III. Technological innovations

From this chapter hereafter we are dealing with technological innovations only, it means with product or process innovations. Innovative enterprise is from this point of view considered as the **enterprise with only product or process innovation**, enterprises with marketing or organizational innovation are not included. In the following text, they can be also named as **technologically innovative enterprises**, i.e. enterprises, that in 2003-2005 **successfully implemented only product or process innovation**, or **technologically innovative active enterprises**, i.e. enterprises that had in 2003-2005 some innovation activity connected with products or services, and which was not, for some reason, concluded by implementing this innovation.

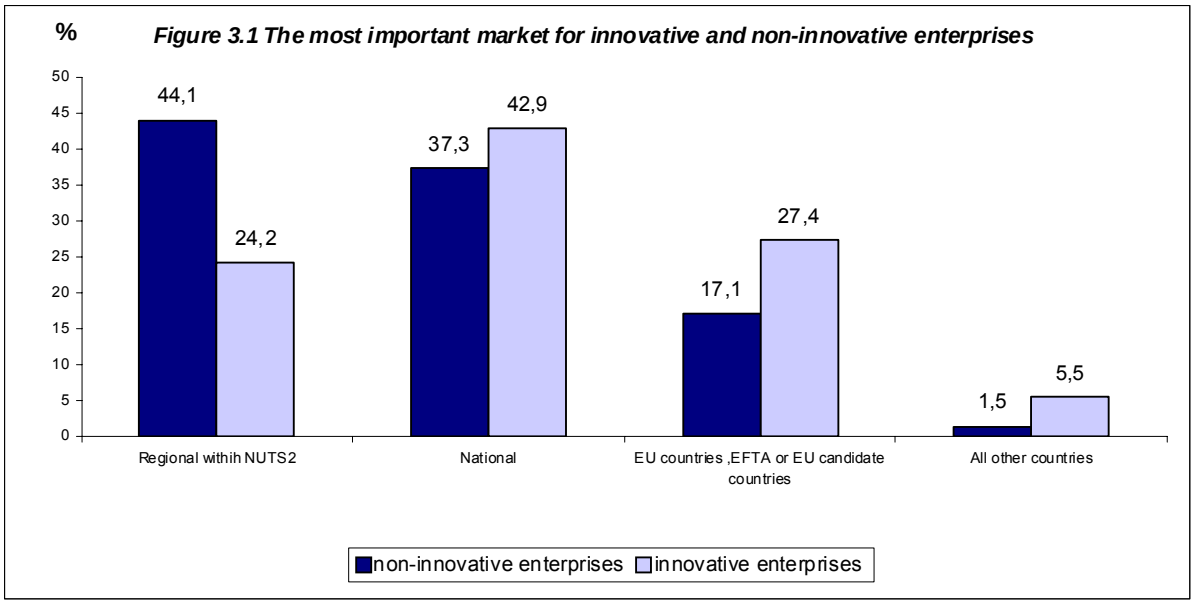
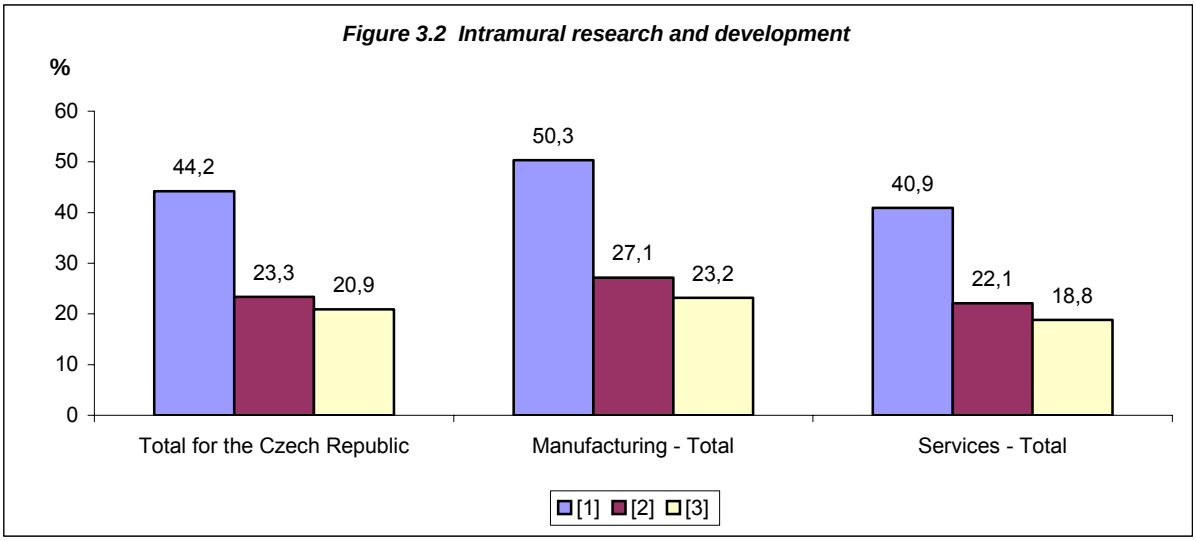


Figure 3.1 informs about the most important market for both innovative and non-innovative enterprises. For innovative enterprises the most important market was national market, within the Czech Republic (42,9%). Much less important was on the second place market comprised by EU Member States, Candidate Countries and EFTA countries (27,4%) followed by regional market (24,2%) and other countries with 5,5%. In case of non-innovative enterprises is the structure of market importance different. The first place takes regional market with 44,1% followed by national market, within the Czech Republic, with 37,3%. Much less important is the market comprised by EU Member States, Candidate Countries or EFTA countries with 17,1%, other countries reach only 1,5%.

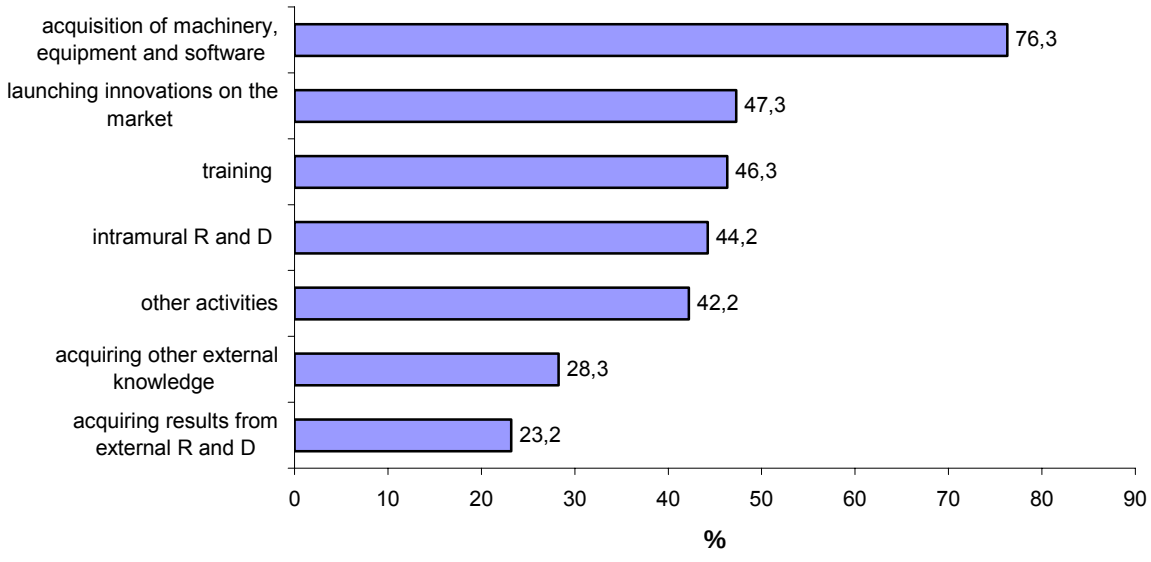


Legend:
[1] Share of enterprises with research and development activities on the total number of technologically innovative active enterprises
[2] Share of enterprises being continuously involved in R and D on the total number of technologically innovative active enterprises
[3] Share of enterprises being occasionally involved in R and D on the total number of technologically innovative active enterprises

With innovation activities is significantly connected intramural research and development. Figure 3.2 shows share of enterprises with research and development activities on the total number of technologically innovative active enterprises. It is evident, that research and development carried out 44,2% of enterprises, 23,3% of enterprises continuously and 20,9% occasionally. In manufacturing there was the share of enterprises carrying out R&D at the level of 50,3%, from which 27,1% carried out research and development continuously and 23,2% occasionally. In services reached the value of this indicator 40,9%, whereas research and development was carried out continuously by 22,1% of enterprises and occasionally by 18,8% enterprises.

Share of enterprises with product or process innovation that have been carrying out relevant innovation activities in 2003-2005 is shown in figure 3.3. The most important activity was from 76,3% acquisition of machinery, equipment and software. A group about 40% comprise innovation activities: launching innovation on the market (47,3%), training (46,3%), intramural research and development (44,2%) and other activities (42,2%). The less frequent were innovations in the field of acquiring other external knowledge with 28,3% and acquiring results from external research and development with 23,2%.

Figure 3.3 Share of enterprises with product or process innovation that have been carrying out relevant innovation activities in 2003-2005



III.1 Innovation expenditures

On innovation activities of the enterprise are necessary large financial resources that in many cases, with regard to the nature of innovation activity, have long-term character and economic return. Figure 3.4 shows structure of innovation expenditures in 2005 in percentage. The highest share has with 55,5% acquisition of machinery, equipment and software, on the second place stands intramural research and development with much less value of 26% and then external research and development with 15,3% and acquiring other external knowledge with 3,3%.

Figure 3.4 Structure of innovation expenditures in 2005

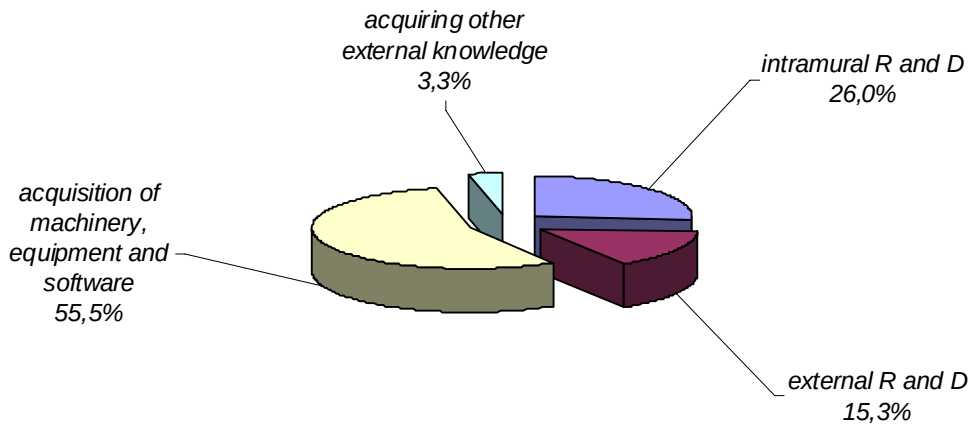
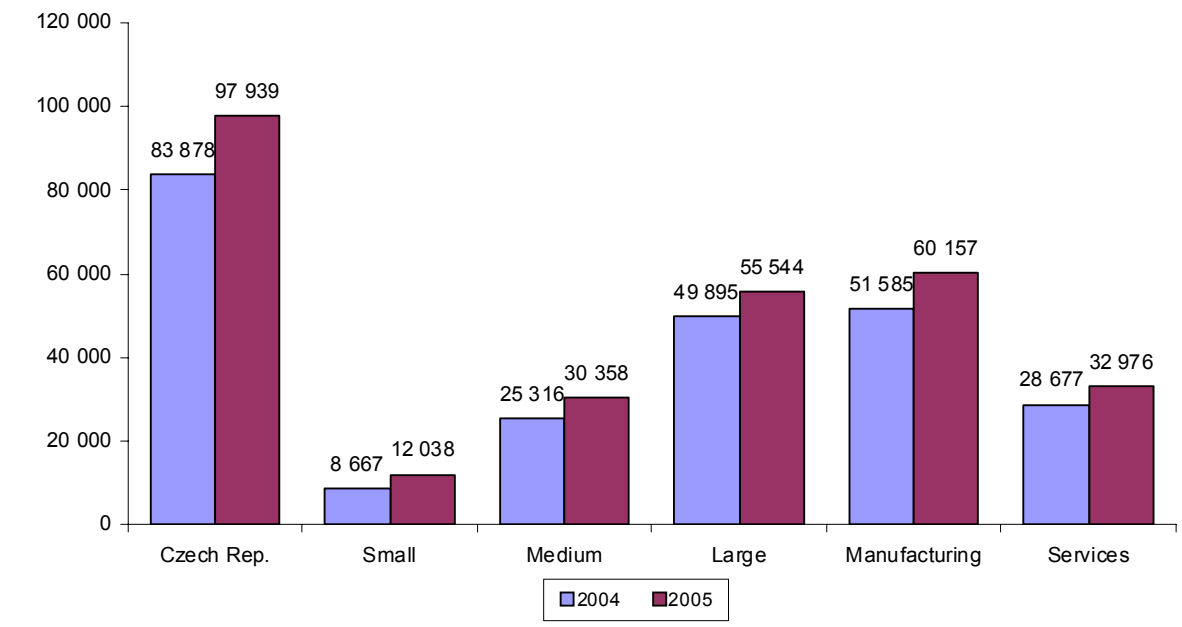


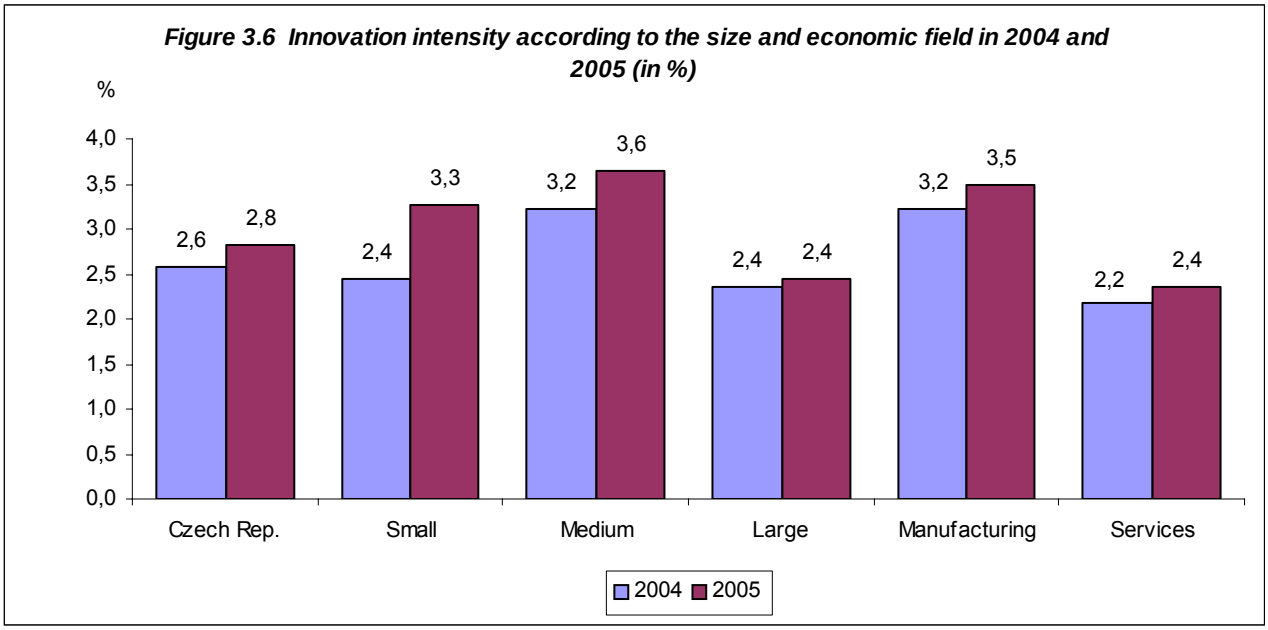
Figure 3.5 Total innovation expenditures of enterprises according to the size and economic field in 2004 and 2005 (in mil.CZK)



Information about absolute amounts spent on innovations brings figure 3.5. It implies, that in 2004 spent the Czech enterprises on innovations 83 878 mil. CZK and 97 939 mil. CZK in 2005. In absolute numbers did the Year 2005 exceeded innovation expenditures in 2004 about 31 438 mil. CZK. According to the size of the enterprise given by number of employees were the highest expenditures at large enterprises, 49 895 mil. CZK in 2004, and 55 543 mil. CZK in 2005. Expenditures of medium enterprises then reached amount of 25 316 mil. CZK in 2004 and 30 357 mil. CZK in 2005. The least spent on innovation small enterprises and it was only 8 667 mil. CZK in 2004 and a little bit more (12 037 mil. CZK) in 2005. When comparing expenditures in manufacturing and services, the amount of money spent in manufacturing was twice much bigger (51 585 mil. CZK in 2004 and 60 156 mil. CZK in 2005) than in services (28 677 mil. CZK in 2004 and 32 975 mil. CZK in 2005).

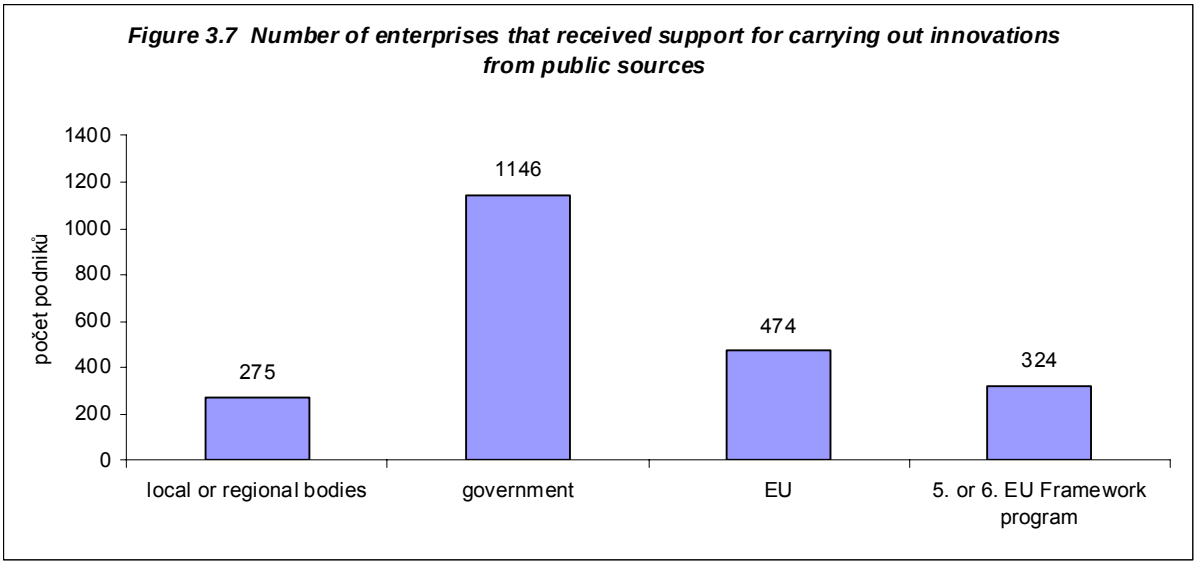
Important innovation indicator is **innovation intensity**. Innovation intensity means percentage share of innovation expenditures on the total turnover of innovative active enterprises in 2003-2005. Situation in the Czech Republic shows figure 3.6. The value of this indicator for the whole Czech Republic reached 2,6% in 2004 and 2,8% in 2005. According to the size classes of enterprises reached the highest innovation intensity medium enterprises, 3,2% in 2004 and 3,6 % in 2005. Small and large enterprises reached the different value of the innovation intensity in 2005, at small enterprises it was 3,1% and at large enterprises 2,4%. According to the economic fields, the higher innovation intensity was found out in manufacturing, 3,2% in 2004 and 3,5% in 2005. Much lower values of the indicator compared to the manufacturing were measured in services, 2,2% in 2004 and 2,4% in 2005.

Figure 3.6 Innovation intensity according to the size and economic field in 2004 and 2005 (in %)



Enterprises can decrease their own innovation expenditures by receiving support for carrying out innovations from public sources. This support can be granted by local or regional bodies, government, EU or the 5th or 6th EU Framework program. The main support provider was in government in 2005, whose support used 1146 enterprises. The important provider was also EU from which received the support 474 enterprises and 324 enterprises used existence of the 5th or 6th EU Framework program. Only 275 enterprises got support from local or regional bodies.

Figure 3.7 Number of enterprises that received support for carrying out innovations from public sources



III.2 Turnover from innovations

For assessment of economic return spent innovation expenditures can be used indicator called share of turnover from the sell of innovated products on the total turnover of enterprises with product innovation. The situation in 2005 according to the size of the enterprise and economic activity and according to the product novelty shows figure 3.8. In the Czech Republic there was reported the most of the products unchanged or slightly modified no matter what is the size of the enterprise or the economic activity. Share of turnover from their sale on the total turnover of enterprises with innovation reached 67,6% in 2005 in the Czech Republic, according to the size of the enterprise reached the highest values of this indicator (69,8%) medium enterprises, and the absolutely highest value was found out in services (70,9%) whereas in manufacturing it was 67,1%. Next step in the product novelty is a product new only for the enterprise. The share from their sale reached 16,4% in the Czech Republic and the highest value at all reached again medium enterprises (17,5%), services reported value 15,1%, whereas manufacturing only 11,4%, which is possibly the lowest value of this indicator with regard to the economic activity as well as to the size classes of the enterprises. The third step of novelty presents product new for the market. The share from the sale of such products on the total turnover of enterprises with product innovation reached 16% in the Czech Republic. Compared to the previous cases reported, according to the size classes of enterprises, the highest value of this indicator large enterprises with 17% followed by small enterprises with 16,3% and the contrary the least value reached medium enterprises with only 12,7%. The value of the indicator in manufacturing and services is very similar. Services exceeded manufacturing for only four decimals of percentage by value of 15,1