INNOVATION PROCESSES IN A FINANCIAL INTERMEDIATION SECTOR IN POLAND

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Abstract: The promotion of innovation activities in various fields of economics is one of the main goals of modern economic policy of EU countries. The mail goal of this article is a synthetic presentation (n the basis of statistical data) an innovation activity which has been recently undertaken by the financial intermediation sector in Poland.

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Introduction

Innovations are generally recognized as a main factor determining the development of modern businesses, sectors and economies. The promotion and support of innovation activities in various fields of economics is currently one of the main goals of modern economic policy not only in EU countries but also in other member countries of OECD. The growth of the role and significance of services observed all over the world is reinforcing the observation of the innovation processes of the aforementioned activity field. R&D, information technology, telecommunication and financial intermediation services are found among world's most innovative types of services.

Due to the multidirectional analyses conducted in many countries all over the world, financial agency ought to be rated as a type of a service sector which has become intensely involved both in innovation activity and employment of new technological solutions. According to Eurostat estimations it appears that the participation of innovation businesses in financial agency sector[1] amounted to approximately 58%, which, bearing in mind fact that in a service sector of EU the businesses introducing innovations constituted around 40%, allows to recognize this type of activity as prominent one (Eurostat 2004).

The development of new technologies in a financial sector has increased particularly since mid 1990s of 20th century when the fall in demand for traditional bank services triggered the need for: new sectors of activity and market segments, extension of current product offers, implementation of modern tools and channels for services distribution.

Nowadays, the patterns of technological infrastructure used in banks and other financial institutions are being influenced by various trends arising from general development of information technology. The trends of the greatest significance are as follows: cooperation of heterogeneous processing environments; multidimensional structure of computer systems; object oriented approach to creating and using computer systems; the expansion of ICT technology and various types of risk accompanying these processes.

Financial intermediation sector in Poland

Polish financial intermediation sector is in a large measure made-up of commercial banks, investment funds and brokerage offices. Since mid 1990s of 20th century, this sector has become the area of radical and multidirectional changes of structural, privatization and technological nature. Table 1 demonstrates the development of the assets of financial sector in Poland in the years 2004-2008.

TABLE 1. THE ASSETS OF FINANCIAL SECTOR IN POLAND IN THE YEARS 2004-2008 (BN ZLOTYS)

Detailed list	2004	2005	2006	2007	2008
Commercial and cooperative banks	538.5	586.5	681.8	795.0	1.038,8
Savings and credit union	4.2	5.3	6.0	7.3	9.5
Insurance companies	77.9	89.6	108.6	126.9	137.9
Investment funds	37.6	61.6	99.2	133.8	73.9
Open pension funds	62.6	86.1	116.6	140.0	138.3
Brokerage entities	5.5	6.9	10.8	11.8	8.6

Source: Own work on the basis of National Bank of Poland data.

Taking into consideration the value of assets and the number of entities, banks take the most important position among financial institutions in Poland. Bearing in mind the number of operating credit institutions, Polish banking sector is currently one of the biggest in Europe. On the other hand, the number of branches per 1 million of residents is running below the average. The level of concentration (measured in five biggest banks' shares in banking sector assets) is running slightly above average level in EU. Ownership structure of Polish banking sector is typical for new EU member countries which have a very high level of foreign investors. It should be therefore stated that the activity range of Polish banking sector is rather small in

[1] The analysis was based on Eurostat and GUS statistical data collected as a part of research grounded on questionnaire form CIS-2003 and CIS-2006 which concerns activities described as financial intermediation except insurance and pension funding.

comparison with the developed countries which, on the one hand, proves the low level of bank awareness of Polish economy and, on the other hand, shows high potential for development of the sector.

Innovation activity of financial institutions in Poland

The innovation of financial sector in Poland, described with the number of entities introducing innovations in businesses carrying out a particular type of activity, is considerably higher than the average in service sector and has been demonstrating a tendency for growth so far. Table 2 demonstrates changes in this area.

One can also observe that a percentage of innovative enterprises in this case was higher than, for example in industry, where in the years 2004-2006 it amounted to 23.2%. It can be therefore stated that, in comparison with other types of activities in Poland, the aforementioned sector carries out innovation activity relatively often, introducing product, process, organizational and marketing innovations.

Statistical researches show that innovation activity in the field of service in Poland is characterized by more frequent occurrence of organizational and marketing innovations rather than process and product innovations. Between 2004 and 2006, organizational innovations was introduced by 27.6% of all service enterprises in Poland, marketing innovations by 19.8%, process innovations by 17.1% and product innovations by 13.3%. The situation was slightly different in the case of financial intermediation. The shares of the entities introducing above mentioned categories of innovation were considerably higher. The mostly introduced innovations were organizational ones (introduced by 55.1% of all entities of this section). In this category special attention should be paid to new or significantly improved knowledge management systems introduced by around 37% of institutions. Product innovations turned to be the second category, as far as the frequency of implementation is concerned, and they were introduced by 49.4% of companies involved in financial agency. One should observe that only 18.5% introduced product innovations were new to the market. Revenues from sales of new or significantly improved products in financial intermediation enterprises constitute around 10.6% of total turnover. At the same time new to the market innovations constitute around 3% of total turnover, the remaining part (7.6%) is obtained by innovations only new to the firm.

New or significantly improved processes were introduced by approximately 46.5% of financial institutions and in the most cases the processes applied to new methods supporting activities for processes. Marketing innovations were introduced in 43% of financial institutions. Very often there were new or substantially changed methods of sale or distribution channels, which can be certainly connected with the rapid growth of e-banking especially via the Internet. More than 39% of entities pointed out this type of innovations.

The analyses show that for many years innovations have been drawn up independently by the introducing entities or they have been worked out as a part of fund group they belong to (Table 3).

TABLE 2. INNOVATIVE ENTERPRISES IN SERVICE AND FINANCIAL INTERMEDIATION SECTOR IN POLAND (% OF TOTAL ENTERPRISES)

Years	1997-1999	2001-2003	2004-2006
Service sector (altogether)	16	22	21.2
Financial agency excluding insurances and pension and social security funds	23	45.8	60.1

Source: Own work on the basis of The Polish Central Statistical Office (GUS) data.

TABLE 3. INNOVATIONS IN FINANCIAL INTERMEDIATION SECTOR IN POLAND BY THE TYPE OF INSTITUTION, WHICH DEVELOPED INNOVATIONS (% OF THE ENTITIES THAT INTRODUCED INNOVATIONS)

Detailed list	2001-2003	2004-2006	
	Product and process innovations	Product innovations	Process innovations
mainly by the enterprise or enterprise group	41.4	54.1	36.2
in the cooperation with other domestic companies and/or the scientific institutions	26.1	15.7	24.9
in the cooperation with other foreign enterprise and/or the foreign scientific institutions	0.8	1.5	1.4
mostly by domestic scientific institutions	1.0	0.0	0.0
mostly by the foreign scientific institutions	1.9	1.3	0.2
mainly other domestic companies (external enterprise group)	28.8	27.4	37.3

Source: Own work on the basis of The Polish Central Statistical Office (GUS) data.

It should be noticed that taking the decision on cooperation with other entities in the area of innovation activity is, in the case of financial institutions, very common (44.3% of all entities and approximately 65% of innovation active financial institutions).

The important role in creating innovations in financial sector is played by the cooperation with other entities, for example enterprises- suppliers of technologies or institutions as Polish Chamber of Accounting, National Bank of Poland, Polish Banks Association and SWIFT.

Among various types of suppliers in case of financial institutions great significance is given to ICT technology suppliers. Relationship bank-supplier in the above cases can vary due to a different role of the parties:

1. Active role of a consumer - usually concerns the demand for technologies enabling the extension of a current offer, for example introducing new products and services in a bank. The changes in computer systems result, in this case, from strategy adopted and market policy of the bank. Due to dissimilarity between newly created services and those offered by the competitors, appropriate requirements for a computer system usually cannot be met by the change of control parameters but they require the development and modification of existing system at, so called bidding. The supplier is then put in a situation where every bank-customer apparently has got its own version of the same system modified to match individual needs. In such a situation the supplier can only play a passive role and his task is limited to introducing modifications facilitating the system as whole and improving its efficiency;
2. Active role of a supplier - usually concerns entities offering operating systems and computer tools such as databases, network software, integrated systems, compilers etc. The suppliers of these solutions are initiators of changes and improvements in such technologies;
3. Active role of both the consumer and the supplier of technology - concerns the situation in which the new existing computer technology becomes a triggering factor of extensive changes in the area of procedures for financial institution. To provide an example for such a situation one can mention meeting the requirements of Basel II by creating professional solutions in the area of software and data warehouse systems. If one independently wanted to provide software for this area, they would have to conduct the certification of correctness. The demands of banks in this area can be satisfied by the suppliers of such solutions who undertake the task of verifying whether suggested computer programs work correctly and presenting bank authorities with the outcome.

A minor share in creating innovations in Polish financial market belongs to foreign entities which provide with new and independently created technologies. Specificity of the market requires conventionally created solutions to be adapted to match the needs and conditions existing in a particular country or a particular entity adopting the technology. Taking this fact into account, the cooperation with such entities is much more popular than buying ready-made solutions. It should be highlighted that financial institutions operating on Polish market generally do not recruit technologies produced by domestic scientific institutions.

Expenditures for innovation activity include resources essential to create and promote new products and processes. One can observe that in the expenses structure of financial institutions of EU quite often financial resources are spent for appropriate technical equipment (machines and devices) and for acquisition of disembodied technology and know-how (documentation, patents and software). The costs of personnel trainings and undertaken R&D are also of significant amount.

Statistical researches conducted in Polish market, in the period of 2004-2006, show a significant (almost 50%) decrease in the amount of expenditures for innovation activity in financial institutions. On the other hand, it should be stated that the structure of expenditures for innovation activity has not diverged significantly from structures of most financial institutions of EU countries (Table 4).

TABLE 4. THE STRUCTURE OF EXPENDITURES FOR INNOVATION ACTIVITY IN FINANCIAL INTERMEDIATION SECTOR IN POLAND

Expenditures in million zlotys	2001-2003	Structure (%)	2004-2006	Structure (%)
R&D activity	313.2	16.56	270.4	27.48
Acquisition of disembodied technology and know-how	178.5	9.44	33.6	3.41
Software	314.5	16.63	232.0	23.58
Capital expenditure on machines and technical devices	706.9	37.37	234.9	23.87
Capital expenditure on buildings, constructions and plots of land	234.9	12.42	80.1	8.14
Personnel training connected with innovation activity	58.3	3.08	16.6	1.69
Marketing for new and significantly improved products	55.1	2.91	106.5	10.83
Other preparations for implementing the innovation	30.2	1.59	9.9	1.00
Total	1891.6	100.0	984.0	100.0

Source: Own work on the basis of The Polish Central Statistical Office (GUS) data.

Positive changes that can be observed in the period in question concern the increase of the expenditures for R&D activity in an overall amount of incurred expenditures. Unfortunately, as far as absolute values are concerned, the figures were lower than expenditures in the years 2001-2003. The purchase of tangible technologies (machines, technical devices and software) is still significant importance which is in compliance with modern trends in this area all over the world. The trends are aimed at activities leading to introduction of modern computer systems and harmonization of the systems using various tools for handling many channels of distribution, for example grid computing and central package systems enabling cooperation of various applications installed so far

in banks and other locations where from data is downloaded and processed.

Taking the effort of innovation activity should bring definite effects. In case of product innovations the effects may apply to the extension of assortment range, increase of service quality, entering new markets. As far as processes innovations are concerned, the effects may result in changes of cost structure of a given activity, increasing the flexibility of undertaken processes, increasing the capacity and decreasing material consumption. Polish financial institutions recognized: entering new markets and increasing the shares in market (43.9% of innovation active entities), the extension of assortment range (42.6%), increase of product quality (36%) as the most important effects of undertaken innovation activities. Increasing the flexibility of undertaken processes (for 16.4% innovative financial institutions) and meeting regulatory requirements, norms and standards (for 16.6% innovative financial institutions) had also importance. The aforementioned effect results mainly from integration processes still outgoing in EU which are determining the need for accommodation and standardization of conditions for financial market functioning which are present in every country. That is why the implementation of solutions which would help to meet the requirements or to match the standards is still considered as extremely important. The decrease of work expenditures, material consumption or, so called, ecological effects are of relatively small significance for the sector in question. This situation concerns not only Polish market but is also observed in other markets and probably results from the specificity of this type of activities.

Applying new technological solutions requires the introduction of appropriate tools and protection against competition. The terms and conditions in which financial institutions operate, determinate and clearly limit the scope of applying of formal tools for introduced technologies protection. In 2001-2003 only four entities engaged in financial intermediation applied for a patent. There were no such applications during the next analyzed period. The situation in this area is not much different from the average in EU countries where this type of protection of intellectual property rights is rarely used by financial institutions. Not more than 1- 4% of institutions in Poland make use of other formal tools of protections (mainly registered trademarks and exclusive copyrights). Confidentiality is the most popular among unofficial methods of protection. Approximately 12.6% of financial institutions in Poland is trying to protect their invention in that way. This method is also quite common in banks operating in other EU countries, for example approximately 16% of Belgium banks and 20% of German banks use this method.

The high level of complexity of implemented solutions or a significant time advantage over competitors is of the utmost importance as far as the protection against competition is concerned. Unfortunately, these forms are not used very often in Polish banks. Only 2.2 - 3.9% of Polish banks make use of such solutions. This situation may result from the fact that there are rather imitation than innovation in Polish financial market. It means that polish financial institutions rather imitate the solutions introduced on developed markets than introduce globally new solutions (objective innovations). That is why a significant time or technological advantage is not possible in most situations. The countries with a higher level of development of financial market try to protect themselves against competition using complexity or time advantage in relation to applied solutions. For example, approximately 29% of banks in Germany declares that they make use of time advantage over competition.

Summary

The undertaking of innovation activity by financial intermediation sector in Poland on a scale larger than the average in services sector contributed to modernization and updating of the national financial system the scope of activities and offer of which does not differ from the average of other developed markets. The efforts in this matter in comparison with other EU countries are yet unsatisfactory. The institutions involved in financial agency in Poland are still imitating solutions created on other markets rather than becoming innovators determining the trends of future development of this field of activity in the world.

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