

## IMPORTANT ISSUES FOR BUILDING THE MARKETING PLAN FOR THE INPRO RESEARCH NETWORK

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**Abstract:** The paper presents the main issues for building the strategic plan in the particular case of the Romanian Research Network for Integrated Product and Process Engineering (INPRO). This virtual organization was established in the context of a project financed by the CEEX national program in 2006 and it joint 10 partners from all over the country. After the first year of the project, a preliminary strategy was build and the adapted strategy suggested a more aggressive attitude of the INPRO partners on the research and development market. Based on this reason we formulate the INPRO research network’s marketing plan.

### 1. INTRODUCTION

In this paper we proposed to analyze the main issues for establish and develop the marketing plan for a virtual research network: the Romanian Research Network for Integrated Product and Process Engineering (INPRO). This approach is based on the preliminary SWOT analysis’s results that identify an aggressive strategy on the research and development market. Finally, some important conclusions are made regarding the efficient way of establishing the INPRO’s marketing plan in associate with a new market behavior of the partners.

#### 1.1. Brief Description of the INPRO Research Network

The **INPRO – Romanian Research Network for Integrated Product and Process Engineering** was developed in the context of the **CEEX** national program in 2006. The project joint 121 members (73 PhD, 37 PhD. students, 9 researchers and 2 master students) from 9 research centers, localized in the Universities of Timișoara, București, Iași, Brașov, Bacău, Suceava, Sibiu and Oradea and a research national institute. They have decided to share their competencies and knowledge in the field of integrated engineering. The project proposal is based on the idea of linking the Romanian scientific research to the European research using the bridge created by the participation of **Politehnica University of Timisoara** (the leader of the proposed project), by the **Integrated Engineering Research Centre** (CNCSIS certificate no.103/2001) in the **Network of Excellence (NoE) Virtual Research Lab for a Knowledge Community in Production (VRL-KCiP)**, financed by the **6th Framework Program (FP6)** of the European Commission, **contract no. NMP2-CT-2004-507487**.

In NoE VRL-KCiP, the partners have the mission to create and develop **national research networks**, to sustain their integration process in the European network, for the development of the **European Research Area**. This objective was attended by setting up the national research network in the field of Integrated Engineering (INPRO). Also, it derive from the need of reducing research fragmentation in the field, for building of a common material and human base that assure the possibility for complex researches in modeling and simulation of product and manufacturing, and processes associated with their life cycle. It will be create a dynamic structure and a collaborative platform in integrated design that will allows its members to participate in collective design projects with industrial applications. The share information process needs the information change into knowledge.

Their variety is from the determination of the product specification to the life cycle end, including the processes and the manufacturing systems design.

The integration process inside the network will be the base for the communication system development between the partners and for the knowledge community establishment. The proposed project answer the requests of the FP7 European Commission program for building a **Europe based on the knowledge society principles** [3].

## **1.2. The necessity and the marketing strategic planning levels**

The marketing strategic planning is a complex process for determinate and maintenance of the best relationship between objectives, network members training and organization's resources on the one hand, and marketing mix related to market position on the other. The main marketing planning advantages are:

- Raising of managerial motivation and a better cooperation between network members;
- Determination of realistic objectives and a bigger probability for achievement of general objectives, which result from network mission;
- A better coordination of all network members through time ;
- A bigger probability to identify the further industrial trends evolutions;
- A bigger ability to meet changes;
- A more efficient communication between the network members and the actors from external environment of organization;
- A more efficient assignment of organizational resources depending on market opportunities;
- An optimal framework assurance for a permanent check and coordination of the developed activities.

The marketing strategic planning generally evolve on many levels, namely:

- superior organizational level;
- business (activity) strategic unity level;
- functional level.

Marketing planning is a continuous process and its finalization requires marketing program implementation, partial results control and the contingent corrections determination. These corrections have to be applied in order to achieve the enterprise marketing objectives.

Marketing planning process evolve in time in many phases:

- objectives assignment;
- actual situation analysis;
- marketing strategies statement;
- marketing program elaboration, control, assessment and eventually improvements.

## **2. IMPORTANT ISSUES FOR BUILDING THE MARKETING PLAN IN THE CASE OF INPRO RESEARCH NETWORK**

The marketing plan is a document that directs the organization's marketing activities and resources in order to determine and accomplish the marketing objectives, according with its mission. It represents materialization of marketing planning process. Depending on time interval related with planning, the marketing plan can be strategic (for intervals of 3- 5 years) and tactic ( for intervals smaller than a year).

The marketing plan elements are shown in Table 1.

<b>Analysis of network internal environment</b> - financial resources - technological and material resources - human resources	<b>Network objective</b>	<b>Product</b>	<b>Price</b>
	<b>Market segmentation</b>		
	<b>Marketing strategy</b>		
<b>Analysis of network external environment :</b> Competition Contractual power Entrance barriers Alternating products	<b>Network position on market</b>	<b>Placement (Distribution)</b>	<b>Promotion (Communication)</b>
	<b>Target</b>		
	<b>Reason Why ?</b>		

*Table 1: Marketing plan elements [6]*

### 2.1. The INPRO internal environment analysis

The internal environment analysis generally surmises the evaluation of organisation's internal environment potential. This means an analysis of network resources, and of certain factors which influence its internal activity.

FINANCIAL RESOURCES

MATERIAL and TECHNOLOGICAL RESOURCES:

- Resources access;
- Patents, inventions, holding secrets.

HUMAN RESOURCES:

- Organizational culture;
- Organization image;
- Organizational structure;
- Management staff;

INTERNAL FACTORS (which affect the network activity)

- Position on the curve of organization's life cycle;
- Operational efficiency;
- Operational Capacity;
- Market segment held;
- Exclusive contract;

### 2.2. The INPRO external environment analysis

The external environment analysis generally surmises the evaluation of organization's external environment potential. An opportunity is that change introduced in concepts, products/services or processes. It can produce rewards or superior efficiency. Many of these changes can be perceived as threats of the organization's market position (through its products and services) and can generate changes of specification products/services or new products development because of organizational device to stay competitive. The changes which appear in external environment can be in regard to:

COMPETITION – is reduced because there are no other research networks in the area of integrated engineering of products and processes. The company has national cover.

MARKET ENTRANCE BARIERS:

- Competition;
- Image deficit of Romanian academic community inside the economical environment;

Legislation – through research un-encouragement at companies' level and through low financing (remuneration) of young involved in research activities;

Market trends;

Social changes;

Political-legislative environment evolution;

Dynamic of international economical environment

There are still barriers which can obstruct the strategic control prosecution:

1. **systemic barriers** – deficiencies in control system design and administration;
2. **behavior barriers** –conventional thinking, organization culture, cognitive limits, opposition at changes from ones of the network members;
3. **other barriers** – inability to agree strategy or to grant resources, its rejection by those implied or affected, concealment of bad results

CONTRACTUAL POWER with:

Clients;

Providers

REPLACING – ALTERNATELY PRODUCTS (SERVICES):

New technologies;

### 2.3. The INPRO Virtual Research Network's Objectives

The complex project INPRO attend strategic objectives in high scientific-technical (S/T) development through: critical mass concentration (at national level) of human resources and materials (equipment) of high value, in the field of integrated engineering of products and processes in Romania and link them at the European Research Areas (ERA) priorities, objectives and specific activities. The human and material resources allocation in the S/T thematic fields of the project proposal are proved by the partners' competencies and their research results.

**The General Strategic Objectives** [3] – The project sustains research and development activities that include fundamental, applicative researches of pre-competitive level and which are made together by the INPRO network's partners. This following: integration, increasing quality and performance activities; development of a long time partnership between the partners and *regional research centers* establishment: South Pole (Bucharest), East Pole (Iași-Suceava-Bacău), Central Pole (Brașov-Sibiu), West Pole (Timișoara-Oradea). The regional research centers will concentrate the scientific research and the human and material resources of high performance from their region, by taking into account their local specific/conditions but, also, for their adapting and integration at the national level. At the regional centers there will be installed visioconferences systems that allowed communication and knowledge share in an operative manner.

The project proposal aims to associate some representative research teams in the field of integrated engineering from the universities: Timișoara, București, Iași, Bacău, Suceava, Brașov, Sibiu and Oradea and a national research institute, in a consortium of specialists which have decided to share their competencies and knowledge. This consortium will become a representative research centre of excellence for a new research model and for a new system for resources using. It will contribute to the knowledge development as requested by the national strategy for the scientific research development (established by the CEEX) and by the European strategy for ERA creation. The necessity of the INPRO network establishment is a solution for reducing fragmentation in the field of research and for building a joint research base. That will facilitate complex research development in product and processes modeling and simulation by the joint effort of the partners. This is

the creation context of a dynamic structure and a collaborative integrated design platform that allowed the members to participate at the joint research projects.

The **specific strategic objectives** followed by the creation of the INPRO network are:

- Setting up a manufacturing knowledge base in the field of product and processes integrated engineering;
- Increasing research activities performance, stimulating the specialized research team foundation in the priority R&D fields and facilitating the access to the EU research programs;
- Enhancing of the human resources education process by including the young PhD. students in the joint research activities and by assure the access to the disseminating activities in the INPRO network and the connection with VRL-KCiP European;
- Facilitating the mobilities inside the INPRO network and the European network VRL-KCiP;
- Superior valorization of the existing material research base and research cost reduction by creating the possibility to common use of the partners' extant infrastructure;
- Managerial skills development in the scientific research field and increasing the capacity for new financial resources identification.

Considering the holistic approach, the research activities have to be developed by combining fundamental research with the applicative one. The capacity of solving design and production problems, supporting the industrial dynamic processes will determine the consolidation of the INPRO network position and it becomes the best partner for industry. Progressive creation of a common knowledge base and of the reliable structure of the network will allowed us to increase the implication in industrial partnerships which will assure network viability and will strength its' scientific prestige. Small and medium enterprises (SME) will be more and more interested in the collaboration with the research networks. INPRO wish to be implicating in the technology transfer, knowledge dissemination and research results evaluation [3].

The INPRO project brings an contribution to attend the strategic objective at a high level of S/T knowledge development considering **3 conjugated objectives** [3]:

- I. Creation, consolidation and development of the INPRO virtual research network;
- II. Initiation and development of jointly executed research activities;
- III. Spreading of excellence.

## 2.4. Market segmentation

Organizations utilize market segmentation in order to give better answer than their competitors at potential clients needs.

Market segmentation is generally made depending on four categories of segmentation criteria:

- geographical segmentation;
- socio-demographic segmentation;
- segmentation on psychographic criteria;
- segmentation based on beneficiary –consumer behavior.

Segmentation market for INPRO network is based on geographic criteria because due to 10 collaborators (9 partners + CO) presence in network, localized in different geographic area, they can assure a representative presence at national level and also at international level. That can be done through connection at **Excellency network (NoE) Virtual Research Lab for a Knowledge Community in Production (VRL-KCiP)**, financed through **Framework Program 6 (FP6)** of European Commission, (contract NMP2-CT-2004-507487).

Geographical segmentation impose market share in different geographical units like: states, regions, counties, cities and suburban zones. An organization can develop its activity in one, in some or in all geographical areas. Segmentation on geographical criteria is based on many variables: geographical area and its size, localities type and density, climate.

Market's geographical brake down is a kind of segmentation often used. Internationally geographical variations are very important. [1]

## 2.5. Marketing strategies

- **Undifferentiated marketing strategies:** organization decides that there are too few arguments to segment the market and therefore will approach globally the market, the company ignore the differences between market segments and enter the market with only one offer as we can see in figure 1.

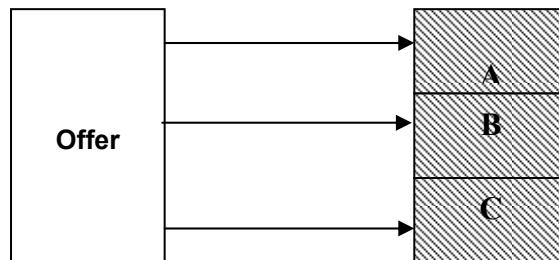


Figure 1: Undifferentiated Marketing [6]

- **Differentiated marketing strategies:** organization will segment market, and for each segment will elaborate a program (marketing program) specially intended for that segment. So it will integrally cover the market, but differentiated from a segment to another.

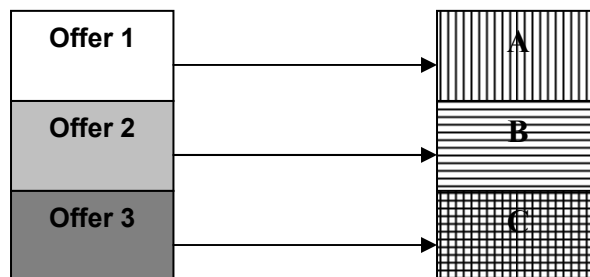


Figure 2: Differentiated Marketing [6]

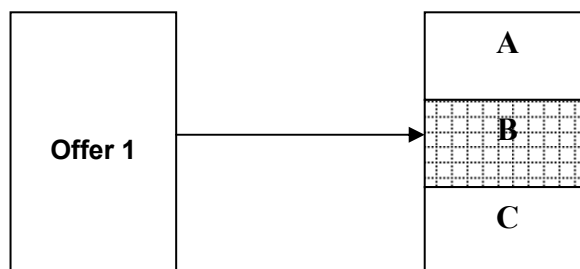


Figure 3: Concentrate Marketing [6]

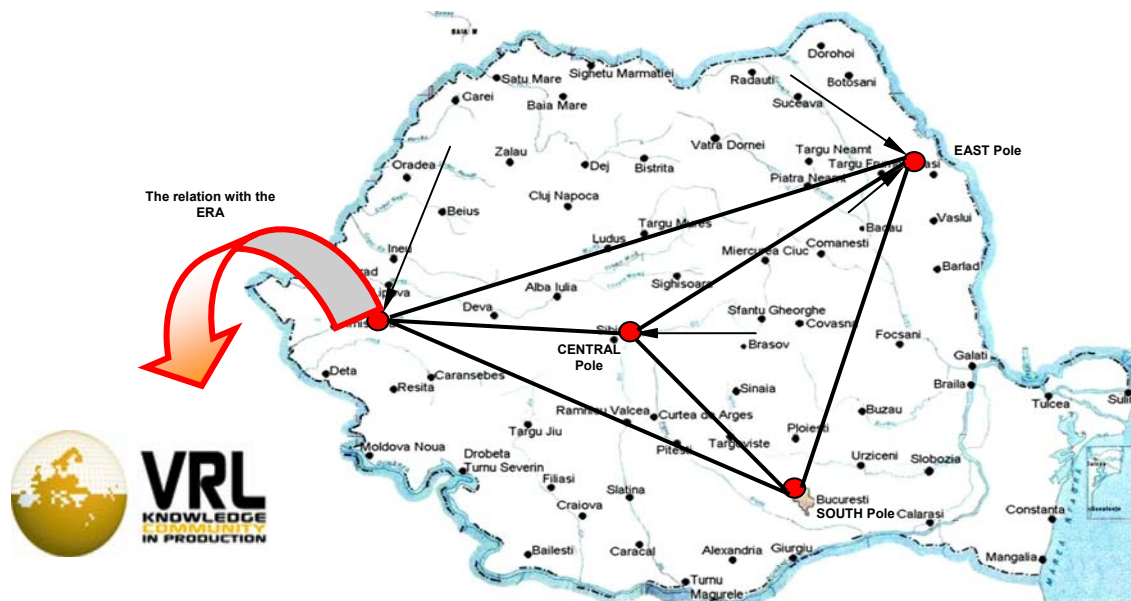
- **Concentrate marketing strategy:** after market segmentation organization will select only certain market segments, which are considered more attractive. They can be taken and small enough to be considered as market niche. The explanation for the possibility to select a market niche is that a very small part of market can be considered by the more powerful company competitors as unattractive, and the company could capitalize alone the advantages offered by that market niche.

Marketing strategy applied for INPRO network is **differentiated marketing strategy**, because for every client-beneficiary the network members must offer specific solutions for the organization where these will be applied.

## 2.6. INPRO network positioning

Positioning is the way where through an organization will design its image and offer for clients segments (beneficiaries), in order to occupy in sighted clients attention an well-defined and distinct place than the competitors place.

Positioning refers at the way that market will perceive the organization sooner than the organization perceives itself. Positioning is defined also in terms in an organization position itself and directly the offered products and the ways of this positioning communication to different market segments.



*Figure 4: Relations between the research poles inside the INPRO network and the link with the European Research Area [5]*

Positioning needs browsing of three phases [7]:

- Phase 1: identification and selection of a characteristics and competitive set advantages, which can create differences between what the organization offer and what the competitors offer.
- Phase 2: assessment of these competitive advantages and the most important differences selection. They will be promoted for the selected characteristics.
- Phase 3: after the communication of positioning to target segments was made it is necessary to clearly design its image. A very important aspect is the establishing the characteristics number to differentiate. From all the attributes is recommended to base

the positioning on one to three attributes. If the organization is leader in a certain direction than is recommendable to chose that attribute. From the positioning point of view, the biggest problems an organization confront with are:

- Lack of resources to sustain the positioning in a certain period;
- Lack of clarity in communication, which leads to a different image formation than that wanted by organization;
- Uptake of some competitors who ask to the company to invest supplementary resources for repositioning.

## 2.7. The target marketing

An organization which segmented its market after this activity will define the target market. The target market is made of that segments that are capable to satisfy the efficiency and profitability conditions. This implies the segments reevaluation according with benefits and accessibility.

The five criteria for target segments selection are:

- the estimate size of market;
- the growing potential of the segment;
- the competitive position: there are now a low or high number of competitors for that segment and what will be their number in the future;
- the segment touch cost: a market segment which is not accessible for organization's marketing actions is not recommendable to be watched because too many resources will be used for reach it;
- compatibility with organization's objectives and resources: many time in marketing decisions making, a certain market segment can be considered attractive or unattractive, depending on the criteria utilized in analysis.

Conclusively, an organization has to choose carefully the target market segments. If it will choose segments too narrow it could not be able to reach the proposed objectives. If it will choose a group of segments too large perhaps the marketing effort will be dissipated, and the supplementary expenses needed for approach a market too big will lead to „profit” diminution.

## 2.8. Product characterization

Product is anything satisfies a need or wish and is offer on market. A product can be offer like a material good, service, idea, and person or like a combination of these.

Product offered by INPRO network on market is completely defined through knowledge map of network. This capitalizes all knowledge at member/researcher level to the partner teams' level. The structure of knowledge map has the stages of life cycle of product as basic level, and each stage is given in detail up to the level of detained methods and means, known by INPRO network members. Besides the knowledge map, the INPRO offer on market also includes the research means database. By building a common material and human database, INPRO network offer the possibility of complex research for product and life cycle associated process modeling and simulation. The information sharing needs their transformation into knowledge. These overreach from determination of product specifications to materials recycling at the end of life cycle, including the manufacturing processes and systems designing.



## 2.9. Some considerations regarding the price policy

Price represents a good or service value for the seller (provider) as for the buyer (beneficiary).

The value attached to a good or service, its price, is based on tangible elements (Product quality, offered advantages) and also on intangible elements (services).

The way to establish a price is different from an organization to another. Some organizations simply follow the market price, so they take into consideration only competition influence when they choose the price strategy, while others determine those service cost and based on that they establish a price. Another factor which is generally considerate when a service price is established is the recorded request for this service. In case of two identical services, the beneficiary will choose the cheaper one. The bigger is the price imposed by an organization, the lower are the chances that this product is chosen by more beneficiary.

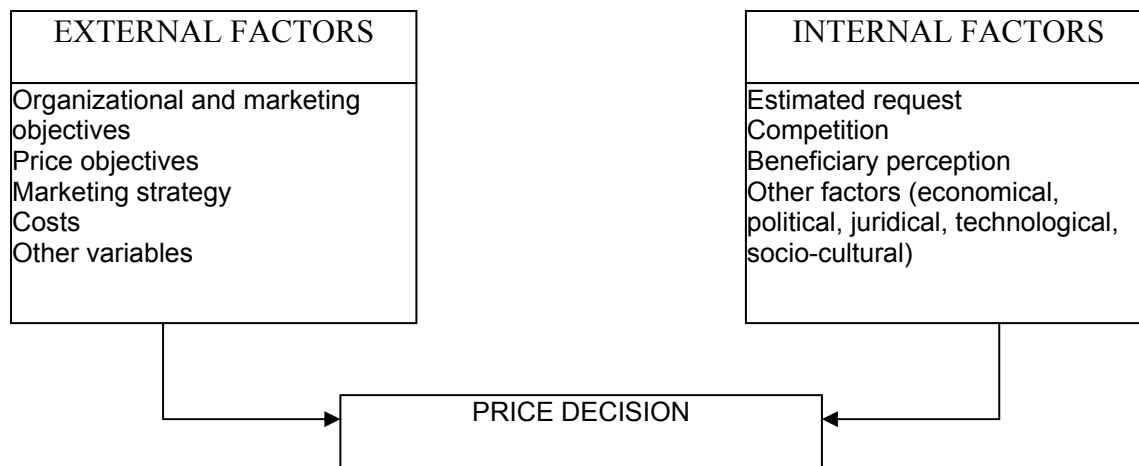


Figure 5: Factors which influence price decision

Because of Romanian universities image deficit in economic environment, INPRO network, at the beginning, is forced to offer consultancy and to disseminate its researches results at a low price and in many cases for free, in order to attract the economic environment actors.

## 2.10. Important issues about placement

Placement concept can be defined as all the economical and organizational activities for services flux leading and conduction from the provider to the beneficiary.

The placement channel used by INPRO network, is the ultra short one, because a service characteristic is provider-client interaction (inseparability)

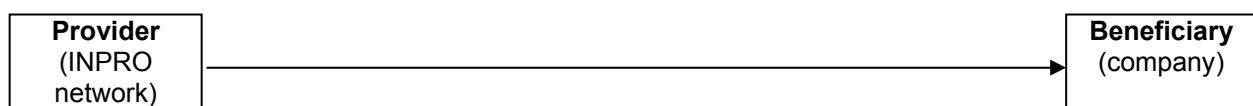


Figure 6: The placement channel - ultra short

## 2.11. Communication issues

The communication policy includes all the organization's internal and external measures which act on knowledge, conceptions and attitudes of market participants' with organization's performances.

INPRO network will communicate on internal and external network plan through site: [www.inpro.ro](http://www.inpro.ro). Through this site we can present the INPRO network activity to all interested people. This site assure the connection with European Research Area

Another way to promote the services offered by INPRO network is participation at national and international conferences, where the network research results are disseminated.

For the future we have in view to participate at workshops organized by INPRO network, which are intended for economic environment beneficiaries.

## 3. CONCLUSIONS

The strategy adopted will lead to **the rising of competitive advantage of INPRO national network for research** through:

1. Scale savings – research costs reducing;
2. Learning savings – the same good solution could be easily extended in network;
3. Efficiently usage of existent capacities;
4. Managerial and organizational efficiency (at INPRO and AMCSIT relation managing level );
5. Rising of partners' integration level through the building of a scientific research organization, representative at national level in the integrated engineering of products and processes area, through the development of new research /learning instruments (videoconference) and a collaborative research platform building. In this way is intended the research fragmentation reduction in this area and efforts concentration to performance and compatibility with European Research Area.

Considering the aforesaid, it recommends building and sustaining a culture based on knowledge sharing between the organization's members this being a **strategic and prior objective for further development of INPRO national research network**.

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