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EVALUATION OF APPROACHES USING THE PRODUCT LIFECYCLE

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Abstract

Aim of this paper is to present and discuss approaches that use the product life cycle (PLC) and their application to corporate marketing. Product life cycle describes how the product grows over time. Theory of literature identifies various stages as follows: introduction, growth, maturity, decline. Throughout these stages, companies have different costs, profits, pricing strategy, marketing goal or number of customers or different rivalry competition. The main objective of this paper is to map the PLC effect on business activity and the consequent impact of these influences on corporate marketing across all stages of the PLC. The importance of product lifecycle management (Product Lifecycle Management, PLM) is increasing, especially for companies in manufacturing, high technology, telecommunications and industry. Today, industrial production because PLM is becoming an essential tool for coping with the challenges of global competition and demanding constant shortening product life cycles.

Keywords: Product Lifecycle, Product Lifecycle Management, Measurement, Marketing, Efficiency.
JEL Classification: M11, M21, M31.

Introduction

The period of the life cycle is divided into five main phases. According to sources Dhillon (1989) are classic stages in the life cycle of the product (development, marketing, growth, maturity and decline). These periods are applicable to all products and services. These phases can be split into smaller, depending on the nature of the product and must be considered because they dictate the selling power of the product since its launch. All products and services have a specific life cycle. The purpose of this paper is to map the sphere of business activities, approaches and methods, which is used in the product life cycle and discuss the effects obtained by the following possibilities and their application to measure the effectiveness of corporate marketing. The research method used in this paper is to analyze and explore a variety of expert sources using the product life cycle. The main problem is to evaluate approaches using life cycle of the product and determine the extent of their use in practice.

The life cycle begins with a period of research and development is finished downloading the product from the market. This period is divided into several phases. During this period of ongoing significant changes in the behavior of the product on the market, for example, this is reflected in sales of the product in its profitability, etc. The study authors Hofer (1975), Anderson and Zeithaml (1984) and Hambrick and Lei (1985) demonstrate that the various functional strategies and techniques should be performed during the different phases of product life cycle and to improve business performance. Product lifecycle management is very important because the main objective for market actors behaving as rising profits. Thorell and Burnett (1981) made the characteristic structure of individual phases of the life cycle of a product. To achieve this primary objective, some companies use strategic planning and other basic rules and respect the particularities of each phase of product life cycle. Using the product life cycle can result in the development of manufacturing strategy production. Analysis of product sales, the comparison with the competition, the timing of introduction and download the product from the market, it all helps to understand the life cycle and affects the success or failure of the product. Each company therefore needs to fully understand and successful product lifecycle management to develop strategies and methods. The possibility of using product lifecycle management in their work the authors focus Magnan, Fawcett and Biro (1999). The use of life cycle of a product perceived as crucial pillar in the planning process of manufacturing strategy.

Product life cycle issues

A general model of a classic product life cycle helps to analyze the maturity stage of product, technology and industry from all perspectives. Companies are always looking for practical ways to maximize revenues from the sale of products and services (Lay et al, 2000). In business it is the cash flow, which allows companies to invest in new product development and business development in order to gain additional market share and become a leader in its field. Saaksvuori and Immonen (2004) suggested in their work process to measure benefits in daily business operations. Argue that it is difficult but not impossible, to express the benefits of PLM in the money. Benefits (benefits) can be divided into two different forms: savings in operation and growing earnings in business. The savings are reflected in the strengthening of

operational activities and reduce costs and improve labor productivity, while new business opportunities are perhaps more a matter of strategy. The PL focus on the possibility of saving material costs, improve productivity and the cost of achieving the required quality. They discuss the potential of which any such matter, together with that appropriate indicators to measure. Qian, Burritt (2011) are dedicated to adding value throughout the product life cycle and reducing the cost of the product. The introduction of product lifecycle management makes it possible to improve the quality manufacturers and feature articles. Instrument for the particular technological innovation or changing customer requirements and their incorporation into the product life cycle (Roy, 2000).

Aurich, Fuchs, Wagenknecht (2006) looks at the life cycle as the starting point for designing a systematic combination of technical services related to the product of the corresponding business processes. Support his research oriented development life cycle of products and related technical services. Che (2009) examines the pricing strategy based on product life cycle, by the decision-making model based on genetic algorithm. The proposed user interface helps businesses to select the appropriate price and design production capacity. Federico, Massimo, Koh (2010) deal with life cycle assessment in terms of the supply chain. Their goal was to create a model applicable to investment management firms in the supply chain operating in the field of fashion industry, where it is necessary to count with a low level of stability and predictability. Dunk (2004) argues that the analysis of product life-cycle cost is considered to be significant for companies with international competition and the need for ongoing technological change. It emphasizes that rapid technological change and shortened product life cycles mean that the life-cycle cost analysis of the product is crucial for organizations. In their study, the author shows the cost-efficiency analysis across randomly selected firms. Eger, Drukker (2010) test and give empirical evidence of the existence of consecutive phases of product throughout the product lifecycle. Complementing the classic stages of the life cycle of six other quality product phases. This is the functionality, price, design, manufacturing technology, strategy and promotional presentations. Hashimoto (2003) theory unifies the life cycle of a product with the development of education in a university environment. It creates a file kvantitavního evaluate the development of higher education.

Approaches including life-cycle perspective

Managing business results in various stages of PL using appropriate metrics in their work and devote Saaksvuori Immonen (2004). Enumerate the current indicators for measuring corporate performance, including examples of how these metrics to use in daily traffic. The metrics used to measure the performance of the product in the currently ongoing phase PL must comply with both the phases, and the strategic goals of the company. For example, the stage of development and marketing of state as an appropriate metric "response time" for the incoming phase of growth "for start-up" for the incoming phase of maturity "number of product changes and their nature" and for the decay phase of "number of hours needed to meet customer requirements".

The time frame in which you can measure the effectiveness of the work, has a different life cycle stages. The measured interval is the estimated time that elapses from the implementation of a marketing activity to business operations to achieve the effect. The life cycle thus helps to determine the time horizon and a real picture of managers and business owners what and for how long can bring marketing. Novotny et al. (2010) classifies the effects of setting and working range, depending on the success of projects (such as marketing activities) to assess over time, such as the division to:

- immediate effects
- effective within six months after the introduction,
- effective over a half years after introduction.

Management companies usually expects and supports the achievement of most immediate effects. On the other hand, but practice shows (Miller, Cioffi (2004); Kerssens Cook (1997)), and most importantly that the strategic effects are achieved through a longer period of time, which is characteristic of such effects associated with the implementation of major marketing campaigns .

The research carried out by relevant sources (in Table 1.), it is clear that the various functional strategies and techniques should be performed during the different phases of product life cycle and to improve business performance. Product lifecycle management is very important because the main objective for market actors behaving as rising profits. The authors recommend research papers to respect the basic rules and particularities of each phase of product life cycle. Using the product life cycle can result in the development of manufacturing strategy production. Analysis of product sales, the comparison with the competition, the timing of introduction and download the product from the market, it all helps to understand the life cycle and affects the success or failure of the product. Each company therefore needs to fully

understand and successful product lifecycle management to develop strategies and methods. The knowledge of the life cycle can be drawn so as to assess the effectiveness of marketing activities.

Table 1. Summary of the main approaches

Autor	Rok	Hledisko	Přístup
Drucker	1954	Marketing	Characterization of marketing as "all business", seen from the perspective of its final results, therefore, from a customer perspective
Webster Payne	1988 1992 1988	Marketing	The original purpose of introducing the concept of marketing was to meet the specific wishes and needs, focus on marketing orientation
Kotler O'Sullivan et al.	1977 2009	Marketing Measurement	Design methods of measuring the usefulness of marketing
Shapiro Kohli, Jaworski Lošťáková	1998 1990 2009	Marketing	Record the difference between market and marketing orientation, marketing orientation concept, differentiated customer relationship management
Pavlov, Bourne Novotný et al. Miller, Cioffi	2011 2010 2004	Efficiency	Theoretical model of the influence of measuring effectiveness on company performance
Neely, Bourne et al. Griffith, Neely	1995 2005 2009	Business performance	Support for corporate management and other activities
Loch, Tapper Učeň Davis Bahadir, Kapil Greenyer	2002 2008 2007 2002 2006	Efficiency	A combination of several types of scales, not only financial measurement metrics for cutting hard and soft metrics definitions
Bacon	2004	Measurement	Effects expressed in various types of indicators
Kaplan, Norton Seggie, Cavusgil, Phelan	2000 2007	Business performance	The method of measuring effectiveness of corporate activities
Lagrost et al. Lagrosen et al.	2010 2012	Measurement	Non-metric measurement of quality values in business
Zahay, Griffin	2010	Measurement	Strategic survey of corporate success
Mondragon et al.	2011	Measurement	Measuring the performance of supply chains
Saaksvuori, Immonen Anderson, Zeithaml	2004 1984	PLM	Managing business results in PLC
Kotler, Armstrong Wasson Dhillon Eger, Drukker Aurich, Fuchs, Wagenknecht	2004 1978 1989 2010 2006	PLC	The basic concept PLC and definition of properties of individual PLC phases
Qian, Burritt Hashimoto Che	2011 2003 2009	PLC	Increasing the value of the product across PLC, pricing strategy based on PLC
Federica, Massimo, Koh Dunk	2010 2004	PLC	PLC evaluation from the perspective of supply chain costs

Conclusions

Basic techniques of product lifecycle management are used to optimize income from product sales, while respecting market position and its life-cycle stage. These techniques are the basis of marketing or strategic management and are used by many global companies. They include know-how and effective procedures for improving the product, and its replacement by a new end sales. The basis for the understanding of these strategies is a theoretical analysis of the model life cycle. The investigation, the following findings:

- Shift changes in the requirements for the product during the period of time makes the product life cycle model very difficult. The duration of these changes, almost impossible to predict, makes a distinction between the level of product sales in the imagination and reality.
- There are many products that do not follow the curve of the product life cycle mentioned above.
- Product life cycle is not entirely dependent on the timing mentioned above. It depends on other parameters such as policy management, strategies for company decisions, trends in the markets. These parameters are difficult to determine apredikci, therefore, not included in the lifecycle. There are three different types of products: product class (car), product model (automatic, family car, SUV) brand and product sector (Skoda Fabia). The life cycle of product class reflects changes in market segments and lasts longer than the product life cycle model or brand. From another point of view of product life cycle model or brand competitiveness shows the company (sales, profits) and therefore more closely follows the model of the product lifecycle. However, an experienced product manager must be able to discern at what stage is just the product, regardless of the problems discussed above.
- Follow the set of data on product behavior in the last period of 3 to 5 years (information includes prices, piesec sold, profit margin, return on investment ROI, market share, the total value of product).
- Analyze the short-term competitive strategy (analysis of new products emerging on the market, reported production increases competition, product innovation, advertising).
- Analyze the competition, while respecting its market share
- Follow the life cycle of information on similar products that will help to correctly estimate the life cycle of our new product.
- Estimate the volume of sales in the 3 to 5 years from the beginning to market
- Estimate the total costs to sell for 3 to 5 years from the start of sales (development, production, advertising).

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