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ABSTRACT

**Conceptual model of strategy hierarchy and its
reflection on financial performance – applied in
the automotive industry**

**For conferring a scientific degree „doctor of science“ in a professional
specialization 3. 8. Economics**

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Introduction

Originality and value of the topic

As a particular direction in the economic science, management discipline originates for more than a century. For a milestone we assume the principles of the scientific management, introduced by Frederic Taylor from 1911, the scheduling diagram (Gantt chart) of Henry Gantt from 1912, the conveyor belt line for vehicles assembly from Henry Ford one year later. During this relatively short timeframe no one is able unbiased to judge what is right and what is wrong. One century is not enough time for the economic knowledge to be directed in the right way, not only to be able logically to explain what is happening around, but also to anticipate future changes in consumer behavior, as well as to be able to prepare the participants for their future success. So called “the invisible hand”, introduced by Adam Smith nearly 250 years ago, is still occupying the brain of contemporary corporate executives, in their efforts to impose their products with the required profitability.

Both strategic and operations management are moving in different directions. The former is focused in formulating successful strategies for different products and markets, the latter is concerned with optimization methods for production process, aiming to increase its profitability within elaborating attractive products and valuable services. Though different application areas, both management disciplines intersect each other in the fundamental term “ the strategy”. However this point at the current moment of accumulated knowledge does not solve the issue related to the different approaches, applied in its establishment. Strategic management scholars assign the place of operations strategy just to support the business strategy, which is not different than the remaining functional areas as marketing, finance, human resources, etc. Opposite to them, operations management scholars, raise the strategic role of operations, which are supposed to position operations strategy above others functional strategies. Even they consider that in order to achieve sustained competitive advantage, the place of operations strategy is not less important as that of corporate and business strategies. However these aspirations are dated just since few decades and still the time has not judged with its historical imprint.

Current dissertation differs with some common conceptual researches on few counts. First, it disagrees with the well accepted assertion that operations strategy (OS), along with marketing, finance, HR, IT, etc., is being part of functional strategies

(FS), whose role is just to support the BS. Second, it challenges the validity statements of well-known scholars regarding the place of “operational effectiveness and efficiency” within the strategy. And third, it offers a conceptual framework that transforms the theory into practice in a smooth manner. For this reason, the framework will be tested whether it satisfies all the criteria for a “good” theory. We leave the reader to judge whether our arguments are presented logically enough in order to support the novel strategy model, as well as to accept the newly formulated conceptual interaction between market-based theory (MBT) and resource-based theory (RBT) that impacts each strategy level in a specific proportion.

Purpose of the dissertation

The purpose of the dissertation is to redefine the existing corporate strategy concept – a conventional order of corporate (CS), business (BS) and functional (FS) strategies levels (Fig. 1), aiming to develop a new conceptual model within the strategic pyramid (Fig. 2), as well as to explore its impact over the financial performance of the firm.

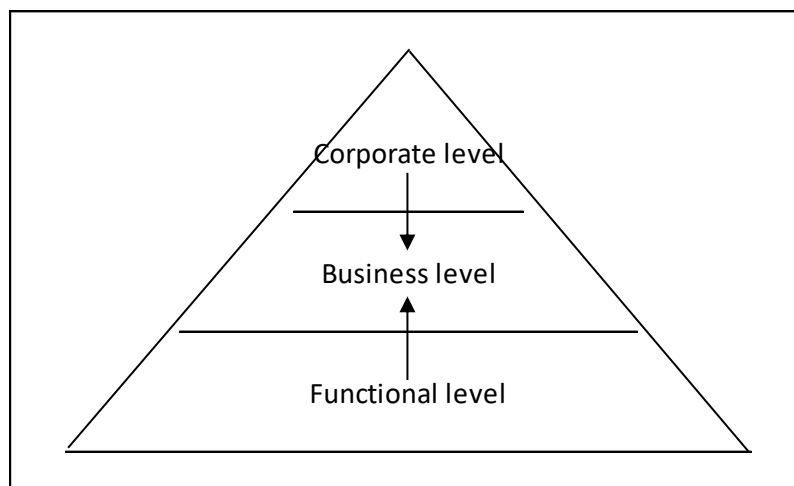


Fig. 1 Conventional corporate concept

Source: Hoffer W. & Schendel D.; Strategy Formulation: Analytical concepts. St. Paul: West Publishing, (1978)

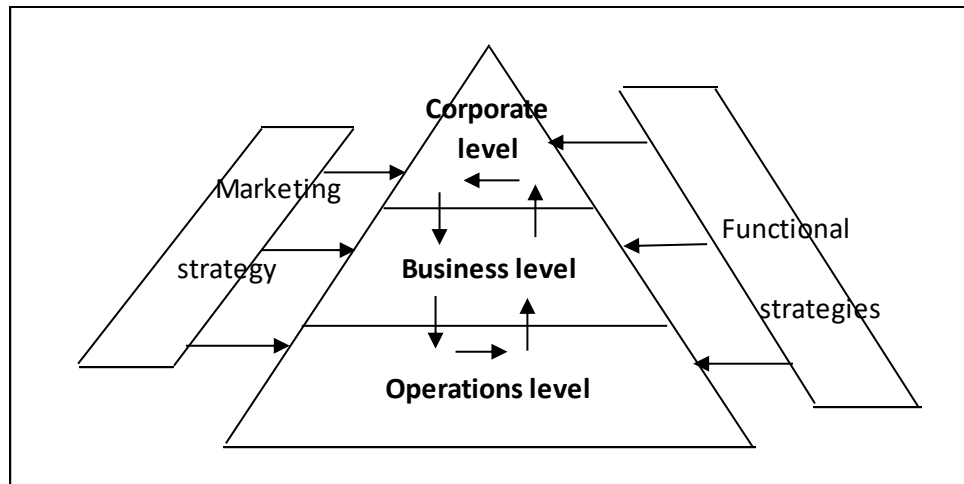


Fig. 2 Redesigned strategic concept

Source: author own

Doing this, we are proposing a framework of different perspectives of the role of operations strategy (OS) as a separate strategic level, as well as we are repositioning the remaining FS as supporting tools, appearing at all three levels. There are solid arguments why such a restructuring is needed. Assigning different role and place of FS does not mean that we are trying to diminish their importance, rather than extension of their application. Since, the focus of this dissertation is explicitly the interaction of three core strategic layers, we are not addressing any theoretical research for the influence of remaining FS like finance, HR, IT etc. Although among them, we are assigning to marketing strategy a leading role in charting the strategic direction. The purpose of the dissertation is not to impose a condemnation of current corporate strategy concept (CS, BS and FS), but instead to offer a conceptual model for quality enhancement of the entire strategic process that enables to provide the desired superior competitive advantage. Such an advantage, that impacts in a positive way the financial performance of the firm.

Assignments of the dissertation

The first assignment is related to the clarifying the essence of operations and more precisely, with outlining their strategic role within the organization, as well as presenting them as functions and as processes. On a second place, the assignment is linked with the classification of the core elements of operations strategy from two perspectives – from content point of view (performance objectives and strategic

choice) and from process point of view – transformation of inputs into outputs. At this place is presented the essence of the core management concepts, being part of the discipline *operations management*. The third assignment is linked with a research of the theoretical fundament, where the operations strategy is built, along with related concepts and models. At the fourth place is formulated the assignment for the clarification the place of the operations strategy within the strategic hierarchy. This is done through the elaboration of four different directions in its positioning. And last but not least, it is performed an empirical research for the validity of the proposed conceptual model for establishing a sustainable competitive advantage. This final assignment aims to bring enough solid arguments for the positive impact of the model on financial performance of firms, which eventually would apply it.

Field and subject of research

The field of the research represents the strategic pyramid, built up on the manner that the operations strategy is separated from the functional strategies. The assumption is the operations strategy to be assigned at a separate core level, while the remaining functional strategies to be positioned in a way that will be able to support equally corporate, business and operations level strategies.

The subject of the current dissertation is constituted upon formulating a conceptual model along with corresponding elements for creating a sustainable competitive advantage and its extrapolation to the level of a novel theory. A survey among 15 leading CEO's managing Bulgarian or international enterprises evaluates the validity of the formulated concepts in practice. As a secondary subject is applied a research of the reflection on the novel model over the firms' performance in terms of their financial results.

Examples for the research execution represent two global automotive corporations – a manufacturer (Toyota Motor Corporation) and a master-franchise distributor (Inchcape plc.). The impact of the strategic pyramid is researched within firm's performance in two directions – the interrelation between the different strategic levels with their related elements, as well as the evolution of the different levels strategies, to the extend to the achieved outcome. In addition, it is researched the impact of the corporate strategies over the whole automotive industry from the beginning of the current century. The reflection of the redesigned strategic pyramid

over the financial performance of corporations is materialized through detailed financial analysis, based on the DuPont model and the analysis of the working capital. For this purpose, are researched consolidated financial statements of four biggest global manufacturers within 15 years period – Toyota, Volkswagen, General Motors and Ford (2005-2019). The establishment of the sustainable competitive advantage is clearly envisaged following the combined impact of the corporate, business and operations strategy, applied in the famous Toyota Production System (TPS).

Core hypotheses for research

In the dissertation it is applied an analytical conceptual research method that develops new logical relationships for conceptual strategic models. The approach to this paper is to test three formulated hypotheses. First, the place and the role of OS is specific and therefore falls outside the scope of the traditional FS. Second, Market-based theory (MBT) and Resource-based theory (RBT) impact the three strategic layers in a specific consistent way. Third, the proposed theoretical model satisfies all the criteria for a “good” theory. The first hypothesis tests whether the relationship between OS and CS/BS is stronger than that between OS and the other FS. The second hypothesis is designed to test whether there is any dependency in the application of RBT and MBT within aforementioned strategic layers. The third hypothesis attempts to prove that our conceptual model is logical, based on a robust set of theoretical fundaments.

Core matters, not researched in the dissertation

Although being substantial, there are two areas, which will be not researched in this dissertation. We assume that theoretical essence of corporate and business strategy are well-known, thanks to the international scholars and for this reason we will just mention their outcome. And the second, the essence of remaining functional strategies falls outside the scope of our research, for two reasons. The former, excluding marketing, is that they are fields of different scientific disciplines and the latter (again excluding marketing) in terms of their strategic orientation, they do not possess the required scientific potential that deserves a dedicated research. In addition, we assume that marketing (marketing strategy) represents a multifunctional

scientific discipline where its theoretic essence coincides with the management essence. A base of such a conclusion is provided by Peter Drucker, who claims that there are two core functions in the business – marketing and innovations. From the other hand, we do not want to take the risk to lose out focus within the concentrated approach in the research.

Structure of the dissertation

The content of the dissertation consists of introduction, three chapters, conclusion, appendix and list of references. The basic text is presented within 272 pages (+34 pages appendix), citing 352 scholars from various sources. The appendix contains answers of seven key questions, assessing the validity of the proposed by the author conclusions and scientific contributions of current research. Current stage of operations management is analyzed in **Chapter One**. Two key elements are outlined - process and content, as well as how their interpretation is solved in the other strategic discipline *strategic management*. The theoretical essence of operations is outlined, being presented as functions and as processes, along with the evolution and definition of the operations strategy. The element of the content is outlined from core and additional performance indicators point of view, as well as through structural and infrastructural decisions. The link between the process and the content is outlined through the fundamental management approaches. The strategic analysis of the theoretical fundament, based on which the corporate, business and operations strategy is built, is performed in the **second chapter**. For operations management purposes some theories (Resource-based and Market-based) are borrowed from the strategic management discipline. Some core concepts, applicable for the operations management, are outlined. Chapter two ends with a transfer in the field of the strategic management, articulated with some key models, build from both scientific disciplines. The theoretical and practical research culminates in **chapter three**. It commences with a novel approach for outlining the place and the role of operations strategy within the strategy hierarchy. Four different viewpoints of eminent scholars are presented. The author's positioning of the operations strategy is outlined in a novel model within the redesigned strategy hierarchy. The scientific contribution for current dissertation is supported through three formulated hypotheses. Practical application of the novel

conceptual model is realized in two ways. The former – a global automotive corporation, from where it is inspired, the latter – a global automotive manufacturer, whose success is explained with the logical consistency of relationships, derived from the model and the corresponding reflection in their financial performance. The reasons for supporting the author's thesis are derived from a comparison of consolidated financial statements of total five automotive corporations for the period of time within 15 years. In addition, it is performed a survey among 15 owners and senior executives of local and international enterprises, acting in Bulgaria.

CHAPTER ONE

Analysis of the operations management domain

Content and process of the operations strategy

The meaning of the operations strategy, as a fundamental driver of the firm's strategic direction, is built by lots of insights, concepts and definitions that have been thoroughly researched in the academic literature and will be presented in this dissertation. However, few milestones should be noted right from the very beginning. Operations strategy has evolved from manufacturing strategy. Operations management has become one of the core directions with the management discipline, comprising various areas, commencing with the conventional manufacturing management, moving through the operations strategy and the supply chain management, approaching the service management (Boer, 2015, p. 1232). The essence of operations strategy is constituted in a dual form – two different, but related areas (Slack and Lewis, 2011, p. 1). The former is concerned with the operations function itself, and how it can contribute to organization's performance. The latter is related with the ability of how any function can develop its processes and resources, and establish its strategic role. The focus of current dissertation is put on the second meaning.

From theoretical perspective, regarding the role and place of operations strategy, two different concepts are widespread. Most accepted one examines it just

as a functional strategy, along with Marketing, IT, Finance, HR and other functions, which goal is to support business strategy and corporate strategy, respectively. The other concept, although not so popular, but gradually increasing its influence over the operations management audience, assigns to operations strategy more comprehensive view. It examines operations strategy either as an instigator to the business strategy, or as a competitive weapon to corporate strategy. The purpose of the dissertation is to unify both views from the second concept into a new theoretical framework, constituted in a novel structured model. One of the reasons why most authors refer operations strategy to functional strategy is because they research it just as a process and not as a content.

The process of strategy formulation and implementation is still in the scholar's debate, since there is no general agreement among them on a standard approach in this issue. However, such is not the case with the strategy content. Both management disciplines – strategic management and operations management, when dealing with related strategies, refer to process and content, but in different way. The strategic process for both corporate strategy and business strategy is one and the same and is consisted from the following phases: planning, formulation, implementation and measurement. However, their content is different – corporate strategy is dealing with value chain, markets and diversifications, while business strategy – concerns generic strategies as cost leadership, product differentiation and focus. From the operations management perspective, content plays much more important role, than its process. Even though, the process within the operations management of strategy path is shorter than that from strategic management perspective – from that linkage the planning is missing. Usually when researching the process, operations management literature in omitting the term “planning” on purpose. This statement is supported by Williams et al. and Brown & Blackmon, who claim that not only has the manufacturing function been neglected as a strategic element of the planning process, but also the linkage between manufacturing and strategic planning has been elusive and bad defined (1995, pp. 19-33; 2005, p. 797). Perhaps there might be two reasons. First, operations management /operations strategy is much more practical oriented and possesses more pragmatic focus, compared with strategic management/corporate and business strategy and for that reason, operations managers do not need to plan too much, rather than to act. Second, operations management is much more focused on details, rather than on a

whole or entire organization, where the last one needs more planning than the first one.

The other difference in the strategy content and process between strategic management and operations management literature is that in the business strategy and corporate strategy there is a clear differentiation in research – “scholars study either content, or they study process” (Huff & Reger, 1987, p. 211). In the operations management literature, the case is different – operations management scholars address process variables along with content variables without acknowledging them as such (Adam & Swamidass, 1989, p.191). Actually, such a differentiation is done in current dissertation. We believe that such a differentiation in operations management literature might improve the quality in research as it has been done in strategic management discipline, where there are three major research streams in terms of process strategy – planning, formulation and implementation. On the other hand, distinction between content and process in strategic management literature could be traced back to Chandler (1962), Ansoff (1965), Andrews (1971), and Schendel & Hofer (1979), who suggested top-down approach in the hierarchy of strategy, as articulated on the following figure:

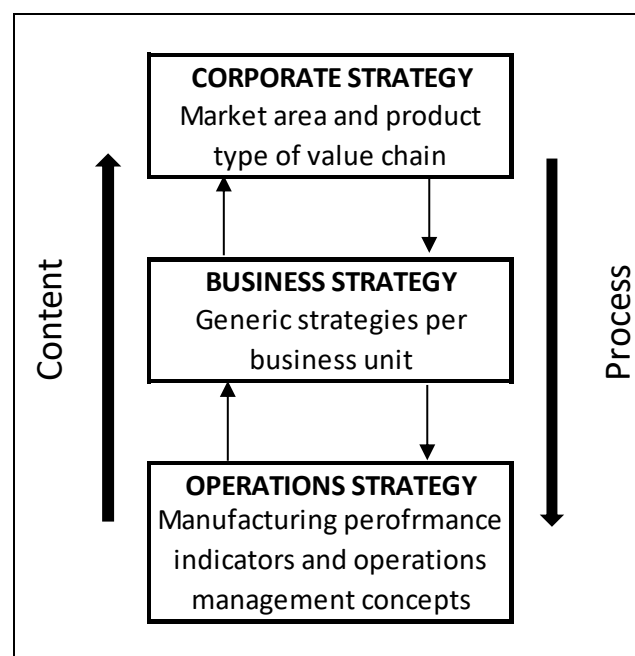


Fig. 3 Hierarchy of strategy

Source: authors own

In terms of strategy planning, formulation and implementation, the process starts first at corporate level, then is cascaded down to business level and eventually on operations level. Opposite to top-down approach, operations management literature supports the bottom-up of content approach, where manufacturing competitive priorities strengthen, and support identified business strategy and based on its outcome corporate strategy might be influenced and potentially changed.

Theoretical essence of operations

The strategic role of operations

Prior to formulate the theoretical essence of the operations strategy, we must identify what really “operations” mean. In order to do this, first we will define what operations are not. Operations are not equal to operational, where the last one is concerned with day-to-day, detailed and routine activities that are exactly opposite to the strategic function of operations. Academics and practitioners, who believe that the study of operations is limited to operational matters are fundamentally misunderstanding the contribution of operations management to strategy and more importantly, the huge potential that operations must to deliver sustainable competitive advantage (Slack, 2005, pp. 323-332).

The strategic role of operations strategy affects the whole area, covered by the operations management, but does not primarily correspond with operational decisions. Actually, under the term “operations” we assume the resources that create products and services. Conceptually, operation is embedded at the heart of performance and strategy is to navigate performance towards a competitive advantage (Aghajari, 2012, p. 2). The main objective of operations is to produce goods and services that are required by customers, simultaneously with executing organizational resources on the best efficient way. From theoretical perspective, operations strategy is supported by the Resource-based theory, which assumes that the fundamental resource flexibility creates a sustainable competitive advantage. In this relationship, operations must essentially contribute to a broader “resource protection” strategy in their role to help firms to reach their desired competitive excellence within a hierarchy of resources (Dangayach & Deshmukh, 2001, p. 915). Operations *strategy* is concerned less with individual processes and more with the total transformation

process that is the whole business. It is claimed that if the business does not fully appreciate the strategic impact that effective operations and process management can have it is missing an opportunity (Slack & Lewis, 2011, p. 7). Operations management is defined as the business activity that involves the design, development and maintenance of systems and processes that transform resources into goods and services, meeting customers' needs (Raturi & Evans, 2005). In fact, since all operations use their resources and processes to transform inputs into outputs in order to satisfy customer needs, the whole idea is called “an input-transformation-output” model of operations, as is shown on the following figure:

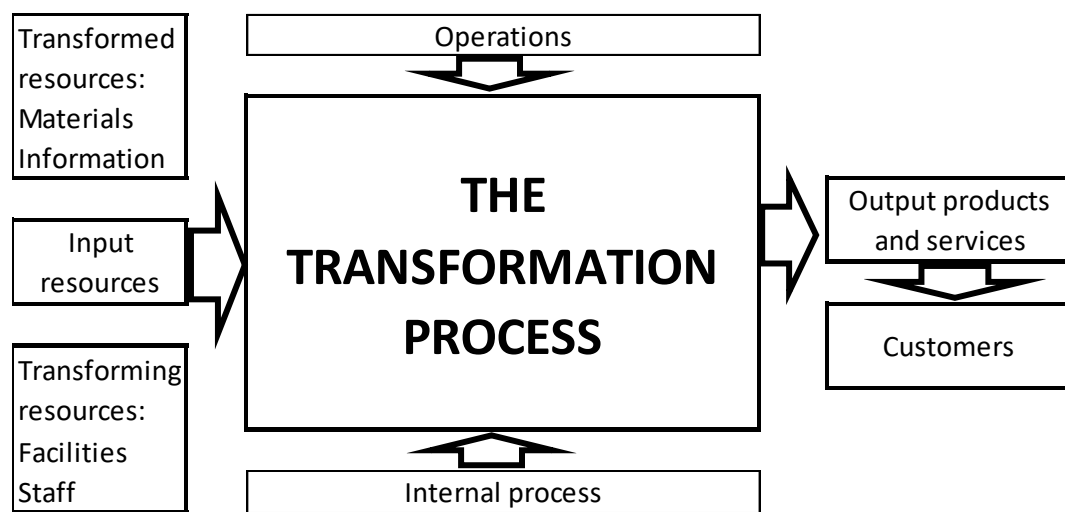


Fig. 4 All operations are input-transformation-output processes

Source: Adapted from SLACK N., JOHNSON R., JONES A.; Operations Management, Seventh edition, Pearson Education Limited, 2012, p. 14

Operations as functions

There are two meanings of “operations” – as a function and as an activity. First meaning relates to the part of the organization that creates and delivers services and products for its external customers. Second meaning relates to the management of the processes within every internal for the organization function. An operation itself, is a group of resources, performing all or part of one, or more processes (Krajewski et al., 2016, p. 23). Regarding the functions meaning, there is no consensus among authors which one should be considered as a core and the other as supporting. What

is unique among all the functions, nevertheless being core or support, is that each of them interact with operations function.

Operations as processes

Operations could be examined as processes as well. A process is any activity or group of activities that takes one or more inputs, transforms them and provides one or more outputs for its customers (Krajewski et al., 2016, p. 23). Like functions, there are also core and support processes; first deliver value to external customers, while second provide vital inputs to the core processes and support the whole business organization. Similar to operations as functions, operations processes belong to the central function, which interacts with all remaining internal activities of the organization.

Operations strategy content

Operations strategy as process

In the operations management literature, there is an abundance of definitions of process approaches when formulating the operations strategy. It is assumed to be a linear analytical and rational process of top-down formulation and implementation activities (Rytter et al., 2007, pp. 1093-1114). Wickham Skinner was the first scholar who stressed the importance of the process of manufacturing strategy formulation and implementation, observing that the company's manufacturing function could do more than simply produce the products. His specific recommendation relates to application of the top-down approach with the following steps (Skinner, 1969, p. 143):

1. To develop a manufacturing task based on business strategy.
2. To conform manufacturing infrastructure policies and efforts to the manufacturing task.
3. To give a substantive role for manufacturing managers in defining and implementing manufacturing strategy.

Under the term “manufacturing task”, it is assumed what the manufacturing function must accomplish, which relates to the specific goals and priorities for the manufacturing function in terms of performance competitive priorities (Skinner, 1978, p. 45).

Evolution of manufacturing strategy

Within the subject of production economics, it is concerned how manufacturing companies deploy their scarce resources into the process of transforming inputs to useful outputs. In this, manufacturing strategy offers a structured approach to decision making in facilitating an economic production (Hellgren, 2007, p.1). It is claimed that foundations of the manufacturing strategy were developed at Harvard in the 1940s and 1950s, when researchers started looking at industries, realizing many different ways in which companies were choosing to compete each other by accompanying different choices concerning production technology and production management (Voss, 1995, p. 5). Skinner (1966) in his three seminal articles in Harvard Business Review (HBR) states that the potential role of the production function in corporate strategy is being enlarged, as well as that it is functionally connected with the business strategy. During the 1970s, for first time, the term “operations” started to be used, being to a great extent associated with the manufacturing sector, concerning entirely with the core business of manufacturing physical goods. Later on, in the beginning of 1980s the term *operations management* started to appear in academic books more often. It was used to reflect two trends (Slack, 2005, pp. 323-332):

1. To imply that many of the ideas, approaches and techniques traditionally used in the manufacturing sector could be equally applicable in the production of services.
2. To expand the scope of “production” in manufacturing companies to include, not just the core processes that directly produce products, but also the non-core production-related processes that contribute to the production and delivery of product, like purchasing, distribution, after-sales service, etc.

The future potential of operations management development was first outlined in 1972 by Levitt, predicting that, “once service “in the field” receives the same attention as products “in the factory”, a lot of new opportunities become possible” (1972, p.41). After 2000s the term “operations and process management” is used to outline the increased scope of the subject, including the whole organization, already being applied for all parts of it and representing nowadays a challenge to operations strategy.

Definitions of operations strategy

Many contemporary scholars research operations strategy as a tool of creating a competitive advantage, as well as being a competitive weapon for implementation the business strategy. One of the most comprehensive definition of what an operations strategy is, belongs to Slack and Lewis, where they define four perspectives (2010, p.65):

- Operations strategy is a top-down reflection of what the whole group or business wants to do.
- Operations strategy is a bottom-up activity where operations improvements cumulatively build strategy.
- Operations strategy involves translating market requirements into operations decisions.
- Operations strategy involves exploiting the capabilities of operations resources in chosen markets.

The four perspective are articulated on the following figure:

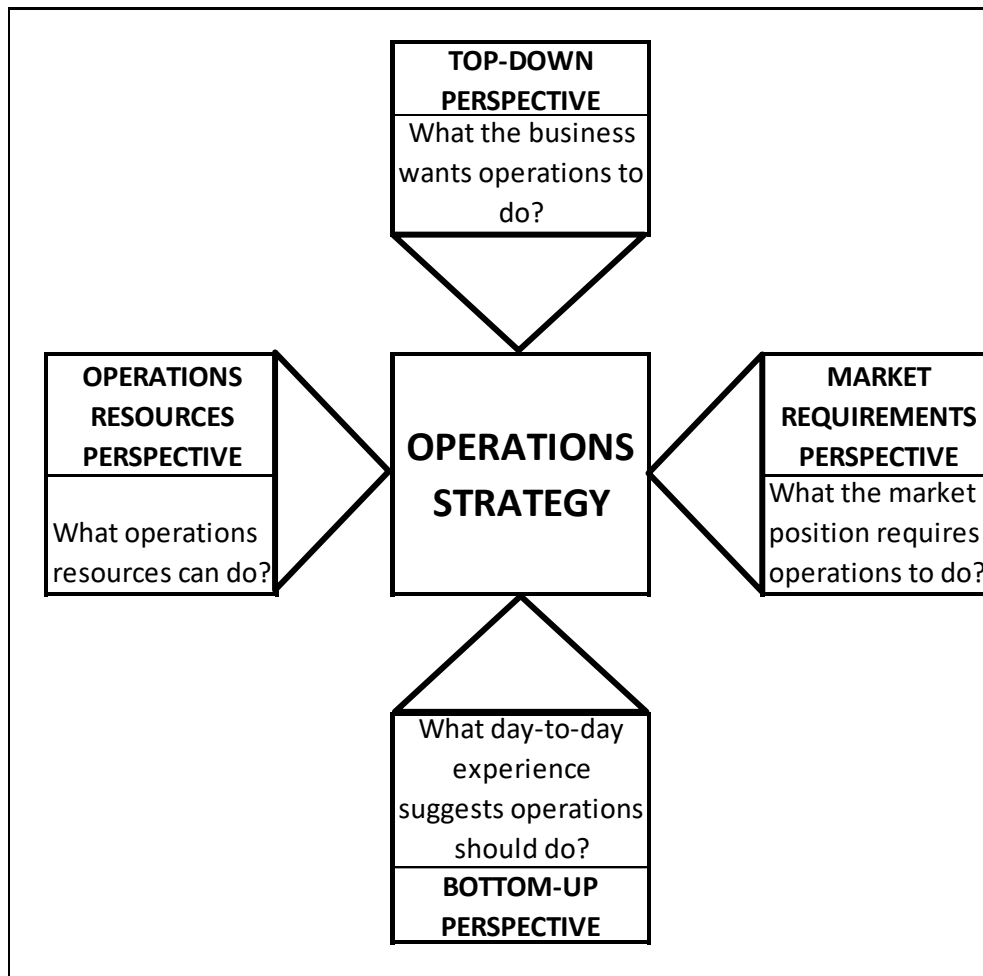


Fig. 5 The four perspectives on operations strategy

Source: SLACK N., JOHNSON R., JONES A.; Operations Management, Seventh edition, Pearson Education Limited, 2012, p. 73

First perspective – top-down, provides an orthodox view of how functional strategies must interact with each other. It reflects the view from the strategic management's hierarchy of the strategy, where *operations strategy* follows the *business strategy*, based on *corporate strategy*. The main idea on this perspective is that operations are to support the business strategy, or with other words to “operationalize” it. The top-down *inductive* process cascades the strategic intent of the business strategy into more fine-grained sub goals for the development of technological capabilities (Sting & Loch, 2015, p.1). Main advocates of this approach are Skinner (1969, 1978 and 1985), Miller (1981), Wheelwright (1978), etc. From manufacturing perspective, the key elements of the top-down strategy process are (Swamidass & Newell, 1987, p. 510):

- The establishment of manufacturing task – a statement of goals and means.

- Alignment of the policies and actions of the manufacturing infrastructure with the task established earlier.
- The involvement of manufacturing executives in the strategic decision process.

Bottom-up perspective represents the reciprocal view, coming from day-to-day experience of every function. Operations actions and decisions might at first sight appear somewhat haphazard, as operations managers respond to customer demands, seek to solve specific problems, copy good practices in other organizations, etc., however they can build over time to form a coherent pattern recognizable as an operations strategy (Barns, 2008, p. 32). The idea of this approach is called a concept of emergent strategies, best described by H. Mintzberg. According to him strategy is a “pattern in a stream of deliberate and emergent actions” (Mintzberg & Waters, 1985, pp. 257-272).

The key virtues required for shaping strategy from the bottom up are an ability to learn from experience and a philosophy of continual and incremental improvement (Slack et al., 2012, p.75). It should be noted that one of the risks associated with the bottom-up perspective is if the organization will not be able to recognize what really its operations strategy is. The bottom-up perspective is one in which the organization learns from its experiences, developing and enhancing its operational capabilities as operations managers try new things out in an almost experimental fashion using their workplaces as a kind of “learning laboratory” (Leonard-Barton, 1992, pp. 23-38). Sting & Loch state, that the bottom-up *autonomous* process invites undirected innovation impulses from frontline actors to adapt and refine the existing operations system (2015, p. 2). Hayes & Wheelwright claim that an interactive (top-down and bottom-up) development of manufacturing strategy will be more successful (1984).

Coming to the remaining two perspectives – operations resources and market requirements, on top of the operations management perspective, we should add the strategic management discipline with its Market based view and Resource based view.

Next figure articulates clearly outlining central themes in operations management – process and content:

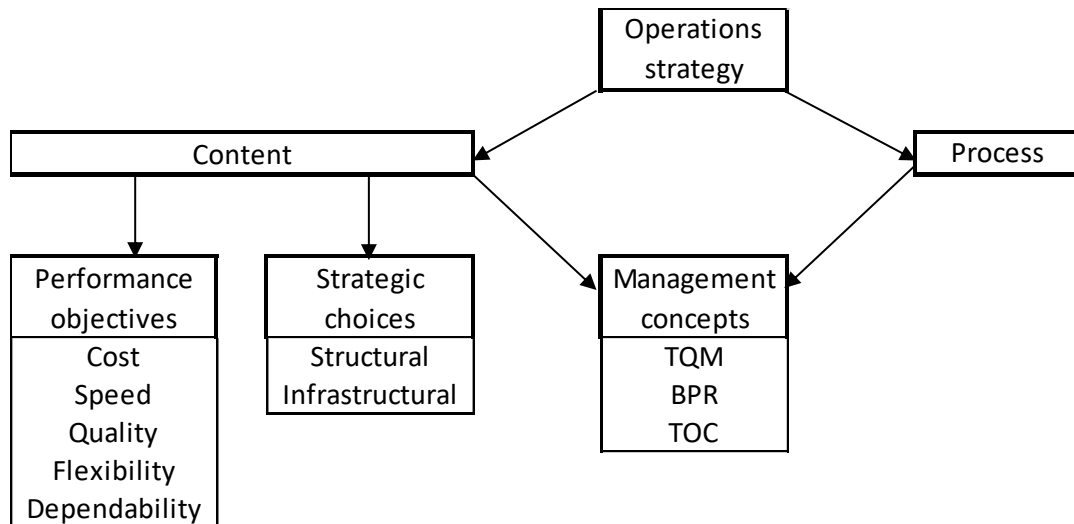


Fig. 6 Classification of Operations Strategy.

Source: adapted from Dangayach & Deshmukh, Manufacturing Strategy: International Journal of Operations and Production Management, 2001, vol. 21, no.7, pp. 885-886

Core performance objectives

Historically, today's operations objectives or competitive priorities have been called *generic manufacturing capabilities*, identifying to be just four, as they are presented on the following figure:

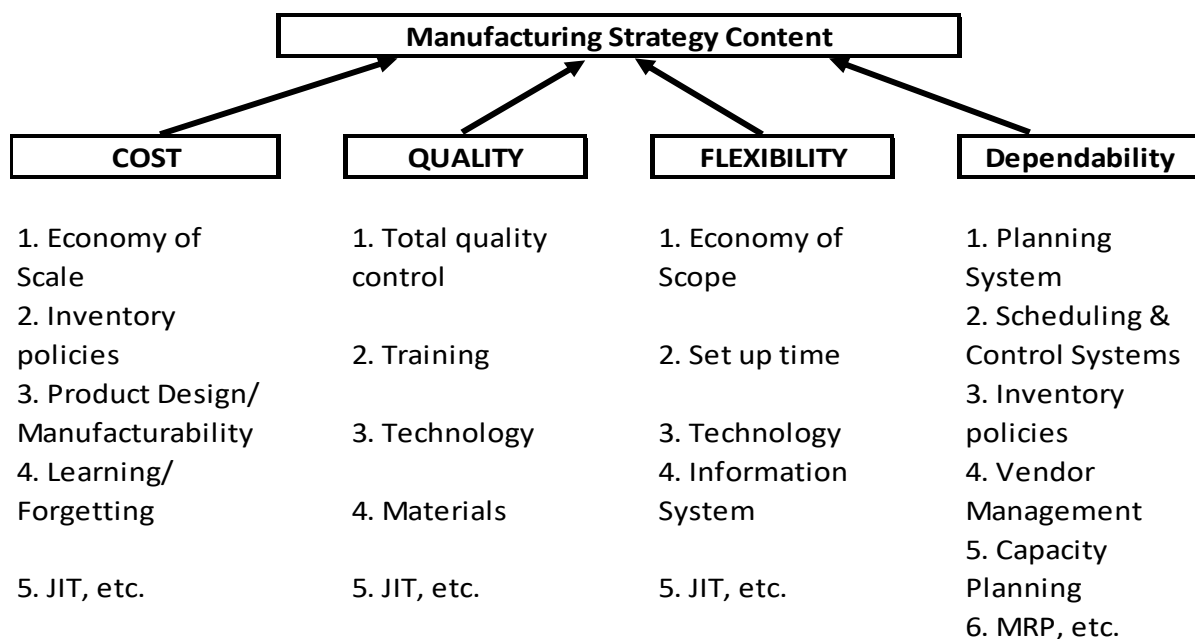


Fig. 7 The Dimensions of Manufacturing Strategy Content and Contributing Variables

Source: SWAMIDASS P., NEWELL W.; Manufacturing Strategy, Environmental Uncertainty and Performance: A Path Analytic Model, Management Science, April 1987, p.511

Later, from a manufacturing perspective authors like Skinner, Buffa, Hayes & Wheelwright, Schmenner, etc., extended them to several additional capabilities, including “cost” as one of them

Quality represents a consistent conformity substance to customers' expectations. Perhaps it is the most important objective within all operations. Quality is the most visible part of what operations do. A customer perception of high-quality products and services is directly linked with its potential loyalty. Quality influences all the remaining operations management objectives, especially dependability and cost. Quality is the main driver to profitability (Adam et al., 1986). It is assumed that the key for achieving competitive quality is linked with prevention. As more attention is put at prevention expenditures of quality assurance, as much proportionately cost savings will be generated.

Speed means the elapsed time between the registered demand and the ability to respond it through a proper supply. The faster the products and services could be delivered, the higher will be the likelihood they to be bought and paid, respectively. Followed through a quick process of customer perception of a received benefit and a transformation of becoming a loyal beneficent. The aim is to speed up response, ensure dependability of delivery, and reduce costs through minimizing total inventory across the whole system (Fowler, 1999, pp. 182-204).

Flexibility shows an organization's ability to change, being one of the most difficult objectives for a firm to achieve. Usually this means changing what, how or when the operations do. Manufacturing flexibility represents a multidimensional concept, ensuring that the manufacturing process is both cost-efficient and cost-effective in that it can produce customized products without sacrificing either objective (Gupta & Somers, 1996, p.204).

Dependability means doing things in time for customers to receive their goods or services exactly when they are needed, or at least when they were promised (Slack et al., 2012, p.49). Slack & Lewis define dependability as a straightforward concept:

$$\text{Dependability} = \text{due delivery time} - \text{actual delivery time}.$$

When delivery is on time, the equation should equal zero, positive means it is early and negative means it is late (2011, p. 50). Since dependability is consumed post factum, it potentially increases customer's satisfaction and improves customer's loyalty. Dependability in service organizations means being ready to mobilize resources instantly to ensure that any failures are corrected immediately (Hayes & Wheelwright, 1984, p. 40).

Cost is the other feature that has to be considered with a special attention. Its unique position is linked with the eminent requirement to keep costs down, simultaneously with maintaining all the remaining four objectives at the maximum levels that customers require. Cost is the most important objective, especially for those organizations, that have decided to compete directly on price of their products or services

Effects of performance objectives

As it is shown on fig. 8, all five core performance objectives have internal and external effects. While all of them influence the external environment differently, internally all of them affect cost. So one important way to improve cost performance is to improve the performance of the other operations objectives (Slack et al., 2012, p. 59):

- High-quality operations do not waste time or effort having to re-do things, nor are their internal customers inconvenienced by flawed service.
- Fast operations reduce the level of in-process inventory between processes as well as reducing administrative overheads.
- Dependable operations do not spring any unwelcome surprises on their internal customers. They can be relied on to deliver exactly as planned. This eliminates wasteful disruption and allows the other processes to operate efficiently.
- Flexible operations adapt to changing circumstances quickly and without disrupting the rest of operation. Flexible processes can also change over between tasks quickly and without wasting time and capacity.

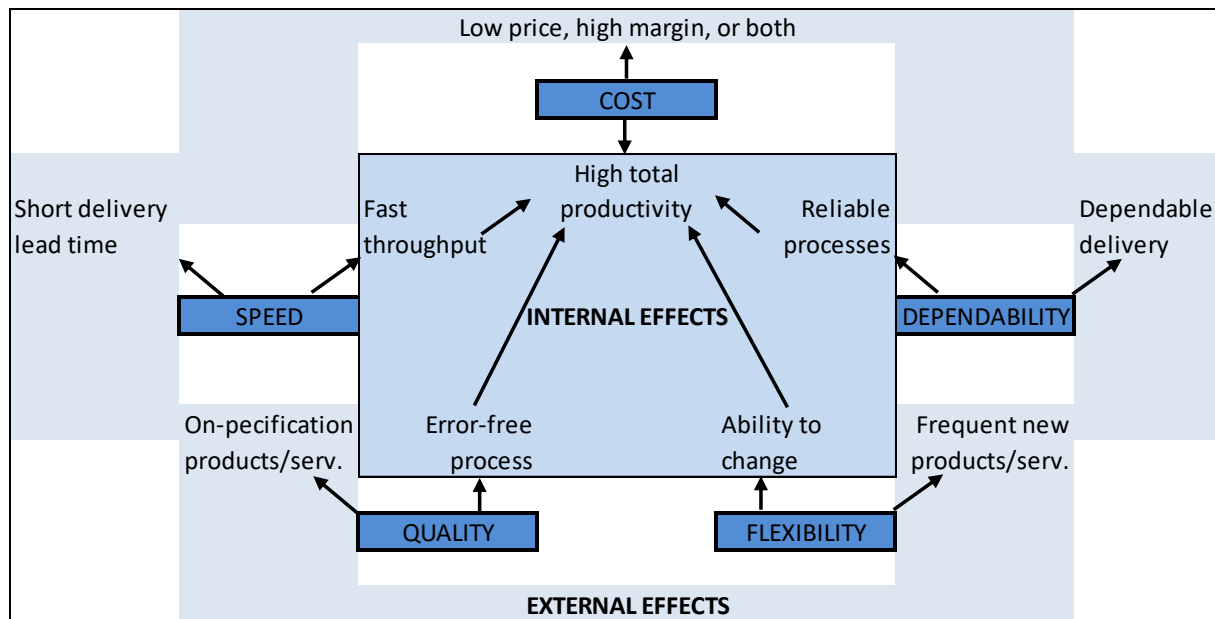


Fig. 8 Internal and external effects of performance objectives

Source: SLACK N., JOHNSON R., JONES A.; Operations Management, Seventh edition, Pearson Education Limited, 2012, p. 58

First inner frame represents the transformation process, where the core operations (manufacturing) activities are performed. It is the real manufacturing process, determined by internal structural and infrastructural organization. Second circle of performance indicators represents operations resources, or goals that must be achieved during the journey for delivering sustainable competitive advantage. Outside area represents market requirements that determine the main characteristics of operations strategy.

If we extrapolate fig. 8 to figures N.4 (the transformation process) and N. 5 (perspectives on operations strategy), we can conclude that the internal effects on those five performance indicators influence the whole process of transformation of all inputs of resources into outputs of products or services. The external effects of same indicators ensure the link of operations strategy with the business strategy and the surrounding outside environment, respectively.

Structural and infrastructural decisions

As already indicated, the theoretical foundation of the operations strategy (manufacturing strategy) is built of two components – process and content (Hayes & Wheelwright, 1984). The process relates to the activity of the strategy's formulation

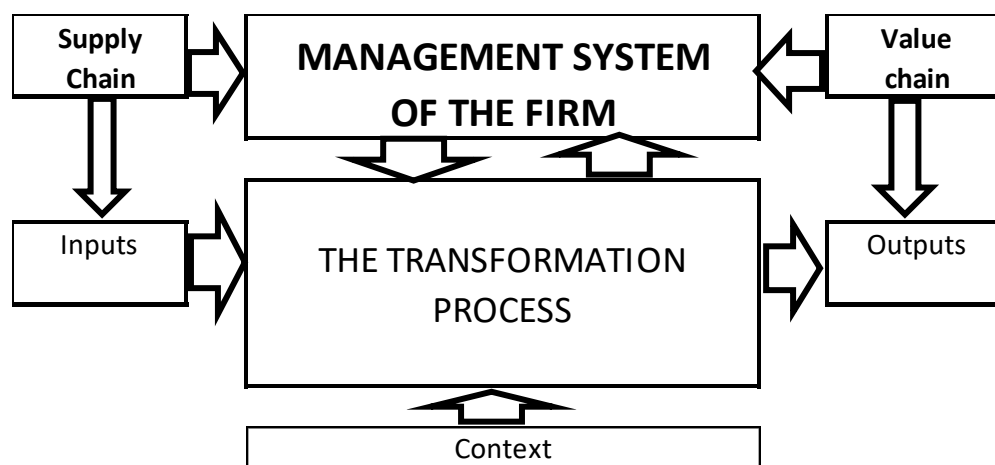
and implementation. The core content of operations strategy refers to the primary performance indicators. The strategy content focuses on the specifics of what was decided and process addresses how such decisions are implemented in an organizational setting (Fahey & Christiansen, 1986, p. 168). The content of manufacturing strategy is first defined by Skinner (1966) and then refined by Buffa (1984), Schmenner (1982), Hill (1985), Wheelwright (1978 & 1981). It refers to two broad area decision categories: structural and infrastructural (Hayes & Schmenner, 1978; Miller & Roth, 1994). Both structural and infrastructural issues build the strategic foundation of the manufacturing concept. It is assumed that structural issues set the process and technology for operations, while infrastructure supports it with long-term competitive edge by continuous improvement of all related elements (Hill, 1987). Effective use of infrastructural issues with structural issues leads the organization towards manufacturing excellence (Dangayach & Deshmukh, 2001, p. 907). Structural categories, which relate to facility's capacity, design or various types of process technology have long-term impact over the organization and require a significant amount of investments. Infrastructural decisions are not linked with same level of investments, however they require more complex decision-making process, since the nature of such decisions is very specific and is longer time consuming to prove their validity.

Since manufacturing strategy has been identified as a functional strategy, two important elements become vital to its proper definition – “the manufacturing function” that has to be accomplished and “the pattern of manufacturing choices” that the company makes. The first element, defined as a “management task” in terms of necessary capabilities the manufacturing unit is obliged to possess in order to compete, following the predetermined business strategy. Examples of such critical competitive capabilities are cost, quality, delivery, flexibility, responsiveness, dependability, innovation, efficiency, service etc. The manufacturing task is more likely to vary from one job to the next, requiring more complex interactions between different areas of the plant and higher levels of decentralized decision making (Hill, 1994). On the other hand, it claims that for achieving the company mission, manufacturing should be capable of helping the company do what it wants to do without wasting resources in lesser pursuits (Hayes & Schmenner, 1978, p. 108).

Operations management concepts

Quality improvement perspective

Extending the transformation process, which was presented already, now we are upgrading it putting some more management emphasis to that process. As articulated on the following figure, inputs and outputs are researched as elements of supply and value chain, respectively. Both establish the whole management system of the firm.



Fir. 9 The management process model

Source: adapted from Holweg et al.; Process Theory: The principles of Operations Management, Oxford University Press, Oxford, 2018.

Explaining the quality of the products and services as one of five basic operations management objectives, given in chapter 3, the primary focus was put on the final product, which has been already produced and ready for customer delivery, but not the production process. Up to 1970's it was assumed that operations, involved in the production process and especially their consequences have been technologically established and were out of the research area. The product quality was inspected at the end of the production process, when it has been accumulated as an inventory, primarily through statistical quality control. Beginning of 1980's the focus was moved from the product to the process and especially to the possibility to improve the process operations. The quality of the operations was understood as the quality of

its operations (Zeleny, 2013, p. 209). During this time, leading operations management concepts like Total Quality Management (TQM), Just in Time (JIT), Six Sigma etc. were established. At this stage those concepts contributed to achieve tremendous improvement of operations, leaving the structural architecture of the processes unchanged. End of 1980's and onwards the research focus was shifted from the operations to directions that change the process architecture itself. This transformation resulted in emerging adaptation processes towards integration of individual components into autonomous and self-managed subsystems. During this time frame emerged management concepts like BPR, Lean and TOC. All four strategic approaches explore productivity improvement, or improvement of operations performance, but in a different way. TQM (Six sigma) is stressing on quality, Lean (JIT) is stressing on flexibility, while TOC and BPR are stressing on dependability. No one of those management philosophies consider cost impact as a primary objective. Actually, cost improvement appears as a consequence of adoption either of TQM, JIT or Lean, based on no cost spent for waste or for stock accumulation, respectively. On the other hand, implementation on those management philosophies impact organizational changes in a different way. BPR represents a radical improvement philosophy, where changes are performed in big steps and in a short time. Opposite to it, TQM is a continuous improvement approach, where changes are performed gradually and slowly, after lots of considerations. The remaining core philosophies like TOC and Lean manufacturing can combine elements from both polar approaches. Through implementation of some of those four strategic approaches, companies gain significant operations-based advantages.

| Management concept | Primary objective | Secondary objective | Objectives not considered |
|--------------------------------|--|----------------------------|-----------------------------------|
| Total quality management | Quality | Cost | Flexibility, Speed, Dependability |
| Business process reengineering | Cost | Quality | Speed, Dependability, Flexibility |
| Theory of constraints | Speed | Flexibility | Cost, Dependability, Quality |
| Lean operations | Speed, Dependability, Quality, Flexibility | Cost | no such |

Fig. 10 Performance objectives according to management concepts

Source: author own

Total Quality Management (TQM) represents a management concept that pursues to meet customer needs and expectations within an organization through continuous improvement of the quality of goods and services and by integrating all functions and processes within same organization (Prajogo & McDermott, 2005). Business process reengineering (BPR) represents a management approach that assumes the most radical change in an organization could happen. The basic enabler for achieving dramatic improvements in business processes' performance represents the technology. The Theory of Constraints (TOC) provides a different perspective for the way to achieve an efficiency in the operations management framework, where each company is researched as a system. Going further, the organization is viewed as a chain, or network of chains, of interdependent functions and processes. The strength of the whole chain is determined by the strength of its weakest link. TOC is characterized as a set of concepts, principles and measurements that focus attention to the flow of work optimization to identify core problems (constraints), design and test solutions and structure implementation plans (Dettmer, 1998, p.3). The lean concept is related to the direction towards being highly responsive to customer demands through waste reduction (in case of manufacturing), at the lowest possible costs and at the exact time to be delivered as per customer request. The phenomenon of lean production, an area made up of multiple concepts is widely considered to increase productivity (Voss, 2015, p. 1235).

Conclusions

Based on presented theory review of the current level of the scientific knowledge, few conclusions follow:

1. Regarding the role and the place of the operations strategy, there are two reciprocal concepts, within the well-accepted strategy hierarchy. The conventional statement assigns it as being part of functional strategies, while outstanding operations management scholars assign it more comprehensive role, either as a “instigator” within the process of establishment the business strategy or as a competitive “weapon” of the corporate strategy.
2. The strength of the operations strategy is still under evaluated in both theory and practice, in terms of its contribution for establishment of a competitive

advantage. This fact is due from the misunderstanding of the theoretical essence of operations – as process and as function, as well as their strategic potential.

3. The theoretical essence of the operations strategy should be researched not only in terms of its process, as it is done by the strategic management scholars, but through its content, where the following elements could be outlined: competitive performance objectives, structural and infrastructural decisions, as well as operations management concepts.

CHAPTER TWO

Analysis of Market- and Resource based theories

Industrial Organization and Market Based Theory

The Industrial Organization (IO) as a theoretic term, describes the framework of industries structure in the economy and the firm's behavior in these industries. The correlated Structure – Conduct - Performance (S-C-P) paradigm represents an approach for industry structure assessment and analysis, primarily from the market structure point of view. With other words, the focus of IO theory is on the market a company operates in, rather than the company itself (Ramsey, 2001, pp. 38-47). IO is considered as the application of microeconomic theory to the analysis of firms, markets and industries (Stigler, 1968, p.1). Two directions of analysis are proposed – the specifics of firm performance, based on related competition and the market power, arisen from the different market structures. Therefore, from one side, IO is concerned with the working of markets and industries, and in particular the way firms compete with each other (Cabral, 2000, p.9). From the other side, IO is defined as a study of the operation and performance of imperfectly competitive markets and the behavior of firms in these markets (Chunch & Ware, 2000, p.7 This statement is further developed by outlining the difference between microeconomics and industrial economics. The former theoretic direction is assumed to be more formal and deductive, the latter is inductive and less formal. This is the reason why microeconomics is more

focused on researching the profit maximization of an individual firm, but not exploring its operational aspects. Opposite to it, industrial economics' focus is directed to the operational aspect and tries to explain its way of work and potential changes in the existing system (Lelissa & Kuhil, 2018, p. 77). In terms of environmental perspective, it is believed that microeconomics is primarily concerned with extreme events – in cases of monopoly and perfect competition, while industrial economics is usually focused on the typical oligopoly situation (Shepherd, 1972, pp.25-37). On the other hand, it is claimed that the original objective of IO was to describe conditions under which competition in an industry would not develop (Barney & Hesterly, 2012, pp.33). Next purpose of the S-C-P paradigm was to isolate violations of the perfectly competitive model, to address these violations in order to restore the social welfare benefits of perfectly competitive industries (Barney, 1986, pp. 791-800). However soon, social welfare concerns were abandoned in favor of the creation of imperfectly competitive industries within which a particular firm could gain competitive advantage (Porter, 1981, pp. 609-620).

In case the firm's competitive advantages could be obtained by looking at the market, this theoretical approach was called Market-based theory (MBT), where outside-in perspective is considered. Such a perspective suggests firms to gain competitive advantage through identifying external opportunities in new and existing markets and thus aligning the firms with these opportunities. The company's position in the market or competitive environment is the crucial determinant of its success (Kotler et al., 2010, p. 44). MBT is also known as a concept of "strategy as positioning", where the focus is put on the customer, the market, or the industry (Brews, 2003, pp. 34-43). In this approach competitive changes within markets determine which markets firms should enter, stay in, or exit (Haspeslagh, 1982, pp. 13-30).

Resource Based Theory

Alternatively to MBT, Resource Based Theory (RBT) postulates that the firms should assemble and deploy appropriate resources providing opportunities for long-lasting competitive advantage in its chosen markets for return maximization (Barney, 1986, p. 656; Diericks & Cool, 1989, p.1505). Resources are inputs into the production process – the basic units of analysis, while capability is the capacity for a pool of

resources to perform some task or activity (Grant, 1991, p. 119). It is considered that resources are the source of a firm's capabilities, while capabilities are the main source of its competitive advantage. And to achieve these goals, the business unit must assemble resources that are valuable, relatively rare, imperfectly imitable and not easily substitutable (Barney, 1991, pp.99-120). The ideal mix of those resources supposed to be involved in creating a strategy that is different from that of its competitors. With the new century, RBT has emerged as a major theme in operations management (Pilkington & Firtzgerald, 2006, pp. 1255). Even though operations theory has moved gradually from a "market-based" to a "resource-based" view of competition, where the former view sees operations as a perfectly adjustable system concentrated at successfully follow the rules imposed by markets, while the latter suggests that it is more profitable to focus on developing, protecting and leveraging a firm's unique operational resources and advantages for changing the rules of competition (Gagnon, 1999, p.125).

Operations Management Theory

Core concepts of operations

There is no clearly recognized theory on which operations management to rest. It has only a limited number of theories and must rely on those drawn from other disciplines such strategy, economics and behavior science (Voss, 2015, p. 1235). On the other hand, operations management is one of the disciplines that is more open to a scholarly exchange with other disciplines (Linderman & Chandrasekaran, 2010, p. 357). Operations management can be viewed as a mixture of natural and behavioral science (Schmenner & Swink, 1998, p. 99). The role of theory in both types of sciences works in essentially the same way (Kaplan, 1964, p. 303). However, the theory in some natural sciences like mathematics, physics, chemistry etc. rests on some laws, formulas or theorems, proven by numerical equations, supported by incontestable facts. Oppositely, the predicament of behavioral science is not the absence of theory, but its proliferation, since the successive replacement of poor theories by better ones, whose advances depend on the way in which each takes account of the achievement of its predecessors (Kaplan, 1964, p. 304). As an economic discipline, similar to accounting and finance, perhaps the roots of operations management might be traced

in the economic theory. Its nature offers exploring relationship among different variables. However, similar to the strategic management, some evidence of strong impact from psychology theory could be found. More specific, those dealing with some organizational behavior aspects. On the other hand, due to the specific nature of the operations research field and their focus on precision and details, engineering science with its related theory should also be involved. Especially if recognizing that industrial engineering stipulates importance on the fact when solving a given problem, someone to be able to demonstrate a viable solution (Boer et al., 2015).

Operations management theory puts operations in the core of the research area and examines the way how they can be improved. Looking more broadly, microeconomic theory deals with the eminent question “Why one company is more productive than another?” Potentially, part of the explanation is provided through different types of labor and capital as well as different mixture of them. There might be cases where one company is better invested in fixed assets, compared to its competitor. Another possibility exists when one company processes more skilled personnel than the other. However in both examples the insights of microeconomic theory do not enter the framework of the company itself. It does not explain different productivity through different applied technology, different quality of the products and services, different speed of production process or different tendency to flexibility, eventually achieved economy of scale, etc. All these outputs represent operations management achievements, created within the “black box”, applied different kind of techniques that rest of some economic principles.

The concept of the trade-offs

It is logically to assume that improving the performance in one operations objective could result in improvement of other performance objectives. More specifically, higher quality, speed, dependability and flexibility usually result in cost reductions. However, there are areas where improvement in some performance objectives causes distortion in others. In these cases we are considering the validity of the concept of *trade-off* between performance objectives, where only sacrificing one or more objective could deliver improvement in others. Usually higher flexibility, dependability, speed and quality, in short-term means higher cost. According to the traditional manufacturing strategy, operational effectiveness is maximized when

operations performance indicators such quality, dependability, speed, flexibility and cost are “traded-off”. Respectively, improving one of them must come at the expense of the rest, such as cost for quality, unless there exist some level of operating inefficiencies (Boyer & Lewis, 2002, p.9-20).

The theory of competitive progression and the sand cone model

The competitive progression theory (CPT) holds that sustainable competitive capabilities are built cumulatively, from conformance quality to delivery reliability to volume flexibility to low cost, because moving up each step in the model requires more learning than in the earlier steps (Rosenzweig & Roth, 2004, p. 356). CPT proposes that those capabilities that are occurring in a specific order, are subject to diminishing returns over time due to technological constraints all firms are subjects to (Vastag, 2000, p. 353-360). The perspective, provided by this theory, outlines the complementary way of developing cumulative capabilities, based on which firms benefit from realizing synergies that ensure a significant source of competitive advantage (Flynn et al., 1999, pp. 249-269). The CPT is best visualized by the sand cone model, provided by Ferdows and De Mayer in 1990s. Actually, the essence of trade-offs within manufacturing capabilities is more complex than it is proposed as an economic concept. There are situations where the availability of one capability would enhance the development of the other in a logic consequence. It is claimed that when a certain capability is improved in a cumulative way, it is likely to become more lasting compared with a development way at the expense of other capabilities. Following the CPT, first management attention should be stressed on enhancing quality. Once quality improvement is achieved, next focus lays on the improving the dependability of the production system. Then follows the improvement in the flexibility and finally all the efforts have to be concentrated in the enhancement of cost efficiency.

The concept of the performance frontier

The performance frontier can be defined as the maximum achieved performance by a manufacturing unit given a set of operating choices (Schmenner & Swink, 1998, p. 106). The other term that economic theory is using, is called “a production frontier”. The production frontier is defined as the maximum output that can

be produced from any given set of inputs, given technical considerations (Samuelson, 1947). Borrowing definitions from Hayes & Wheelwright for “structural” and “infrastructural” choices, affecting assets and operating policies respectively, Schmenner & Swink propose two types of performance frontier. The one that is formed by choices in plant design and investment, called “an asset frontier” and the other – formed by choices in plant operation, called “an operating frontier”, as they are shown on the following figure:

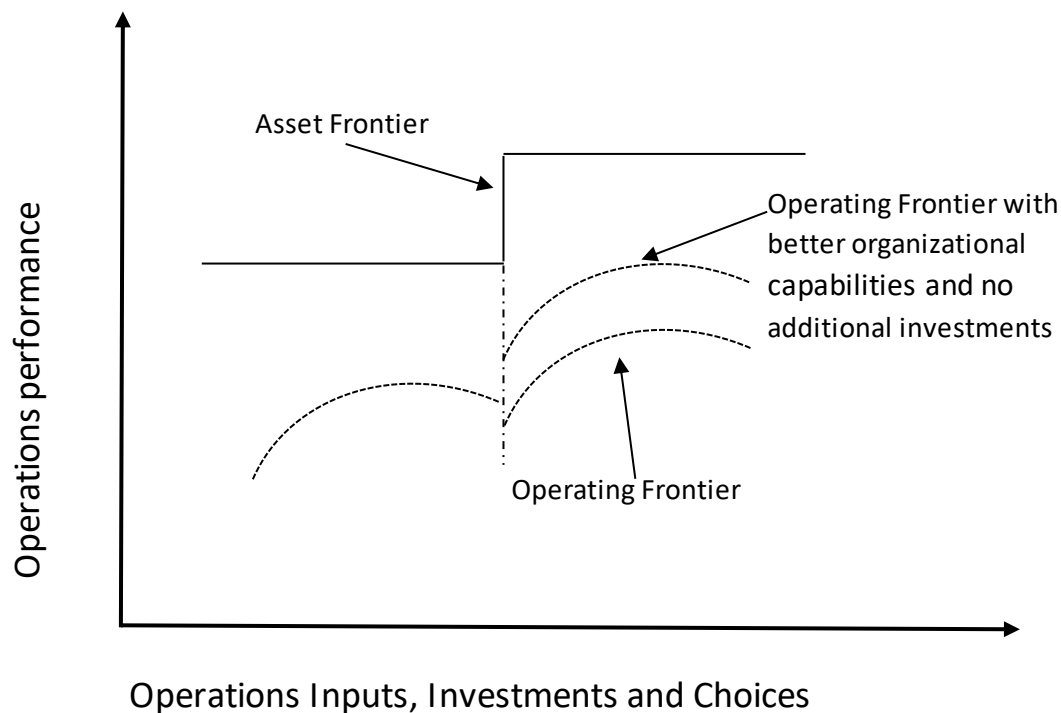


Fig. 11 Asset and operating frontier

Source: Adapted from: Vastag G.; The theory of performance frontiers, Journal of Operations Management, 2000, vol. 18, pp. 353-360

The characteristics of the asset frontier are formed through the different kinds of investments (structural decisions) within the company, while the behavior of the operating frontier depends on the choices made based on the available set of assets (infrastructural decisions). With other words, a performance frontier is determined by the assets at a firm’s disposal and the ability of that firm to leverage those assets (Schoenerr et al., 2009, p.5). Therefore, the asset frontier represents the maximum performance based on certain utilization of given capacity, while operations frontier reflects certain achievements in result of the combination between given operations policies and applied strategies. Since there is similarity between asset frontier and

design capacity (maximum output that can be attained at a plant) on one side, and operating frontier and effective (measured) capacity, on the other, it could be claimed that there is no asset frontier without operating frontier and vice versa (Vastag, 2000, p. 354). In this sense, both structural and infrastructural decisions are necessary to be taken in order to be reinforced the operations of a manufacturing unit. The validity of the concepts of trade-offs (Skinner) and the sand cone model (Ferdows & De Meyer) depends on the type of curve of performance frontier, or with other words, where the organization is positioned according to its performance frontier. Skinner's concept is more likely to occur when manufacturers are operating near their frontier, because further improvements are initially constrained by the limits of the organization's technological assets (Rosenzweig & Roth, 2004, p.356). Opposite to it, the sand cone model assumes situation where companies are not at the edge on their frontier.

The concept of the product life cycle

The concept of the product life cycle (PLC) represents a cycle through which every product pass over its market evolution - from the formation to its withdrawal. The basic assumption postulates that all products have a limited life span until a better solution to the customer problems comes along (Cravens & Piercy, 2006, p. 171).

The concept of the experience curve

The basic theory of the learning theory says the following: a worker learns as he/she works and the more often he/she repeats an operation, the more efficient he/she becomes, with the result that the direct labor input per unit declines (Andress, 1954, p. 87). This reduction is called rising productivity. There are two main factors which affect learning: (1) the inherent susceptibility of an operation to improvement and (2) the degree to which that susceptibility is exploited (Hirshmann, 1964). The effect of the learning curve could be explained with an analysis in two perspectives – product and process evolution (Hayes & Wheelwright, 1979, p. 133):

1. Product cost reduction could be achieved through product redesign, product line simplification, development of improved raw materials and parts, use of economical distribution channels, etc.

2. Manufacturing process cost reduction opportunities appear through economies of scale, improved materials-handling technology, better tools and equipment and reduced labor cost through automation.

The concept of focused factory

The concept of focused factory could be reviewed as extension of the trade-offs concept. It is again introduced by Skinner with his seminal statement: “A factory that focuses on a narrow product mix for a particular market niche will outperform the conventional plant, which attempts a broader mission. Its entire apparatus is focused to accomplish the manufacturing task, demanded by the company’s overall strategy and marketing objective” (1974, p. 114).

The four-stage model

Evaluating the strategic role and contribution of the operations function within the firm, Hayes & Wheelwright have developed their four-stage model. It presents the progress of the operations function from playing a negative role in the initial state, being a neutral, through becoming a supportive element of the operations strategy excellence. The model persuades the statement that companies should not only strive to align their competitive capabilities with the marketplace, but also to deploy policies that will help to achieve the desired strategic goals.

The essence of “four stage” model is very similar to the learning model from psychology, having the same title – *the four stages of competence*, which relates to the stages involved in the process of progressing from incompetence to competence in a skill, as presented on the following figure:

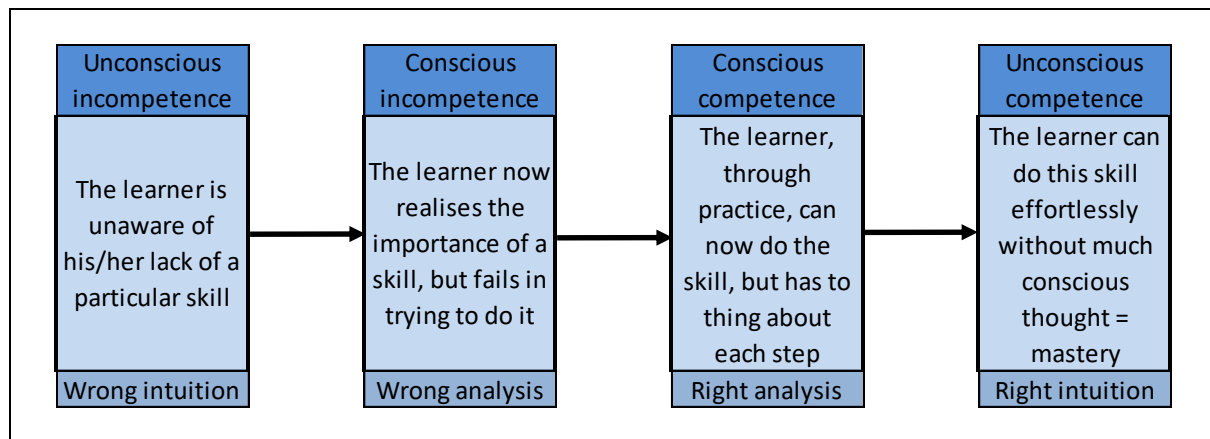


Fig. 12 The conscious competence learning model

Source: MEHAY R.; Programme Director (Bradford, West Yorkshire), 2010

Corporate and business strategy level content

Theoretic principles and corporate level strategy types

Corporate-level strategy is a scope of actions firms take to gain competitive advantage by choosing to operate or own assets in multiple markets or industries simultaneously (Barney & Hesterly, 2012, p. 9). Corporate strategy is the umbrella strategy for the entire company and aims: (1) to define strategic businesses, (2) to evaluate current market positions and (3) to identify investment priorities for the businesses that the corporation manages. Corporate strategy decisions include investment in diversification, vertical integration, acquisitions and new ventures; the allocation of resources between the different businesses of the firm and divestments (Grant & Jordan, 2012, p. 12).

Theoretic principles and business level strategy types

Porter considers competitive strategy to be about taking actions to create a defensible position in an industry with a view to yielding a superior return on investment for the firm (1980, p.34). However, when one strips away the details to get at the real substance, the biggest and the most important differences among competitive strategies boil down to (1) whether a company's target market is broad or narrow and (2) whether it is pursuing a competitive advantage linked to low cost or

product differentiation; based on these criteria, he developed the concept of the Five Generic Competitive Strategies:

1. A **low-cost provider strategy** appeals to a broad spectrum of customers based on its being the overall low cost provider of the product or service. Businesses employing this strategy are exceptionally good at finding ways to drive cost down.

2. A **broad differentiation strategy** seeks to differentiate the company's product offering from rivals' in ways that will appeal to a broad spectrum of buyers. The most appealing approaches to differentiation are those that are difficult or expensive for rivals to easily replicate - resourceful competitors can in time copy almost any product or feature or attribute.

3. A **best-cost provider strategy** gives customers more value for money by incorporating good-to-excellent product attributes at a lower cost than rivals; the target is to have the lowest (best) costs and prices, compared to rivals offering products with comparable attributes.

4. A **focused (or market niche) strategy** based on **low cost** concentrates on a narrow buyer segment and on outcompeting rivals by servicing niche members at a lower cost than rivals.

5. A **focused (or market niche) strategy** based on **differentiation** concentrates on a narrow buyer segment and on outcompeting rivals by offering niche members customized attributes that meet their tastes and requirements better than rivals' products.

Business model

Next level where operations strategy and business strategy could be compared and eventually aligned is in the related models of their practical application. The business model corresponds to the business strategy, while the operating model relates to operations strategy. The structure of the corresponding business model and operating model are articulated on the next figure:

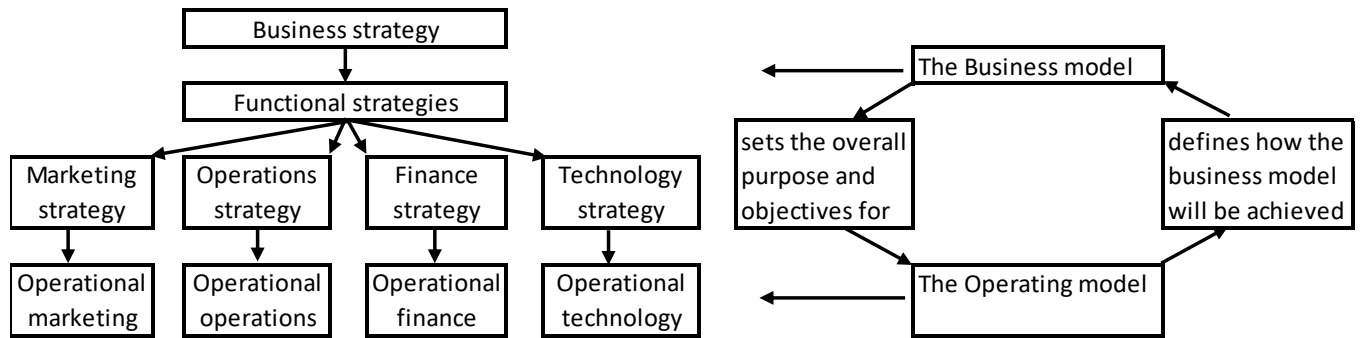


Fig. 13 The relationship between the concepts of the “business model” and the “operating model”

Source adapted from: SLACK N., LEWIS M., Operations Strategy, Third Edition, Pearson Education Limited, 2011, p.9

Normally, every business organization has developed and accepted its own business model. However, business model is not the same as organization’s strategy, although many managers, even top executives use these terms interchangeably nowadays. Usually, the ingredients of the model define the customer value proposition and the pricing mechanism, as well as the structure of its supply chain. In any given industry, a dominant business model tends to emerge over time, in the absence of market distortions, the model will reflect the most efficient way to allocate and organize resources (Kavadias et al., 2016, p.92).

Operating model

Historically, the notion with the first operating model is linked with the concept of focus. Applying it through the operating model, it has been suggested as a basic receipt how the American industry can overcome the attacks of Japanese factories that in 1970s and 1980s were extremely good in quality, flexibility and low cost The concept of focus along with the related operating model are further developed by Treacy & Wiersema, examining leading American corporations in their emphasis on delivering superior customer value (1993). There are two important characteristics of the operating model (Slack & Lewis, 2011, p. 8):

1. It does not respect conventional functional boundaries as such – the operating model is like an operations strategy but applied across all functions and domains of the organization.
2. There are clear overlaps between the ‘business model’ and the ‘operating model’. The main difference being that an operating model focuses more on how an overall business strategy is to be achieved. Operating models have an element of implied change or transformation of the organization’s resources and processes.

The main difference, compared with the business model, is that the operating model is much more focused on the way, through which the whole business strategy is supposed to be achieved.

Operating model – the invisible part of the iceberg

From the application perspective, there is a fundamental difference between the business model and the operating model. Although, to some extent being overlapping concepts, they differ in terms of their transparency. Like an iceberg, the business model tends to be the visible part (above the water) of the business, while the operating model remains the secret competitive weapon (below the water) of the organization. The business model reveals the competitive position of the company. Most of the companies present their business model in the strategy section of the corporate website. Many corporate CEOs claim in media interviews that their business model is such and that, but the operating model remains a secret for the external stakeholders. And the reason is that the operating model plays the magic role that helps the company to distinguish itself by keeping its success from competitors, although their business model being potentially copied or imitated. In essence, the operating model explains how the processes are organized within the company to become competitive effective and efficient.

Conclusions

Based on the presented strategic analysis in this chapter, the following conclusions should be made:

1. The operations management is not based on a single clearly defined theoretical framework, as it is done in the strategic management discipline, with its industrial organization's theory, reinforced by the resource-based theory. The operations management is one of the scientific disciplines, which is suitable for exchange with other scientific directions like engineering or natural sciences.
2. Similar to the strategic management discipline, where the strategy's practical application is expressed through the business model, the operations management discipline has its own application tool – the operations model. To some extent, both elements coincide each other, however at the same time they differentiate from one another.

CHAPTER THREE

Operations management evolution in theory and in practice

The place of operations strategy within the strategy hierarchy

Analyzing the role and place of operations strategy within the conventional strategy hierarchy – corporate strategy, business strategy and functional strategies, some elements will be borrowed from Hayes & Wheelwright's four stages model and namely the titles of those four levels – internally neutral, externally neutral and internally supporting, and externally supporting. The suggested positioning of operations strategy is based on strategic management (first two) and operation management (last two) perspectives, with related scholars, as articulated on the following figure:

| Stage | Perspective | Basic statement | Scholars |
|------------------------|-----------------------|---|--|
| Externally negative | Strategic management | Operational efficiency is not strategy | Porter (1996), Frery (2006) |
| Externally neutral | Strategic management | Operations (manufacturing) strategy, as part of functional strategies, interacts with business strategy | Ward & Duray, (2000); Rosenzweig et al., (2003); Leong et al., (1996) |
| Internally neutral | Operations management | Operations (manufacturing) strategy supports firms performance | Skinner, (1969); Wheelwright, (1984); Gupta & Somers, (1996); Vickery et al., (1993); Williams et al., (1995); Cleveland et al., (1989) |
| Internally progressive | Operations management | The strategic power of operations redefines corporate strategy | Skinner, (1969); Hill, (1985); Hayes & Schmenner, (1978); Kelly, (1995); Hayes & Upton, (1998); Voss & Blackmon, (1998); Jeong & Philips, (2001); Krajewski et al., (2016) |

Fig. 14 The place and role of operations strategy within the strategy hierarchy.

Source: author own

First stage, called “externally negative” is based on the statement that operations are nothing to do with strategy, since operational efficiency (provided by operations) it is not equal to strategy. Second stage, is more balanced and neutral, saying that actually operations strategy, as part of other functional strategies, interacts with business strategy. Third stage, coming from operations management perspective reinforces this neutrality, assuming that operations strategy supports firm’s performance, their business strategy and corporate strategy, respectively. And finally, internal progression derives from the strategic power of operations, able to redefine the corporate strategy, being a competitive weapon for the corporate success.

The initial stage – “externally negative” starts with the famous Porter’s statement “operational effectiveness is not strategy” (1996). “Operational effectiveness means performing similar activities better than rivals perform them, it includes but not limited to efficiency. In contrast, strategic positioning means performing different activities from rivals or performing similar activities in different ways” (Porter, 1996, p. 62). With other words, operations should be separated from strategy in the following way: strategy is put above operations – strategy formulation and implementation navigate operations activities. Same statement is shared by Frery, who is claiming that “strategy must never be confused with operational efficiency” (2006, p. 4).

In the second and third stage (externally and internally neutral), the relationship between competitive strategy and manufacturing strategy is primarily researched in two ways – from strategic management perspective and from operations management perspective. The strategic management perspective examines the link: Environment-Strategy-Performance (Ward & Duray, 2000; Rosenzweig et al., 2003; Leong et al., 1996), while the operations management perspective explores the interrelation between business strategy and operations strategy and their impact on firm performance (Gupta & Somers, 1996; Vickery et al., 1993; Williams et al., 1995; Cleveland et al., 1989).

What is important to mention is that all the papers, even those from the operations management perspective, examine operations strategy just as functional strategy that supports business performance of the firm. The underlying assumption is that the manufacturing function plays a key role in the overall performance in the business unit and that its role can be enhanced through proper integration with other functional areas (Williams et al., 1995, p. 19).

Another perspective of strategy hierarchical framework postulates that corporate strategy relates to business strategy and business strategy to manufacturing strategy (operations strategy) (Skinner, 1969). Two decades later this perspective is extended by incorporating multiple business units with various functional areas like marketing and sales strategy, research and development strategy, accounting strategy, etc. (Wheelwright, 1984, pp.77-91; Kotha & Orne, 1989, pp.211-231).

The last stage, internally progressive, assigns more supreme function of operations as a secret competitive weapon, asking the question: “Is operations strategy just a type of functional strategy or something more?” The basic role of any functional strategy is to find out how this functions is able to contribute to the competitive advantage of the business. The central statement is that manufacturing must not focus on productivity and efficiency only, but also be consistent with the capabilities that must be developed for support of corporate goals (Skinner, 1969; Wheelwright, 1984). Therefore, corporate strategy affects manufacturing strategy and vice versa. According to Mills et al., within strategy hierarchy, manufacturing strategy can appear in two places, first at the corporate level, taking a broad view over a set of related or separate businesses and second, it can appear as one of the functional strategies at the business level (1995, pp. 17-49). With other words operations strategy plays much more broader and important role than just as a type of a functional strategy.

Manufacturing strategy is defined as the effective use of manufacturing strengths as a competitive weapon for the achievement of business and corporate goals (Swamidass & Newell, 1987, pp. 509-524). Manufacturing's strengths are developed and sustained by a "pattern of decisions" as initially proposed by Mintzberg (1978, pp. 934-948). These are taken in a set of decision areas, which encompass manufacturing strategy and are aimed at achieving manufacturing goals that align with business and corporate goals (Mills et al., 1995, pp. 17-49).

If manufacturing has a strategic role to play, it is conceivable that a company goes beyond using manufacturing as a tool to implement a wider business strategy and that it develops a manufacturing strategy proper (De Meyer, 1992, p.2). No other functional strategy has such a direct impact on both revenue and cost – therefore any subject that claims to increase revenue and reduce costs must demand the attention of companies that can appreciate its potentially disproportionate effect on profitability (Slack, 2005, pp.323-332). Actually, there is an essential conflict of understanding between operations strategy as a functional strategy and operations strategy as a driver of business. Outstanding authors like Hayes, Wheelwright, Pisano, etc. examine it with its second viewpoint. In this relationship, operations strategy specifies the means by which operations implement corporate strategy and helps to build a customer-driven firm, by linking long-term and short-term operations and develops the capabilities it needs to be competitive (Krajewski, 2016, p. 28). Hayes & Schmenner also examines the concept of manufacturing strategy as a natural extension of the concept of corporate strategy, which implies a consistency in the company's preferences for and biases against certain management choices.

Positioning of operations strategy

Current dissertation aims to deliver enough logical arguments supporting the thesis that the core objective of the strategy is to ensure the desired sustainable competitive advantage through the three interrelated strategic levels, as it is (fig. 15): First, CS is to create corporate advantage through adding up value to corporate whole more than the sum of its business unit parts (Porter M., 1987, p. 43). Second, BS is to create competitive advantage through increasing the difference between buyer's willingness-to-pay and supplier's willingness-to-sell, and at the same time being greater than same competitor's difference (Puranam & Venneste, 2016). Third, OS is

to create operational advantage through devising an optimal combination of five performance objectives – quality, cost, dependability, flexibility and speed (Slack & Lewis, 2011). In this sense, among others, one of the core goals of CS is to achieve synergy; OS is to achieve economies of scale, while BS is the pursuit of differentiation. Our new conceptual model articulated in this paper comprises three levels of strategy which are interrelated through a specific dual consistency built through vertical orientation.

Based on the presented points of view of various outstanding scholars in the previous section of the chapter and borrowing theoretical fundamentals of MBT and RBT, it could be proposed a novel conceptual model, articulated on the following figure:

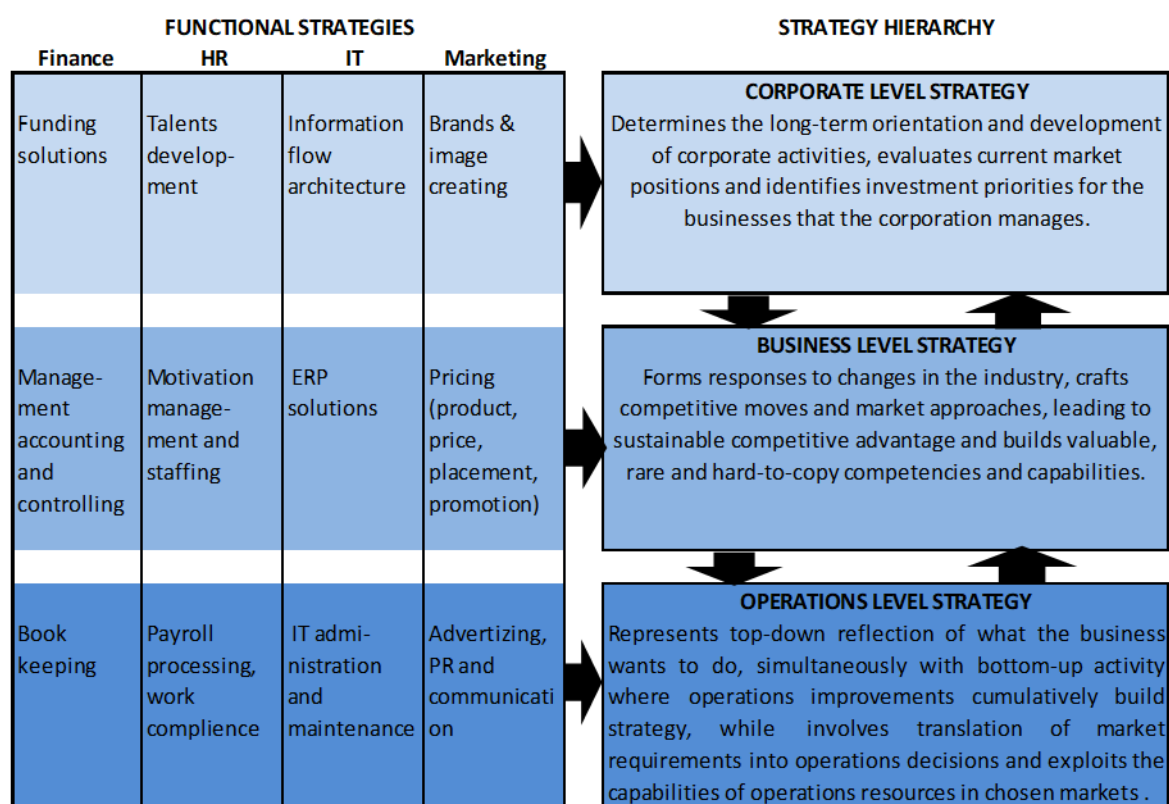


Fig. 15 The new strategy hierarchy model

Source: author own

The model consists of two parts – vertical and horizontal strategy layer. The vertical one (right side) is identical to that from fig. 3. The horizontal layer (left side) is built of different types of functional strategies. What is unique in it is that they (finance strategy, marketing strategy, HR strategy, It strategy, etc.) appear at every vertical level – at corporate, business and operations level in the right side. The reading of the

model starts from the top right corner, cascading down and up, simultaneously being reinforced by the left side, as following:

Top-down direction. The whole process commences with establishing corporate strategy goals, posing questions about business portfolios and investment decisions. Then comes business strategy identifying how to compete in specific markets and industries. Finally operations strategy follows that should provide the right solution to how to deliver the highest result from the sum of the five aforementioned performance objectives.

In **the bottom-up perspective**, operations strategy strives to improve speed, quality, dependability and flexibility at an appropriate cost level, supports and reinforces the final outcome of business strategy – to achieve sustainable competitive advantage that contributes in turn to achieving superior economic returns on a corporate level. Based on the results of business strategy, corporate strategists decide to enter/leave markets, enlarging/shortening value chains or pursuing business diversification. Once this dyadic information flow is completed, further refinement of the whole process might start again based on the outcome of this process.

Horizontal direction left-right. What is important to emphasize is the fact that during the strategic journey at every stage, functional strategies support the corresponding strategic level with necessary resources and capabilities from Marketing, HR, IT and Finance.

Historical background of current strategy levels

Most leading definitions of strategic management emphasize the “determination of long-run objectives, adoption of action courses and allocation of resources necessary for carrying out these goals” (Chandler A., 1962). They also highlight “a pattern of objectives, purposes, or goals and the major policies and plans, stated in such a way as to define what business the company is in or is to be in and the kind of company it is or is to be” (Andrews K., 1971). Lastly strategy is defined as a “unique and valuable company’s position, making trade-offs – choosing what not to do and forging fit among activities” (Porter M., 1996).

Ansoff (1965) was among first authors who identified three different levels of organizational decision making. First, Strategic decisions (what we term CS) – “the

selection of the product mix and markets ... and the match between the firm and the environment". Second, Administrative decisions (what we term BS) – "structuring a firm's resources to maximize profit potential". Third, Operating decisions (what we term OS) – "maximize the efficiency of the firm's resource conversion process". In the same vein, a decade later, Hoffer & Schendel (1978) proposed their hierarchy of strategy, with three major levels. First, Corporate strategy asks what set of businesses should a corporate be in. Second, Business strategy asking how a corporate should compete in a given business? Third, Functional strategy asking how can functional activities contribute to the competitive advantage of a business? Since then, most authors (Varadarajan & Clark, 1994; Grant, 1995; Thomason et al., 2007; Hill & Hill, 2009) assign OS as FS. However, the functional level of strategy is typically linked to a department scope of day-to-day work that supports the whole organization. Usually, it relates to a single functional operation or activity involved. The other name of FS is operational (not operations) strategy and decisions at this level are often described as tactical ones. The other role of FS is assigned to take care of needed relationships between business units and relevant departments. Fine & Hax (1984) provided perhaps the most consistent view of same hierarchy level as Hoffer and Schendel did assigning a more central role for manufacturing strategy. "Each hierarchical level of the firm has a distinct and important role to play in the effort to achieve competitive advantage. ... it is appropriate to ask the question: at what level does the firm design its manufacturing strategy? The answer, obviously, is at all three heretical levels." (Fine & Hax, 1984, p.6) Nevertheless, Fine & Hax still researched manufacturing strategy within the environment of FS.

Corporate-level strategy formulation in conglomerate diversified firms is mainly characterized by the consideration of scope and resource deployments. At the business-level, the scope and boundaries of each business unit and the operational links with corporate strategy are specified. The basis on which the business unit will achieve and maintain a competitive advantage within its industry is also established. At the functional level, the objectives are to support the desired business level strategy in a manner that will provide a competitive advantage and to determine how functional strategies will complement each other (Gupta & Somers, 1996, p. 207). If the statement, that "functional strategies add detail to business strategy, as their primary role is to support it" (Thompson & Strickland, 1990, p.40), will be used, it should be

stated that operations strategy lays the fundament to strategy architecture. This notion is supported through another statement where “manufacturing strategy is often advanced as a source of competitive advantage and therefore it can have significant effect on competitive strategy (Ward et al., 1996, p. 602). Manufacturing strategy refers to the competencies that a firm develops around the operations function and is expected to be one of the components of a firm’s business strategy or strongly integrated with a firm’s business strategies (Anderson, et al., 1989, pp. 133-158).

The roots of the right side of the model could be traced back to 1980’s, when Fine & Hax, designing their view on manufacturing strategy, stated that as a critical component of the firm’s corporate and business strategies, “it cannot be formed in a vacuum, because it affects and is affected by many processes inside and outside the firm” (1984, p.1). Despite being cited numerous times, no one extended their message uncovering a direct link with corporate strategy and business strategy. Rather most research, as already presented in this chapter, is limited to the alignment of manufacturing strategy with the broader business environment and/or firm performance (Hayes & Wheelwright, 1984; Ramanujam & Venkatraman, 1987; Swamidass & Newell, 1987; Williams et al., 1995; Ward et al. 1996; Duray & Ward, 2000). Indeed, the extant literature has not yet attempted to categorize operations strategy on a discrete strategic level beyond the scope of traditional functional strategies.

Why operations strategy is not part of functional strategies?

The validity of our conceptual model leads to formulation of three hypotheses. The first tests the strength of the relationship between OS and BS, and CS. The second tests the reflection of MBT and RBT over the three core strategic layers. And the third hypothesis tests all assumptions that constitute the model for providing a sufficient theoretical environment. During the testing process of hypothesis, an analytical conceptual research method will be applied.

Hypothesis 1: The place and the role of OS is specific and therefore falls outside the scope of the traditional FS.

Perhaps, the general misunderstanding for the role and place of OS not to be associated with any FS is the difference in the meaning of “operational” and “operations”. Operations are not equal to operational, where the last one is concerned

with day-to-day, detailed and routine activities that are exactly opposite to the strategic function of operations. The strategic role of OS affects all areas covered by operations management but does not primarily correspond with operational decisions. Under the term ‘operations’ we assume the resources that create products and services. Conceptually, operations are embedded at the heart of performance, while strategy as a whole, is to navigate this performance towards the achievement of competitive advantage (Aghajary, 2012, p.2).

Why operations strategy deserves a dedicated place at core level?

There is one fundamental reason for placing operations strategy along with corporate strategy and business strategy – it possesses underlying theoretical principles and concepts, similar to business strategy and corporate strategy. Figure 93 below indicates eight theoretical concepts and principles, applicable for operations strategy and simultaneously half of them correspond with similar ones from the business strategy and the other half are common with corporate strategy ones.

| Basic strategy level | Overlapping concepts and principles | Corresponding strategy level |
|----------------------|--------------------------------------|------------------------------|
| Operations strategy | 1. The concept of trade-off | Business strategy |
| | 2. The concept of focus | |
| | 3. Cost objective/leadership | |
| | 4. Quality objective/differentiation | |
| Operations strategy | 5. Life-cycle concept | Corporate strategy |
| | 6. Radical improvement | |
| | 7. Continuous improvement | |
| | 8. Vertical integration | |

Fig. 16 Overlapping concepts and principles

Source: author own

Hypothesis 2: MBT and RBT impact the three strategic layers in a specific consistent way.

RBT has important implications for both corporate strategy and business strategy (Peteraf, 1993). The same implications apply to operations strategy as well. At the corporate strategy level, RBV has focused attention on the role of corporate resources in determining the industrial and geographical boundaries of the firm’s activities (Teece, 1980, pp. 223-247). At the business level, explorations of the

relationships between resources, competition and profitability include analysis of competitive imitation and the means by which the process of resource accumulation can sustain competitive advantage (Dierickx & Cool, 1989, p. 1504). Business strategy rests on the foundations of the economist's model of the firm (RBV) and the theory of industrial organization (MBV) and especially in their intersection - between business policy and economic theory (Rumelt, 1984, p. 556).

In figure 17, matching application of both theories RBT and MBT over the three strategic layers, several consequences could be outlined.

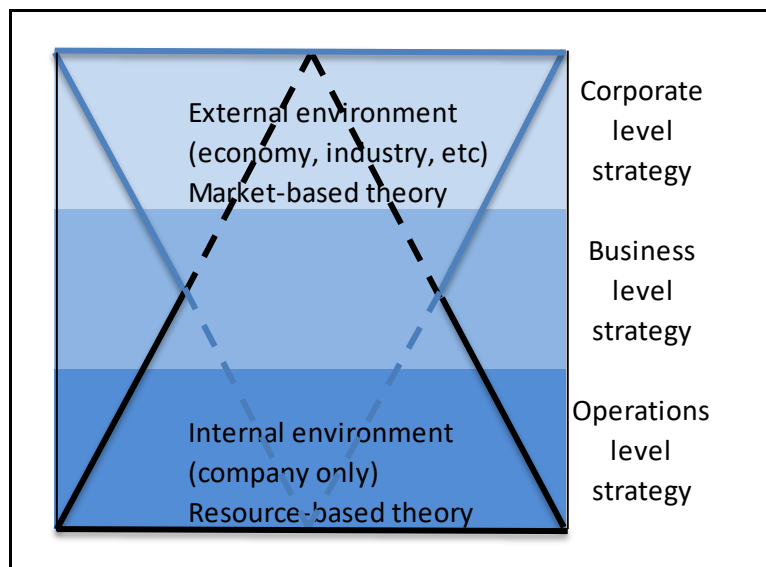


Fig.17 Matching RBT and MBT at different strategic levels

Source: author own

The blue triangle frame represents MBT and its impact on the different strategy levels. The black triangle frame indicates the RBT. It is argued that both theories interact the three strategic levels in a different, but consistent way. The impact of the external environment over the corporate strategy is different from that for business strategy. The first one researches opportunities if anyone can assemble a similar portfolio of businesses, while business strategy examines the issue if anyone is able to influence a business' cost or revenue adversely (Puranam & Venneste, 2016). Following a similar logic, operations strategy seeks to achieve the best combination of performance objectives that satisfies market requirements of the firm. Analogously, from the resource point of view, the internal perspective of operations strategy seeks to achieve highest efficiency, matching those objectives, business strategy strives to

find the best fit of activities, while corporate strategy focuses on the most suitable allocation and application of resources and skills sharing among various businesses.

As already indicated in the beginning of the dissertation, corporate strategy deals with three dimensions of a firm's scope: product, vertical and geographical. The product scope examines the issue with the specialization of the firm in terms of the supplied range of products. It could be anticipated equal allocation of the impact of both theories. The vertical scope deals with the range of vertically linked activities within the value chain. As indicated in figure 18, it could be assumed that vertical scope requires three times more reflection of MBT than, RBT. And finally, geographical range of company's activities requires 100 percent reflection of MBT. On average score, corporate strategy adopts 75 percent from MBT principles and just 25 percent from RBT.

| Corporate strategy | Impact of theory | Product scope | Vertical scope | Geographical scope | | | Average score |
|---------------------|------------------|---------------|----------------|--------------------|---------------|---------------|---------------|
| | MBT | 50% | 75% | 100% | | | 75% |
| | RBT | 50% | 25% | 0% | | | 25% |
| Business strategy | Strengths | | Threats | Weaknesses | Opportunities | | |
| | MBT | 0% | 100% | 0% | 100% | | 50% |
| | RBT | 100% | 0% | 100% | 0% | | 50% |
| Operations strategy | Cost | | Quality | Speed | Flexibility | Dependability | |
| | MBT | 20% | 20% | 30% | 30% | 25% | 25% |
| | RBT | 80% | 80% | 70% | 70% | 75% | 75% |

Fig.18 Assigning values for the impact of MBT and RBT to the corresponding strategy levels

Source: author own

Next level is business strategy, where the impact of RBT and MBT has been extensively researched. The crossing point resulted in the establishment of SWOT analysis in the 1960s at HBS, originated by Albert S. Humphrey from Stanford Research Institute. On a business level, both theories equally impact the strategy formulation process. In other words, achieving sustainable competitive advantage should reflect 50 percent assessing environmental opportunities and threats and 50 percent belongs to the assessment of a company's strengths and weaknesses.

In terms of operations strategy, in general it is believed that RBT plays much more important role (say, 75 percent on average score) than MBT (25 percent on average). The extreme value for the reflection of both theories could be assigned to cost and quality, where internal effects of high productivity (cost) and error-free

products/processes (quality) are four times more important than external effects over the combination on low price and high margin (cost), and uniqueness/specification on products/services (quality) respectively. A similar effect is applicable to speed and flexibility. It is assumed that internal effects of high throughput process and ability to change system are three times higher than the external impacts on short delivery/lead time (speed) and frequently new products/services (flexibility). To the last performance objective – dependability, one quarter would be assigned to external dependable delivery as importance of MBT and the remaining score is left to reliable processes and internal production organization, applicable for the scope of RBT.

Based on the average results from the three strategy levels, it could be posit: From top-down perspective, the application of MBT diminishes its impact proportionately (75 percent on corporate strategy, 50 percent on business strategy and 25 percent on operations strategy), to the same extent as the importance of the application of RBT is increasing (25 percent on corporate strategy, 50 percent on business strategy and 75 percent on operations strategy). In other words, from bottom-up perspective, the application of RBT diminishes its impact proportionately at the same rate at which the application of MBT is increasing.

Stepping on the conclusions from last two figures (17 and 18) the proposed conceptual model from fig. 15, could be extended into a novel framework, presented on the following figure:

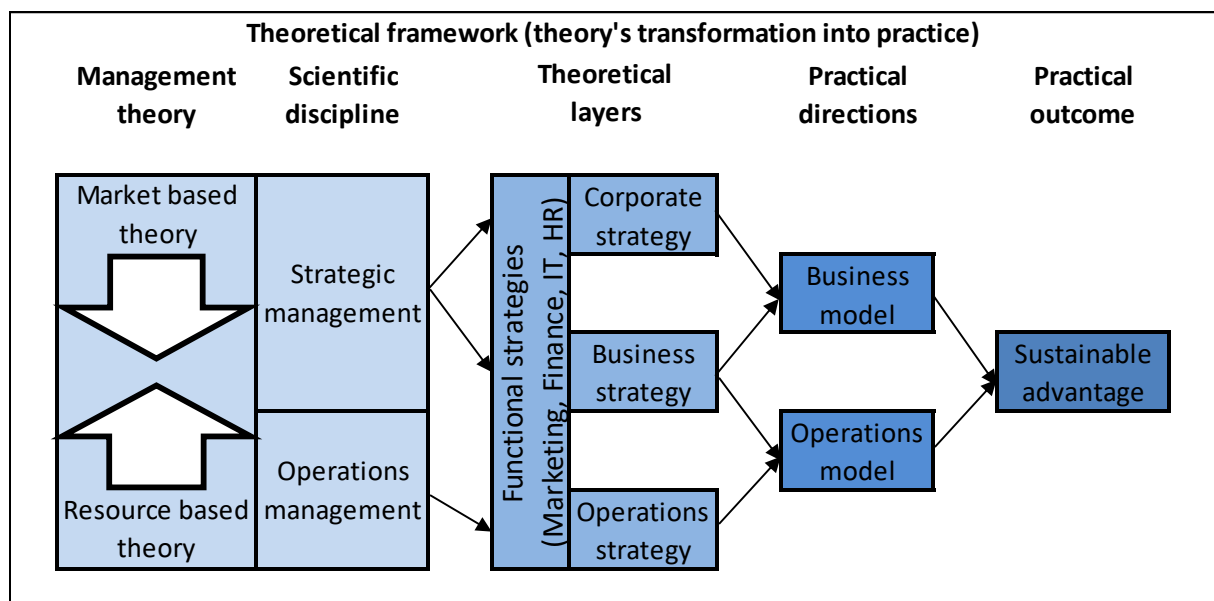


Fig.19 Theoretical framework

Source: author own

As indicated in the beginning of the dissertation, the model is supported by strong theoretical framework. The desired sustainable advantage would appear at the aligning point where the business and the operations models cross each other (fig. 19). The business model can be explained as a unit of analysis to describe how the business of a firm works; it is often depicted as an overarching concept that takes notice of the different components a business is constituted of and puts them together as a whole (Demil B., Lecocq X., 2010). The operations model describes the operational innovation that the company applies in its business..

Hypothesis 3: The proposed theoretical model satisfies all the criteria for a “good” theory.

The proposed theoretical framework of the novel conceptual model will be tested whether it satisfies all the criteria for a “good” theory. We will employ Wacker’s (1998, 2008) approach for theory building, since it reflects the consensus among scientists (Bunge, 1967; Dubin, 1978; Reynolds, 1971; Whetten, 1989; Hunt, 1991) for definitional components of theory, from one side, and the common set of virtues of a good theory, from the other side:

1. Definitions of terms or variables.
2. Limiting the domain/where the theory will apply.
3. Relationship (model) building/a set of relationships of variables/explaining why formal conceptual definitions are needed.
4. Theory predictions and empirical support/specific predictions.

Each of these 4 components should answer the specific questions of who, what, when, where, how, why, could, should and would (Whetten, 1989). All the relevant variables are defined by answering the common questions of who and what. The theoretical domain limits the framework where the theory is expected to be valid by placing the questions of when and where. The set of relationships provides a reasonable explanation for the link among the variables using the questions how and why. And finally, the predictive assertion indicates whether the expected event actually could, should and would occur.

Definition – the model consists of four building blocks: CS, BS, OS as separate strategic level, along with FS as supporting tools, appearing at all three levels
What is the goal? – To create superior (sustainable) advantage.

Who are the variables? - Corporate advantage, measured by return on investments, economy of scale; business advantage, measured by profit; operations advantage, measured by efficiency, functional advantage, functional enablers for each advantage.

Limiting the domain – any company that pursues to achieve sustainable advantage

When? – At corporate level, when creating the strategy; at business level, when specifying it as per SBU; at operations level, when fine-tuning and implementing the strategy; at functional level, when ensuring resources, providing information and delivering results from applied strategy.

Where? – Within the corporation, CS - in the head office, BS in the company office, OS – in the manufacturing unit or service provider, FS – at all levels.

Relationship (model) building – there is a clear relationship among CS, BS, OS, as well as with remaining FS.

Why? – The CS anticipates a broader strategical view (funnel shape) that restricts its focus through the BS to OS. Oppositely, the OS is based on fundamental details (cone shape) that pales when passing through BS, while approaching CS level those details are lost completely.

How? – By applying top-down and bottom-up approaches.

Theory predictions and empirical support - depending on the results, achieved/ensured by FS, or on the sustainability of assumptions, the three main strategy layers might be challenged for further change. CS could enlarge the value chain or markets, or finally diversify. BS might enlarge its SBU's portfolio of products or services into cost leadership, then into product differentiation or vice versa, and eventually into focus/niche direction. Depending on the change required, OS might start with BPR, or any other continuous improvement management philosophies like TQM, JIT, Six Sigma, then to extent it to lean operations.

Could, should and would – any probability of failure/critical success factors is situated at the operations level. Once the OS is implemented, the next layers are expected to be challenged again. In this sense the whole strategic process could be viewed as continuous improvement process, especially through the concepts from the Theory of constraints (TOC) and its five steps (identify the constraints, decide how to exploit it, subordinate everything else, remove it and start again). All the strategy levels should be strengthened through FS.

The “good” theory possesses eight additional properties, known as the theory’s virtues: uniqueness, conservatism, generalizability, fecundity, parsimony, internal consistency, falsifiability and abstractness (Wacker, 1988). The results from the test are presented on fig. 20:

| Virtue | Key feature | Rating | Explanation |
|----------------------|---|--------|---|
| Uniqueness | The uniqueness virtue means that one theory must be differentiated from another. | YES | Because the new model (CS, BS and OS, supported by FS at all levels) is different from the traditional model (CS, BS and FS). |
| Conservatism | A current theory cannot be replaced unless the new theory is superior in its virtues. | YES | Because the traditional theory diminishes the importance of OS, aligning it to the level of the other FS. |
| Generalizability | The more areas that a theory can be applied to makes the theory a better theory. | YES | Because the traditional model relates to the strategic management only, while the new framework can be applied to operations management area, as well. |
| Fecundity | A theory which is more fertile in generating new models and hypothesis is better than a theory that has fewer hypothesis. | YES | Because the traditional theory offers a simple straight forward hypothesis - top-down approach (CS-BS-FS). The new theory offers a hypothesis for dual approach (top-down and bottom-up), as well as a horizontal interactions from the other FS. |
| Theory simplicity | The parsimony virtue states, other thing being equal, the fewer the assumptions the better. | NO | Because the traditional theory is more parsimony since besides CS and BS, all other strategies are just FS. |
| Internal consistency | Internal consistency means the theory has identified all relationships and gives adequate explanation. | YES | Because it explains the interaction among CS, BS, OS and FS and is able to offer a subsequent formation of a superior (sustainable) advantage. |
| Empirical riskiness | Any empirical test of a theory should be risky. Refutation must be very possible if theory is to be considered a "good" theory. | NO | Because both theoretical frameworks do not predict any unlikely events. |
| Abstraction | The abstraction level of theory means it is independent of time and space. It achieves this by including more relationships. | YES | Because the novel conceptual model consists of more relationships, including MBT, RBT, CS, BS, OS, FS, business and operations models, compared to the traditional ones: CS, BS and FS. |

Fig. 20 Eight theory virtues

Based on the answers provided, we can conclude that **the proposed theoretical framework covers 75% from the requirement for “good” theory.**

The novel conceptual model derived from the practice

The novel conceptual model is inspired by Inchcape plc. (www.inchcape.com)

- a leading global premium automotive group (Fig. 6), operating in 26 countries across Africa, Asia, Australasia, Europe and South America, with a portfolio of the world's leading car brands in the fast-growing luxury and premium segments, like Audi, BMW, Toyota, Mercedes-Benz, Volkswagen, Lexus, Jaguar, Land-Rover, Porsche, Subaru, Mini, Rolls-Royce. The company is listed on the London Stock Exchange and is a constituent of the FTSE 250 Index.

In late 2006 Inchcape launched its core strategy "Strengthen and Expand", based on the belief that outstanding end-customer relationships driven by superior-centric operational process would improve the Group's business performance in existing markets. The aim of the plan was to produce a strategic assessment and a 5-year roadmap for the Group to underpin the vision to become the world's most customer-centric car retail group. In order to do this, profit before tax from 2016, had to be doubled in five years' time.

Inchcape operated a robust three-dimensional global business model (strategic pyramid) designed to give the company a strong portfolio diversification and a powerful platform for future expansion (fig. 21).

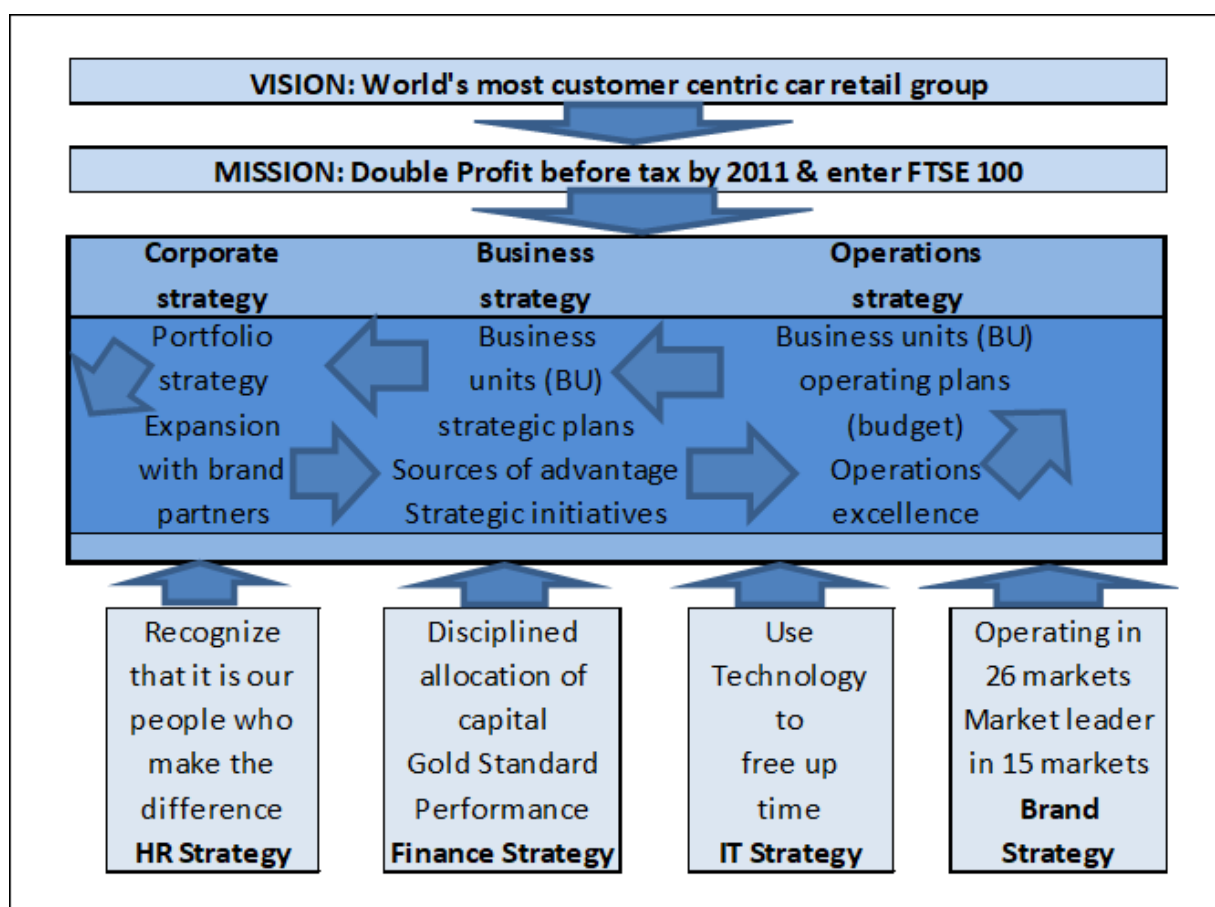


Fig.21 Inchcape strategic model

Source: Adapted from www.inchcape.com

The three dimensions were:

- (Corporate strategy) A broad geographic spread, with strong local management, which provides a scale presence across emerging and developed markets; a portfolio of the world's leading premium automotive brands as core partners; enabling Inchcape to fit the right brand with the right market;
- (Business strategy) A route to market using more than one channel – distribution (effectively a master-franchise partner to a motor manufacturer operating as the exclusive national sales and marketing company) or retailing, with scale operations on a regional basis;
- (Operations strategy) Diversified revenue streams, from growth and defensive value drivers such as new vehicle sales and after-sales servicing.

Four core pillars (Functional strategies) were formulated to support this strategy:

- People Make the difference (HR strategy): Decentralized and coordinated organizational model, high growth performance culture, world class customer, retail management and support function expertise, people development and capability planning, where success is recognized and rewarded
- Disciplined allocation of capital (Finance strategy): Investment criteria (opportunities must meet strategic criteria - focus on internal rate of return, economic profit generated over the investment period, cash payback, differential hurdles for developing and developed markets), Funding capacity (In order to finance the aggressive growth strategy – a cash fund was established - with a financial capacity to invest up to £800m). Drive consistent Gold Standard Performance in existing processes and assets (internal and external retail and distribution benchmarking to identify the gap versus gold standard profitability, overhead and working capital)
- Use technology to free up time (IT strategy): Automation of processes and information, free up people to focus on front office activities, transfer of best practice processes around the group and consistent information for decision making

- Growth through expansion with brand partners (Brand strategy): Accelerate profit growth through expansion with brand partners (build long-term partnerships with leading brand partners, to be N1 brand partner in terms of market presentation, effective use of cash for advertising and promotions).

One year after the launch of this strategy, the financial results for 2007 reported extraordinary performance: year-on-year turnover growth of 26 percent to £6.1 bill. and operating profit of £270.7 m. Despite the company's record financial performance in the first half of 2008, Inchcape had to prepare itself to place an unprecedented and disruptive economic downturn. End of 2008, since the economic assumptions were totally changed, the original strategy had to be changed as well. A three-tiered strategic approach to managing the crisis replaced the core strategy "Strengthen and Expand":

- Reduce the number of priorities in the business;
- Increase the frequency of performance management from monthly to weekly sessions;
- Increase recognition of outstanding employee performance.

Nevertheless that Inchcape successfully survived the economic crisis from the past decade, but abandoned its initial strategic intent to enter the prestige club of companies from FTSE 100, the roots from "the strategic engine" model still drive its sustainable performance resulted in 2019 in £9.4 bill. turnover and profit before tax of £402 m.

The new conceptual model in practice

In order to explore the practical relevance of our conceptual model, the paper applies it to the global car manufacturer – Toyota Motor Corporation (TMC), whose operations philosophy embodied in the Toyota Production System (TPS) became a milestone for the company's success. Its core principles have been contrasted with the mass production mode of production that predominated at that time principally striving to achieve economies of scale. After World War II, acting on a much smaller domestic market in Japan compared with the US and lacking cash, Toyota was challenged to produce different models on the same assembly line that caused short lead times, small inventories and a flexible assembly process. This approach called lean

production resulted in efficient productivity, based on high quality and better utilization of equipment (Womack et al., 1990). Nevertheless, while TPS is predominantly an operations system, its application by necessity impacts the whole organization. Fig. 22 illustrates the way of work of fourteen principles, reflected in TPS at every stage of Toyota's strategy, within the framework of the new conceptual model:

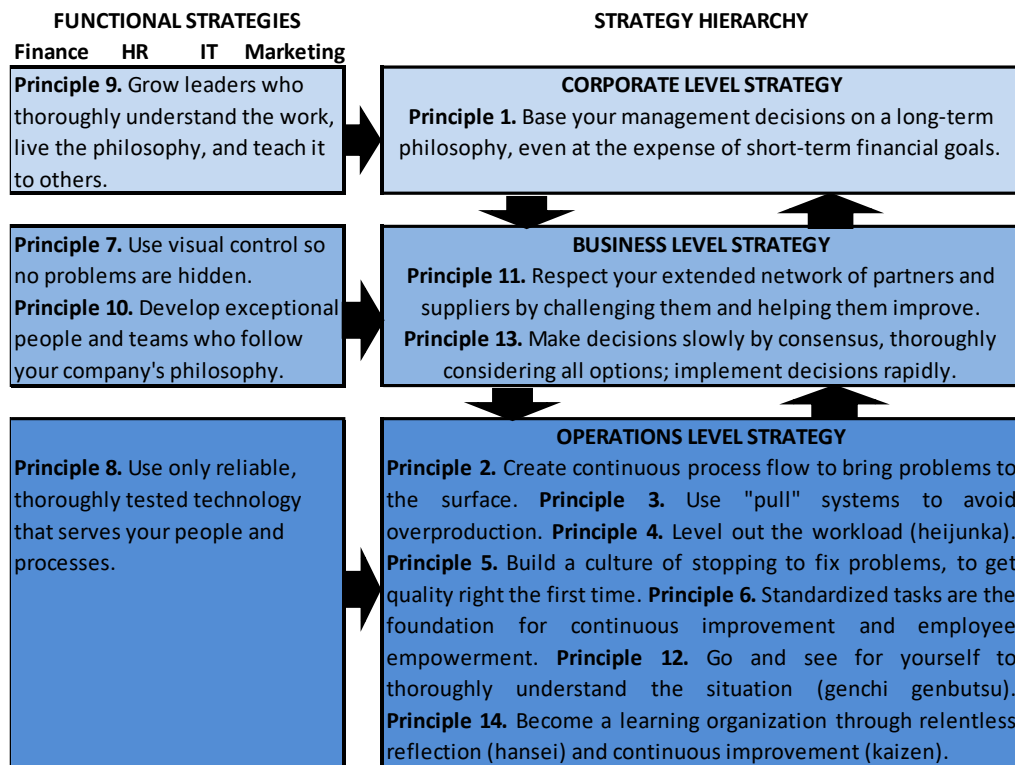


Fig.22 Principles of Toyota Production System

Based on TPS, we are able to present the whole strategy of Toyota, again developed according to our strategic hierarchy model in fig. 23. Using the main types of strategy hierarchy from fig. 15, we illustrate how information flow affects the related strategy levels. First, we start with CS where Toyota strived to attract more customers on its current market – Japan. To do this the company was supposed to offer products for every market segment and every type of customers – small, middle and big size cars, SUVs and trucks – for budget and premium customers, for B2B and B2C sectors alike. This strategy approach, on the business level is supported by a cost leadership orientation, which assumes optimal sales volume and ensures profitability. The adopted BS is a result of TPS applications, pursuing high quality, flexible production lines, short lead time and low inventory levels.

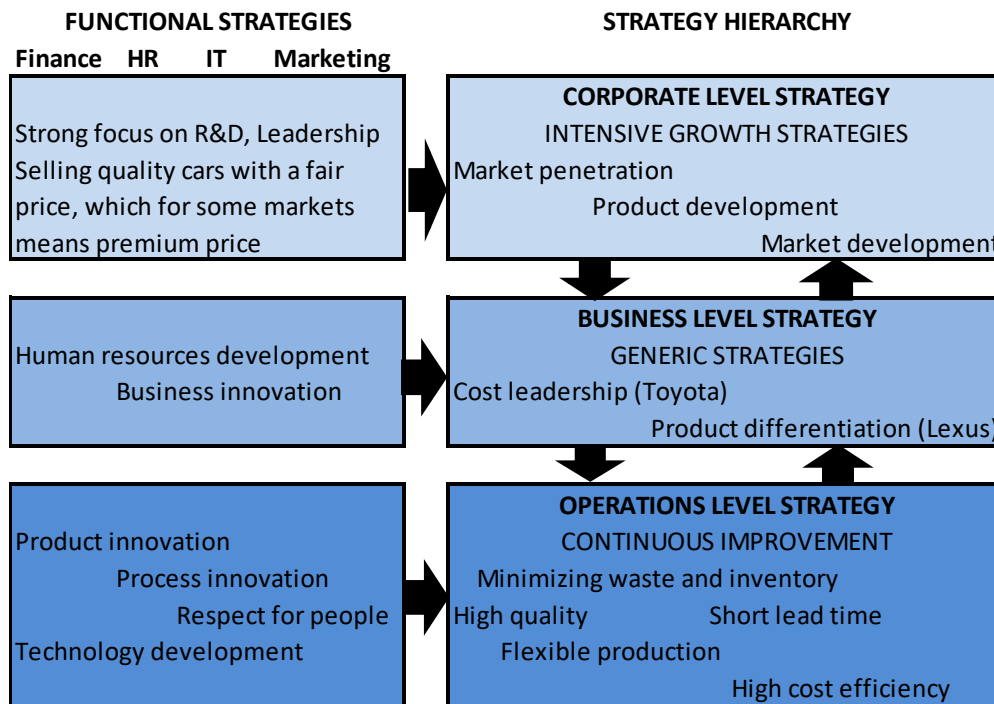


Fig.23 Toyota's strategy based on the new hierarchy model

Source: author own

Based on its successful evolution, Toyota adopted a second type of CS: a product development strategy – attracting current customers for new products – Toyota Prius (as a new hybrid technology), Rav4 (as a new sub segment), Lexus (as a premium brand), etc. Applying innovation technology and processes, the company started to position its products attracting customers on the basis of uniqueness or advanced features (Thompson A., 2017). This new strategic orientation is supported by the same operations system and principles of continuous improvement embedded in TPS. Actually, this philosophy ensured the avoidance of trade-offs between offering low-priced and high-quality vehicles. And again, drawing on operational excellence, Toyota has launched a third type of CS – market development, becoming a global player on every major automotive market and segment worldwide.

During the last 15 years (2005-2020) the successful evolution of Toyota's strategy was challenged by volatile global development. Thanks to its TPS, last three years before the financial crisis from 2008, the company's operating income accommodated massive investments in new fixed production assets to support ever increasing vehicles sales. In 2009, reflecting 15% volume decrease, Toyota reported a loss of – 461 billions of yen. During the next four years (to 2013) the manufacturer

managed to bring the number of vehicles (8.87 million of units) sold back up to the levels before the global crisis (but not the profit levels). During the last 7 years, several major events happened to reflect the company strategy: (1) Toyota further improved quality of vehicles “accelerating the making of ever-better cars”; (2) change in the organizational structure, including introduction of an “in-house company system”; (3) advancing the building of partnerships through alliances, based on the new company strategy called “home & away” (serving Toyota plants in Japan to support Toyota’s global production, applying the foundation principle “making better products at a lower cost”). Thanks to TPS, in terms of profitability, in the current COVID-19 crisis, the global car manufacturer is better positioned than in 2008. “We anticipate more than 20% decrease of sales, which will be greater than the decrease during the global financial crisis, although we forecast a profit with an operating income for 500 billion yen”, said Akio Toyoda, TMC president, announcing financial results of the group for 2019 (Tokyo, Japan, May 12, 2020).

Thanks to its successful strategy, Toyota enters 21st century as one of the three biggest automotive manufacturers worldwide. For the period 2000 – 2003 the company is ranked on a third place, after General Motors and Ford. From 2004 till 2007 Toyota climbs on a second place. With the year 2008 commences the most successful decade for the Japan company, becoming the biggest car manufacturer, though for the longest period of time within the automotive history ever. During the last two years - 2018 & 2019 Toyota was removed from the first place by Volkswagen, by just 1% difference in the volume (10.635 mil. vehicles vs. 10.865 mil. vehicles and 10.742 mil. vs. 10.975 mil. respectively). During 2019, compared with the previous year only these two manufactures recognize increase in their sales, with one percent each of them. All the other competitors face a drop in their product sales. And one more interesting fact. Although Toyota is replaced by Volkswagen as an industry leader, in terms of sales and revenue (250.8 bil. Euro vs. Volkswagen with 252.6 bil. Euro), the Japan corporation remains the most profitable in the automotive industry (ahead of the German group), reporting operating profit of 21.2 bil. Euro. The key reason becomes the hybrid technology of Toyota, which is applied in ever growing portfolio of new products.

The new conceptual model proved through the finance analysis

For the reflection of the strategic pyramid to which extent it creates a sustainable competitive advantage, is used the ratio analysis, evaluating Toyota financial performance in comparison with the other 3 biggest worldwide automotive manufacturers in 2019. The researched period is 15 years. Two types of ratio analysis is be applied – a financial KPI's within the DuPont Model and operations KPI's, measuring the efficiency of the working capital management through the Cash Conversion Cycle (CCC). The DuPont Model indicates how the three areas of management (profit margin, asset turnover and financial leverage) impact the firm's performance (return on equity) separately and in a combination. The return on equity is calculated as the financial leverage is multiplied by the return on assets, while the CCC indicates the period of time in terms of days the firm's funds are involved in financing its working capital. The initial point is the payment of purchases to the suppliers, transforming them through work in progress into final goods and ending with sales' remittance, received from the customers.

Toyota performance is above that, achieved by the average of top 4 automotive manufacturers worldwide. Similar outcome, however not so obvious from first glimpse, is realized through the analysis of the working capital. The performance of Toyota is within the group average, which indicates that Toyota offers good business terms to both its suppliers and wholesale customers and though manages to be best profitable automotive manufacturer. Finally, we can conclude that TPS and the corresponding Toyota strategy, which is framed within the new strategy hierarchy model, deliver the desired sustainable advantage.

Empirical survey for the applicability of the conceptual model

The outcome of first two hypotheses is confirmed by a survey of 15 (out of 20 initially invited) CEOs of leading international companies, operating on Bulgarian market, managing and representing well-known brands, like Toyota, Lexus, Mercedes, OMV, Unicredit bank, Raiffeisen bank, Allianz, KBC group, OTP group, or owners of big local enterprises. The aim of the survey was to achieve considerable representativeness of samples. For this reason were identified executives from large companies, whose total assets as of 31.12.2019 are equal to the level of Bulgarian

nominal GDP (59.901 billion euro). The effective cumulative response from senior executives (managing assets for 39.667 billion euro) represents 66% of it. In terms of their annual turnover for 2019 (4.345 billion euro), they account for 7.3% of country's GDP, respectively. We used senior executives' opinion as the key informants, because they possess the most comprehensive knowledge of the characteristics of their organization, its strategy and performance (Snow & Hrebnick, 1980). Part of the questionnaires were completed remotely (via e-mail), since some of responders denied personal meetings. Their answers indicated no difference with the others whom the author explained the rationale. The questionnaire consists of the following seven questions with four possible answers (entirely agree, agree, disagree, and completely disagree), ranked with (2), (1), (-1), and (-2) points, respectively¹:

1. *The classical strategy concept consists of CS, followed by BS and FS, at the end. (73% confirmation)*
2. *OS plays a leading role among FS. (53% confirmation)*
3. *Marketing strategy plays a leading role among FS. (17% confirmation)*
4. *Your opinion about the following statement: the novel strategy concept should consist of CS, followed by BS and OS, at the bottom; FS relate to the three strategic levels equally. (83% confirmation)*
5. *RBT and MBT reflect to the content of the strategy concept. (77% confirmation)*
6. *Your opinion about the following statement is: RBT and MBT, reflect the strategy hierarchy on the following way: The impact of one theory diminishes to the same extent as the importance of the application of the other theory is increasing. MBT impacts mostly the CS and at minimum the OS. Opposite, the OS is impacted mostly by the RBT, while the CS is impacted at minimum. BS is influenced equally by both theories and the proof can be found at SWOT analysis. (67% confirmation)*
7. *The novel strategy concept – CS, BS and OS, supported simultaneously by the remaining FS at all levels, is able to create the desired sustainable competitive advantage for companies, I am managing. (70% confirmation)*

First and fifth questions aim to verify the extent to which responders are theoretically prepared to express their opinion on the formulated hypotheses. Second and third questions reveal preferences for assigning a leading role of either operations

¹ Results are shown at the end of each question in brackets

or marketing strategy among classic functional strategies. Fourth and sixth questions test the validity of the new strategy concept and second formulated hypothesis. Last question aims to evaluate practical application of the conceptual model in the way to create the desired sustainable advantage.

The responses of each interviewed CEO are attached at the end of current dissertation.

Conclusions

Based on the conducted theoretical and empirical research, the following conclusions could be outlined:

1. It is presented sufficiently solid theoretical fundament, based on which to opt the operations strategy to be positioned on a separate core strategic level, along with corporate and business strategy. The operations strategy possesses milestone concepts and principles, similar to those, applicable for both other types of strategies.
2. There is clearly outlined logical consistency of the impact of the both RBT and MBT over the three core strategy levels. Based on the “top-down” approach, the application of the MBT diminishes its impact in the same vain as the importance of application of the RBT is increasing. **Such a conclusion corresponds with a potential for contribution to the theory.**
3. The proposed theoretical framework of the novel conceptual model satisfies all the features for a “good” theory, based on the theoretical approach imposed by John Wacker for principle building a theory. Based on testing for achieving the eight additional properties, known as the theory’s virtues, we can conclude that the proposed theoretical framework covers 75% from the requirement for “good” theory.
4. It is highly probably that the validity of the novel conceptual model will differ from the various types of industries. Some economic sectors, especially those related to services (for instance communal services and those highly regulated from the state), not relying on innovations and establishment of sustainable competitive advantage, would be hardly borrow author’s statements. In contrast, other sectors (like finance, commerce, etc.), that due to the pandemic environment, were forced to rearrange their well-established business models, supply and

value chains respectively, would welcome them. In this relationship, the successful operations strategy appears to be a core fundament for the corporate success for organizations that relay on urgent adaptation towards new realities, based on digitalization and social distance.

5. Depending on the positioning of the business and the management point of view, the novel strategic model is in position to satisfy different functions. Through the eyes of senior executives, sitting in the global head offices, who have clearly formulated corporate and business objectives, to executives, managing the business on a local level, they have assigned only operations strategy execution. On the other hand, for the local executives, realizing “the big business picture” remains dissatisfaction from not taking part in the corporate and business strategy creation, being forced to apply the “big” strategy on a local level. At the same time however, for the part of the same local management, the global operations strategy in fact appears to be a new corporate strategy, which requires to define new business strategy and new operations strategy, respectively.

Future research

The dissertation addressed the notion for redesign the well accepted corporate strategy concept into a new hierarchy, consisting of CS, BS and OS, supported by remaining FS at all levels. It is highly probable that after such a restructuring, the aggregated strategic value would bring the desired sustainable advantage. The contribution of our conceptual model is mainly limited to the fact that its validity is difficult to be proved since the set of principles is theoretical and its empirical tests will be questionable. Primarily the reflection of RBT and MBT over the strategic levels’ framework, and the formulated logical consequence of their impact is supported just by interviews from the CEO’s survey. The other option for sampling of practical application from corporations would be rather vague.

Despite the empirical difficulties for proving the validity of the conceptual model in current dissertation, this does not diminish its scientific value. Similarly, like the sand cone model, proposed by Ferdows and De Mayer in 1990’s, where nevertheless they used data from 1988 European Manufacturing Futures Survey (167 respondents) to test and illustrate their model, the authors concluded that cannot

“prove” the model, however they believe there is enough evidence for a critical reexamination of traditional managerial approaches for improving manufacturing performance (Ferdows & De Mayer, 1990, p. 168). Since then several scholars (Noble, 1995; Schmenner & Swink, 1998; Narismhan & Jayaram, 1998; Rosenzweig & Roth, 2004) tested the hypothesis of the sand cone model, but their findings are not 100% proof, rather positive support on the relationship among variables. Nevertheless of the results, nowadays the notion for the model is well accepted.

Main conclusion

The competitive edge of a successful strategy is built on solid foundations of the right strategy levels within a proper hierarchy. The sustainability of its vertical ingredients (CS, BS and OS) depends on the availability of some horizontal features (FS). Based on these assumptions, we have proposed a novel conceptual strategic model that rests on the belief for a different view of the role of OS within the overall strategy architecture. We proved that the theoretical essence of operations goes far beyond traditionally accepted scope of business functions. Examining the applications of RBT and MBT within the strategic levels' framework, and assigning related values to the corresponding elements, we found out that there is a logical consequence of the theoretical impact in CS, BS and OS – at every strategic level, the application of one theory is substituted to the level of the other.

We believe that the proposed framework is supported by a theory of good quality. It is accepted that a theory quality is predominantly determined by the degree to which it is creative, useful and scientific (Lewis, 1998). Since “creative theories provide novel insights that challenge pre-existing assumptions” (Weick, 1989), we posit that the new strategy level order (CS, BS, OS, supported by FS to all levels) is better than the traditional corporate strategy concept (CS, BS and FS). Assuming the fact that theory's potential provides foundations for future research that will demonstrate its usefulness (Mintzberg, 1979), we rely on expressed CEO's opinion for the validity of our model. And finally, scientific theories are created from valid and practical constructs related in a logically consistent manner, enabling empirical testing and possible refutation (McCutcheon and Meredith, 1993). This statement is applicable for our theoretical model, as well.