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***THE INFLUENCE OF ECONOMIC CRISIS  
ON DIRECTIONS OF RESTRUCTURING OF  
MARKETING IN RESEARCH INSTITUTES***

# THE INFLUENCE OF ECONOMIC CRISIS ON DIRECTIONS OF RESTRUCTURING OF MARKETING IN RESEARCH INSTITUTES

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## Abstract

On the eve of the third millennium Polish economy is being influenced to an ever greater extent by international globalization trends, which in a particular way influence the scope and intensity of changes introduced in Research Institutes.

This is accompanied by another often more and more intensively spreading international economic crisis, which is slowing down economic growth.

A key factor determining the development of Research Institutes in contemporary global economy is the ability to react to changes and the necessity to take restructuring measures, including the area of marketing.

The issue of advancing global economic crisis and the impact of the process on the restructuring of marketing of Research Institutes constitutes a serious research problem which requires a deeper, more detailed analysis and conducting research on this subject area. That's why this work will be devoted to all those important issues.

**Keywords:** economic crisis, restructuring, marketing, research, research institute

## Introduction

At the beginning of the third millennium international trends in globalization are affecting the Polish economy to an ever greater extent. This has a particular impact on the scope and intensity of changes being introduced in Research Institutes. What accompanies this process is intensifying global economic crisis slowing down the growth of Polish economy.

Key factors in the development of Research Institutes in the contemporary economy are the ability to react to changes and the necessity to take restructuring measures. In case of Polish Research Institutes carrying out a successful restructuring process in this area of marketing has been a difficult task. The research and development sector in Poland has a history of functioning under different economic systems and these processes have been delayed. For a long time the sector was left to itself by the government. There was no adequate supervision and for this reason the branch stopped serving its statutory purposes properly, to an extent required by contemporary, dynamically developing economy.

One of the factors that increased the pace of restructuring of marketing in the research sector was Poland's accession to the European Union. The Union's economic policy forces its Members, including Poland, to increase innovative potential and carry out a thorough reform of the R&D sphere. In terms of innovative activity, Poland is lagging behind the rest of Europe and for this reason it has made a huge effort to catch up with others. In order to achieve these goals, Poland has to raise spending on R&D activities and carry out deep restructuring, also in the area of marketing.

The issue of globalization, advancing global economic crisis and the impact of these processes on the restructuring of marketing at Research Institutes constitutes an important subject for research, which requires deep and detailed analysis. This work is devoted to these issues.

### 1. Current global crisis and the restructuring of marketing

One of the characteristic traits of global economy understood as a historically formed system of various kinds of economic ties between particular entities in international distribution of work, which evolve over time, is the dissemination of economic trends on an international scale. This also means that at any time the national economy of a particular country is affected by, among others, cyclical development of other national economies and the other way round — cyclical development of a particular nation-

nal economy affects to a smaller or greater extent the economic development of partner countries.<sup>1</sup> From the point of view of national economy of a particular country, especially a small or medium country, it is very important whether and to what extent this cyclical development of particular countries is synchronized. Here it is possible to distinguish between positive synchronization (accumulated mutual influence of economic growth of various countries and groups) and the so-called negative synchronization, when economic slowdown or recession in one country or group of countries are transferred on an international scale in an apparent way (with all the negative effects), in such case we can talk of a global economic crisis.

Currently we are witnessing another, global economic crisis, which similarly as the economic depression in the 1920's and 1930's started in the United States. What's more, similarly as back then, the sources of this crisis can be found in the broad financial sphere which are often called and not without a reason — especially in Anglo-Saxon countries — bank mistakes<sup>2</sup>. It is also known that disruptions in the USA's financial system quickly moved to the so-called real economy sphere of the country and all of this became a negative factor for the development of financial systems and whole national economies of many other countries of the world, including Poland's national economy.

Global economic crisis (2008–2009) started with the subprime<sup>3</sup> mortgage crisis and led to the emergence and deepening (together with the so-called deleveraging of financial institutions) of the liquidity problem, contraction of international trend and other changed eg. currency crisis in emerging countries — transfer of capital to countries with stronger currencies<sup>4</sup>. The crisis brought about spectacular bankruptcies of giant investment banks (BEAR STEARNS, LEHMAN BROTHERS) and thousands of development companies<sup>5</sup>.

Economic crisis means serious disturbances on financial markets. It's usually characterized by dropping prices of assets and bankruptcies of many companies and financial institutions. Such a phenomenon comes up when certain disturbances affect the financial system and stimulate negative selection and growth of moral hazard to such an extent that markets stop being effective channels for the transmission of funds from savers to inve-

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<sup>1</sup> Discussed in: J. Bednarczyk, S. Bukowski, J. Misiąła, *Współczesny Kryzys Gospodarczy-przyczyny, przebieg, skutki*, Wydawnictwo CeDeWu, Warszawa, 2011, p. 9.

<sup>2</sup> *Ibidem*, p. 11.

<sup>3</sup> The term of "subprime" mortgage refers to borrowers with bad credit rating, or the so-called limited (negative) credit history, possibly with comparably low income.

<sup>4</sup> M. Landler, *West Is in Talks on credit to Aid Poorer Nation*, *The New York Times*, 2008, p. 23

<sup>5</sup> *Ibidem*, p. 23.

stors. Among the main factors behind crisis, there are: interest rate hikes, growth of uncertainty, the influence of market situation on companies' results, bank panic and fiscal imbalance<sup>6</sup>.

The current economic crisis is the most serious one in over 75 years and it was caused by a combination of various factors. Stereotypical approach highlights the significance of the crash on property and credit markets as the main reason for the crisis. This is not a correct explanation, as the above phenomena are a consequence of real reasons, or sources of the crisis. The main reason is the combination of low interest rates set by the Federal Reserve, unprecedented level of liquidity on financial markets (global excess of savings) caused by financial surpluses generated by some countries (China, oil-producing countries) and ineffective, or insufficient regulation of these markets<sup>7</sup>.

Many economists focus on the ties of the current financial and economic crisis with the character of contemporary capitalism, which has been dominated by a spectacular growth of the role of speculative capital. Often, the term of "global casino", introduced to literature by the American futurologist and political scientist A. Toffler<sup>8</sup> is used. At the same time, G. Soros regards the expansion and domination of financial markets in contemporary economy as the most important traits of globalization. In his opinion, these markets have been given unlimited room for action, which considering their innate inclination to steer towards speculative crises, must lead to global financial disruptions. Real expansion of stock market operations and the accompanying fast growth of the financial sector took place in the 1980's and 1990's<sup>9</sup>. At the beginning of this century the volumes of daily transactions on financial markets reached around a trillion dollars.

Direct effects and mechanisms of transmission of the discussed economic crisis stimulate the activation of various reactions and adaptive mechanisms within the restructuring process, including the area of marketing, carried out in Research Institutes.

**The restructuring of marketing** at Research Institutes can be carried out in three basic areas as:

1. Market reorientation of a Research Institute.
2. Product restructuring in terms of conducted research-development works.
3. Changes in sale of products and R&D services using marketing-mix tools.

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<sup>6</sup> F. Mishkin, *The Economics of Money, Banking, and Financial Market.*, The Addison-Wesley. Overview of the GSEs'Housing Goal Performance, 2000–2007, p. 189.

<sup>7</sup> R. Altman, *The Great Crash 2008*, Foreign Affairs Vol. 88, nr 2009, p. 5.

<sup>8</sup> A. Toffler, *Ekospazm, Czytelnik*, Warszawa 1977, pp. 23–24.

<sup>9</sup> G. Sors, *Kryzys światowego kapitalizmu*, Muza S.A., Warszawa 1999, pp. 8–9.

The goal of marketing restructuring is expanding and activating the market functions of Research Institutions, which leads above all to raising its sales and boosting its market position, understood as key conditions for their development.

It is necessary to emphasize that in course of carrying out restructuring processes, the formation of an appropriate orientation of an Institute plays an exceptional role. Market reorientation of an Institute means in the long term changing the philosophy of its activity, which involves moving the center of its attention from generating services and products to sales and satisfying the needs of buyers. Such an approach represented by the Institute has its real practical dimension — it influences the strategy of a scientific unit, defining its goals. Tools and conditions of implementation. At the same time, product restructuring covers transformations like comparably simple changes in the unit's product offer, restructuring in the product — market relation and changes concerning the scope of the offer, or even complete change of the scope of activities. First, comparably easy stage of product restructuring concerns changes in Institutes' offer, including the scope and manner of carrying out research and development works. The goals of these changes are:

- raising production and sales of goods generating most of the Institutes' income up till now,
- departing from unprofitable and outdated products and services, which have no prospects for success on the market.

Restructuring of the product — market system (changes in sales) and new utilization of marketing-mix tools constitutes deepening simple changes in the Institutes' offer. Activities in this area are associated with marketing strategy and influence the assumptions for the strategy of development of a whole unit. The main goal of restructuring at this stage is raising the sales of research works and services provided by a unit, through a closer connection with character, size and distribution of the needs they satisfy over time and space.

The basis for such activities is a detailed identification of the needs of buyers in terms of actual and potential demand and carrying out market segmentation. The final task carried out in this system is defining target markets (segments), or in other words the final recipients of a unit's offer and thus adopting a marketing activity plan taking into consideration optimum product — market combinations<sup>10</sup>. The area of restructuring activities in the product — market system can be best illustrated with a modified Ansoff matrix, shown in table 1.1.

<sup>10</sup> L. Garbarski, I. Rutkowski, W. Wrzosek, *Marketing. Punkt zwrotny nowoczesnej firmy*, PWE, Warszawa 1998, p. 155.

Table 1.1. The scope of restructuring activities in the product-market system

product \ market	existing market	extended market	new market
existing product	1	→	2
changed product		↘	
new product	3		4

Source: L. Garbarski, I. Rutkowski, W. Wrzosek, *Marketing. Punkt zwrotny nowoczesnej firmy*, PWE, Warszawa 1998, p. 155.

For the purpose of more detailed analysis and correct interpretation of table 1.1, the explanation of particular elements included above in the product-market system is shown in table 1.2.

Table 1.2. The area of restructuring activities in the product — market system — supplement

FOCUSING RESTRUCTURING ACTIVITIES ON THE SYSTEM OF EXISTING MARKETS, PRODUCTS AND SERVICES	ENTERING NEW MARKETS WITH CURRENT R&D PRODUCTS AND SERVICES	DEVELOPING THE OFFER AND PLACING NEW R&D PRODUCTS AND SERVICES ON CURRENT MARKETS	ENTERING NEW MARKETS WITH NEW RESEARCH PRODUCTS AND SERVICES (INNOVATIONS)
<ul style="list-style-type: none"> <li>● intensification of existing ventures and solutions aimed at raising the sales of previously offered R&amp;D products and services to the same buyers,</li> <li>● raising market penetration,</li> <li>● higher diversification of prices, intensifying special offers, active formation of distribution channels</li> </ul>	<ul style="list-style-type: none"> <li>● Research Institute's offer attractive for the market and competitive,</li> <li>● entering international markets, export.</li> </ul>	<ul style="list-style-type: none"> <li>● formulating basic goals for the development of Research Institutes and defining target market segments,</li> <li>● modernizing the facilities of Research Institutes (technological restructuring).</li> </ul>	<ul style="list-style-type: none"> <li>● creating conditions for development, which take into consideration the trends of globalization of markets and activities of Research Institutes.</li> </ul>

Source: Own materials prepared on the basis of: C. Suszyński, *Restrukturyzacja przedsiębiorstw*, PWE, Warszawa 1999, p. 140.

Data presented in tables 1.1 and 1.2 constitute an attempt at creating an optimum model of restructuring of a Research Institute depending on the combination of the market - product system. Thus, it is possible to conclude that marketing restructuring is one of the most important changes in Research Institutes, which is associated the most with the still advancing globalization of markets and current economic crisis.

The main reason for such a strong position of marketing restructuring in the whole process of restructuring is contemporary orientation of Research Institutes focused on the most important thing in modern marketing: identifying and satisfying the client's needs.

Restructuring processes in Research Institutes were started, or in fact, were enforced by systemic transformation, globalization and current global economic crisis.

Thus, there is still a need for research on the external and internal conditions for the processes of restructuring of research and development sector's marketing, with regard to their scope and intensity, as well as the efficiency of their implementation.

## 2. Research assumptions

The goal of research and analysis will be identifying to what extent the new economic reality and the associated economic crisis shapes changes in the area of restructuring, including the marketing of Research Institutes. The goal is also to identify the directions in which restructuring of Research Institutes, in course of their adaptation to turbulent environment, is going.

With reference to the goal, which in a general way outlines the directions of deliberations, the following research issue has been formulated: **under conditions of growing globalization and facing another global economic crisis, the processes of restructuring of Research Institutes, including the area of marketing, are aimed at raising the usefulness of R&D activities and transfer of innovative technologies.**

With reference to the assumption, which in a general way outlines the directions of deliberations, the following hypotheses have been formulated:

**Hypothesis 1:** *The implementation of restructuring processes in the time economic crisis had varied, not always beneficial intensity and was aimed at raising the usefulness of research and development activities.*

**Hypothesis 2:** *Economic crisis has an impact on the restructuring of marketing of Research Institutes.*

## 3. Research methods and the characteristics of the research sample

Empirical research included in the scope of research assumptions was carried out on a group of 74 Research Institutes. Questionnaire studies were carried out in the period from June to October 2011. The goal of the survey was to obtain information necessary to verify the assumed hypotheses and making it possible to expand the

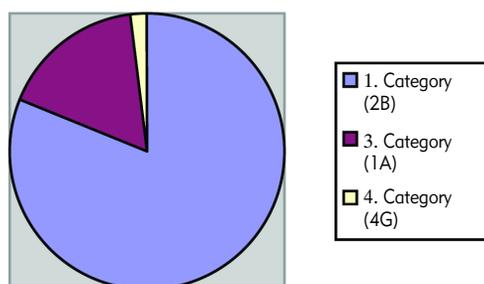
current state of knowledge about restructuring, including the restructuring in the area of marketing of Research Institutes in Poland.

The structure of surveyed institutes with consideration of their basic parameters is presented in graphic form on pictures 1–5.

The legal form of surveyed Institutes complies with the trends presented in reports concerning scientific units prepared by the Central Statistical Office (GUS) and confirms that the basic legal form of Polish scientific unit is a Research Institute.

Picture 1 shows the structure of the surveyed research sample, according to their scientific category<sup>11</sup>.

Picture 1. Structure of surveyed Institutes, according to scientific category



[1] — Category of quality of research and development activity B — 81 %

[2] — Category of quality of research and development activity A — 17 %

[3] — Category of quality of research and development activity C — 2 %

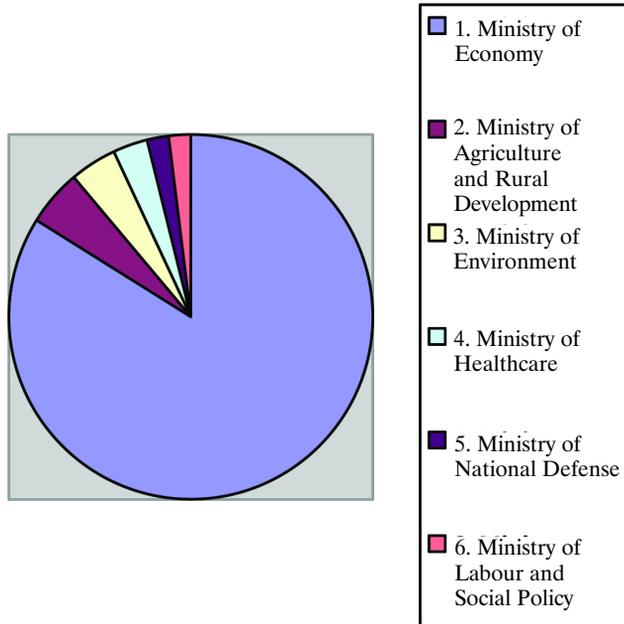
Source: Own materials prepared on the basis of questionnaire results.

Most of the surveyed Institutes declared they belonged to category B, which may suggest better recognition of the needs to intensify their research and development activities. Category C declared by 2% of the surveyed units suggests that they don't pay much attention to research and development works (R&D).

On picture 2 the structure of Institutes participating in the survey from the perspective of Ministries supervising them is presented.

<sup>11</sup> Art. 42 ust. 3 *Ustawa z dnia 30 kwietnia 2010 r. o zasadach finansowania nauki*. Dz. U. 2010, Nr 96, poz. 615. (Act on financing science from April 30, 2010) As a result of complex assessment of quality of scientific, or research and development activity scientific units are awarded categories: A+ (leading level), A (very good level), B (satisfactory level with a recommendation for strengthening scientific, R&D activities, or activities stimulating innovation), C (unsatisfactory level). Parametric assessment means the assessment of a scientific unit's activities, the practical application of scientific research and development work results and other kinds of activities of a scientific unit.

Picture 2. Structure of Research Institutes according to supervising Ministries



- [1] — Ministry of Economy — 84 %  
 [2] — Ministry of Agriculture and Rural Development — 5 %  
 [3] — Ministry of Environment — 4 %  
 [4] — Ministry of Healthcare — 3 %  
 [5] — Ministry of National Defense — 2 %

Source: Own materials based on the results of questionnaire studies.

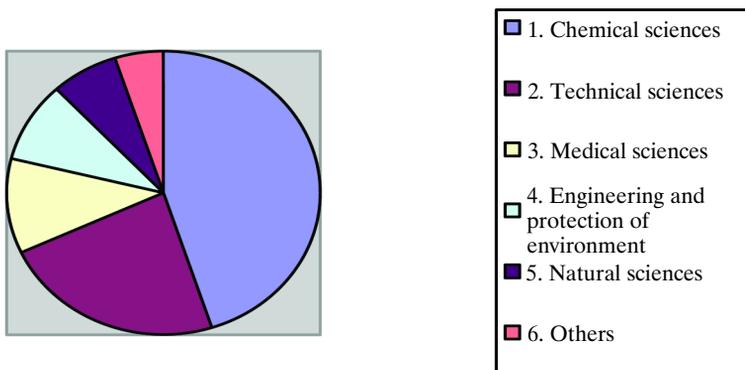
The organizational subordination of the surveyed Institutes to particular Ministries complies with the structure of subordination presented by both the Central Statistical Office and the database of the "Orgmasz" Institute of Organization and Management in Industry.

Picture 3 presents the structure of the research sample, according to the area of research activity.

Most Institutes declared that they were conducting activities in the areas of chemical, technical, medical sciences, engineering and protection of environment, which suggests that most of the important areas of research activity are represented by the surveyed group.

From the point of view of activity of Institutes, it is important that 100% of them declared that their type of business activity is registered under the Polish Classification of Activity number PKD 7219Z, which means that research and development (R&D) activity is the main activity of the surveyed units.

Picture 3. Structure of Research Institutes according to the area of research activity

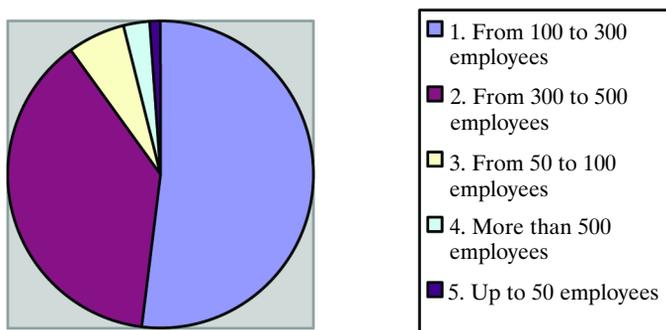


- [1] — chemical sciences — 45 %
- [2] — technical sciences — 23 %
- [3] — medical sciences — 11 %
- [4] — engineering and protection of environment — 9 %
- [5] — natural sciences — 7 %
- [6] — others — 5 %

Source: Own materials on the basis of the result of questionnaire studies.

The last, but significant parameter defining the structure of the surveyed sample of Research Institutes is the number of employees. From this perspective the research sample was divided into five groups, presented on picture 4.

Picture 4. Structure of level of employment at Research Institutes



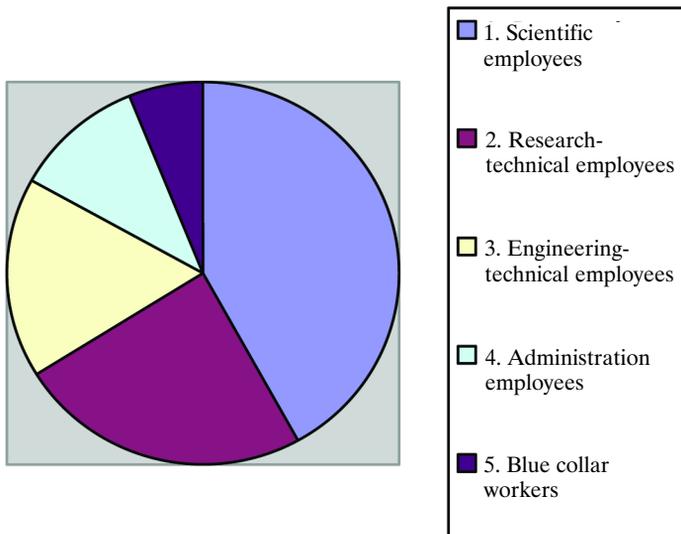
- [1] — from 100 to 300 employees — 52 %
- [2] — from 300 to 500 employees — 38 %
- [3] — from 50 to 100 employees — 6 %
- [4] — more than 500 employees — 3 %
- [5] — up to 50 employees — 1 %

Source: Own materials prepared on the basis of the results of questionnaire studies.

The above figures show that most information concerning restructuring processes focused on marketing was obtained from Institutes employing from 100 to 300 people and from a group of Institutes employing from 300 to 500 people. The structure of the sample of surveyed Institutes, in terms of size, doesn't deviate much from the structure of all Polish Institutes, according to this criterion. The whole sector in Poland is dominated by Institutes with an average level of employment (that is, 100 to 300 people).

One of the most important parameters defining the structure of the surveyed sample of Research Institutes is the composition of staff, according to the category of employees. Institutes were divided into five groups presented on picture 5.

Picture 5. The structure of employment in Research Institutes, according to the classification of employees



- [1] — scientific employees — 42 %
- [2] — scientific-technical employees — 24 %
- [3] — engineering-technical employees — 17 %
- [4] — administration employees — 11 %
- [5] — blue collar workers — 6 %

Source: Own material prepared on the basis of results of questionnaire studies.

Another trait which serves the purpose of describing the surveyed sample is the division of Institutions according to their geographical location. Filled out questionnaires made it possible to identify regions of the country where the intensity of research and development activity is the highest.

Structure of received responses, according to voivodeships (regions) is presented in table 1.3.

The most feedback was received from Mazowieckie, Śląskie and Wielkopolskie voivodeships. Such a distribution of responses in terms of geographical location corresponds to the division of the country to the regions where Research Institutes are located.

Table 1.3. Diversification of received responses, according to the territorial division of the country

Voivodeship	Share in research (in %)	Share in whole sample (w %)
Mazowieckie	45 %	30 %
Śląskie	39 %	26 %
Wielkopolskie	10 %	6 %
Łódzkie	4 %	2 %
Others	2 %	1 %

Source: Own materials prepared on the basis of the results of questionnaire studies.

#### 4. The results of conducted research

The presented deliberations aimed at identifying the impact of economic crisis on the restructuring of Research Institutes in the area of marketing made it possible to identify basic stages and directions of restructuring, as well as basic conditions shaping these processes. The verification of formulated hypotheses was positive and led to the following conclusions:

**Hypothesis nr 1:** *The intensity of the processes of restructuring in time of economic crisis varied and wasn't always beneficial. It was aimed at raising the usefulness of research-development activity.*

For the purpose of verification of of this hypothesis, it is necessary to analyze the level of progress of restructuring activities with a division into particular direction of activities, including the area of marketing. It is possible to notice the varied intensity of particular activities in each of the distinguished directions of restructuring. The results of research concerning this issue are presented in table 1.4 and in graphic form on picture 6.

Table 1.4. Progress of implementation of basic areas and directions of restructuring

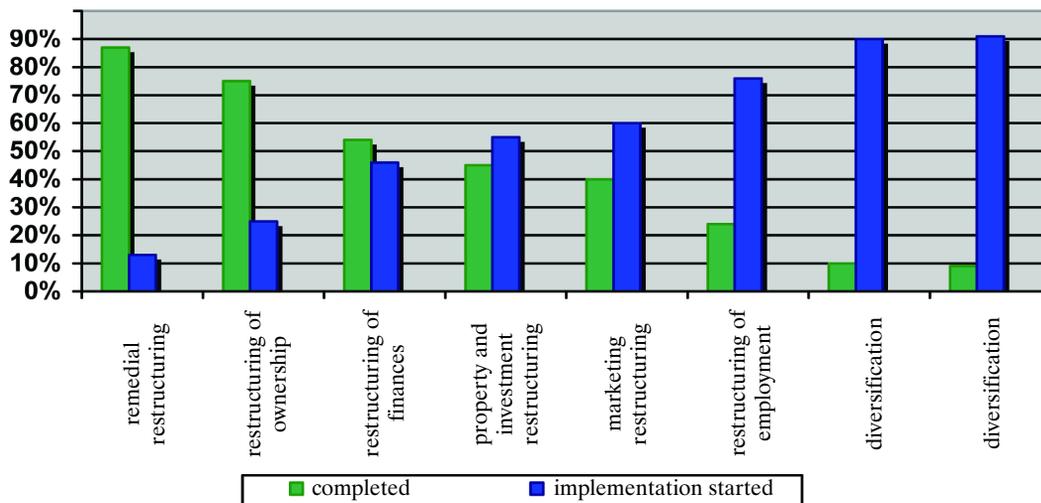
Directions of restructuring	Completed*	Process of implementation started*
1. Remedial restructuring (formulation and implementation of remedial programmes for a unit)	87% of answers	13% of answers
2. Restructuring activities mandated by executive (legal) acts (legal) — restructuring of ownership	75% of answers	25% of answers
● mergers of units (consolidation and the status of a Research Unit)	45% of answers	9% of answers
● inclusion into another scientific unit (Polish Academy of Sciences, public university)	12% of answers	6% of answers
● establishment of a commercial partnership and transfer of assets to the company	18% of answers	4% of answers
● other restructuring and transformation, eg. (division, separation, transformation into a public sector enterprise)	—	—
● division	7% of answers	4% of answers
● consolidation and the status of a National Research Institute (PIB)	8% of answers	2% of answers
3. Restructuring of finances	54% of answers	46% of answers
4. Property and investment restructuring	45% of answers	55% of answers
● purchasing and building new objects	—	—
● modernization of owned objects	2% of answers	25% of answers
● purchasing research equipment (conducting R&D works)	5% of answers	22% of answers
● selling an organized part of a unit or assets (remedial)	38% of answers	8% of answers
5. Marketing restructuring	40% of answers	60% of answers
6. Adapting the level of employment to the scale of basic activity (including the department of marketing)	24% of answers	76% of answers
7. Development restructuring — <b>diversification</b> (change of subject and scope of conducted activity)	10% of answers	90% of answers
8. Development restructuring (e.g. new offer of services and research works, new commercial contacts, new markets, strategy)	9% of answers	91% of answers
9. others (what?)	—	—

Source: Own materials prepared on the basis of questionnaire studies.

\* percentages rounded up to full figures.

On the basis of data presented both in table 1.2 and on picture 6 it is possible to conclude that in the processes of restructuring of Polish Research Institutes, in their particular directions, the intensity of actions taken over time varied. The implementation of changes started with carrying out measures called remedial restructuring. After this, as research shows, further, mentioned elements of restructuring were implemented. The process of restructuring is regarded as almost completed in the area of remedial activities (87% of answers) and with regard to restructuring of ownership (75% of answers), finances of Institutes (54% of answers), as well as property and investment restructuring (45%), diversification of activity only 10% of answers, restructuring of marketing (40 %). These

Picture 6. Level of progress of particular directions of restructuring of Research Institutes



Source: Own materials prepared on the basis of questionnaire studies.

results show that a condition for the survival and further for the functioning of Research Institutes on the market was above all taking appropriate remedial (saving) measures and changing the structure of ownership. Additionally, it is possible to notice trends emerging in the discussed phenomenon: the number of Research Institutes declaring the completion of proposed changes (presented on picture 6) within the scopes of particular areas and directions of restructuring is decreasing, when at the same time the number of those which are only starting particular ventures is increasing, which additionally confirms that the hypothesis is right. The results of research also confirm that Research Institutes are undergoing intensive restructuring transformation, including the area of marketing and for most of them the process is only starting.

Apart from the presented results of research, it is necessary to present further results arising from the answers to the question concerning the identification of the most important restructuring measures taken in particular years. The data are presented in table 1.5.

The data presented above show that in particular periods a phenomenon of diversification of intensity of introducing changes can be observed. As the above set of data shows, remedial, ownership and financial restructuring were recognized as the most important and the earliest started directions of restructuring, which clearly confirms the importance of these kinds of changes for the functioning of Polish Research Institutes.

Table 1.5. Intensity of restructuring activities carried out in the surveyed Institutes in the years 2002–2010

Directions of restructuring	2002–2004	2005–2007	2008–2010
1. restructuring of marketing	10% of answers	10% of answers	20% of answers
2. property and investment restructuring	1% of answers	19% of answers	25% of answers
● purchasing, construction of new facilities,	—	—	1% of answers
● modernization of existing facilities	—	—	2% of answers
● purchasing research equipment (carrying out R&D works)	—	—	5% of answers
● purchasing other machines, devices and equipment	—	—	—
● selling an organized part of a unit (division) or assets	1% of answers	19% of answers	17% of answers
3. Restructuring actions resulting from executive acts (ownership)	4% of answers	7% of answers	64% of answers
● merging units (consolidation)	1% of answers	3% of answers	36% of answers
● inclusion into another scientific unit (Polish Academy of Sciences, public university)	—	—	—
● establishing a commercial partnership and transferring assets to the company	1% of answers	1% of answers	11% of answers
● other reorganization or transformation (eg. division, separation, transformation into a public sector enterprise)	—	—	—
● consolidation and the status of an Institute	1% of answers	1% of answers	9% of answers
● consolidation and status of a National Research Institute (PIB)	1% of answers	2 % of answers	8% of answers
4. diversification (change of subject and scope of activity)	—	2% of answers	8% of answers
5. remedial restructuring (formulation and implementation of remedial programmes for a unit)	9% of answers	19% of answers	59% of answers
6. adapting the level of employment to conducted activities	5% of answers	9% of answers	10 % of answers
7. development restructuring (eg. new range of services and research works, new commercial contacts, new markets, promising development strategies and missions)	—	—	9% of answers
8. restructuring of finances	10% of answers	15% of answers	29% of answers
9. others (what?)	—	—	—

Source: Own materials prepared on the basis of the results of questionnaire studies.

\* percentages rounded up to full figures.

The presented results of empirical research additionally prove that the implementation of restructuring changes, also in the area of marketing, is a continuous process. The whole process had to be divided into particular areas of restructuring, depending on their “significance” — in Polish Research Institutes. For this purpose essential gradation of particular directions of restructuring was carried out. Processes of restructuring in Polish Institutes have been particularly intense since 2008–2010.

**Hypothesis 2:** *Economic crisis has an impact on the restructuring of marketing of Research Institutes.*

Restructuring of such areas as: **remedial restructuring** (intensive work on remedial restructuring started already in 2002, the most intensive works took place in 2008–2010 due to the necessity to save Institutes); **restructuring of finances** (started in 2002, most intensive works in 2008–2010) due to dropping profitability of Research Institutes, growing problems with collecting balances, reduction of received subsidies, dropping demand, **ownership restructuring** (establishment of legal foundations in 2004–2008 — act on research and development units and the act on Research Institutes from 2010). To an ever greater extent Research Institutes have to take into consideration the significance of external factors (globalization, as well as the effects of global economic crisis) without forgetting that internal economic policies of the state also has a dominant impact on their social-economic development.

Thus, it can be assumed that the implementation of restructuring activities, including the area of marketing, was in a way a defensive response of Research Institutes to the new conditions emerging from globalization and economic crisis. The results of research are presented in table 1.6.

What also served the purpose of positive verification of the first hypothesis are the results of research focused on identifying which restructuring measures in the area of marketing were taken or continued as a result of globalization and economic crisis, or regardless of them, which is presented in table 1.7.

The data presented in table 1.7 allow positive verification of the assumed hypothesis, as out of 20 proposed symptoms of economic crisis, almost all presented symptoms with higher or lower intensity had a very significant impact on the implementation of marketing restructuring in its particular directions. Moreover, no negative impact was observed. Thus, it is possible to conclude that the current economic crisis influences the identified directions of marketing restructuring.

Table 1.6. Average influence of particular symptoms of economic crisis  
on various directions of marketing restructuring

SYMPTOMS OF ECONOMIC CRISIS	Directions of marketing restructuring								
	Focusing on the client	Promotion of Research Institute	Building relations	Marketing reorientation	Technological	Changes in sales	Employment	Diversification of services	Average of arrange values
1	2	3	4	5	6	7	8	9	10
average values of assessment									
1. lax monetary policy and limitation of supervision over the activity of financial institutions	1,70	1,50	1,60	1,80	1,60	1,80	1,20	0,60	1,47
2. policy of governments and central banks towards international markets	1,60	1,70	1,40	1,40	1,70	1,80	1,20	0,40	1,40
3. limited flow of workforce, including scientific-research employees	1,70	1,60	1,40	1,50	1,10	1,20	0,90	0,20	1,20
4. limitations in international exchange of goods, products, services, including scientific-technical know-how	0,10	1,80	1,70	1,60	1,40	1,80	1,00	0,10	1,18
5. expansion and domination of financial markets in contemporary economy causing financial shocks	1,40	1,60	0,20	0,60	1,60	1,50	1,20	0,30	1,05
6. expansion of stock market transactions and the accompanying rapid growth of the financial sector	1,30	0,90	1,30	0,90	1,60	1,80	0,00	0,10	0,99
7. growing concentration of capital in many areas (including intellectual capital)	1,20	0,80	1,20	0,70	1,40	1,90	0,50	0,10	0,97
8. negative external conditions for foreign trade, including R&D services	0,70	0,10	0,00	1,70	1,80	1,50	0,50	0,00	0,78
9. growth of the unemployment rate and the migration of people who lost their jobs	0,10	0,80	0,10	1,60	1,60	1,40	0,30	0,00	0,73
10. decreasing significance of private foreign transfers in Poland's internal exchange	0,60	1,00	0,10	0,60	0,50	1,00	0,60	0,10	0,56
11. outflow of credit capital from Poland	0,90	0,10	0,00	1,10	0,90	1,30	0,10	0,00	0,55
12. development of modern technologies of production and monitoring technological and scientific achievements	0,00	0,00	0,00	1,30	1,00	1,10	0,00	0,00	0,42
13. reduction of the pace of economic growth and the risk of recession	0,60	0,50	0,00	0,00	1,20	1,10	0,00	0,00	0,42
14. reducing the possibility of moving products and research-development services	1,10	0,90	0,10	0,00	0,10	0,20	0,40	0,10	0,36

cont. table 1.6

1	2	3	4	5	6	7	8	9	10
15. strengthening coordination and centralization of international activity	0,90	0,10	0,10	0,00	0,50	0,40	0,20	0,00	0,27
16. limited possibility of expanding widely available database of knowledge	0,10	0,20	0,00	0,00	1,00	0,60	0,10	0,00	0,25
17. limited knowledge and significance of after-sales services in the area of implementation of innovative technologies of products and services (tests, trials and improvement of products)	0,00	0,00	0,00	0,00	0,80	1,00	0,10	0,00	0,23
18. limiting the implementation of innovative production technologies in industry on an international scale	0,10	0,00	0,10	0,10	0,20	0,10	0,30	0,10	0,12
19. limiting the possibility of moving and expanding innovative production and research and development services	0,00	0,10	0,00	0,10	0,10	0,10	0,00	0,00	0,05
20. raising the importance of the resources of home country	0,00	0,00	0,00	0,00	0,10	0,00	0,00	0,00	0,01
Average of average values	0,71	0,69	0,46	0,75	1,01	1,08	0,43	0,11	—

[rules for calculating average values of assessments<sup>12</sup>]

Source: Own materials prepared on the basis of results of questionnaire studies.

As the information presented in table 1.7 shows most Research Institutes took measures from the proposed set of restructuring activities due to advancing globalization and economic crisis. Actions were stimulated by various factors resulting from — in varied scope — globalization and economic crisis, which supports the claim that it would be very difficult to find measures that were taken solely because of the crisis and globalization or regardless of them.

The start of restructuring in this area of marketing in Poland was caused by particular factors whose strength and intensity of influence depended on two basic phenomena taking place in Polish economy: on globalization and on the developing economic crisis. These factors influenced (or enforced) making the decision to start particular restructuring measures beginning with analysis, identification of causes, diagnosis of the situation and detailed planning of restructuring measures in the area of marketing.

<sup>12</sup> In order to define the scale of strength of influence of particular symptoms of economic crisis a scale ranging from -2 (hampering influence) to +2 (strong stimulating impact) was devised. Further, arithmetic averages were calculated and the received averages were added. This made it possible to identify the strength of influence and the degree to which globalization and economic crisis determine the implementation of particular directions of restructuring at Research Institutes, including the area of marketing.

Table 1.7. Restructuring activities carried out regardless of, or due to economic crisis

Kinds of restructuring measures	Measures taken	
	Regardless of crisis and globalization [number of answers]	Due to crisis and globalization [number of answers]
1. developing activities on international markets (development)	9	65
2. modernization of machinery stock (investment)	8	66
● purchasing modern research equipment, machines and devices (investment)	5	69
● introducing computer systems supporting research and small scale production (investment)	4	70
3. developing activity, including research-development and production activity for international markets (development)	9	65
4. development of modern technologies, monitoring technological and scientific achievements (development, remedial, diversification)	21	53
5. developing the system of obtaining information about technological and scientific needs (investment, development)	31	43
6. creation of public relations activities and building the image and position of an Institute (development)	35	39
7. taking modern marketing measures for the purpose of obtaining new projects and production orders (development, diversification)	43	31
8. investing in modern research and development (investment, development)	46	28
9. attracting foreign investors, also for new technologies, scientific research and production (development)	53	21
10. expansion of commonly available database of knowledge (development)	55	19
11. introducing modern management methods (structural-organizational)	56	18
12. decentralization of management (structural-organizational)	14	12
13. improving the technical and scientific culture of employees (employment, structural-organizational)	20	13
14. staff reduction and adapting to the market needs (employment, remedial)	22	29
15. Investments in training and development of employees (employment, development)	21	18
14. creating long-term ties with recipients and suppliers (development, diversification)	17	35
15. improving after-sales service (development)	18	33
16. flow of workforce (employment, development)	10	21
17. cost reduction (development, diversification)	13	19
18. establishment of controlling (development, diversification, structural-organizational)	12	33
19. others (what?)	—	—

Source: Own materials prepared on the basis of results of questionnaire studies.

**Restructuring of marketing** should involve mainly the promotion of an Institute in the area of implemented or conducted research works (among others, database). Research-

development works as a real "product" of an Institute's activity constitute its value, which should be promoted, "sold", popularized among the possibly biggest group of recipients. It was commercialization of science which brought about a marketing view of Institutes. In order to function and develop it is necessary to attract customers by providing information and promoting one's products. The changes taking place in contemporary media enforce introducing substantial modifications in, among others, communication with the recipients. These changes will concern both the utilization of forms informing about and advertising their activities and achievements, as well as the method and language of messages addressed at various groups of recipients. New media brought a broad range of possibilities of reaching recipients interested in a particular subject and improvement of the system for communicating with them. Internet websites have become an exceptionally popular form of marketing activity. For this reason it is very important for Institutes to take care of their Internet websites, of providing latest important information about available services, conducted research and development works and to provide necessary information about current events concerning Institutes.

Taking the above into consideration, for efficient promotion of science and research of Institutes the following tools should be used:

- Internet as one of the most important media for promotion of science in the world including mainly: Internet websites presenting Institutes and their research offer, electronic mail, ICT network for Institute's internal and external communication, Internet monitoring and updating knowledge, informational-promotional tool enabling access to target groups, cooperation with specialist portals, links and information about conducted projects and project partners, institutions about the availability of all publications.
- Institutes' own materials covering: reports on achievements containing the justification of research plans and spending on their implementation, publications presenting Institutes (brochures), posters promoting a particular scientific area, bulletins (newsletters) printed or sent over the Internet.
- Expanding the activity of Scientific Information units functioning within Institutes, which would be responsible for the organization of the system of provision of information, visual identification of particular Institutes, contacts with the media, contacts with the environment, including social-business environment, they would also inform about the announced tenders for the provision of research-development works<sup>13</sup>.

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<sup>13</sup> W. Wiśniowski, *Marketing Instytucji Naukowych i Badawczych. Prace Instytutu Lotnictwa nr 208*, Wydawnictwo Naukowe Instytutu Lotnictwa, Warszawa 2012, pp. 13–19.

In light of the above Institutes should face the challenge of working out a system of communication with the environment, which would be a “transmission belt” for informing about and popularizing scientific achievements and conducted research, as well as for establishing cooperation with business. As a results such activities should efficiently support the transfer of knowledge and commercialization of the results of research conducted in Institutes.

The main marketing task of managers of particular units should be maintaining relations with the already existing clients and and penetration of the market for the purpose of identifying potential clients, for whom appropriate offers should be prepared. Only running very active marketing with the utilization of all available channels of marketing communication is enough to support carrying out statutory tasks of Institutes and overcome the economic crisis. Otherwise, clients won't have the knowledge about the research conducted by Institutes and will have limited access to the results of research. The popularization of research results will be insufficient and the ability to build new research teams (especially for interdisciplinary research) will be weak.

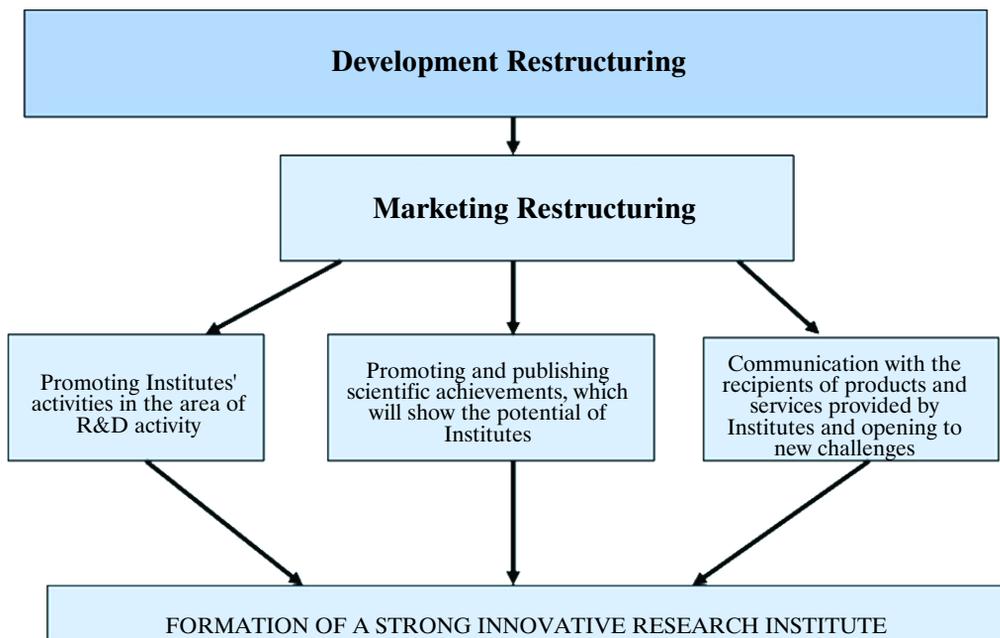
It could be said that marketing activities in an Institutes care carried out by everyone who publishes content on paper, or on websites, who appears at conferences, seminars etc. such active marketing also allows to promote Institutes, thus, it is necessary to efficiently activate these activities and encourage scientific employees to participate in such promotion.

Research Institutes have a big potential, they have big knowledge resources. Unfortunately, this often is not associated with “sale” of products or services from the conducted research-development activity and often this kind of activity is marginalized. This can eventually lead to a situation in which Institutes are “excluded” from this type of activity and are unable to function on the market as scientific units, especially if potential recipients of knowledge (e.g. companies) feel the lack of their offer, or rather feel the inability of reaching such an offer<sup>14</sup>.

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<sup>14</sup> Ibidem, pp. 51–57.

Picture 7. Development Restructuring



Source: Own materials.

## Conclusions

New reality, in which Research Institutes are important participants, obliges to focus continuously on the processes of adaptation, in which marketing restructuring plays a key role. It is worth, even necessary to follow up on the subject of marketing restructuring, especially that the issue hasn't been finished yet.

The analyses carried out in the article, supported with the results of empirical research give ground to conclude that the restructuring of Polish Research Institutes was and still is a process which has substantially changes and will keep changing their image and will allow to pass through the global economic crisis. Research Institutes in the recent time are actively looking for their position among other scientific institutes with an educational mission and searching for, as well as creating new technologies and new knowledge is closest to the mission of Institutes.

Summing up the results of conducted research it is possible to conclude that the issue of restructuring of Polish Institutes, including the area of marketing, in the years 2002–2010 is a very complex matter. Marketing restructuring is a very dynamically

changing area of life in an organization, also a scientific-research organization and it is a necessary element for carrying out development restructuring. New tools, new needs, the necessity for a dialogue with the recipients require analysis and evolution, strategy and marketing programmes which will help Institutes in the process of adaptation to the market system and overcoming economic crisis. Marketing restructuring has long been a rather unpopular subject and now it is dynamically entering Research Institutes. It is apparent that the sector is very much interested in using the capacity for raising competitive potential on the developing global market<sup>15</sup> brought by marketing restructuring.

In light of the above deliberations, an ideal solution to a crisis situation is a radical “technological expansion”. The current economic crisis doesn't really mean that market economies (including Poland's national economy) are not functioning well. It's just the opposite — the economic crisis encouraged to take radical restructuring measures in Research Institutes in the direction of pro-development changes in the area of marketing.

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## Acts of law

1. Act from July 25, 1985 on research and development units: Dz.U. 2008, Nr 159, poz.993 z późn. zm.
2. Act from April 30, 2010 — Regulations introducing acts reforming the system of education: Dz.U. 2010, Nr 96, poz. 620 z późn. zm.
3. Act from October 8, 2004 on the rules of financing science: Dz.U. 2008, Nr 169, poz. 1049 z późn. zm.
4. Act from April 30, 2010 on research institutes: Dz.U. 2010, Nr 96, poz. 618 z późn. zm.

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<sup>15</sup> W. Wiśniowski, *Marketing Instytucji Naukowych i Badawczych*, Wydawnictwo Naukowe Instytutu Lotnictwa, Warszawa, 2012, p. 10.

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