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**SYSTEM FOR THE DISSEMINATION  
OF INNOVATIVE TECHNOLOGICAL  
SOLUTIONS AT AN R&D INSTITUTE**

## SYSTEM FOR THE DISSEMINATION OF INNOVATIVE TECHNOLOGICAL SOLUTIONS AT AN R&D INSTITUTE

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### Abstract

The changes in the global market and the emphasis on the commercialization of R&D results, boost competitiveness and decide on the necessity to implement a marketing approach towards the organisation and management of the business activity, including that of research institutions, which being treated as a unique kind of enterprises, make the results of their research commercially available.

An important factor supporting effective commercialisation of research results is a proper preparation and execution of promotion activities, which based on the rules of marketing, increase the likelihood of success of implementation of innovative solutions on the market. The dissemination activities comprise all activities aimed at raising the interest of the public (i. e. users, enterprises, institutions) in the results of R&D works, and focused on presenting the possibilities and benefits of their practical application. In order for the innovations to be diffused, target markets need to be specified, media most relevant for a given sector of the market need to be selected together with the most effective ways of reaching out to the target groups identified in the market segmentation process, and an effective marketing campaign needs to be launched. The system for the dissemination of innovative solutions developed and implemented at the Institute for Sustainable Technologies — National Research Institute in Radom (Poland) (ITeE — PIB), supports the management of R&D results and stimulates networking between the Institute and entities involved in the practical implementation of innovations. It also enables the execution of system tasks concerning promotion of innovative product and process technologies developed at the ITeE — PIB. As a result of its application, business projects, which improve the technology commercialization process resulting in new products or technologies being brought to the market, are proposed.

**Keywords:** product management, innovation, technological solution, commercialization, R&D institute

## Introduction

In the knowledge economy, effective commercialisation of R&D results is greatly aided by designing and undertaking dissemination activities. Dissemination activities include all activities undertaken in order to make relevant people, enterprises and institutions interested in R&D work results and to present possible applications of R&D results alongside benefits that result from bringing R&D results to economic practice. Dissemination is not restricted to disclosing information about certain specific tangible results of R&D projects. Dissemination activities embrace a number of other efforts such as identifying target markets, formulating messages suitable for a given market segment, selecting the most effective ways of reaching out to potential buyers identified through the market segmentation process and effective implementation of marketing strategies.

The goal of this paper is to present best practices concerning the methodology of disseminating innovative solutions developed and implemented at the Institute for Sustainable Technologies at Radom. Verified on the basis of several dozen solutions, the dissemination model has proved to substantially improve the management of innovative technological products.

## Product management process in the context of R&D results

The current changes on the global market including the pressure to commercialize R&D outcomes are boosting competitiveness and forcing organizations to adopt a market-driven approach. This also applies to research organizations, which are beginning to function as a special type of commercial companies selling the results of research and development work.

The product portfolio of a research organization consists of innovative technological solutions. Innovative should also be the marketing model used by a research organization. An effective and efficient marketing strategy should be based on modern sales techniques and the precise identification of target markets.

Successful new product development/product improvement and its launch on the market depends on a number of factors:<sup>1</sup> technology (added value of the technology, cost reduction as a result of using the technology), marketing (meeting customer needs,

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<sup>1</sup> R.G. Cooper, *Stage-gate systems — A New Tool for Managing New Products*, Business Horizons, 33 (3), 1990, pp. 44–54, [http://dx.doi.org/10.1016/0007-6813\(90\)90040-I](http://dx.doi.org/10.1016/0007-6813(90)90040-I).

production time, profit, market share), NPD management, and commercialization (calculated as profit increased by the value of potential additional investment undertaken due to the product commercialization).<sup>2</sup>

Among the above factors, New Product Development Management<sup>3</sup> is regarded as the most important. The dual goal of New Product Development Management is to prepare a strong customer proposition and to ensure maximum profit from the product sales.

New Product Development Management involves four major processes:<sup>4</sup>

- developing and delivering a product that best meets market demand,
- adjusting the business model to the structure and rules of functioning of target market segments,
- adapting the marketing activity to the market competition rules,
- undertaking efforts to strengthen the company's position in the marketplace.

The first stage in management of New Product Development is developing and delivering a product that meets the market needs. The product is more likely to be successfully brought to market if it is developed not only as a result of R&D work ("technology push" or "science push"), but also if the converse process takes place when R&D work is shaped by the innovation process ("market pull")<sup>5</sup>. It is important to tailor the product to individual customer needs. Customer needs should be identified through the process of market analysis. Market research should lead to identifying directions and procedures of product improvement.

The second aspect of New Product Development is concerned with the adjustment of the organization's business model to market forces shaping target market segments. A business model under which a research organization operates largely determines the effectiveness of the product implementation process, and, above all, the economic performance indicators (including financial indicators). A business model is a function of the understanding of how market forces, adjustment to market structures, and, most importantly, identification and verification of target customers' needs.

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<sup>2</sup> J. Mu, G. Peng, Y. Tan, *New product development in Chinese enterprise key successes factors managerial prospective*, International Journal of Emerging Marketing, 2 (2), 2007, pp. 123–143, <http://dx.doi.org/10.1108/17468800710739216>, 10.11.2013, R.G. Cooper, *The dimensions of industrial new product success and failure*, Journal of Marketing, 43 (3), 1997, pp. 93–103.

<sup>3</sup> A. Mamaghani, I. Azad, *Multiple Criteria Decision Making Technique in New Product Development Management*, Journal of Management Research, 4 (3), 2012, p. 85, <http://dx.doi.org/10.5296/jmr.v4i3.1753>, 10.11.2013.

<sup>4</sup> S. Mello, *Customer — centric product definition. Key to Great Product Development*, PDC Boston 2002, p. 63.

<sup>5</sup> S.J. Kline, S. Rosenberg, *An Overview on Innovation [in:] The Positive Sum Strategy. Harnessing Technology for Economic Growth*, ed. R. Landau, N. Rosenberg, National Academy Press, Washington 1986.

The third important consideration in New Product Development is adapting the marketing activity to the market competition rules (focus on achieving competitive advantage), which in modern economy represents a basic premise for the functioning of a business entity and determines its competitive advantage.<sup>6</sup> A crucial component of this process is the design and implementation of a marketing strategy based on the market segmentation and identification of customers' needs and requirements. At this stage, the following activities are important: image enhancement efforts to strengthen the brand on the domestic and international markets, promotion of new products at conferences and symposia in the country and abroad, scientific publications, and personalised marketing.

Finally, NPD management is concerned with strengthening an organization's position in the marketplace through monitoring customer satisfaction levels. It is also important to keep customers informed about any research and development work being conducted to develop a new generation of a given type of product.

The above four components of NPD management with reference to R&D results are reflected in the dimensions of an organization's dissemination activities. Dissemination is understood as the process of communicating specially constructed messages about the solution/product.<sup>7</sup> Dissemination activities serve to integrate, transform and reinforce all aspects of product management.

### **Dissemination of technological innovations as a component of product management process in a research organization**

In order to organize the product management process supporting transfer of research results into economic practice, a procedure for the dissemination of innovative solutions by a research organization was developed. The procedure comprises five major elements (Picture 1):

- market analysis,
- market segmentation,

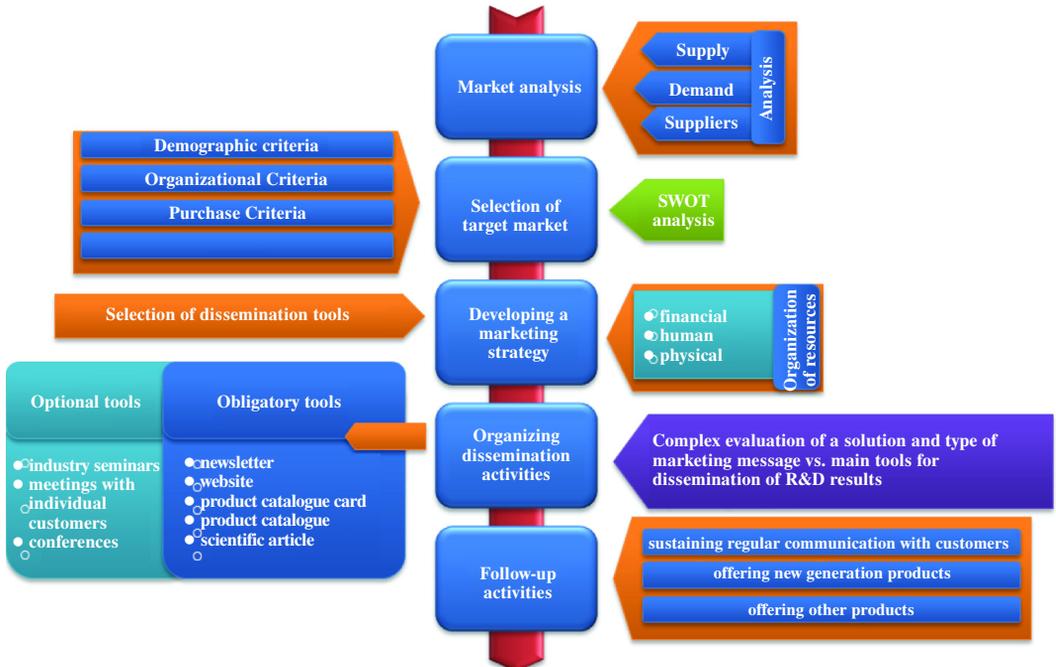
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<sup>6</sup> B. Sojkin, *Zarządzanie produktem w usługach badawczych* [in:] *Marketing instytucji naukowych i badawczych*, Prace Instytutu Lotnictwa nr 208, Wydawnictwa Naukowe Instytutu Lotnictwa, Warszawa 2010, p. 112.

<sup>7</sup> A tool supporting dissemination of R&D results is a complex technology assessment system developed at ITeE-PIB allowing for assessment of: technology readiness level (TRL), commercial potential, and innovation level of product and process solutions. The assessment system enables in-depth application analysis of a technology (A. Mazurkiewicz, B. Poteralska, *System of complex technology assessment*, *Problemy Eksploatacji*, 4/2012 (87), Radom 2012, pp. 5–18, M. Walasik, *Model technology platform for cooperation of research centres with the business sector*, Transactions of the Institute of Aviation number 227, Warsaw 2012 pp. 55–71).

- bulding a marketing strategy,
- organizing dissemination activities,
- follow-up activities.

Picture 1. Stages in the dissemination of R&D work results into economic practice



Source: Author's own research.

The first stage of dissemination, market analysis, involves the investigation of the following: the industry (supply analysis), its target customers (current and projected demand analysis) as well as suppliers of components and the terms of co-operation with suppliers.

Essentially, market analysis serves the purpose of selecting the most promising part of the market through the market segmentation process. The selected market segment is the so-called target market of a research organization to which the product offer is directed.

Market segmentation involves dividing market into smaller parts using a selection of diverse criteria. The literature on the subject gives a great number of segmentation

criteria.<sup>8</sup> Due to the specific character of products offered by research organizations the key segmentation criteria include demographics (e.g. industry, company size), benefit-related criteria (e.g. consumer awareness of the solution offered, perceived benefits a product/service may offer) or situational criteria (e.g. urgent needs, special applications).

Market segmentation enables:

- Differentiating marketing messages;
- Creating a marketing strategy schedule — e.g. due to financial constraints, at the first stage, informational and promotional activities can target one market segment only, to be successively extended to other segments;
- Conducting profitability monitoring — involving verification of the profitability of entering a given market segment.

Importantly, market segmentation allows for the identification of those consumers whose needs still remain unsatisfied (a niche market). A niche market is a small group of consumers with clearly defined needs. Factors that determine consumers' shopping choices may include product price and quality as well as its functionality. Identifying a niche market usually significantly raises the chances for successful product launch.

According to the definition of a niche market a research organization should build its competitive advantage based on:

- differentiation (special solutions) — focus on functional features of products or services;
- pricing advantage.

The essential condition for achieving success based on a niche market strategy is a thorough understanding of the target market resulting from the narrow specialization in the area of products offered and, consequently, the capability to satisfy non-typical consumer expectations in this area.

The selection of a target market, requiring an awareness of consumer needs and expectations as well as an understanding of the strengths and weaknesses of potential competitors, makes it possible to prepare and implement a marketing strategy.

Preparing a marketing strategy involves formulating dissemination activities in such a way that the promoted product is perceived by the target market as attractive (including price-wise) and unique. The ability to accentuate these features allows for differentiating the product from rival products.

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<sup>8</sup> P. Kotler, *Marketing*, Rebis Dom Wydawniczy, Poznań 2005, s. 243–259, L. Garbarski (ed.), *Marketing. Koncepcja skutecznych działań*, Polskie Wydawnictwo Ekonomiczne, Warszawa 2011, [http://www.web.gov.pl/g2/big/2012\\_10/de9507c-c3c98fd1ef6cab798622a3e88.pdf](http://www.web.gov.pl/g2/big/2012_10/de9507c-c3c98fd1ef6cab798622a3e88.pdf), 10.11.2013.

Having prepared a marketing strategy, one may proceed to formulating concrete tasks to be delivered within a specific time frame.

Planning informational and promotional activities should be a double-track process involving on the one hand horizontal activities relating to disseminating information about the organization in general and on the other hand promoting the outcomes of a concrete R&D project. Based on data obtained from market analysis and segmentation, it is necessary to prepare product information emphasizing the following:

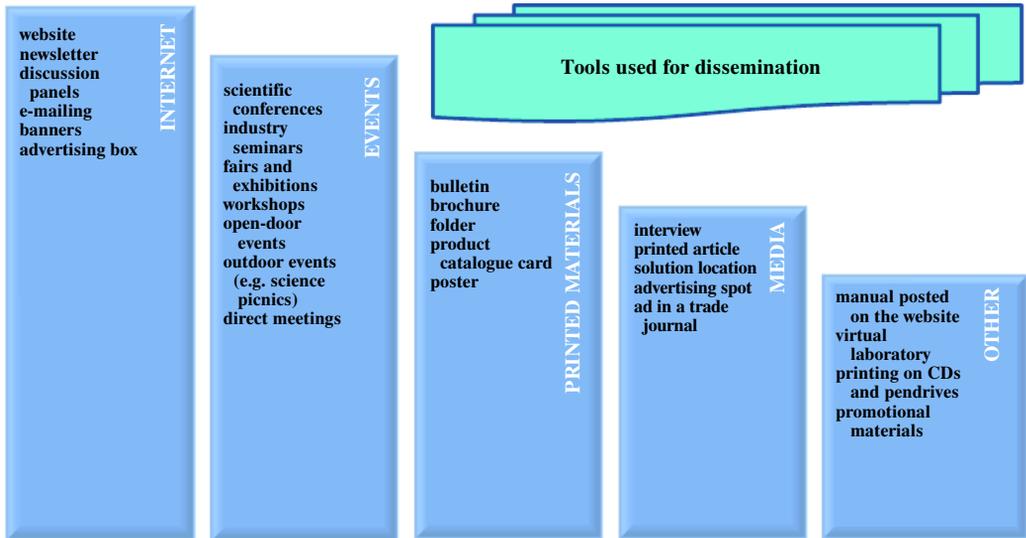
- What innovative solution was developed and why, and what needs it fulfils.
- What's the functionality range and quality level of the solution offered, how it differs from similar solutions, and why it is better.
- In what ways the solution offered can be used on a broader scale by other entities.
- What's the impact of the solution offered on the environment and society (environmental and social effects).
- What are the economic benefits resulting from using the solution offered.

When preparing the product presentation for the dissemination purposes it is important to accentuate its major assets. The evidence of the product effectiveness should be provided both in the form of figures (economic profitability analysis), as well as through the representatives of target groups engaged in the development of the solution, who can confirm the product market potential/functionality.

The tools and communications used in dissemination activities should vary depending on whether they are addressed to prospective users or a broader range of recipients. In the first case the message is concrete and concerns practical and technical matters. Messages sent to the second group are more general and focus for example on the product's functional advantages or positive results obtained in product tests. Of vital importance is the identification of the addressees of dissemination activities based on market segmentation (the selection of key addressees). The communication content also matters: what's the message to be sent? Finally, the right form of communication should be chosen or appropriate dissemination tools should be selected. (Picture 2) for sending messages to both prospective users and a broader circle of addressees.

The form of information about R&D results, which are often complex and never before used in economic practice, must be carefully adjusted to the needs of individual addressees. It is also useful to estimate the costs of conducting dissemination activities in terms of necessary financial and human resources.

Picture 2. Main tools used for dissemination of R&D results



Source: Author's own research.

A marketing strategy should be thought out at the stage of product concept development. Marketing tools employed in the initial phases of project delivery are different to those used for a production-ready product.

The marketing strategy of a research organization should include the following activities:

- Reaching with specific products or services to clearly defined target customers, in contrast to mass marketing wherein companies offer one identical product to a large group of diverse buyers;
- In the case of offering services on two different niche markets — e.g. to customers expecting the lowest price, and to customers who are first and foremost interested in the satisfaction of their needs even if it comes at a higher price — creating a special sophisticated technology offer meeting certain specific needs of consumers;
- Meeting non-standard customer expectations, which requires using a highly individualized marketing mix (including the product and its dissemination tools);
- Building and maintaining competitive advantage through offering innovative solutions (effective satisfaction of customer needs) in the area of product development (completely new or modified products, improved service provision), and process development (new or substantially improved production methods, significant

changes to the production facilities and technologies, e.g. automation of manufacturing processes); and, less frequently, in the area of organization (new methods of organizing activities and procedures) and marketing (introducing changes to the product design and appearance);

- Offering diverse complementary services (e.g. extended customer support free of charge).

The stage which follows the development of a marketing strategy is the organization of dissemination activities involving the implementation of marketing plans based on human and financial resources available. The organization of dissemination activities serves the purpose of:

- Enhancing the image of a research organization;
- Sending clear and comprehensible product information to particular target groups.

One factor that has a major impact on the effectiveness of dissemination activities is the product character (one-off/short-series/multiple-series). The correlation between the product character and tools used for product dissemination is shown in Table 1.

Table 1. The correlation between product character and tools used for product dissemination

DISSEMINATION TOOLS	PRODUCT CHARACTER		
	ONE-OFF PRODUCT	SHORT-SERIES	MULTIPLE-SERIES
Internet	+	++	+++
Events	+++	+++	++
Printed materials	++	+++	++
Media	+	++	+++
Other	++	++	+

Symbols: + small, ++ moderate, +++ large (the extent to which a given group of tools is used to disseminate product information).

Source: Author's own research.

It was found that direct communication with the prospective buyer is the best form of marketing in the case of one-off/short-series products. In the case of short-series products it is also useful to disseminate product information by means of printed materials including product catalogue cards, in order to reach a wider range of prospective buyers. The tools considered the most effective for dissemination of multiple-series products are the Internet and mass media, including in particular articles published in national and foreign trade magazines.

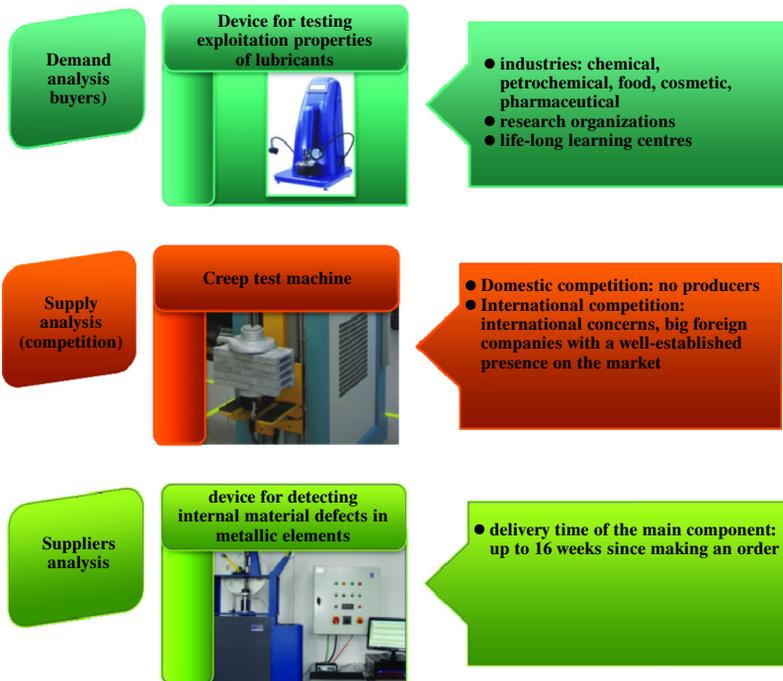
As the product moves to more advanced phases of development, the dissemination activity and its scope need to intensify. The last stage of dissemination, the follow-up activities (after a successful commercialisation of the solution developed) is vital from the point view of establishing partner relationships with clients and enhancing the organization's image. To build and maintain a strong position in the marketplace an organization needs to offer customer support services for dealing with product complaints, repairs and exchange. Many modern companies have special after-sales programmes put in place for assisting customers in making correct use of a product. One tool that could be employed by a research organization in the follow-up phase is a centralised customer database. It ensures immediate flow of information about customers and the issues they raise with regard to the use of the product such as suggestions as to possible functional product improvements. An important element of an after-sales programme is a speedy, effective and competent product maintenance service ensuring product repair or exchange. Ideally, a customer-focused R&D organization should contact each client at least several times per year, including, for example, when it launches a new product, when the periodic inspection such as an installation maintenance service is coming up, before a license contract expires, with the Seasons Greetings, etc. In this context, a customer relationship management system is absolutely necessary to store information about, for example, customer purchase history, preferences and expectations, or even dates of birth.

### **The implementation of the procedure for the dissemination of technological innovations**

The Institute for Sustainable Technologies at Radom (ITeE-PIB) has developed and successfully implemented a system for the dissemination of the outcomes of scientific research and development work in the area of advanced material technologies, high-tech mechatronics, IT, steering and control systems, environmental technologies, and research and testing equipment. The Institute conducts dissemination activities for the solutions delivered within the framework of the Strategic Programme "Innovative Technologies for Sustainable Economic Development" as well as for outcomes of other research and development work.

The first stage of the dissemination system is market situation analysis based on detailed criteria regarding the industry, target audiences and suppliers (Picture 3).

Picture 3. Market Situation Analysis for selected products  
developed at the ITeE — PIB



Source: Author's own research.

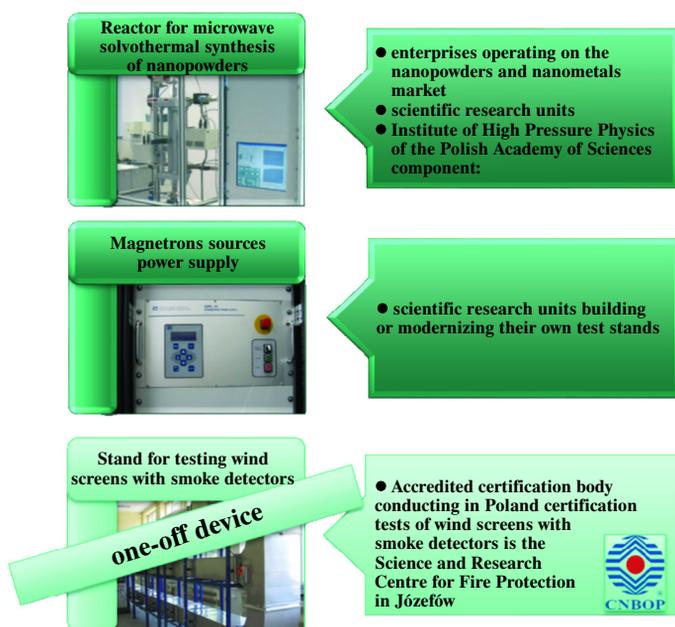
Market analysis has shown various degrees of competition intensity with regard to various target industries. For instance, there are many foreign producers and suppliers of mobile multiple-task robots used for both military and civil applications. In Poland, however, there is only one research institute offering this type of product on a larger scale. Actors competing on the market of hybrid automated quality control systems include the US-based science centres and a number of Polish technical universities. For creep test machines, the competition on the domestic market is practically nonexistent while on international markets there are many producers of this type of devices. The next step involves demand analysis or the analysis of potential buyers of a given solution. Due to diverse applications of products developed at the Institute, the demand for these products varies considerably. For example, the test stand for testing wind screens with smoke detectors is used for accreditation and certification tests, while the only institution in Poland entitled to carry out such tests is the CNBOP in Józefów. To compare, the use of the penetrometer — a device for testing

exploitation properties of lubricants is very widespread and cuts across a number of branches including chemical, petrochemical, food, cosmetic and pharmaceutical industries. Other possible users include scientific and research organizations and life-long learning centres. By contrast, potential purchasers of the fumigation chamber are archives, renovators of historical buildings, libraries, courts of law, and companies offering fumigation services.

Demand analysis is followed by investigating the suppliers who provide components necessary for developing products created at ITeE — PIB. The supply analysis has revealed that the time needed for generating innovative solutions depends to a large extent on the time needed for the delivery of necessary components. In the case of the device for detecting internal material defects in metallic elements, the main component delivery time might be even up to 16 weeks. For test chambers for VOC detection, product delivery time depends on subcontractors while the co-operation terms are negotiated for each order separately. However, this is not the case with the test stand for electromechanic propulsion systems — as here it is possible to use catalogue replacements of comparable parameters.

Market analysis is followed by market segmentation and target market selection (Picture 4).

Picture 4. Market segmentation results for selected products developed at ITeE — PIB



Source: Author's own research.

Market segmentation is conducted for short/multiple series products only. For example, the test stand for wind screens with smoke detectors is developed for one specific customer so market segmentation is not required.

Subsequently, a marketing strategy should be developed. The key element in creating a marketing strategy is the selection of optimal methods and tools for product dissemination. According to the procedure used at the Institute, dissemination tools include optional and obligatory tools. The obligatory tools, employed for all products developed at the ITeE — PIB, include creating a product catalogue card, publishing product information in the electronic newsletter and on the Institute's website, bookmarked under the "offer".<sup>9</sup>

Dissemination activities are organized as a dual process of publicizing information about the Institute's activity in general and promoting a specific product or group of products. Dissemination activities fall into three basic categories: horizontal activities, promotion activities and personalised marketing activities involving customer visits to laboratories and presentations of products dedicated to particular customers (Picture 5).

Picture 5. Basic categories and examples of dissemination activities



Source: Author's own research.

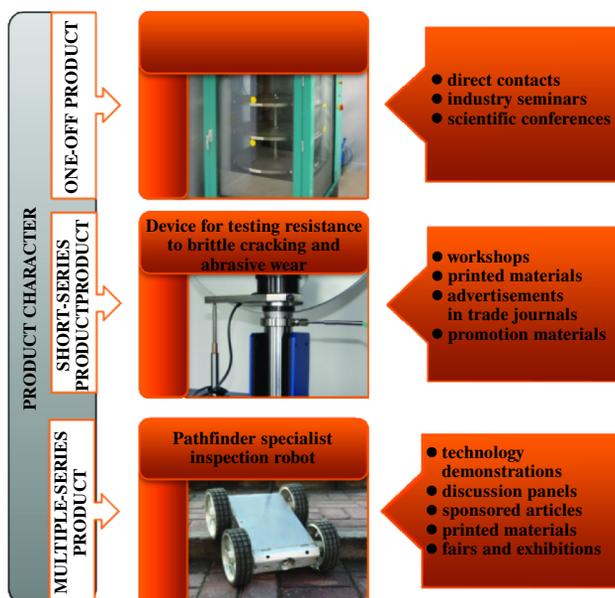
<sup>9</sup> <http://www.katalog.itee.radom.pl>, 12.11.2013

A very important element of dissemination activities is organizing cyclic events such as industry seminars, which offer dual opportunities for the enhancement of the Institute's brand and closer co-operation with business partners and other research entities. In the first half of the year 2013, horizontal activities carried out by the Institute involved promoting the Institute's brand and several selected products at trade fairs and industry exhibitions held in Poland and abroad (e.g. Hannover Messe 2013, 41st International Exhibition of Inventions in Geneva, 15th International Trade Fair of Analytical, Measurement and Control Technology EuroLab 2013 held in Warsaw, ITM Fairs held in Poznań).

Additionally, specifications of selected products were included in the technology database of the Polish Ministry of Economy.<sup>10</sup>

It is also important to remember that the selection of adequate dissemination activities depends first and foremost on the product character (one-off, short/multiple series product) (Picture 6).

Picture 6. Product character and adequate dissemination tools



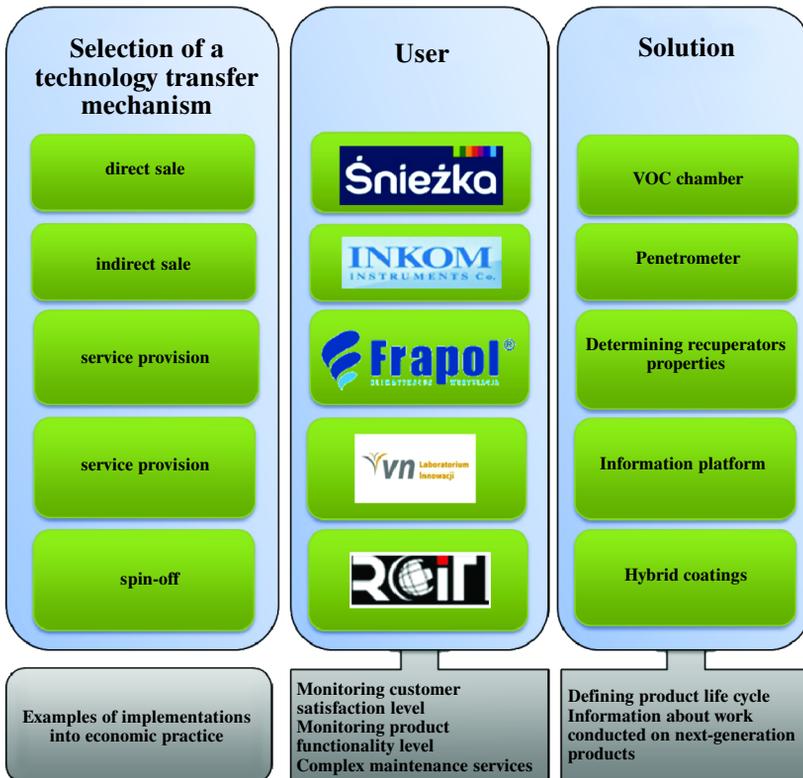
Source: Author's own research.

<sup>10</sup> <http://www.innowacje.gov.pl>, 11.11.2013

In the case of one-off products such as for example the concrete carbonisation test chamber, obligatory dissemination tools were complemented with optional activities such as the organization of meetings with individual entrepreneurs and industry seminars for a wider group of recipients. Additionally, the representatives of the ITeE — PIB presented the outcomes of R&D projects in which they had been involved at a number of scientific conferences. In the case of the device for testing resistance to brittle cracking and friction, which is a short-series product, the selected dissemination tools included workshops, promotional materials, printed materials, and advertisements in the trade journal. In the case of a specialist mobile robot, which is a multiple-series product, the selection of dissemination activities embraced technology demonstrations, discussion panels, sponsored articles, and printed materials. In addition, the device was presented at a science picnic held on 1 June 2013 at Radom.

After dissemination activities have been organized and completed, the follow-up phase should start (Picture 7).

Picture 7. Follow-up activities for selected products



Source: Author's own research.

If dissemination activities have led to successful commercialisation of a solution (indirect/direct sale, service provision, licence, spin-off), it is important to measure both customer satisfaction levels and the functionality of the product/service offered. It is essential to systematically collect information from customers and business partners on product reliability. Offering customer support services should be considered.

Follow-up activities also involve monitoring phases of product life cycle and creating a technology portfolio. At this stage, information is gathered regarding possibilities of generating new research topics for co-operation between the Institute and business partners.

It should be noted that due to the specific nature of solutions offered by the ITeE-PIB there are more possibilities for product improvement compared to "traditional" commodities, which results in a considerably longer product maturity phase. This is the reason why both current and prospective customers are also offered information about product modifications being developed or intended to be developed by the ITeE — PIB in the near future. From the point of view of the special character of the Institute's activity it is equally important to acquire new clients and to keep current ones satisfied. Hence, the Institute is engaged in the following pro-active marketing tasks:

- maintaining continuous close contact with customers,
- conducting regular customer opinion surveys and customer satisfaction measurement regarding co-operation with the Institute,
- presenting updated offer of R&D outcomes.

The systematic approach to the dissemination of R&D work results, e.g. through the focus on addressing product information to entities using similar solutions (marketing messages hitting right target audiences), has raised the efficacy of product dissemination efforts. Systematic dissemination activities stimulate interest in products developed at the Institute and build up its visibility both in Poland and abroad.

One product management tool supporting product dissemination is the model technology platform for co-operation of research centres with the business sector<sup>11</sup>, which presents product and process solutions developed in the result of research and implementation work carried out at the Institute in the area of sustained development. The main objective of the platform is to create durable horizontal ties between the Institute and the business sector and to promote innovative technological solutions leading to transfer of research outcomes into economic practice.

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<sup>11</sup> M. Walasik, *Model technology platform for cooperation of research centres with the business sector*, Transactions of the Institute of Aviation number 227, Warsaw 2012 pp. 55–71.

Intended primarily for use by enterprises, business environment institutions and R&D organizations from Poland and abroad, the platform brings together several dozen business entities, seventy-five per cent of which are enterprises. The platform offers support in managing innovative projects in the area of science and business and facilitates market implementation of new technologies.

## Summary

Alongside providing innovative technologies tailored to customer needs, market-driven product management at research organizations is placing a strong focus on improving the quality of products and services offered, raising customer service standards and creating added value for customers. This approach is forcing R&D organizations to search for new nonstandard solutions to product management and to creatively modify the existing operation models.

The systematic approach to conducting dissemination activities developed at the Institute of Sustainable Technologies supports management of R&D work results and facilitates co-operation with business partners interested in the implementation of innovative solutions. It also enables the Institute to carry out systematic activities relating to the promotion of product and process innovations. The adoption of the procedure has resulted in developing a strong focus on business-oriented projects that facilitate commercialisation of innovative solutions and lead to bringing new technologies to market.

## Bibliography

1. Cooper, R.G., *Stage-gate systems — A New Tool for Managing New Products*, Business Horizons, 33 (3), 1990, [http://dx.doi.org/10.1016/0007-6813\(90\)90040-1](http://dx.doi.org/10.1016/0007-6813(90)90040-1), 10.11.2013
2. Cooper R.G., *The dimensions of industrial new product success and failure*, Journal of Marketing, 43 (3), 1997.
3. Garbarski L. (red.), *Marketing. Koncepcja skutecznych działań*, Polskie Wydawnictwo Ekonomiczne, Warszawa 2011, [http://www.web.gov.pl/g2/big/2012\\_10/de9507cc3c98fd1ef6cab798622a3e88.pdf](http://www.web.gov.pl/g2/big/2012_10/de9507cc3c98fd1ef6cab798622a3e88.pdf), 10.11.2013
4. Kline S.J., Rosenberg S., *An Overview on Innovation* [in:] *The Positive Sum Strategy. Harnessing Technology for Economic Growth*, ed. R. Landau, N. Rosenberg, National Academy Press, Washington 1986.
5. Kotler P., *Marketing*, Rebis Dom Wydawniczy, Poznań 2005.
6. Mazurkiewicz A., Karsznia W., Giesko T., Belina B., *Metodyka oceny stopnia dojrzałości wdrożeniowej innowacji technicznych*, Problemy Eksploatacji 1/2010 (76), Radom 2010.
7. Mamaghani A., Azad I., *Multiple Criteria Decision Making Technique in New Product Development Management*, Journal of Management Research, 4 (3), 2012, <http://dx.doi.org/10.5296/jmr.v4i3.1753>, 10.11.2013
8. Mazurkiewicz A., Poteralska B., *System of complex technology assessment*, Problemy Eksploatacji, nr 4/2012 (87), Radom 2012.
9. Mello S., *Customer — centric product definition. Key to Great Product Development*, PDC Boston 2002.

10. Mu J., Peng G., Tan Y., *New product development in Chinese enterprise key successes factors managerial prospective*, International Journal of Emerging Marketing, 2 (2), 2007, <http://dx.doi.org/10.1108/17468800710739216>.
11. Sojkin B., Zarządzanie produktem w usługach badawczych [in:] *Marketing instytucji naukowych i badawczych*, Prace Instytutu Lotnictwa nr 208, Wydawnictwa Naukowe Instytutu Lotnictwa, Warszawa 2010.
12. Walasik M., *Model technology platform for cooperation of research centres with the business sector*, Transactions of the Institute of Aviation number 227, Warsaw 2012.

## Websites

- <http://www.innowacje.gov.pl>, 11.11.2013
- <http://www.katalog.itee.radom.pl>, 12.11.2013

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