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***DETERMINANT FACTORS
OF THE MARKETING ACTIVITY
OF SCIENTIFIC AND RESEARCH INSTITUTIONS***

DETERMINANT FACTORS OF THE MARKETING ACTIVITY OF SCIENTIFIC AND RESEARCH INSTITUTIONS

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Summary

In the article the internal and external determinant factors which influence research and scientific institutions' choice of business orientation are presented. Typical business orientations fit for application in such institutions for the purpose of carrying out market tasks are pre-sented. Against their background the tasks of marketing in such institutions are outlined and the currently available set of marketing instruments at their disposal is discussed.

Keywords: marketing, scientific institution, product portfolio, determinants of marketing activities

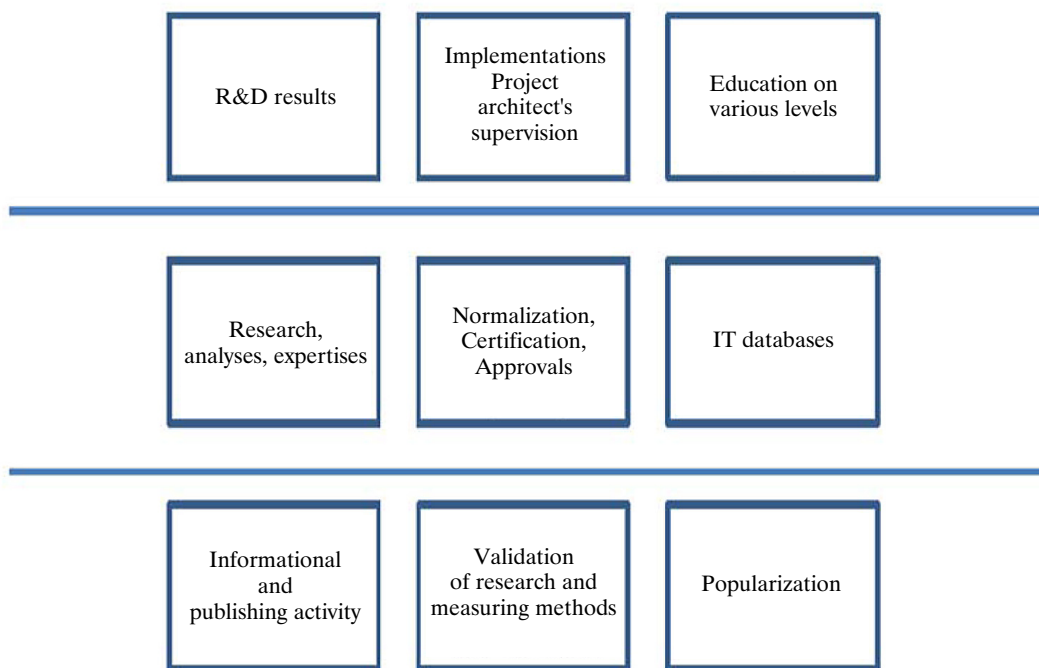
Introduction

A starting point for deliberations on the subject of marketing activity of any market entity and in particular a research, or scientific institution is distinguishing a set of market values which will constitute the reflection of the implementation of its strategic goals of market activity. They are directly associated with its product portfolio, which it is offering, or preparing as new market proposals, including in particular innovative solutions. In case of research-scientific institutions the dimensions of the product portfolio and its size can be regarded as defined, in particular, they arise from the act on research institutes from April 20, 2010¹ and the act on higher education from September 27, 2005 (Picture 1)². The analysis of their scope of content points to a rather substantial thematic diversification, multidirectionality and interdisciplinarity of problems and issues, as well as a very broad group of stakeholders potentially associated with their implementation. At the same time a deepened analysis of their content and the significance of particular categories of products in the business strategy of an institution shows their very clear branch diversification, distinctness of implementation procedures, or even apparent diversification of product strategies. This forces units to run very diversified marketing policy adapted the characteristics of problem area and to the category of market entity and thus to diversify the forms, intensity and scope of utilization of marketing tools. Nevertheless, despite the observed, very clear, diversified configuration of the characteristics of products forming the portfolio of a research-scientific institution, it is possible to find a common core in them — knowledge. Knowledge is currently recognized as the basic factor of competition and success, which supported with the owned resources and skills and their proper utilization becomes a potential source of creating value for the client.

Traditional approach to the marketing activity of an economic entity is most often identified with shaping the marketing strategy of this entity constituting the basis of its market activities. This is why basic issues and problems, which in this case are taken into consideration, focus on the assignment of various kinds of determinants as the

discriminants of the above mentioned functional strategies of research and scientific institutions. Within their framework strategies/instrumental programmes are prepared. These programmes reflect the scope and procedures of implementation of marketing on earlier defined target markets and the adopted assumptions for the positioning of constructed market offer. The basis for the preparation of marketing programmes constituting the basis of an operational marketing programme is identifying and defining all conditions often called determinants, or discriminants of scope, form, as well as proposed market solutions determining the choice of approach and application of chosen marketing tools.

Picture 1. Product portfolio of a research-scientific institution



Source: Own materials prepared on the basis of: Slotorsz, A. i Cichoń, W. (2014). Marketing instytucji naukowo-badawczych w świetle obecnych uwarunkowań organizacyjno-prawnych. *Marketing instytucji naukowych i badawczych*. Warszawa: Instytut Lotnictwa; act on research institutions from April 30, 2010; act on higher education from September 27, 2005, with amendments.

Determinants of marketing activity

Contemporary approach to the understanding of marketing and defining its instruments is definitely more complex and focuses on it as a complex process of managing market activities according to the adopted business strategy of a company (sales, marketing, social marketing, market, strategic). Market activity takes advantage of the achievements of information technology in a broad dimension. Its aim is to attract clients (mainly endcustomers) in the longterm perspective through creating, identifying and satisfying their changing needs and emergence of new expectations. As a consequence, this process is supposed to lead to achieving competitive advantage understood as maximization of the value of market offer for the client in the longterm perspective and should be discounted in form of satisfying financial results³. That's why the starting point for the preparation and implementation of a complex of marketing activities resulting from the assumed market orientation is the identification and verification of possibly all determinants which may potentially determine the achievement of the assumed market targets in any time perspective. Thus, it is important to specify the existing internal and external determinants, assigning their role and significance in the implemented strategy of marketing activity of an entity and the strength of their influence on the formulated targets, tasks and used set of instruments. In case of each of the internal and external determinants the most important thing is the scope of held information about the role and significance of each of them in the past and the current and expected influence on the proposed solutions of the implemented marketing strategy of a market participant. They make it possible to "define" the competitiveness of the components of the product portfolio of an institution and in particular to identify its formal aspects associated with:

- product architecture' of an institution, compared to other market participants;
- identification of individual values and "selling" them to the clients — stakeholders on the basis of research;
- determining the "level" of adaptation of the elements of portfolio for key and potential clients — stakeholders (preparing assumptions for the "CSP/USP" equivalent);

- determining key values for "client/user/agent" as a determinant of market distribution and communication (what I'm supposed to deliver and sell to the client's brain' — knowledge about the served and potential market).

Due to this, a very important original element of the conducted analysts in the context of the competitiveness of portfolio is drawing attention to the issues associated with defining, communicating and offering value for the client and reflecting their distinctness/diversification of elements in case of each of the categories/product lines. Thus, it is necessary to specify the whole process of conduct leading to all enumerations of the components of value for the client, that is⁴:

- defining value (evolution of the value for client — V. Zeithmal, K. Monroe, Ch. Gronroos, R. Woodruff, A. Parasuraman, P. Kotler)
- forming value (subjectivity, dynamism, context, universality, perception)
- communicating value (semantic communication: promotion — mix, personal communication, non-personal communication, sponsoring, WOMM, events)
- offering value (solutions in the area of distribution and sales, networks of connections, organizational networks)

Table 1. Determinants of marketing activities of research and scientific institutions

Internal determinants	External determinants
1. coherence of portfolio	1. economic (economic situation, programmes of National Centre for Research and Development — NCBiR, National Science Centre — NCN, Programme Innovative Economy — PO IG, new financial solutions...)
2. marketing culture of R&D institutions	2. legal-organizational (mainly systemic solutions)
3. business model of R&D institutions	3. market infrastructure (institutional infrastructure + IT-communication infrastructure)
4. level of specialist knowledge	4. stakeholders of innovations (recipients, suppliers, partners)building platforms of cooperation
5. gathered experience	
6. research procedures	
7. material-technical equipment (technologies)	
8. professionalism of the staff	

Source: Own materials.

In this context, what is exceptionally important is identifying the internal and external determinants which will shape the mentioned value in a chosen time horizon (table1). At the same time it is worth pointing to one fact that influences the efficiency of conducted activities, in particular, analyzing and considering the determinants of the conducted market processes, it is necessary to remember the thesis of J. Kay, who claims that the basis for gaining competitive advantage is adjusting a company's internal capacities to its external environment (Kay, 2004, p. 4). Translating this into the language of market activity, these determinants should be reflected by the adopted and implemented business strategy of a research and scientific institution. Out of the internal determinants mentioned above, the following can be regarded as exceptionally important: coherence of portfolio, marketing culture of an institution and the preferred business model of an institution. Market infrastructure (group of supporting entities) and stakeholders innovations and future partners in the creation of platforms/cooperation networks can be mentioned as the most significant external determinants⁶. In the set of elements constituting external determinants a particularly important determinant for the achievement of expected results, but which at the same time poses serious challenges for a scientific and research institution is a business model, which reflects the combination of resources and actions which an institution intends to organize and implement in order to deliver particular value to the target client⁷. Its essence is a proposition of value, which a buyer/client/recipient is supposed to receive and should be adapted in many dimensions to his defined needs and satisfy his often multifarious expectations. Currently, this model, due to the number of components and variability of key values requires quite high flexibility, efficiency in making decisions and forming proper relations between components.

As a result, what should be created is institutions' business orientation implemented on target markets, which should be comprehended above all in the categories of creating institutional solutions based on:⁸

1. building and implementing a business model adapted to the structures and rules of functioning of the market taking into consideration the target segments (adaptation of the existing ones), taking into consideration the creation of elements of new infrastructure (in case of new solutions, or taking up market challenges together with a partner);

2. working out a marketing strategy (strategy of product portfolio) taking into consideration the rules of competition on the market, which will make it possible to prepare and implement sales plans and commercialization of innovative solutions proposed in the offer;
3. creating procedures of continuous search for new solutions, ideas and products building and strengthening market position of a research-scientific institution ("deepening" the process of commercialization).

We shouldn't forget here about the significance and variability of the strength of influence of particular determinants on the business strategy, which is associated with dynamic socioeconomic changes, emergence of new market solutions in the area of communication and distribution, or legal-organizational solution, which may enforce flexibility in the functioning of a business model leading usually to its modification, or substantial changes. The abovementioned business orientation and its basic characteristics may assume different formulas, which according to the assumed market "challenges" may be implemented as: sales, marketing, market, strategic and enterprising orientations (table 2). At the same time, often the most appropriate solution for a scientific, or research institution is implementing alternately business orientations adapted to the characteristics of offered categories/lines of products within a product portfolio, or served market segment. However, this requires from an institution an adequate level of marketing culture (in particular, information resources) and professionalism of the staff, or taking advantage of available outsourcing solutions. Regardless of the adopted approach, it is important to remember that it is necessary to focus on solving real problems, motivating participants and preferring their activities and new approaches, as well as building platforms/networks with the participation of various groups of stakeholders. The choice of the appropriate orientation in case of a research and scientific institution is not constant in character, but is often subject to the results of the process of commercialization of innovation, or product. In accordance with either "sensu stricto", or "sensu largo" approach and their determinants, an orientation more appropriate for the adopted solution is chosen (MNiSzW, 2010). It is also necessary to take into consideration the character of an institution, which due to its organizational-legal form and the subject of

conducted ventures decides on the choice of the most appropriate business orientation from the point of view of market position, level of competition, own marketing culture and economic-financial capacities.

Table 2. Kinds of business orientations of research and scientific institutions

Type of orientation	Determinants
Sales orientation	1. Aggressive sales and intensive promotional activities 2. Flexibility in the choice of tools for sales and promotion 3. Domination of the department of sales and promotion
Marketing orientation	1. Identification of the client's needs, 2. Defining target markets, 3. Coordination of marketing tools (4P) 4. Focus on efficiency of activities (profitability)
Market orientation	1. Extended marketing concept covering all market participants: current and future clients, distributors, rivals (cooperation) 2. Interfunctional coordination 3. Flexible approach to social-economic changes
Strategic orientation	1. Positioning of portfolio on the market of the future 2. Overcoming limitations in the area of the availability of resources 3. Competing not only within the borders of existing sectors, but also in the process of forming new sectors of the future 4. Competing for leadership in the area of key features of competitiveness (not only product) 5. Strategy serves the purpose of determining a company's position on the market in the future
Enterprising orientation	1. Flexibility of the decision-making process 2. Searching for and taking advantage of chances 3. Focusing on innovations 4. Key values for the client 5. Risk management 6. Taking advantage of available resources

Source: Michalak, S. (2010). *Zachowania konkurencyjne przedsiębiorstw na rynku kawy w Polsce*.

Rozprawa doktorska. Poznań; Kotler, Ph. (1994). *Marketing*. Warszawa: Gebethner & Ska, p. 14;

Lambin, J.-J. (2001). *Strategiczne zarządzanie marketingowe*. Warszawa: Wydawnictwo Naukowe PWN, p. 75;

Hamel, G. i Prahalad, C.K. (1999). *Przewaga konkurencyjna jutro*. Warszawa: Business Press, p. 25–37.

Marketing instruments in the activity of research and scientific institutions

Currently, the set of marketing instruments at the disposal of scientific and research institutions is very rich, diversified, specialized and highly professionalized; additionally, it is supplemented with exceptionally developed background in the area of external marketing services (outsourcing) and dynamically developing institutions supporting the research-scientific sector. This creates substantial opportunities in a very flexible approach to building various marketing solutions, which use various configurations of tools according to the de-fined market challenges (table 3). Thus, the traditional, or classic tools, that is 4P, or more advanced 4C will be used. This means that a standard approach with market segmentation, choice of target markets, positioning and focus on brand creation, or undertaking ventures aimed at building value for the client at every stage of the innovative process. However, the variability of business models caused by recession, sustainable development, new social media, growth of significance of the consumer's voice, information technology and globalization will force the transformation of the approach to role, significance and constructing marketing solutions for a part of the innovative solutions, or product offers proposed to the market (Kotler, Kartajaya i Setiawan, 2010, p. 46).

It is also worth drawing attention here to an approach called the marketing of entrepreneurs usually left to themselves, in which they are the creator of all processes associated with serving the clients and stakeholders, company's goals and undertaken solutions and market practices (Martin, 2009, p. 391–403). This type of activities is characteristic for many startups, small and medium entities dealing with the creation and development of technologies and special purpose vehicles of universities. An important subject of conducted marketing activities, regardless of the considered approach, is the abovementioned aspect of creating added value for chosen and potential segments, treated as a value for the client (considered mainly in the context of benefits). In case of scientific and research institutions it should also take into consideration the dimension of social-economic value understood not only in economic categories, but also defined benefits for communities most often associated with sustainable development.

Table 3. Set of marketing instruments of research and scientific institutions

Approach	Marketing instruments			
M4 P Marketing 1.0 (Product)	Product	Place	Price	Promotion
4C Marketing 2.0 (Klient)	Consumer value	Convenience	Cost	Communication
SAVE Marketing 3.0 (Wartości)	Solution	Access	Value	Education
4 P (MSP) Marketing 3.0 (Wartości)	Person	Process	Purpose	Practice

Source: Ettenson, R., Conrado, E. i Knowles, J. (2013). *Model 4P wymaga rewizji*. HBR; Gilmore, A. (2011). Entrepreneurial and SME marketing. *Journal of Research in Marketing and Entrepreneurship*, 3; Kotler, P., Kartajaya, H. i Setiawan, I. (2010). *Marketing 3.0. Dobry produkt? Zadowolony klient? Spełniony człowiek?* Warszawa: MT Biznes.

However, it is necessary to not forget that marketing is supposed to serve not only the purpose of accelerating the process of acceptance and diffusion of any kind of innovation, but that activities associated with building market perspective for a research, or scientific institution and the whole sector together with its continuous adaptation to the turbulent environment are equally important. In this group of market entities, due to the specific character of the market and its participants building a market perspective for this group of institutions should be understood as considering in marketing strategy (above all business strategy) and attributing priority importance to the following directions of market activities (marketing):

1. Creating DNA (Distinctiveness, Novelty, Attributes) of a scientific-research institution (Kotler, Kartajaya i Setiawan, 2010).
2. Creating platforms for cooperation in implementation/distribution.
3. Co-creation with the market (participants of the market) — humanization of solutions.

4. Integrator's role in satisfying the needs of the market (mainly the needs of clients).

The first direction, which puts emphasis on the determinants of the identity of a scientific and research institution and its contribution to building the strength of the institution's brand should be focused in particular on product lines in the portfolio, which are of strategic importance for the institution. We can identify the following as product lines of strategic importance: the results of scientific research and development procedures, procedures for implementation of results and in particular, their commercialization and education on various levels.

The second and third direction concern lines of tactical significance, such as: expertises, opinions, analyses, normalization, certification and building databases (information resources). This is associated, above all, with following current trends of building communication and sales channels on served markets, which will enable direct communication with the client and other market participants, creating platforms for cooperation with its participants for the exchange of experiences and taking advantage of formed network connections. Further, the role of an integrator is treated as current, regular and interdisciplinary activities reflected by the contribution of an institution to activity which involves informing, popularization and publishing and which leads to building relationships with all market participants who can potentially participate in solving the voiced needs of target client segments and in searching for new potential areas which could be covered.

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¹ See: Slotorsz, A. i Cichoń, W. (2014). Marketing instytucji naukowo-badawczych w świetle obecnych uwarunkowań organizacyjno-prawnych. *Marketing instytucji naukowych i badawczych*. Warszawa: Instytut Lotnictwa.

² See: Act on higher education from September 27, 2005, article 6.

³ See: Bogdanienko, J., Haffer, M. i Popławski, W. (2004). *Innowacyjność przedsiębiorstw*. Torun: Wydawnictwo Uniwersytetu Mikołaja Kopernika, p. 185.

⁴ In literature on the subject this value is defined as: consumer value, value perceived/expected by the consumer, consumer's awareness of value, added value for the consume. See: Woodruff, R.B. (1997). Customer value: The next source for competitive advantage. *Journal of Academy Marketing Science*, 2 (25); Zeithmal, V.A. (1988) Consumer perceptions of price, quality, and value: meansend model and synthesis of evidence, *Journal of Marketing*, 3 (52);

Smith, J.B., Colgate, M. (2007). Customer value creation: a practical framework, *Journal of Marketing Theory and Practice*, 1 (15).

⁵ The group of supporting entities is potentially formed by: technology parks, technology incubators, pre-incubators and academic business incubators, business incubators, technology development centres, seed capital funds, networks of business angels, local loan funds, credit guarantee funds, technological platforms, training-consulting centres, clusters and other branch, regional and local institutions supporting innovations, as well as other local administration and state administration institutions.

⁶ See: Osterwalder, A. i Pigneur, Y., (2010). *Business Model Generation: A Handbook for Visionaries*. New Jersey: Game Changers, and Challengers; Kołodziej R., *Business Model Canvas czy Lean Canvas?*, <http://cocreation.bbblog.pl/wpis,business,model;canvas;czy;lean;canvas,67100.html>.

⁷ Discussed in detail in: Sojkin, B. (2010) Zarządzanie produktem w usługach badawczych. *Marketing Instytucji Naukowych i Badawczych*, Prace Instytutu Lotnictwa nr 208. Warszawa, p. 105–112.

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