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ECONOMIC DETERMINANTS OF NEW PRODUCT DEVELOPMENT

EKONOMICZNE UWARUNKOWANIA WPROWADZANIA NOWEGO PRODUKTU NA RYNEK

Abstract

Preparation for the launch of a new product is a key element that will allow an organisation to maximise its chances of establishing itself in the consumer's mind. It is therefore necessary to analyse and define the needs, behaviours, purchase paths of the potential customer/consumer. This knowledge is essential for building the final product / service, but also for the product development strategy, followed by its promotion, sales and lifecycle management. In the implementation strategy process, it is necessary to establish elements (activities) such as the name, logo, packaging, market analysis, marketing strategy, and sales strategy (including distribution and sales channels). The article analyses the new product launch process from an economic, marketing, financial and organisational perspective.

Keywords: *market analysis, economic efficiency of processes, rationality, marketing strategy, sales strategy*

Streszczenie

Przygotowanie do wprowadzenia nowego produktu na rynek jest kluczowym elementem, który pozwoli organizacji zmaksymalizować szanse na zaistnienie w świadomości konsumenta. Konieczne jest więc przeanalizowanie i zdefiniowanie potrzeb, zachowań, ścieżek zakupowych potencjalnego klienta / odbiorcy. Ta wiedza jest niezbędna do budowania finalnego produktu / usługi, ale także strategii rozwoju produktu, a następnie jego promocji, sprzedaży i zarządzania cyklem życia. W procesie strategii wdrażania konieczne jest ustalenie takich elementów (działań), jak: nazwa, logotyp, opakowanie, analiza rynku, strategia marketingowa, a także strategia sprzedażowa (obejmująca kanały dystrybucji i sprzedaży). Artykuł analizuje proces wprowadzania nowego produktu na rynek z perspektywy ekonomicznej, marketingowej, finansowej i organizacyjnej.

Słowa kluczowe: *analiza rynku, efektywność ekonomiczna procesów, racjonalność, strategii marketingowa, strategia sprzedaży*

Introduction

New product sales effectiveness as the most important indicator to grade organisational performance. The sales effectiveness of new product companies should be viewed from two perspectives: the effectiveness of the new product sales process, i.e. the sales organisation, the route to market (Route To Market) sales conditions, sales logistics, customer service, sales costs, cash flow; and the effectiveness of the sales department, i.e. market coverage, effectiveness of sales contacts, results achieved by the sales team (quantitative and qualitative), maintenance costs vs. added value for the organisation. (https://ibd.pl/doradztwo-i-badania/doradztwo-w-sprzedazy-i-marketingu/efektywnosc-procesu-i-dzialu-sprzedazy/). Questions an organisation should formulate to effectively market and sell a product?

- how to attract new customers, how to convince them to buy?
- how to reduce the proportion of so-called lost sales?
- how to attract, motivate, develop and increase the performance of those responsible for sales, promotion and customer relations management?
- which performance measurement tools should be used and how to effectively use the information gained to manage sales? (CRM)

There is no doubt that (Zatonatska, Wołowiec, Dluhopolskyi, Podskrebko, Maksymchuk 2023):

- all change models are similar – they point to almost the same dependencies and conditions (e.g. change analysis, design and control),
- the change process should be a step-by-step process, but the tasks in a step can be carried out in parallel,
- the change process should be conscious, planned and effective in action,
- implementing change is not easy – it will always be associated with hardship, effort and for a shorter or longer period of time – a decrease in efficiency,
- change should be well communicated (intra-organisational training),
- reorganisation is not always synonymous with redundancies – it is, for example, the need for employees to acquire new knowledge, new skills, a change of position and responsibilities.

The system of product readiness for implementation proposed for companies should be based on a 9-level scale, where the highest level defines the technological maturity of the product. We can distinguish between nine levels of technological readiness. Level one is the lowest and level nine is the highest (Trocki, Grucza, Ogonek 2014, Tchórzewski 2014).

Level I

Definition: The basic principles of a phenomenon / process / idea for a new product / service are observed and described – the lowest level of technology readiness signifying the initiation of research for use in future applications.

Level II

Definition: A technology concept or future application has been identified. This means beginning the process of exploring the potential application of the technology / service concept. Since the basic principles describing the new technology are observed, a practical application of the technology can be postulated, which is based on predictions. There is not yet any evidence or detailed analysis to support the assumptions made.

Level III

Definition: Critical functions or concepts of the technology /procedures for the provision of new services have been analytically and experimentally confirmed. This means that analytical and laboratory / market research has been carried out to confirm the predictions of scientific studies of selected components of the technology / service concept. This includes components that are not yet integrated into a whole or are not representative of the technology as a whole.

Level IV

Definition: Technology components or basic subsystems of the technology have been verified under laboratory conditions. This process means that the core components of the technology have been integrated / service concept integration. This includes ad hoc integrated models in the laboratory / as a result of market research. An overall mapping of the target system / process under laboratory / market conditions has been achieved.

Level V

Definition: Components or basic subsystems of the technology / service in a near-real environment have been verified. The core components of the technology are integrated with real-world enablers. The technology can be tested under simulated operational conditions.

Level VI

Definition: A demonstration of a prototype or model of a system or technology subsystem / service essence in a near real-world environment has been performed. This means that a representative model or prototype of a system, which is significantly more advanced than the one tested at Level V, has been tested under near-real conditions. Testing at this level includes testing of a prototype under laboratory conditions replicating real-world conditions with high fidelity or under simulated operational / market conditions.

Level VII

Definition: A demonstration of a technology prototype under operational conditions has been performed. The prototype is almost at operational system level. This level represents a significant advance over Level VI and requires demonstration that the technology under development is feasible under operational conditions. Research at this level includes testing of prototypes on so-called test platforms.

Level VIII

Definition: Research and demonstration of the final form of the technology /service has been completed. This means that it has been confirmed that the target level of the technology has been reached and the technology can be applied under the conditions envisaged for it. Practically, this level represents the end of demonstration / testing. Examples include testing and grading of systems to confirm that design assumptions have been met, including those relating to logistical assurance and training.

Level IX

Definition: Testing the technology / service under real-world conditions has had the intended effect. This indicates that the demonstrated technology / service is already in final form and can be implemented in the target system. Among other things, this refers to the use of the developed systems under real-world conditions (Novo 2004, Robbins, Judge 2012)

New product development – the operational approach

Every market in the process of its development requires the introduction of new products The development of a new product consists of many elements of an economic, social, technical, organisational and technological nature (Altkorn 2003, p. 204-205). From a company's perspective, a new product is a complete novelty or a modification, depending on the companies' organisational goals and capabilities, due to the required financial outlay (costs) involved in developing and implementing the product /service on the market (Sojkin 2003):

- new product / service in the world, in the country, in the region (e.g. new product in a new market),
- new production line / new way of providing services (organisational model, process model),
- addition to an existing production line (new product completes existing range) or adaptation of the way of providing services to the new requirements of the socio-economic environment,
- changing or improving an existing product/service,
- directing an existing product or service to a new market / market segment.

The consumer communication strategy should be carefully designed, written out and then implemented step by step (Wrzosek 2012, Turner, Kristoffer, Thurloway 2012, Urbanowska–Sojkin, Banaszyk, Witczak 2007).

Stage 1: Preliminary audit – analysis of the initial situation, i.e. determining where the company stands in terms of communication. It also involves an analysis of its previous activities on the market and in the context of activities (products/services offered) by competitors. A SWOT analysis should be used.

Stage 2: Audience characterisation – this is an analysis of the target groups to be reached by the new product/service. Here it is necessary to distinguish two strategic groups: direct: which usually includes potential customers of the company's products and services, and indirect – by means of which we can influence the behaviour of strategic groups of potential customers, i.e. the media, experts, opinion leaders in a given field, bloggers, etc.

Stage 3: Market and competition analysis – this must include an analysis of the market's expectations of the company's offerings, identifying where a particular company currently stands, how it communicates with its competitors, what tools it uses and what it communicates to its audience. At this stage, a list of the main competitors should be prepared and their activities analysed.

Stage 4: Defining objectives – this is finding the idea, i.e. the big idea, on the basis of which public relations activities will be prepared by experts. This is the main idea consistent with the strategy of the company implementing the new products. In addition, the company's business, strategic and communication objective must be defined.

Stage 5: Communication style and communication tools and channels – this is the development, in cooperation with Park's experts, of the norms, phrases, slogans and rules according to which messages defining and advertising new products should be created. Identifying the individual communication style of the products offered, i.e. the tone of voice, allows messages to be tailored to the needs of potential recipients of the products and services offered by the companies.

Stage 6: Results research – this involves defining, in cooperation with experts, measures of goal achievement to assess whether sales targets have been met and results achieved. ROI (return of investment) will show whether and how the capital invested in developing new products/services has been returned. KPIs (key performance indicators), on the other hand, are the translation of objectives into concrete results, e.g. increased sales, increased enquiries, clicks on the website, etc. The following indicators should be used at this stage (Wereda 2009, Zarębska 2002, Wiącek-Janka 2006):

- average cost of sales calculated by dividing all sales department costs by revenue,
- sales effectiveness, calculated by dividing the number of sales opportunities taken by the number of all sales opportunities (conversion rate),
- average transaction value, i.e. revenue in a given period of time divided by the number of sales in the same period of time,

- average lead acquisition cost calculated by dividing all marketing costs by the number of leads acquired,
- customer retention calculated by subtracting from the current number of customers, the newly acquired customers and dividing by the number of customers from the beginning of the period we are interested in.

New product sales effectiveness is the most important indicator for grading organisational performance. The sales effectiveness of companies offering new products / services should be viewed from two perspectives. Firstly, the effectiveness of the sales process for new products / services, i.e. sales organisation, Route To Market (RTM) commercial conditions, sales logistics, customer service, sales costs, cash flow. Secondly, the effectiveness of the sales department, i.e. market coverage, effectiveness of visits / sales contacts, results achieved by the sales team (quantitative and qualitative), retention costs vs. added value for the organisation. The process of measuring sales effectiveness itself can be more or less complex. It depends on: the industry, the scale of the organisation, the complexity of internal and external processes, but is always a difficult and responsible proces (Deszczyński 2016, Gorchels 2007, Gieraszewska, Romanowska 2017). The process of improving sales effectiveness itself can be broken down into the following phases: situation diagnosis => analysis => implementation plan => implementation => measurement of results. Inefficiency of salespeople, lack of support from other departments, problem with lead qualification – these are common challenges for Polish companies. A way to deal with them may be to introduce a division of labour in sales (Muzyczyszyn 2018). A proven sales methodology with concrete sales results is the 9-step model. Both the sales person and the company manager (the person in charge of sales) have specific tasks to perform during each step. By supporting each other to achieve a single goal, the three parties – customer, salesman, manager /our company/ – benefit (Maister, Green, Galford 2011, Lotko 2006, Kolter 2002).

Professional management of new product implementation at individual level

An effective system for managing the implementation process encourages the cooperation of sales representatives and streamlines the joint activities of companies and experts in the implementation process of new products. By using a sales management or CRM system, you can improve the efficiency of the implementation process, the quality of your team's work, as well as automate some tedious tasks and achieve set implementation and subsequent sales targets (http://www.crm-abc.pl/ (wraz z podstronami).

Customer Relationship Management systems have the enormous potential of making the customer more important to the company by providing the right infrastructure and IT tools. It makes it possible to change the customer-company relationship, which must pay off in the future with increased profits. In other words, CRM is a business strategy, enriched by technological solutions and organisational infrastructure, to manage customers in such a way that long-term benefits are achieved as a result. CRM requires the introduction of a customer-focused way of doing business, ensuring effective marketing, sales and service processes. The overall objective of an organisation applying the principles (strategy) of CRM is to ensure the satisfaction, trust and retention of and loyalty to profitable customers and to make the best possible use of their purchasing potential by appropriately shaping products and offers, saving customers' time in searching and reducing the company's promotion and advertising costs. (Rudawska 2004).

Benefits of a CRM system for companies (https://www.businessweb.pl/sprzedaz/co-to-jest-crm/):

1. Customer data management. CRM software facilitates the sales process by organising all lead and customer information in one place and automating data entry.
2. Sales reporting. CRM tracks the value of potential and achieved sales and monitors sales team activity such as emails sent, phone calls made, appointments booked, deals created and their status.

3. Accurate sales forecasting. The CRM system accurately shows the entire sales funnel, which facilitates sales revenue forecasting and increases sales team management efficiency.
4. Segmentation of customers. You can segment leads according to parameters such as location, deal size, acquisition source or deal closing date to identify specific channels and activities that yield the highest sales effectiveness.
5. Scaling up the sales proces. A repeatable sales process is key to testing new sales activities and strategies. Without information from your CRM, you will always be shooting blind. You need data to know what activities are effective and what trends are trending upwards.

The technology / process readiness level of a new product / service determines the stage of development of a given new product / service and shows the company where the implemented innovation (product, service) is, what has been done and what is yet to be implemented. The system of product/ service readiness for implementation proposed for companies operating in the LPNT should be based on a 9-level scale, where the highest level defines the technological maturity of the product. We can distinguish 9 levels of technological readiness. Level one is the lowest and level nine is the highest (Grześkowiak, Mazurek-Lopacińska, Sobocińska, Stanimir 2016, Iacobucci, Hibbard 1991, Ignatiuk 2011, Kałkowska 2010, Kaznowski 2008).

Conclusions

New products and services are to stimulate the development of the activities of entrepreneurs (SMEs) using modern technologies in the areas of smart specialisation, through support with advisory services and transformation of the results of scientific research and development works into technological innovations, i.e. new products and services with a significant innovation component. The development and introduction of new products shapes the climate for innovation and creates conditions for effective support for companies oriented towards the use of modern technologies at various stages of their development and for stimulating cooperation between local business and the scientific and research community (Jeż 2015, Jonek-Kowalska, Michalak 2013, Juszczyk 2010).

Preparation for the launch of a new product is a key element that allows companies to maximise their chances of establishing themselves in the consumer's mind. It is therefore necessary to analyse and define the needs, behaviour, purchase paths of the potential customer/consumer. In the implementation strategy process, it is necessary to establish elements (activities) such as: name, logo, packaging, market analysis, marketing strategy, and sales strategy (including distribution and sales channels). Results research – in cooperation with LPNT experts, defining goal achievement measures that will allow you to assess whether sales goals have been met and the assumed results achieved. ROI (return of investment) will show whether and how the capital invested in the development of new products/services was paid off. KPIs (key performance indicators) translate the goals into specific effects, e.g. increase in sales, increase in inquiries, clicks on the website, etc. At this stage, the following indicators should be used (Kłeczek, Kowal 2001, Kontyka, Kornaś 2006):

- average sales cost calculated as the division of all sales department costs by revenue,
- sales effectiveness calculated by dividing the number of used sales opportunities by the number of all sales opportunities (conversion rate),
- average transaction value, i.e. revenue in a given period of time divided by the number of sales at the same time,
- average cost of lead acquisition calculated by dividing all marketing costs by the number of leads obtained,
- customer retention calculated by subtracting newly acquired customers from the current number of customers and dividing by the number of customers from the beginning of the period.

The analysis of the company's business process [implementation of new products] should follow a 4-stage plan:

1. Identify the process: The first step is to select the *current state* to be analyzed and identify the stakeholders involved in it. Make sure you have a clear starting and ending point for this process.

2. Collect process information: Next, you need to collect as much information about the process as possible to understand the problems we are facing, goals, scope of improvement and other analysis goals.
3. Analyze Process As-Is: A business process analysis plan should be implemented. Go to the bottom of the identified process, define the process in flowcharts and other diagrams, and measure its effectiveness.
4. Develop a To-Be Plan: Finally, use the analysis to make recommendations on what the *future* process should look like. Indicate requirements, suggest resources and changes, define a timeline, etc.

Individual organizational units (accounting, marketing, legal departments, as well as development and implementation departments) must know the essence of the product/service introduced for sale and its functional features. The product should be known to employees and its price calculated based on the break-even point, along with an analysis of the fixed and variable costs of the implemented product. In an effective and efficient sales strategy, individual organizational units should have complete information resulting from: analysis and definition of the needs and behaviors of a potential consumer of our new product; market analyzes and forecasts (a sales forecast should be made for the entire category for the coming years, defining seasonality, Porter's 5 forces concept, SWOT); competition analysis (development of quantitative and value sales of the closest competition, identification of strong and weak aspects of competition); analysis of category promotion strategies: expenses, method of spending, places of promotion and analysis of activities in sales channels, use of media and analysis of the product/service architecture itself: preparation of a plan for expanding product lines (Cabała, Sołtysik, Woźniak K 2016).

Organizational units must have knowledge of: sales strategy (distribution channels, method of reaching the customer; communication strategy (choice of the route and method of communication with the consumer); P&L: sales development forecasts; A&P budget forecasts, product profitability forecast and implementation schedule (determining all stages of product creation, marketing and sales strategy – up to product launch. When preparing a recommendation regarding planning and budgeting for the sale of new products/services, individual organizational units should know parameters such as (market conditions and trends, market structure and competitive environment, sales channels, including new channels and potential customers, production and distribution capabilities of the company, price changes, customer and consumer preferences) (Dejnaka 2015).

Individual organizational units should have knowledge about the prepared sales strategy; it should include the most important processes, i.e.: sales planning and budgeting as well as the distribution strategy and reaching the point of sale (Route-To-Market => RTM), including: customer segmentation, definition and management of sales channels, RTM modeling, distribution models and the resulting size of the sales department, SWOT analysis of the market, the company and its competitive environment, commercial conditions and development of price lists, key account management process and tools, KPI's – goals, tasks and success measures and cost effectiveness of the sales process – profitability analysis of product/service categories and individual customer groups) (Antczak 2010).

Procedure for managing the implementation of new products – stages of individualization from a process perspective:

Defining the value proposition for the recipient. First, you need to determine what the value proposition is for the potential recipient. The value proposition is the benefit that the recipient achieves by using our solution. It is important that it is defined as precisely as possible and affects the recipient's imagination. In the case of biotechnology innovations, an example value proposition may be non-invasive treatment of a disease with a short recovery time. For chemistry, it may be a catalyst that will reduce carbon dioxide emissions by several dozen percent. For more *mundane*, fast-moving products (e.g. food products), the new value proposition may be based on features such as speed of preparation, new (better) taste, or functional packaging. The most important thing is that the value proposition has visible benefits.

Defining the needs of recipients and legal regulations. The next step to successfully introducing an innovative product to the market is to determine the needs that the new product, technology, invention or service will meet and to identify legal regulations that may affect the commercialization process (positively or negatively). This step is particularly important due to the fact that customers nowadays usually do not think in terms of specific products when making purchase decisions (i.e. they do not buy products, but make decisions based on their needs; thinking in terms of specific products is further plan). Determining your specific needs is very helpful in determining your communication strategy with your audience.

Determining the target market, segmenting recipients, examining the macro-environment and potential recipients. The last step before making the initial decision to enter the market should be to define the target market, i.e. to determine which audience segments our product will be addressed to. On the one hand, the group of recipients cannot be too narrow, because it may turn out that it will not bring the expected profits. On the other hand, the target group cannot be too broad. Defining such a group may be unfavorable due to possible inefficiencies – e.g. related to communicating the product (benefits of the product) to a group that is not interested in it at all. This will dilute the messages between the manufacturer and its audience. We will also lose the opportunity to specialize and create an effective promotional campaign.

Identification of competitive solutions, products and services. The most likely scenario is that the need our solution meets is already met by other, competing products or technologies. The competition in the market should be carefully analyzed. The most accessible, cheap and easy method is the so-called desk research, i.e. analysis of secondary data available on the Internet, in the press or in literature. However, it may happen that information about competitors is not easily available, e.g. on the Internet. An alternative method of identifying the competition may be to conduct interviews with experts in a given industry or with the recipients themselves whom we found in the earlier phase. You can also consider outsourcing the identification and analysis of competition to a specialized market research unit. This stage is necessary to efficiently offer value to our recipients.

Competition analysis. After identifying our competitors, we should carefully analyze their activities (conduct so-called benchmarking). In terms of new products, technologies and inventions, the main areas of research should be: sources of competitive advantage (what makes customers choose this product/technology from this supplier?), main sources of customer satisfaction with the product (what makes the customer return? What gives him the greatest satisfaction? What features of the product make him satisfied?) and the main sources of dissatisfaction (what would customers change in the product? What are they missing?).

Defining the competitive value proposition and business model. After drawing conclusions from the competition analysis, you should return to the place where you defined the value proposition. It is worth considering the possibility of basing or enriching the value proposition with areas that customers of competitive solutions are not satisfied with, or with features that customers lack (in the case of the previously mentioned shampoo, it may be, for example, healthy hair, without dandruff, at an affordable price). In this phase, the business model of the venture should also be defined, taking into account the following areas:

- Final value proposition – defined based on competition activities and opinions of potential recipients,
- Settlement model – will the recipient pay only for the product, for the license, or will the fee be scaled depending on the benefits? (e.g. if our solution concerns the improvement of the production process, are we able to offer a settlement model involving a fee that is part of the resources saved by the recipient?)
- Distribution channels – how will our product be distributed? Is it worth building your own distribution network or is it better to cooperate with other entities (e.g. entities that offer products complementary to ours)?
- Main sources of revenue and main sources of costs – in the case of certain types of solutions or products, it may turn out that a better solution will be to offer a given product, technology or service to the end user for free, and the source of revenue will be, for example, advertisers (if the product specification allows that it may be a carrier of advertising content). The cost structure should also be clearly defined – it may turn out that the delivery (production) of our product itself does not involve high costs, and the greatest cost will be related to human resources.

Creation and implementation of strategies, organization of resources. Based on the previous steps, the final step should be to start implementing the actions, keeping in mind the lessons learned from the previous steps. An important element is also the financing of the project, which is a topic extensively described in the literature – it is impossible to provide a ready recipe for selecting the right tools. We should also determine how widely our product can be available and appropriately select promotional and information tools, at the same time adapting them so that the message reaches the widest possible group of recipients we have defined. You cannot also forget about setting quantitative goals (e.g. number of recipients, products sold), which will allow you to constantly monitor the progress of the project after it has started.

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