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Medarac, Hrvoje, Vignali, Gianpaolo and Vignali, Claudio (2015) Gaps for interactive upgrading of existing marketing models. *International Journal of Management Cases*, 17 (3). pp. 49-67.

Official URL: http://www.ijmc.org/ijmc/Vol_17.3_files/17.3.pdf#page=49

EPrint URI: <http://eprints.glos.ac.uk/id/eprint/2846>

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Gaps for interactive upgrading of existing marketing models

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Abstract

The purpose of this preparatory research was to identify gaps for logical upgrading of the existing marketing models which can keep them simple and interactive and to examine whether the action research and case study would be the proper research methods to reach the aim of the main research which is to improve the relation between business strategy and marketing tactics. Chosen research methodology was phenomenology and the secondary research in the form of the literature review was recognized as the most appropriate research method. Main findings of the research were that there was the gap for logical upgrading of the existing marketing models which would make them simple and interactive. Main practical implication of this research is the identification of fields where there is the possibility to extend the knowledge in the field of marketing modelling. The value of this research lays in propositions for further development of marketing model called Stratics which would contribute to the overall knowledge in the field of business strategy and marketing tactics and the most appropriate research method to achieve this aim. This research was performed as a part of the literature review process of PhD research.

Introduction

The aim to improve the market position on competitive market is one of the reasons why many practitioners and academics are using the existing marketing models and trying to improve them. During the process of defining business strategy, top management of the company usually considers and analyses a range of management models and frameworks, such as product portfolio, BCG Matrix, Ansoff Matrix, GE/McKinsey Matrix, Porter's Five Force Model and SWOT analysis. Based on defined strategy, marketing management has to prepare the marketing tactics and one of the tools which can be used in this case is the marketing mix.

Since two different levels of management cope with business strategy and marketing tactics, it is not rare to witness that business strategy and marketing tactics, especially on local market do not follow each other. In order to cope with this issue, a live Stratics model was developed for coordination of marketing tactics with business strategy. During the research process, the literature review was undertaken and this part of the research process is the main subject of this article. Primary research which followed was conducted as the action research and the case study on one Croatian company. The Stratics model was developed as the simulation mathematical model which was based on the Mixmap model developed by Vignali and Davies (1994), but is more detailed and brought to a higher and more applicable level with the usage of artificial intelligence methods.

Approach

The objective of this research was to find out more about marketing strategy and tactics models which have already been developed and based on this objective Medarac (2014) proposed the research question:

- Is there a gap for logical upgrading of the existing marketing models which can keep them simple and interactive?

In order to answer this research question, a secondary data analysis was made during the literature review process. Many authors discuss on methodological approach and some of them like Buttery and Buttery (1991), Bonet and Sauquet (2010), French (2009), Nørreklit et al. (2010) or Yin (1994), describe similarities and differences between positivistic and phenomenological approach. Since this research deals with the phenomenon that the differences between the business strategy and marketing tactics are not rare and the aim is to identify the phenomena which could help to upgrade the existing marketing models, the research methodology which was recognized as the most appropriate in this research was the phenomenology.

Scientific and innovation relevance

The main scientific relevance of this research was the identification of gaps based on which the Stratics model was supposed to be developed:

- the model should be interactive;
- the model should calculate the resulting position of the company according to proposed business strategy and marketing tactics of the company;
- there is the need to introduce importancy levels as the weighting factors for all variables in order to increase the precision of the model;
- artificial intelligence methods should be implemented in order to allow the Stratics model to suggest the measures which should be taken to reach business strategy goals through an appropriate application of marketing tactics;
- if necessary, the GE/McKinsey matrix should be included in the process.

Research Details

The main research process began in 2005 after the researcher got more information on the Mixmap model (Vignali and Davies, 1994) and decided to make it interactive and improve it. The development and improvement of the Stratics model continued as a part of the PhD research process which lasted until 2013 and during this process the literature review part of the research was also made. Main purpose of the literature review was to identify the existing marketing models which help in improvement of business strategy and marketing tactics. The literature review has been focused on two main areas where the first one was the strategy and tactics and the second one was the model building.

Kennedy (1989, 5) considers that in order to reach the goals of the company the answer to the following question has to be clear: "Why should I, your prospective customer, choose you vs. any and every other alternative available to me?" This question is very important for understanding the strategy of the company as it is directly related to satisfaction of buyer's needs and if these needs are not satisfied better than by competitors, buyers will not buy company's products.

Strategy and Tactics

Thompson et al. (2005) consider that the strategy has to help in offering products or services which are different to the offer of competitors, or developing competitive abilities with which the competitors will have problems to cope. Anderson and Kerr (2002) say that the strategy is a large-scale plan for achieving a goal and mention its military origin. Gulin et al. (2004) consider strategic management in relation to long-term goals of the company. These long-term goals are evident from the vision as one of key elements of business strategy. The vision is strategic element which speaks about the overall future aim of the main decision maker in the company whether this is the top management or the owner who holds the top management power. On the other hand, the mission is more present-related and describes the main purpose of the company. For Bebek and Kolumbić (2005), the vision presents all that the organisation should be, while the mission defines the sense and purpose of the organization. Although the vision and the mission represent the main course of leading the company, Johnston and Bate (2003) consider the strategy as a dynamic process which has to be constantly adjusted for the purpose of reaching the goals. Walker (2004) says that an effective strategy is a source of economic gain, provides a framework for resource allocation and guides the firm's decisions regarding management and organization. Vranešević et al. (2006) use various strategy and tactics tools which should be followed together in the strategy planning process. Michael Porter (1980) considers that strategic position of the company is closely related to competitiveness and developed the 5 forces model which is still used in considering the competitiveness in the scope of business strategy. Porter's model takes into account that each industry is influenced by five main forces: the level of rivalry among existing competitors, bargaining power of suppliers, bargaining power of buyers, threat of new entrants and threat of substitutes. But Porter was not the only author trying to model business strategy. Bruce Henderson (Henderson, 1970) presented the Growth-Share Matrix which categorizes products within a company's portfolio as stars, cash cows, dogs, or question marks according to growth rate, market share, and positive or negative cash flow. But Porter (op. cit.) considers that this matrix doesn't have to be applied only to products but also to industries too. And if BCG matrix can be used on both product and industry level, than it should also be possible to use it at company level like in the case of the Mixmap model developed by Vignali and Davies (1994). Igor Ansoff (1957) was focused more on the relations between markets and products and based on this relation developed a matrix which suggests strategic marketing moves whether they are market development, diversification, product development or market penetration. Ansoff matrix is also a matrix which is used in the Mixmap model as suggested by Vranešević et al. (op. cit.).

McKinsey (Official McKinsey web page, 2013) extended the BCG matrix and created a nine-box matrix which is now widely known as GE/McKinsey matrix. The main purpose of this matrix is to observe the relations between the industry attractiveness as external factors and business strength as internal factors which influence the perspective of the company and to help in making decision on investing or divesting. These models are related to strategy, but on tactical level, there are also useful tools which help to gain marketing aims. One of such tools is the marketing mix which is tactical marketing tool and initially it was not considered in the form of the matrix model. For instance, Mlivić Budeš (2008) considers marketing mix as a group of marketing tools which is used to influence buyers on targeted market. In order to make it possible to use marketing mix as a tool in matrix marketing approach of the Mixmap model, Vignali and Davies (op. cit.) suggested the usage of the matrix approach with two most important variables which follows the BCG

matrix scheme. Mixmap approach was described in more details also by Vranešević et al. (op. cit.) who use the product life cycle diagram with four main periods (Hofer, 1975). According to Vignali and Davies (op. cit.), the life cycle can also be followed in BCG matrix as the company starts as question mark, follows to be a star, continues the life as a cash cow and ends in the dogs position. Vranešević et al. (op. cit.) consider that in a similar way, the company moves through the Ansoff matrix too starting with the offer of smaller number of products on higher number of markets, then increasing the number of products, then focusing on the most important markets and finally focusing on main products. Finally the Mixmap model presented by Vignali and Davies (op. cit.) suggest that the matrix marketing visualisation of the marketing mix can also be used in a way that the most important variable is positioned on Y-axis and the second most important variable on X-axis. The described approach of the Mixmap model was the main foundation of further development of the Stratics model.

But the problem was that the Mixmap model was the model on paper and as such it was not interactive. The diagrams were supposed to be read and understood by experts and there was no understanding on the real position of the company if the variables were not in-line with each other. The Mixmap model recognized the quadrant on each of diagrams where the company was positioned, but there was no fine-tuning which would show which of the variables is more or less important. It was also recognized that there could have been the possibility to include the GE/McKinsey matrix in the model and there was the understanding that it must be possible to use the methods of artificial intelligence in order to follow the path of expert analysis and to provide the initial suggestion on possible strategic and tactical actions which would help to improve the business result. In order to cope with the interactiveness and artificial intelligence methods there was the need to make further research in the field of model building.

Model Building

Baračkai et al. (2005) consider that the knowledge which is needed to manage a business unit or a company is transdisciplinary knowledge which therefore asks for the approach from several disciplines to be used and in this process the modelling can be very useful. But although modelling is widely used in everyday life whether when kids are playing with model toys, or when women are choosing the most suitable hairstyle or clothes, Baračkai and Velencei (2004) consider that managers and researchers of business decisions usually do not use modelling, but prefer to experiment in real life conditions. Instead of the term modelling, Buble (2006) uses the term quantitative analysis and describes quantitative analysis process.

In order to make mathematical models, there is the need to use information technology (IT) equipment. In the book "Corporate management" Mario Spremić, one of Tipurić's associates (Tipurić et al., 2008) gives the insight in the advantages and disadvantages of using IT tools for world leading corporations on Croatian market. Zimmermann (1990) says that there are different types of computer supported systems which can help in decision making process, but the most frequently used are management support systems (MIS). On the other hand, Omazić and Baljkas (2005) consider that in many cases managers use IT only as a support to accountancy.

But since IT development has enabled the advanced usage of fast calculations in decision support, this led to the development of artificial intelligence and Huffman (2001) describes one of the best known presentations of artificial intelligence superiority in

decision support- the famous chess game between world's best chess champion Garry Kasparov and IBM's computer Deep Blue, where Deep Blue won the game. Horvitz et al (1988) said that the development of artificial intelligence techniques in 1970's provided a promising alternative to the design of expert systems. Jones and George (2006) consider expert systems as the most advanced management information systems available and Neumann et al. (2002) say that they are programs for reconstructing the expertise and reasoning capabilities of qualified specialists within their domains.

The other kind of artificial intelligence is the knowledge representation which Baral and Gelfond (1994) consider as the most important subareas of artificial intelligence. Medarac (2014) says that knowledge representation models or knowledge based systems use standard logical expressions to make decision based on predefined knowledge database. But knowledge representation is not the only artificial intelligence method which helps in making decisions. Sokolova and Fernández-Caballero (2009) consider the concept of decision support system (DSS) as very broad, since there are many approaches to decision making and there is a wide range of domains in which decisions are made. According to Shang et al. (2008) decision support systems (DSS), as types of information systems designed to support semi-structured or unstructured managerial activity, are ideally suited to bridge the gap between enterprise systems and decision-makers. Niu et al. (2013) see decision support systems as 'executive mind-support systems' that are supposed to support decision-making from human cognitive perspectives. According to Shang et al. (op. cit.) the first reported DSS appeared in the 1960's. Lirov and Lirov (1990) made the research on subject bibliography of logic programming applications in control and decision support systems and according to their research results, the first article on this subject was published in 1974, the first book in 1983 and the first dissertation in 1984. In 1988 there were already 72 articles, 7 books and 6 dissertations published, while by the same year a total number of publications was 330 (ibid.). When taking into account the development of personal computers, it was evident that wider interest in decision support systems was increasing with the possibility to use personal IT equipment. Power and Sharda (2007) also consider that quantitative models embedded in a decision support system (DSS) can help managers make better decisions. Decision support systems can be used in many different areas like for instance in agriculture (McCrown, 2002), financial markets (Leigh et al., 2002), energy (Nakata et al., 2011), accidental mushroom and plant poisoning (Zotti et al. 2001), medicine (Lin et al., 2006), inventory management (Shang et al., op. cit.), relationship marketing (Watkins and Hill, 2009), sustainable river basin land use management (Chen et al., 2005) or health impact (Sokolova and Fernández-Caballero, op. cit.), but one thing that has to be taken into account when using decision support systems is that although computers are superior in calculation performances than humans, decision support systems are still simplified versions of reality. They do not copy the reality as it is, but with a certain level of incompleteness and uncertainty. This means that there is always the level of error and probability that decision support system could suggest a wrong decision in certain, unusual environmental conditions.

Mathematical models are mutually interrelated mathematical relations where for certain values of independent variables, dependent variables reach values which can represent a certain phenomenon in reality. Arciszewski (1986) makes a clear difference when using the term mathematical model and software development and uses the term mathematical model only in the scope of defining mathematical relations, but now the term mathematical model has much wider scope. Mathematical models are widely used in research and business and in many different areas like the oil industry (Lababidi et al., 2011), renewable energy sources (Medarac et al., 2013), the distribution and atmospheric volatilization of

soil fumigants (Wang et al., 2007) or the usage of electricity storage for better position on electricity market (He et al., 2011). Mathematical models can be developed as simulation mathematical models and optimisation mathematical models.

To simulate means to copy the characteristics of some thing or of some phenomenon. Neely and Tucker (2013, 128) use simulations not as software, but in the process of education at the MBA programme in order to prepare students for real life situations. Since before the wider IT development it was very expensive to make and run proper simulation mathematical models, Ansoff and Slevin (1968) also focused their research on examination of the influence of the process of model development on business result. Today, simulation models are usually used for the purpose of what-if analyses where the main task is to examine consequences of certain actions. Simulation models are the easier ones to develop as they are supposed to copy the relations between variables from reality and to calculate the result, but there are also more advanced models which are supposed to calculate the input actions which should be done in order to get the targeted end-result. These models are called the optimisation mathematical models.

Medarac and Medarac (2009) explain the usage of optimisation mathematical models first of all in process and energy plants. Bakhrankova (2009) speaks on usage of mathematical models and particularly optimisation ones in the chemical industry. Optimisation mathematical models are usually used in continuous processes which can be found in energy systems, but also in process industries like oil industry, chemical industry, food industry and similar.

During the research process it was decided that the Stratics model which will be developed in the main research will be the simulation mathematical model which can be used for what-if analyses of strategic and tactical moves and will have integrated artificial intelligence module which would help in analysing the result and making decisions.

Literature review conclusions and gaps

The literature review gave positive answer to the first research question and identified the gaps based on which the Stratics model was supposed to be developed in the scope of the research:

- the Mixmap model was not interactive;
- the Mixmap model doesn't calculate the resulting position of the company;
- in the Mixmap model it is not clear which of the variables has higher importance;
- the Mixmap model can be used only by experts in the fields of management and marketing while for the other average practitioner it is not very easy to articulate the resulting diagrams;
- there could be the room to include the GE/McKinsey matrix in the process.

Primary Research Method Selection

Primary research is the type of the research where the data (primary data) is collected directly from the research subject, which can be a person, household, company, institution or something else (Marušić and Vranešević, 2001). Vranešević et al. (2006) say that primary data is collected for specific needs of the project through field research, observation, interviews, and various research instruments like surveys, mechanical, and electronic devices.

The second stage of the main research was a primary research where the action research approach on a case study for one Croatian company was recognized as the probably the most suitable research method.

Action research

Marshall (2011) says that action research is based on practice and practical knowing. Vignali and Zundel (2003) say that action research is an approach, which aims at both, taking action and creating knowledge or theory about the actions. Khanlou and Peter (2005) state that the term "action research" was introduced in 1946 by Kurt Lewin, but this is argued by Ottosson (2003) who considers that the term "action research" was actually introduced one year earlier in 1945 by John Collier, while Kurt Lewin is seen as the father of action research since he wanted to formulate the action research method to help practitioners. Cooper and Schindler (2006) state that in action research a corrective action is determined, planned, and implemented; the results of the action are observed and recorded; and the action is assessed as effective or not. This process is then repeated until the aim is reached, but during the cycles much is learned about the processes and about the prescriptive actions being studied. Kock (2004) presented action research process including five main steps: diagnosis, action planning, action taking, evaluating and specifying learning.

Nogeste (2008) used the dual cycle action research approach which was presented by McKay and Marshall (2001) with the problem solving cycle and the research interest cycle. Action research is today used in many different science and business disciplines such as information technology (Baskerville and Pries-Heje, 1999; Hartmann et al., 2009; Wastell et al. 2004; Ray and Ray, 2006), medicine, health and nursery (Heale, 2003; Coupland et al., 2005; Nomura et al., 2009; McKellar et al., 2009; Portillo et al., 2009; Coetzee et al., 2005; Walker et al., 2008), waste management (Fahy and Davies, 2007; Gutberlet, 2008), education (Paisey and Paisey, 2005; O'Sullivan, 2002; Mitchell et al., 2009; Moran, 2007; Valli, 2000; Markless and Streatfield, 2006; El-Dib, 2007; Chappell, 2008; McIntyre et al. 2007; Magos, 2007; Cardno and Reynolds, 2009; Desmarais et al. 2009; Greenbank, 2011; Standing et al., 2012; Pereira and Melao, 2012), hotel industry (Waser and Johns, 2003), communication media (Kock, 1998; Hearn et al., 2009), human resources (Hillsen and Ennals, 2005), heavy industry (Momme and Hvolby, 2002), politics (Ataov, 2007, Berger and Peerson, 2009; Cameron and Gibson, 2005), knowledge management (Butler et al., 2008), decision support systems (Kizito et al., 2009), product development (Mejia et al., 2007), quality management (Hales and Chakravorty, 2006; Cheah et al., 2011), psychology (Hunter et al., 2001), process management (Chakravorty and Hales, 2008), accounting (Liu and Pan, 2007), ethics (Langlois and Lapointe, 2010) or energy industry (Schneider and Vieira, 2010).

Case Study

Regarding the case study method Marušić (2001) provides two definitions of case study with considering both learning and research usage of case studies and when considering case study in the scope of research he doesn't consider case study as general research method, but only as a method to identify problems in a certain company. Cooper and Schindler (2006, 751) say that the case study is "a methodology that combines individual and (sometimes) group interviews with record analysis and observations." According to Gummesson (2003, 482), "in case study research one or several cases are used to arrive at specific or general conclusions about certain phenomena, recognizing the multitude of

variables, complex interrelations and ambiguities of business life." Walker (2004) considers case study as one of six major sources for modern consideration of the field of strategy and Yin (1981, 98) says that "the need to use case studies arises whenever an empirical inquiry must examine a contemporary phenomenon in its real-life context, especially when the boundaries between phenomenon and context are not clearly evident." Yin (1994) also provides techniques for good case study evaluation.

Case study as the research method is also widely used in many different areas of science and business such as information technology (Reeves-Ellington and Anderson, 1997; Elish et al., 2013), tourism (Fairer-Wessels, 2007; Gronau and Constanti, 2008; Wu et al., 2013; Henderson, 2009), relationship marketing (Rashid, 2007), behavioural branding (Kaufmann et al., 2007), food and drinks (Vignali et al., 2007; Roy, 2010; Asad Sadi, 2006; Vignali et al., 2008), human resources (Hodgson and Ala-Hiio, 2006; Bahn, 2013), strategic management (Wei, 2008; Tsai et al., 2008, Ciasullo and Troisi, 2013), privatization (Tipurić et al. 2, 2007; Prester et al., 2007; Galetić et al., 2007; Tipurić et al.3, 2007; Hruška et al., 2007), corporate management (Tipurić et al.1,2007; Tipurić et al.4, 2007; Tipurić et al.5, 2007), marketing (Medarac and Medarac, 2009), jewellery (Pantano, 2008), education (Larsen et al., 2013; Neely and Tucker, 2013; Wood and Henderson, 2010), process management (Kumar et al., 2013), change management (Yilmaz et al., 2013; Mihail et al., 2013; Exter et al., 2013), public-private partnership (Bruce, 2013) or knowledge management (Ranjbarfard et al., 2013).

Conclusions on research methods

Since the author of this research had good understanding of Croatian business economy, it was the intention to conduct the main research as an action research on a Croatian company where the author had the influence in the process of decision making and could develop the model according to findings from this research. This meant that the model was supposed to be fully applicable to Croatian market, but since the grounded theory on which the model was developed is the same worldwide, it was expected that the model should also be applicable outside borders of Croatian market. A combination of action research and case study strategy was selected as the most appropriate since the Stratics model as an interactive model was supposed to be developed in phases and implemented during the development process of a couple of years. Combination of action research with case study was therefore recognized as the most appropriate research approach for the nature of the research. Furthermore, a case study approach was seen as appropriate one since it allowed the researcher the opportunity to make decisions and control the implementation during the research process.

Conclusions

The literature review part of the research process of improvement of relations between business strategy and marketing tactics showed that there was a gap for the logical upgrading of the existing marketing models by making them more simple and interactive. On the basis of this conclusion, the action research process was undertaken on the case study of one Croatian company which later resulted in the development of the Stratics model.

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