### 3. Vocabulary

The innovation is an activity that gives birth to a new or significantly improved product (good or service) launched on the market, or represents the implementation of new or significantly improved process in own enterprise. Innovation is based on the results of new technologies, and of technological development due to new combinations of existing technology or to the use of other knowledge obtained by the enterprise.

The innovation expenses are for the following activities:

The internal research-development includes the creative activities systematically done within the enterprise in order to increase the knowledge volume and the use of it for achieving new and improved products (goods or services) and processes, software development included.

The external research-development includes activities of research-development achieved by other enterprises or research institutes.

The purchase of machines, equipments and software means the purchase of quality machines, equipments, hardware or software necessary to achieve new or significantly improved products and/or processes.

The purchase of other external knowledge means the purchase of licenses, patents and non-patented inventions, know-how and other types of knowledge from enterprises or organizations.

For more information see the statistical publication "Innovation in industry and services", date of issue July 31, 2008.