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SCIENCE-TO-BUSINESS MARKETING
AS AN IMPORTANT FACTOR OF EFFECTIVE
COOPERATION BETWEEN SCIENCE
AND INDUSTRY

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Abstract

The paper presents an approach to science-to-business marketing, based on the theory of service marketing. The concept of the marketing strategy is presented; the main components of the model are discussed; the management of customer relationships between scientific organizations and businesses is highlighted; and the appropriate education of scientific research personnel to carry out marketing tasks is illustrated. The approach is the basis for development of marketing strategies of scientific organizations and improvement of their cooperation with industry.

Keywords:

science, research, marketing, business, cooperation, industry.

Introduction

Effective cooperation between science and industry is an important factor that affects economic growth. It is also a good indicator of how effectively the governmental support granted to R&D organizations is used.

While research institutions usually have strong expertise in the marketing of their discipline's scientific research results, the research services are always a challenge (Cyert et al. 1997; Schartinger et al. 2001; Plewa et al. 2007; Baaken et al. 2008).

The specifics of the marketing of professional services are presented in section 2. An approach to science-to-business marketing based on the theory of service marketing is presented in section 3. Issues related to marketing personnel are discussed in section 4 of this paper, including the appropriate education for scientific research personnel so that they can carry out marketing tasks. The concept of marketing strategies for scientific institutions is illustrated in section 5, with the main components of the model discussed and customer relationship management between scientific organizations and businesses highlighted.

This paper creates a framework for scientific research organizations to develop their marketing strategies to effectively sell their knowledge and services, strengthen their cooperation with industry and create a strong background for their further development.

What is specific in the marketing of professional services?

While service marketing differs significantly from the marketing of goods, the approach applied in the marketing of professional services is very different from the marketing of other types of services (Gummesson 1979). Professional services are delivered by skilled professionals – often highly skilled experts – and this is the case in scientific research.

Scientific research and its results are intangible abstractions, and they promise something that poses a high risk. Clients of scientific research projects come into partnerships on the basis of the past experience and achievement records of the research organization (often with its unique infrastructure), research team and particular scientists (their knowledge, expertise, creativity and innovation), but the results that were achieved in the past do not always translate into future success.

An important feature in product marketing is quality. While in standardized goods, quality is usually well defined, in services, quality is defined by the customer's perceptions of quality, which can differ depend-

ing on circumstances. A certain feature is usually the most important in a given situation (response time, delivery time, flexibility, specialized infrastructure, etc.). Thus, quality is in the eyes and minds of the customers, and they decide whether the service is appropriate and whether it meets their expectations.

Science-to-business marketing

Marketing scientific research, know-how and related technical services to industrial companies is of increasing importance to research institutions which face declining governmental funding. At the same time, many firms see such organizations as attractive potential resources, which include their expertise and modern infrastructure.

However, the experience of private firms and governmental institutes working together is limited. Concepts of the marketing of services, with its strong focus on customer needs, can help to facilitate cooperation.

The understanding of customers' needs by scientists requires their proactive behavior. It is necessary for scientists to understand the needs of a business partner and the adjustments of the available resources of the organization (knowledge, expertise and facilities), which will allow the business partner to be innovative and to capitalize on the particular niche market in which the company operates.

Return on investments (ROI) in scientific research is what counts for the business partner of the scientific institution, not the beauty of research results, or how far human knowledge has progressed or other emotional values. Scientists should keep this in mind when taking any marketing actions to sell their results and services.

Scientists know their skills well and have very advanced knowledge in a narrow field. They can much easier understand and penetrate the problems of the business partner than vice versa, both because of the fact that they are the seller of their knowledge, research results and services, and because the entry of business practitioners into the advanced areas of science and research is not easy and sometimes nearly impossible.

People

The marketing of professional services very often involves consulting services (the client is buying a professional adviser), thus scientists who take part in marketing activities need to have a few traits, such as communication skills, creativity, flexibility, competence and an understanding of customers' needs, benefits and expectations.

Communication and interpersonal skills are important to present the offer in a concise form, but underlying all important drivers of possible success is an ability to listen patiently and attentively in order to understand customers' needs and to be able to make customers feel like friends, who can expect help and support from a friend.

Creativity is of great value because in a real-life situation, the issue that seems to be important at first is not always the most important issue. Other issues may arise during discussions, and a creative approach is needed to both define the existing problem and to use all assets of the research organization to propose solutions, to depict "how to" and "how not to" scenarios.

Flexibility is very important in the communication between researchers and business people, as it often happens that scientists want to sell research results even if something different is needed by the industry than what is available at the research organization. Thus quick adjustments, a good understanding of the situation and clients' needs, or selling different or modified solutions may be required. One should listen to what customers want, but one should professionally assess and sell what customers need.

Scientists should understand their service role to the industry. Arrogance and overconfidence must be excluded from the relationship. Business people work hard, feel everyday market pressure, have humility, and usually do not accept this type of behavior. Such attitudes create borders and a lack of trust, exclude the possibility of cooperation, and kill potential business opportunities.

Competence should be used to help solve practical business problems, and knowledgeable technical staff should interact to convince business decision makers that they have unique assets that can move the company to a new level, to help create competitive advantages and generate extra revenue and profits. Without such an approach, the cooperation of both parties and selling the results of scientific research to industry is impossible.

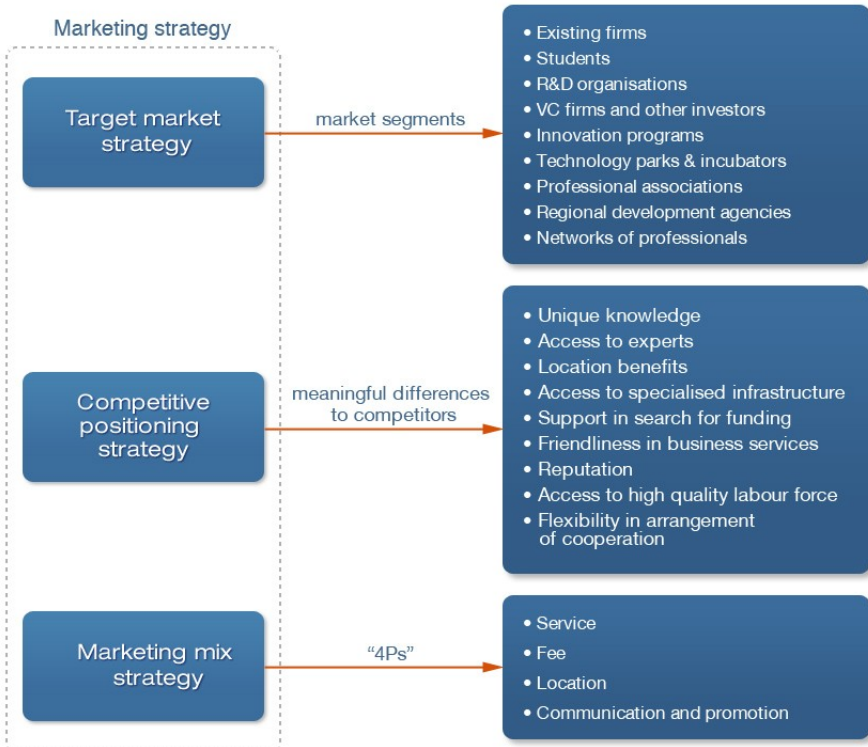
Thus, for the reasons presented above, scientists with marketing knowledge and skills are needed for science-to-business marketing, not professional salespeople (only having selling ability and personality is meaning-

less when dealing with professional services). The client is buying a professional. A professional service can only be purchased meaningfully from someone who is capable of rendering the service.

Marketing strategy

According to Kotler, Hayes and Bloom (Kotler et al. 2002), the marketing strategy of professional services is the selection of target markets, the choice of a competitive position, and the development of an effective marketing mix to reach and serve the chosen clients. A general concept and the components of the marketing strategy are presented graphically in Figure 1. The particular components of the strategy are discussed in detail in the following sections of this paper.

Figure 1. General concept of marketing strategy for professional services



An organizational dilemma of professional service marketing (Grönroos 2000) is that the person who markets the service must usually also be prepared to take part in the operation of the assignment, thus marketing activities are to be carried out by professionals of an organization who know their discipline, their organization and the offer very well.

Target market strategy

We can define a market for a scientific project (and science and business cooperation) as the set of all the people and organizations that have an actual or potential interest in a service and the ability to pay for it.

Potential target groups include the following market segments, organizations and institutions, which directly or indirectly contribute to using scientific research results, knowledge and infrastructure:

- Existing firms, including SMEs, entrepreneurs and serial entrepreneurs.
- Students who can potentially think about establishing their own businesses, but also have a network of contacts and can transfer the information to others (word-of-mouth that leads to spread of information).
- R&D organisations with researchers who might be interested in entrepreneurial activities as their understanding of science and research allows them to explore the potentials of science and bring to light new solutions to the market.
- Venture capital firms, business angels and seed capital, as they usually have a large portfolio of companies and are contacted by an even larger number of start-ups for financing for their businesses. Investment firms usually concentrate on certain market segments, so firms with the closest subject relations to the area of expertise of the scientific organisation should be contacted first, but in the longer term, all possible investment firms should be contacted as they have their own network of contacts and can transfer information to the people who may most need it.
- Science and technology parks, clusters, incubators and innovation programs run by governmental agencies and regional institutions – they all have a large number of companies in their projects, and networks of contacts, often with identified needs, and can serve as

agents for science-business cooperation (scientists should study their profiles and evaluate possible applications for the available technologies).

- Professional associations (e.g. information technology association, automation, eco, etc.), networks of professionals gathered around non-governmental institutions, foundations and other *pro bono* organisations as they have a broad list of their members and can facilitate contacts between science and industry.

Other market segments can also be defined by scientific institutions, depending on their particular areas of expertise.

Competitive positioning strategy

Competitive positioning is the art of developing and communicating meaningful differences between the services of a particular scientific organization and those of competitors serving the same target market.

Scientific research institutions certainly have competitors, such as other universities and research institutions dealing with a similar scope of scientific expertise (home and abroad) and R&D centers created by firms.

The development of a competitive positioning strategy and determining the drivers of positive decisions for cooperation between science and industry can help scientific organizations to compete against others who are targeting the same market. A perceptual space map should be developed (with certain attributes, such as, for example, expertise, infrastructure, business friendliness, etc.), where differences between the competitors and a given scientific organization can be easily presented to business partners.

Competitive positioning should be determined, keeping in mind what drives potential industrial partners to a make positive decision, and why they should want to cooperate with a given scientific organization and not with some other. Learning the clients' expectations is of critical importance. It can also be a learning experience which can be beneficial for better targeting of new prospects.

The potential drivers of success in science-to-business marketing, which can generate positive decisions about cooperation, are as follows:

- Unique knowledge in the field.
- Access to experts, which can accelerate and push forward business development.

- Location with easy access to knowledge and facilities.
- Access to specialised infrastructure which is continuously upgraded with the newest technologies, instruments and equipment.
- Funding – support and cooperation in search for funding from European and regional funds, and participation in project consortia, which provides access to knowledge at lower costs and risk, and makes investments in innovations more affordable.
- Friendliness in providing services and a good understanding of the needs of businesses; creation of long lasting partnerships.
- High quality of services and infrastructure.
- Reputation of the scientific institution, which is partially transferred to its industrial partners and contributes to their good reputation.
- Access to a high quality, well-educated labour force.
- Flexibility in the arrangement of cooperation – how easily the scope of cooperation can be expanded and will it be possible to leave the cooperation without high costs if this becomes necessary.

Each scientific organization can formulate its own most attractive drivers for cooperation with industry. All of the arguments selected as drivers for potential business partners should be stated clearly in all communication documents for clarity and consistency of communication.

Marketing mix strategy

The classical classification of the marketing mix, the “four Ps” – product, price, place and promotion – in professional services are labelled as: service, fee, location and communication, as shown on the diagram in Figure 2. In the following sections, we shall concentrate on determining the best activities in those areas.

Figure 2. A diagram of marketing mix for professional services marketing



Service

The types of services provided by scientific institutions to industrial partners are some of the services which have already been discussed as drivers of success and competitive advantage in section 5.2. This is defined now, however, as an offer and includes:

- Research and development services.
- Renting research, manufacturing and test infrastructure.
- Joint project creation and execution.
- Consultancy services.
- Support in search for funding.

The service offer should be well defined by scientific organizations, taking into account the specific situations of the business partners in a giv-

en industrial sector, from which the companies have easy and flexible access to the services.

Fee

Cost is an important factor for businesses when choosing a partner for R&D services. Without information about costs, decisions about cooperation are impossible.

Scientific institutions usually have their fee policy, but specific project costs should be determined as soon as possible in order to present them to industrial partners together with all other information and benefits. If detailed information on costs cannot be determined, a concept of the fee policy should be presented at least, so that business partners can evaluate the costs by themselves and determine how much R&D services they can use with the budget available.

Fee-splitting is a tactic which can be considered by the R&D project partners if a scientific-industrial consortium can be created with the participation of a few firms to make the scientific research services more affordable, financially attractive and less risky (Marszalec 2008a; Marszalec 2008b; Marszalec 2002).

It should also be stated clearly in any communication with potential firms that scientists understand how important fee policy is for business (money for business is like oxygen for breathing, and scientists often do not know this business perspective).

It should be emphasized that scientific research partners do not just want to fulfill the present project objectives just for themselves and then leave businesses without support, with all the problems that could later arise, but that the approach is based on a long-term policy.

Location

The location issue is about how accessible the services of the scientific organization – i.e. knowledge, expertise, know-how, infrastructure, technologies, etc. – will be to potential industrial companies.

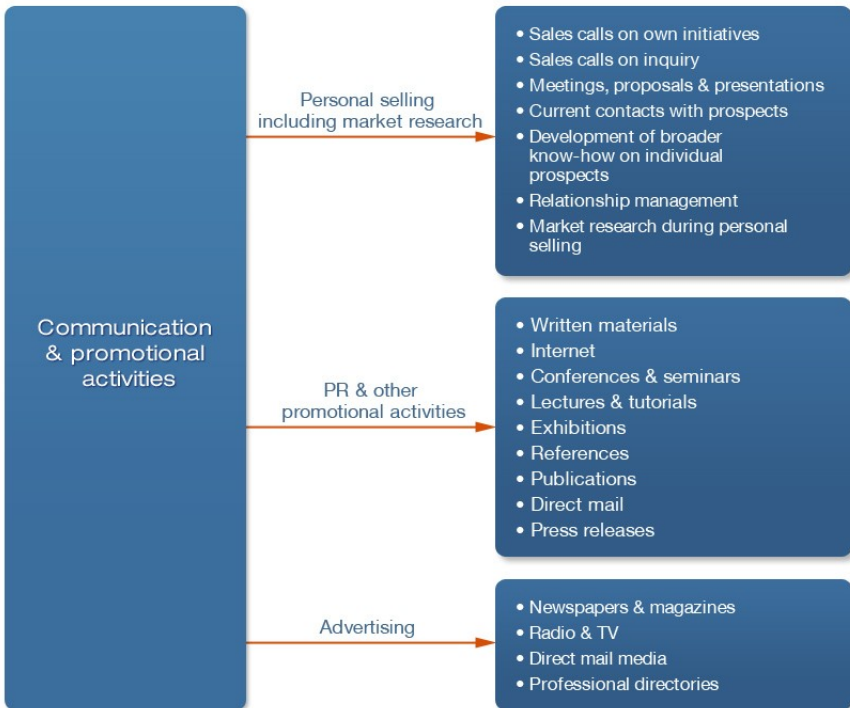
Some knowledge-based services that use brain power and/or specialized infrastructure can be rendered at scientific institutions' locations, while some others can be executed remotely via the Internet. Certain types of services will have to be rendered in industrial partners' locations, if a unique infrastructure is to be used.

Communication and promotional activities

In communication and promotional activities, three types of activities can be used for science-to-business marketing: personal selling, advertising, public relations and other forms of promotion. A general concept of the activities is shown in Figure 3.

Almost all means, except advertising, are very person-intensive. Personal contacts in selling and PR and other promotional activities dominate, so scientists and researchers should be prepared to participate.

Figure 3. Communication and promotional activities in marketing mix strategy



Personal selling, including market research

For most professional services, personal contact is the most important of all the tools available within the communication element of the “mar-

keting mix”. Personal contact – or personal selling – plays a larger role in persuading clients to buy a professional service (knowledge, expertise, commercialization of research results, etc.) than various forms of public relations and advertising. The risks that most business partners perceive in selecting a professional (scientist or researcher) make it necessary to be able to reassure and persuade them through direct, personal messages rather than just impersonal media.

Because of its predominant importance in communication, personal contacts are discussed first, followed by advertising and public relations and other promotional activities in the two following sections. That does not mean that personal contacts, advertising and public relations should be treated as distinctly independent activities. On the contrary, they all should be performed with the understanding that they are interdependent and require joint planning.

The following issues should be addressed for effective personal selling in science-to-business marketing efforts:

- Who should do the selling?
- How should the contact efforts be organised?
- How should time be allocated to selling and making selling more convenient (e.g. mixing research and selling, mixing pleasure and selling)?
- How should promising leads be found and how should they be qualified as potential contacts and clients for future scientific research projects?
- How should a proposal and presentation be prepared, and how should effective communication skills be developed, as they are so important for personal selling?
- How should the deal be negotiated and closed?
- How should relationship management with clients be carried out in further cooperation?

Each meeting with potential business partner should be carefully planned. It is important to find out who scientists will be talking to, and to make sure that information relevant to a given business partner is presented. One should be as specific as possible in presenting the benefits and offer details as quickly as possible, because business people value their time.

The following activities can be specified as possible options for personal selling in science-to-business marketing:

- Sales calls on own initiative.
- Sales calls on inquiry.
- Meetings, proposals and presentations.
- Current contacts with certain important customers and prospects for projects.
- Developing broader know-how on individual prospects for projects.
- Relationship management during selling process.
- Market research during personal selling (collection of information and its use in the follow-ups with a given prospect and in contacts with others); knowledge management (Fazlagic 2006).

A strategy which scientific organizations can apply when in discussion with potential industrial partners, and which can reveal extremely useful information for further communication, is called “changing positions”. The core of the concept is as follows. When a scientist who is proposing cooperation to a company encounters a negative reaction despite the arguments presented, then he/she can suggest that both parties change positions mentally. When the business partner becomes a scientist for a moment, the following question should be asked: What would you say if you were in my position that would make our offer satisfactory for your business? Then the business partner more openly expresses the company’s needs and expectations, while the scientific partner can profile an appropriate offer on that basis, so that both parties can reach their objectives and create a satisfactory arrangement.

The application of the approach presented above in science-business relationships creates the basis for a better understanding of the real obstacles and drivers for a business to make a positive cooperation decision, which leads to a long-lasting science-business relationship as the result.

Public relations and other promotional activities

Public relations and other promotional activities cover a variety of communication techniques that fall in between “personal selling” and “advertising”. These techniques do not involve one-to-one or face-to-face communication (as personal selling does), nor do they involve the exchange of money for time or space in the media (as advertising does).

They are used to enhance credibility and influence attitudes, and to earn public understanding and acceptance.

The following public relations and promotional tools can be used in science-to-business marketing:

- Written materials, including brochures, leaflets, and product and service sheets – although we live in the Internet age, printed materials are still very important. When receiving a brochure, one has to look at the content to check if anything is relevant, while many e-mails are left unnoticed (that does not mean e-mails should not be used; on the contrary, as noted below).
- Internet – websites, blogs, newsletters, mobile apps, social media sites such as, for example, LinkedIn, professional websites and fora for posting comments, and crowdsourcing. The web is an area that should never be ignored. The Internet presence should be very professional in the sense of the content quality (including professional writing for the Internet), website structure, user experience design, user interaction design, information architecture, SEO, etc. to guarantee good communication, and a quick and easy grasp of the most important messages. All of this speaks for the expertise and professional services of the scientific institutions and creates trust.
- Conferences and seminars to deliver presentations.
- Participation in tutorials and lectures at different institutions, speeches for professional associations, etc.
- Exhibitions – presentations of expertise, services and infrastructure.
- References – the recommendation of satisfied business partners is the most effective way of bringing in new science-business cooperation projects, as people tend to view recommendations from those who know the service as highly credible, and are more inclined to use it.
- Publication of articles in professional media in print and online.
- Direct mail – a good way to promote scientific organisations is to send letters or brochures to potential business partners (the key to success in direct mail is to reach out to the right people).
- Press releases for use by business newspapers, professional journals, professional Internet portals, blogs and newsletters.

Good profiling of content for communication, considering the special expectations of business people who are usually busy, is of critical importance. The elevator pitch is an indication of communication among business people, although in the case of detailed discussions, time does not have to be so extremely short.

Attention should be paid especially to the professional presentation of some of the spectacular achievements of the scientific institution in cooperation with industry.

Advertising

Advertising is not a panacea for the marketing of professional services, but some organizations use advertisements in newspapers, magazines, radio and television, direct mail media, and professional directories.

For science-to-business marketing, advertising should be considered rather as a supplement to personal contacts and efforts in public relations, and most attention should be paid to online activities (on-line advertising and SEM) in professional portals for the business community, start-ups, venture capitalists and entrepreneurs.

Conclusions

In this paper, a science-to-business marketing approach was presented. The development of a marketing strategy for scientific institutions was described and particular components of the strategy were discussed with an emphasis on scientists assuming a business perspective in relationships with industrial partners.

The importance of developing marketing skills among scientists was also underlined as a key competence and success factor in effective, long-lasting cooperation between science and industry.

Science-to-business marketing is a challenging task for scientific organizations. However, it can be very beneficial for R&D organizations from the view point of creating better long-term financial conditions for research, enabling entry into new research areas that are created by market demand, the development of new competences, and the strengthening of research organizations.

Summary

This paper presents an approach to science-to-business marketing, based on the theory of service marketing. The concept of the marketing strategy is presented; the main components of the model are discussed; the management of customer relationships between scientific organizations and businesses is highlighted; and the appropriate education of scientific research personnel to carry out marketing tasks is illustrated.

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