UNIVERSITY OF VAASA

SCHOOL OF MARKETING AND COMMUNICATION

Alexandru Diduc

THE PATTERN OF PRODUCT PORTFOLIO FORMATION ALONG THE INTERNATIONALIZATION PROCESS: FIRM-LEVEL PERSPECTIVE

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UNIVERSITY OF VAASA
Faculty of Business Studies:
Author: **Alexandru Diduc**
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ABSTRACT

Internationalization is complex process with various challenges arising at various stages requiring according solutions. Firms struggle to understand at what stage they are, what their degree of internationalization is, and what to do next. Internationalization is product related activity. Firms internationalize their product offer. The pattern of product portfolio formation can tell more about the past of the firm and precondition future. Yet, behavioral internationalization theories do not consider products as part of internationalization decision-making due to the limited perspectives applied for theory development. Academia proposes tactical solutions to otherwise strategic challenges limiting the use of theories to initial internationalization engagements.

Given the problem, the thesis looks at the pattern of product portfolio formation along the entire internationalization process. This work helps identify the degree of internationalization along internationalization stages. This work proposes the development of POM-model for development of internationalization strategies from firm-level perspective.

The study takes interpretivist philosophic paradigm in observing process of internationalization and product portfolio formation from process theory perspective with application of process data collection method, in particular, the visual mapping strategy.

The key contributions of the study are proposition of the classification of firms according to their internationalization effort and the theoretical framework which helps firms identify the degree of internationalization by analysis of the pattern of product portfolio formation along the stages of internationalization.

KEYWORDS: Product portfolio, firm-level perspective, internationalization process, degree of internationalization

1. INTRODUCTION

This chapter discusses the background of the study, identifies the research problem, establishes the objective of the study, develops the research questions and outlines the structure of the Master's thesis.

1.1. Background of the Study

Internationalization has evolved into an important issue within the past few decades, which can be hardly ignored by any firm be that a domestic or global unit. These days one can barely find a firm that is not affected by increasing internationalization of trade and related issues. Even if a firm chooses to stay in a domestic market, it is a subject to competition on the global scale considering the other firms' presence in any domestic market. The accessibility of Internet, numerous multilateral agreements, trade organizations blurs the country borders exposing, challenging and threatening domestic firms as well as global firms with the internationalization challenges. The clear understanding of the entire process and coupled with comprehension of potential appropriate course of action in any given moment of internationalization process by any firms' leadership is the minimum survival requirement and prerequisite for long-term sustainable development. At this exact moment, the main problem appears.

Internationalization is not a homogenous monotonous process where one solution works in all situations; it consists of stages (Craig & Douglas 1996; Douglas & Craig 1989). Each stage contains its unique characteristics, aims and challenges. An ability to identify and address the right one with right solution is a key to success and inversely. The logical question is how to identify at which stage each individual firm is before looking for a solution. And this is not an easy question to answer even with loads of scientific answers at hand. We propose that the key to unveiling the riddle is in the product and, specifically, pattern of product portfolio formation placed within the context of internationalization stages.

At first, it is unclear how product is related to the raised problems, when it is considered without the context. When perceived differently, *internationalization process is*

product-related activity. Firms internationalize their product offer. *Internationalization, thus, is a process of creating structure that facilitates better conditions to offer products in most economically advantageous way to its customers internationally.* Product is a backbone element; it is a system creating factor of any firm. By looking at the final product, one can backtrack the design, development, production, marketing, sales and service processes that go into creation of it. The pattern of product portfolio formation observed over a period of a firm's existence may tell a better internationalization story of a given firm than any other independent variable. A comparison of many patterns by numerous firms in the same industry from different contexts can help design theories that make internationalization more predictable as a guideline that new firms can use to make their assessments about their current internationalization state and future challenges clearer.

1.2. Research Problem

Except for the study to provide the answer how product becomes such solution in a form of plain theoretical model, we need to address the labyrinth of internationalization theories, which in its abundance often are an impediment to clear reasoning than a solution. The main challenge of internationalization theories arises particularly at the point of clear understanding and integration of the entire process with its individual factors into its scientific discussions and constructs. Theories provide tactical solutions for strategic challenges without an effort to distinguish between the tactics and strategy. Internationalization strategies are dominated by marketing perspective aggressive towards operations management contribution which builds unnecessary silos on the path of successful internationalization strategy development, calling for an integrated firm-level solution.

The understanding of the internationalization process is fragmented when considered over longer time period especially when perceived from the process school perspective (Cyert & March 1963; Johanson & Vahlne 1977; Johanson & Wiedersheim-Paul 1975; Luostarinen 1979; Penrose 1959). The role of products is downplayed, where the models seldom include the product in their internationalization calculations or include it

post factum when internationalization decision is made. This particularly applies to the most recognized, researched and cited theories among Nordic scholars from the process school, to which we limit our focus, the Uppsala model (UM) (Johanson & Vahlne 1977; Johanson & Wiedersheim-Paul 1975) and the studies of international new ventures (INV) (Cavusgil 1994; G. A. Knight & Cavusgil 1996; McKinsey&Co 1993; Oviatt & McDougall 1994).

Despite of the numerous researches these theories provoked, the answers they produce have limited contribution to the clarity of the entire internationalization process scattered over many smaller issues, partly because these theories originate from the market-level perspective (see **Table 1**), *proposing tactical solutions instead of tools for a strategic action plan development*. Such perspective is at source of unnecessary confusion briefly summarized under the bullet points below.

- It is predominantly marketing oriented philosophy ignoring the complexity of entire firm in its argumentation.
- Internationalization is seen in a simplified form and, therefore, models struggle with explanatory power when complexity of internationalization increases (Andersen 1993). It has limited application to initial stages and singular tactical decisions, but struggles with consideration of complexity of operations in multiple markets with different operations modes simultaneously.
- From market-level perspective, firms are classified by two dimensions: sales-to-market and time-to-market (Luostarinen & Gabrielsson 2006). The issue with such classification of firms arises when a truly global firm is compared with a truly domestic, yet export-oriented firm (i.e. INV), on par. Technically, the differences in firms following UM and INV internationalization path come down to the issue of ignoring the operations modes in all markets at once along the product, market and time dimensions.
- Poor classification of firms leaves unclear at what stage of internationalization each firm is, making further steps towards allocation of a firm on the scale of internationalization a part of “scientific guesswork.”

Should a company decide to use the mentioned process theories to understand where it is on the scale of internationalization, what should it do at its state, where to look forward as strategic orienteering – it will be lost at the best. When there is no guidance towards a standard, it is hard to compare one entity to another. Firms are left in such case with the option of engaging in “scientific guesswork” about their state of affair on the scale of internationalization with numerous challenges evolving from degree of internationalization identification problems.

Luostarinen (1970, 1979) has laid the grounds for an alternative, firm-level perspective, which considers entire firm. His POM-model includes such substantial elements as product, operations mode and market. Yet it was criticized for lack of dynamism. Unfortunately, the model was not further developed. This work proposes a way to address the dynamism drawback and methodology how to use the POM-model for strategy development.

The main challenge of internationalization theories arises particularly at the point of clear understanding and integration of the entire process with its individual factors into scientific discussions and constructs. Theories provide tactical solutions for strategic challenges without an effort to distinguish between the tactics and strategy. Internationalization strategies are dominated by marketing perspective aggressive towards operations management contribution which builds unnecessary silos on the path of successful internationalization strategy development, calling for an integrated firm-level solution.

1.3. Objective of the Study

The aim of the study is to theoretically analyze the pattern of product portfolio formation along internationalization process of a firm from the firm-level perspective. Thus, the research question is formed the following way:

> *How product portfolio changes along the internationalization process from firm-level perspective?*

To meet the objective of the study, the research question is supplemented with three following sub-questions.

- *What pattern product portfolio follows?*
- *Is the pattern of product portfolio of stage and rapid internationalizing firms differing, when considered from firm-level perspective along entire internationalization process?*
- *How product portfolio helps identify at which stage of internationalization each individual firm is?*

1.4. Contribution of the Study

By observing the product within the internationalization context, this study addresses the gaps mentioned above and proposes an alternative solution for strategy development. The study contributes both theoretically and methodologically. The developed theoretical framework (**Figure 13**), being a tool for observation of internationalization pattern of product portfolio formation, is the tool for internationalization strategy development as well. The proposed way to address the dynamism drawback of the POM-model is by adding the Time dimension. When coupled with appropriate process data collection methodology, it becomes a tool for observation of pattern of product portfolio development and can serve internationalization strategy development. Another proposition is a classification of firms according to their internationalization efforts based on consideration of their product, operations and market penetration simultaneously. Such classification allows firms to recognize their current state and foresee the coming challenges based on the scientific knowledge. Next, the study stresses the importance of firm-level perspective for strategy development. Firm-level perspective bridges the gap between the operations management (OM) and international business fields of studies, by elevating the discussion and internationalization decision-making to a strategic level of entire firm beyond the predominance of marketing influence.

The methodological contribution of the study relates to the mechanism of identification of the degree of internationalization (DOI) of a firm. It also creates a structure for longitudinal research of internationalization process.

1.5. Structure of the Thesis

This study consists of five chapters. Chapter 1, Introduction, presents the research by briefly outlining the background of the study, identifying of the research problem, voicing research questions and outlining the structure.

Chapter 2, Literature review, comprehensively summarizes the theoretical perspectives, models, and definitions from the identified relevant literature. In particular, this section provides a broad overview of theoretical perspectives on internationalization theories, proposes the relevant dimensions for degree of internationalization measurement and a scale for companies' classification based on the proposed elements. Next, the topic of product is explored as it is perceived within the boundaries of primary value chain activities in marketing and operations management discussions. In the third part of the chapter, the interplay of the internationalization theories and product is discussed within the context of internationalization process discussion.

Based on the discussion in Chapter 2, we propose a schematic framework of the pattern of product portfolio formation along internationalization stages in Chapter 3.

Chapter 4 describes the strategy and research method applied in the thesis. The perspective selected for the study requires application of the corresponding research method. We propose the use of the process data analysis and, in particular, the visual mapping strategy. For the reasons discussed in the chapter, this study does not contain data collection and analysis. Instead of changing the format to fully theoretical approach with stress on, for example, systematic literature review, we purposefully leave the structure of the thesis in such way, that whoever gains access to the required data may plug it in with minimal need for other manipulations yet to gain the same result as proposed here.

Since, without the data, we cannot talk about the findings of the study, Chapter 5 proceeds with the discussion of the theoretical contribution of the study and concludes with the summary of the study, outline of the key propositions and its main contributions to the field of international business and management. This chapter closes with the limitations of the study and proposes suggestions for future research.

2. LITERATURE REVIEW

2.1. Internationalization of a firm

2.1.1. Perspectives on the internationalization of the firm

Perspective plays the significant role in any discussion. A great amount of misunderstanding and miscommunication occurs when two subjects look on the same object from different perspective and attempt to convert another party into their understanding. Depending on the point of view, the same object can take a different shape, scale and meaning. Here, one can remember the proverbial story about the elephant and the blind men attempting to identify the object by observing available to them part of the elephant. The topic of the internationalization of the firm is not immune from the misunderstandings of this kind. Before going into the literature review about the internationalization, it is utterly important to identify the perspectives from which one looks at the subject of internationalization of the firm and internationalization as the subject, perceive the scale and the meaning of the topic.

The internationalization and global research has evolved around two schools of thought: the economic school and the process school (M. Gabrielsson & Kirpalani 2004). The economic school asserts that the economic decisions including those related to internationalization are rational and originate from the search of efficiency by utilization of the transaction cost economies approach (Williamson 1975, 1981). The process school originates from the behavioral theory of the firm (Cyert & March 1963) and the theory of the growth of the firm (Penrose 1959), and observes how internationalization process happens.

Prior to discussion about the perspectives, one needs to consider the context within the economic and process schools of thought have evolved. It is important to notice that these schools of though and the models they produced were developed within the international business context of 70-80s of the past century, which significantly differs from the present business environment. This also affected the discussion and the line of sight of those concepts. Quite often, the conflicting economic models and political agenda were the source of the multiple trade barriers firms faced prior to entering a

foreign market within that context. Coupled with cultural diversity of the countries, high transportation costs, volatile exchange rates and other numerous risk factors, businesses required answers to *how to enter the new markets*, how to mitigate the potential risks and further develop international presence. At the time, the major units of analysis as well as international trade actors were the big multinational corporations (MNCs), which served as models for the other firms interested in the internationalization. The environment preconditioned the firms to have significant financial, experiential and operational potential prior to entering the foreign market. Surely, the scale of internationalization was also different with regional international trade as the focal point. With the present at the time trade barriers, the aspirations of global trade and operations were minimal.

Nowadays, we witness significantly different international business environment, which favors global trade with global competition and sets a different set of questions a firm needs to consider. The trade unions (i.e. NAFTA, EU, BRICS), multiple trade organizations (i.e. WTO, UNCTAD, OECD), multilateral trade agreements between the states help to create predictable business environment and to reduce the stress related to entry and the initial foreign operations. Thus, even small firms without significant domestic operations can join the global market. Numerous obstacles to internationalization related to the information, raw materials, and financial transactions flow have been lifted with arousal of the Internet, reduction of the marine and air transportation costs, digitalization and regulation of the international financial transactions. Simultaneously, the main focus of firms' operation has switched from the regional/international to global trade development, which calls for relevant answers to the corresponding challenges. These days, firms enter international/global market even without entering international market per se, simply by competing from their inception with international and global firms within their domestic market context. The traditional alternative whether to internationalize or stay domestic therefore seems outdated by the choice between the internationalization or survival. Most likely, the models developed to fit the needs of the foregoing business environment may require adaptation or reconsideration at minimum to the rapidly changing context of the present.

Even with many recent changes in the business environment, internationalization of the firm remains highly demanding and challenging activity because of its multilateral nature rooted in the complexity of numerous factors requiring adequate attention at milli-micro-level inside the firm, micro-level of the firm, macro-level of the domestic environment, super-macro-level of the international environment (Luostarinen 1982: 9, 25) and the multiple interactions between these levels. There are no easy solutions, no uniform formula nor consolidated scientific theory to address the complexity of the internationalization process. Nevertheless, there are multiple attempts to help businesses address the complexities, help them make adequate decisions and proceed in their international operations by changing the perspective on the internationalization.

In the face of the complexity of the internationalization, the selected for the research internationalization theories present two perspectives on the ways to approach the issue (Luostarinen 1994; Luostarinen & Gabrielsson 2006): the milli-micro-level perspective and the micro-level perspective. They are perspectives or, in other words, ways to approach the challenge. One perspective is not better than the other; one does not prove the fallacy of the other nor reduces the value of the other. As the lines of sight, they serve different purposes.

Milli-micro-level perspective

The milli-micro-level perspective on internationalization takes its origin in the behavioral theory of the firm (Cyert & March 1963) and the theory of the growth of the firm (Penrose 1959). This perspective simplifies the complex internationalization decision by narrowing the sight of the problem to a one-step-at-a-time process by taking into consideration one market at a time, thus, can be also viewed as market-level perspective. Market is a place, nominal or actual, where parties exchange value for value, i.e. product for money or barter (Baumol & Blinder 1998: 210 – 211). In context of market-level perspective, market, as a unit of analysis and decision-making, is predominantly a foreign country (Albaum & Duer 2011: 268), but it can also be a company in a foreign market or a global enterprise as it is often the case about the relations between international new ventures and multinational enterprises (M.

Gabrielsson & Kirpalani 2004; Luostarinen & Gabrielsson 2006). Within this perspective, the decision-maker considers one market and its attributes abstracted from the other markets and based on the relevant contextual factors and own judgement about the psychic distance (see Johanson & Vahlne 1977) or business distance (Luostarinen 1979) makes a decision about the level of commitment, which eventually affects the time of the market penetration. Then, another country is considered with the same procedure. This approach serves the purpose of significant easing of the decision-making process on the initial international market entry stage (Douglas & Craig 1989) with the diminishing explanatory power on the later stages (Andersen 1993).

It is important to notice that this is a two-dimensional sequential approach where market factors affect the operational mode selection. The consideration of the market-related factors takes the primary position and the choice of the operational mode – the consecutive. The limitation of this perspective becomes obvious when the firm attempts the management and integration of the international operations across numerous heterogeneous markets experiencing rising levels of complexity once it moves beyond the initial entry stage of internationalization.

Micro-level perspective

The micro-level perspective as well takes its origin in the behavioral theory of the firm (Cyert & March 1963) and the theory of the growth of the firm (Penrose 1959); and, additionally, on the strategic decision-making theory of the firm (Ansoff 1975), and the system theory (Ackoff 1971; Bertalanffy 1968; Laszlo 1975; Simon 1978). The addition of the strategic decision-making theory and system theory significantly increases the breadth and the scope of the perspective. Particularly important element of the perspective is the influence of the postulates of the system theory, which were adapted to the international business field by Luostarinen (1979).

One of the postulates of the system theory is the interconnectedness of the elements of the system and the connection of the system to its operational environment (Bertalanffy 1968; Laszlo 1975; Luostarinen 1979). It suggests the need of consideration of the

entire organization and its operational environment at once. Such perspective enables holonic comprehension and interpretation of the internal and external environment of a firm, thus, can be called the firm-level perspective. Within the internationalization context, a firm is the subject and the object of the internationalization process, which demands the simultaneous consideration of the entire firm and its operational capacity. A firm is a micro-level system, which consists of multiple purposefully cooperative sub-micro-level functional systems (R&D, marketing, production, etc.) with a goal of creating value-added output (Buaron 1981; Gluck 1980; Porter 1985), and which operates within the macro-level environment of the domestic market system and, being a part of the internationalization process, is a subject of influence and an influencer to the super-macro-level of international and global environment system (Luostarinen 1982: 9, 25). **Figure 1** visually demonstrates the idea.

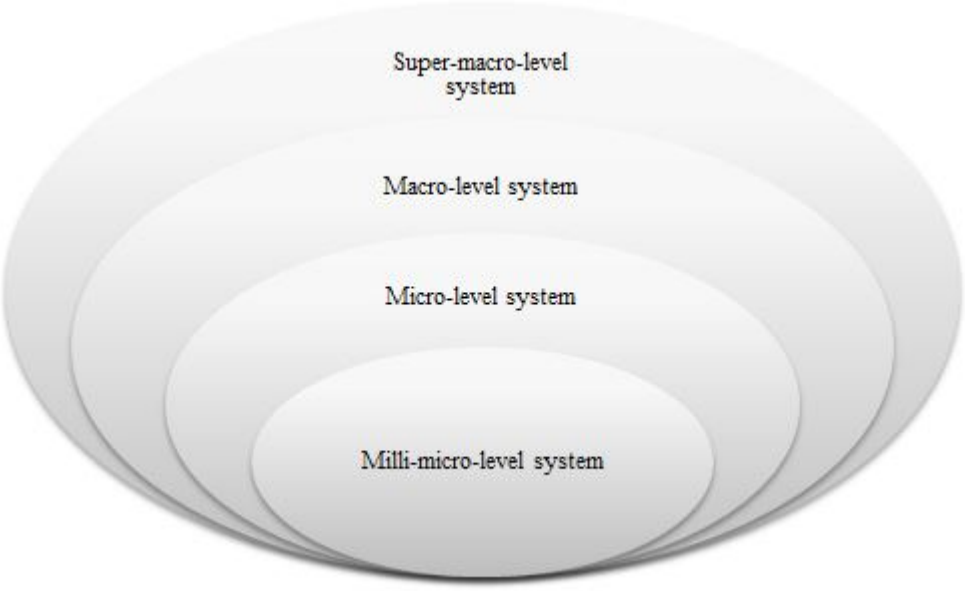

Figure 1. The organizational system and its environment (Luostarinen 1982: 25)

The need to consider the entire firm with its broad internal and external environments demands the simultaneous consideration of and decisions about the multiple dimensions. There are numerous dimensions requiring attention, but those fundamental dimensions are the product, the operation mode and the market (Luostarinen 1979), which allow for the better perspective of the state of the firm. They are the questions of what (product), how (operation) and where (market) any strategic decision-maker has to consider while crafting the business, functional and operating strategies and observing those strategies' successful implementation (Thompson & Strickland III 2003: 50 – 58). It allows for the use of the perspective beyond the initial international entry stage. From this perspective, the decision-maker looks on the entire aggregated organizational effort in terms of all markets, operation modes and products at a given point and uses the same dimensions for the development of the future organizational position. By considering multiple dimensions, the international business theories and decision-makers reduce the risk of oversimplification of the challenge and gain access to a clearer picture of the internationalization process state and potential.

The micro-level perspective effortlessly includes and integrates the milli-micro-level perspective. The later can be simultaneously used within the limits of its purpose as a part of the firm-level perspective. The milli-micro-level perspective helps with the short-term operational and tactical decisions about the market, and helps monitoring the progress in each individual market. The firm-level perspective is more complex view on the state of the entire process, integrated view on the inner and outer state of the firm operations, facilitates short-term market-related decision with explanations about the source of certain decisions (i.e. lateral rigidity, Luostarinen 1979), but also allows for the strategic perspective on the longer-term internationalization progress. The elements of the two perspectives are summarized in the **Table 1** below.

The importance of awareness of the perspectives conceals itself in the paradigms that they produce. The perspectives significantly affect the definition of the internationalization, the dimensions of internationalization, the definition of the international firm, measurement units for degrees of internationalization. The effects reach farther than one can consider from prima facie. Next, we will look at the

internationalization literature and, when appropriate, will highlight the effects of each perspective.

Table 1. Comparison of market-level and firm-level perspectives

	Market-level	**Firm-level**
Key role assigned to	Marketing department point of view	Strategic management, but leaves room for other perspectives
Validity	Initial internationalization stage (see Andersen 1993)	Entire internationalization process
Focus	Establishment pattern in a single market	Sum of all target country penetration patterns with consideration to operation modes and products
Reasoning	Inductive: looks primarily at a narrow, market-level decisions seldom leading to a big picture of internationalization process	Deductive: from aggregated big picture of the current state to the small market-level decisions, which work towards the expected state
Application	-Stage pattern -Limited application to initial stages	Inclusive universal application to both the Stage pattern and the INVs
Application/considers	Marketing department goals	Entire organization consisting of numerous subsystems, departments or operational functions
Decision	Supports short-term, tactical decisions	Short-, medium- and long-term strategic decisions
	Individual markets with individual patterns	All markets with common pattern; also individual market and pattern
	Modulates by the psychic distance: “factors preventing the flow of information from and to the market” (Johanson & Vahlne 1977)	Modulates by the business distance, the combination of geographic, cultural and economic distances (Luostarinen 1979)
	Based on experiential knowledge of the decision-maker	Based on lateral rigidity of the decision-maker
	Sequential two-dimensional: single market and operation mode	Aggregated multi-dimensional: markets, operation modes, products
Operation modes	Diminishing explanatory power on the later stages of internationalization when firms jump over some stages	Firms follow the stage pattern from this perspective
Product demand as major factor for internation. decision	Ignored	Considered
Measurement	Macro- and super-macro-levels: country/MNC, network position	Milli-, macro- and super-macro-levels: entire internationalization effort
Time	Gradual	Gradual

2.1.2. Definitions of internationalization

Before going into the discussion about the patterns of internationalization, it is important to critically evaluate how the international business field describes the concept of *internationalization*.

Perhaps, the most comprehensive definition of *internationalization of the firm* is proposed by Welch and Luostarinen as "**the process of increasing involvement in international operations** (Welch & Luostarinen 1988; also see Luostarinen 1989 pp. 200–201 for the multi-dimensional definition of the concept)." It highlights that internationalization is a *process* (Andersen 1993; Johanson & Vahlne 1977; Kutschker & Bäurle 1997; Welch & Luostarinen 1988), which can be observed, classified and categorized into stages, steps and patterns. This process is *dynamic* (see, "increasing involvement") with different firms changing their state of internationalization over time but when observed statically, at any given moment, firms can have different degrees of commitment to international operations. Internationalization process describes the *forward motion* towards either rapid or incremental increases of the involvement.

The description of the *involvement* and the *international operations* are the areas where the definition becomes more complicated. The terms require a prior recognition of the perspective on the internationalization, which affects the meaning and depth of the "involvement" and "international operations" concepts; the perspective significantly alters the proceeding research and other definitions. As it was aforementioned, the market-level perspective focuses its attention on the market and knowledge about it as the only important dimension for the international operations decision. This is explicitly represented in another definition of internationalization process from the milli-micro-level perspective by Schweizer, Vahlne and Johanson (2010):

> "Most international business studies have implicitly regarded the internationalization process of the firm, i.e., "the process of increasing involvement in **international markets**" (Welch and Luostarinen, p.36), as the outcome of intensions to expand internationally and consequent efforts to do so."

Intentionally or not, the authors substitute the original concept of "international operations" by the "international markets" and even refer the readers to the original

definition by Welch and Luostarinen (1988) as if they wrote it in such way. This shows that from the market-level perspective, the "involvement" and "international operations" means the same as having presence in a foreign market(s): "…the outcome of intentions to expand internationally and consequent efforts to do so (Schweizer et al. 2010)," which is quite narrow, but that is as much as the perspective allows.

Recently appeared another attempt to define internationalization by Vahlne and Johanson (2013) similar to their previous thought pattern. In their third version of the Uppsala Model (UM) internationalization is defined in terms of "opportunity development within context of dyadic relationships, consisting of two processes - learning and committing, when they happen cross-border (Vahlne & Johanson 2013: 195)." Even though the phrasing of the definition has changed to fit the latest developments in the authors' thoughts, it is hard to ignore the persistent focus on the aspects which are predominantly outside of the firm – market and relationships with it.

The definition of Welch and Luostarinen (1988) is, contrarily, built based on the firm-level perspective, which assigns deeper meaning to the concepts of the "involvement" and "international operations." That meaning incorporates the simultaneous consideration of the product, operations modes, and markets as the internationalization state definition and as the ground for the decision-making along with the broad multi-dimensional consideration of operational organizational capacity of the firm to digest the additional expansion (Welch & Luostarinen 1988). The "involvement in international operations" requires consideration of the entire firm with its internal factors and external environment. The operation modes and product(s) with which the firm internationalizes along and beyond the basic considerations of the market factors fit better the purpose. This perspective is more appealing to us and is at the foundation of our definition, which in line with the study's focus includes products. *Internationalization, thus, is a process of creating structure that facilitates better conditions to offer products in most economically advantageous way to its customers internationally.*

2.1.3. Degree of internationalization

Factoring that the internationalization is the dynamic process, has the direction and varies in levels of commitment to international operation, there should be different degrees of internationalization (DOI) of different firms. Next, we review three models with their significant units of measurement of the DOI.

Since we agreed with the firm-level perspective on the definition of internationalization, it is reasonable and consistent to continue with the model suggested by Welch and Luostarinen (1988). This model is based on the POM-model (Luostarinen 1979), which is expanded by the consideration of the operational capacity (OC) of the firm – POM+OC (see **Figure 2**). The POM related dimensions of internationalization are sales objects, the product or the "what"; the foreign operation methods or the "how" and the markets or the "where." The organizational capacity dimensions suggested by the authors are the organizational structure, financial capabilities and the availability of the skilled personnel. As authors highlight, the organizational capacity dimensions' list is not exclusive of other important dimensions, but can serve as the starting point for analysis.

Although, the organizational capacity dimensions are voiced within this model as important factors for consideration of the internal capacity, their evasive definition leaves the room for the speculation that they are already implicitly imbedded in the POM-model consideration (i.e. is the consideration of the organizational structure of personnel imbedded into the consideration of the operation modes?). In fact, these same organizational capacity factors can be added to any other model of internationalization (UM or INV) and supported by the same reasoning to produce the same result, which makes them a supplement rather than the main ingredient. If we consider an analogy of food to a theory, the OC is as spices: it makes the discussion richer and "tastier," and it is great to have it in every "meal;" but when the emphasis falls only on this supplement without the main ingredients (i.e. POM or UM), the discussion becomes hard to "digest" as the organizational capacity is rather context-sensitive matter. We do not belittle the importance of OC by any means. It becomes an important factor on the global rationalization stage of internationalization (Douglas & Craig 1989), when optimal DOI equals to degree of standardization and equals to the OC (Closs, Jacobs,

Swink, & Webb 2008; Fernhaber & Patel 2012; Hitt, Hoskisson, & Ireland 1994). However, as an independent unit of analysis, it is beyond the scope of this study.

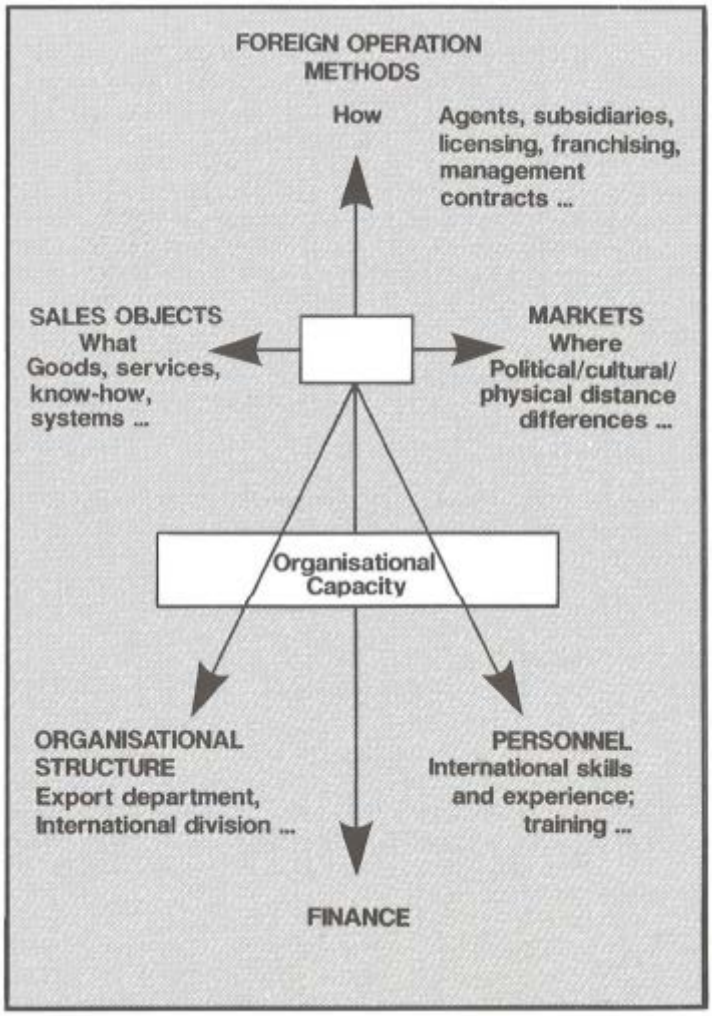

Figure 2. Dimensions of Internationalization (Welch & Luostarinen 1988: 39)

Kutschker and Bäurle (1997) propose their perspective on the units of measurement of the degree of internationalization: the **dynamic three + one framework.** It allows for classification of numerous internationalization strategies, but within this research is interesting for the consideration of the "hidden dimension" of time along those three static one. The authors propose the consideration of three static internationalization dimensions (see **Figure 3**): 1) the number of geographic-cultural distances of countries, 2) value added and the 3) integration of the firm, – and the hidden factor of time, which

brings the dynamism into the framework. The *number and geographic-cultural distances* of countries points to the importance of consideration of the cultural distances of the countries along with the number of the countries penetrated for the determination of the degree of internationalization. The *value added* dimension includes the purchasing, research and development, manufacturing, logistics and sales activities. According to the authors, the more value is added abroad the more international the firm is. As such, this factor reveals the true internationalization state of affairs of the firm. This is an important argument especially within the discussion about the DOI of INV firms.

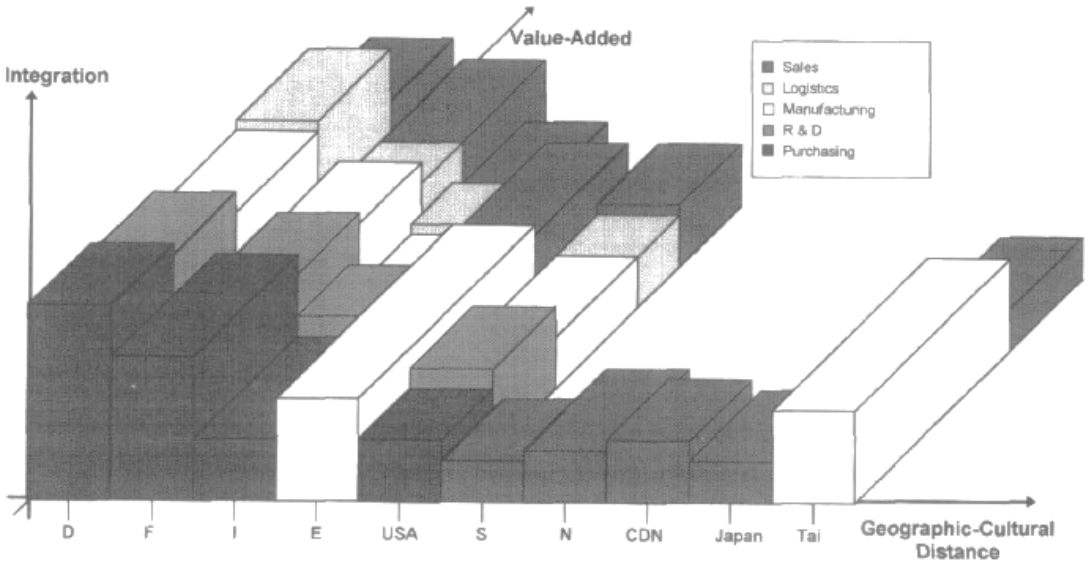

Figure 3. The three-dimensional shape of the international corporation (Kutschker & Bäurle 1997: 108)

The third dimension of internationalization is *integration across borders*. This dimension is defined by four factors: 1) the flow of resources within the corporation and concomitant flow of information, 2) the number of people involved in this exchange, 3) the development of the joint set of knowledge favoring the rise of "contextuating orientation" (Etzioni 1968), which provides a synthesis of the gained fractions of knowledge from the operations, 4) the extent of built-in-flexibility of corporation's infrastructure. These four dimensions are interdependent in creation of the final perception of the degree of the international integration of the firm.

With a few stipulations, the aforementioned dimensions are similar to the POM-model suggested by Luostarinen (1979) and overlay to reach the deeper conception. The similarities are visible in all three dimensions. When Luostarinen talks about the market, Kutschker and Bäurle talk about the number of geographic and cultural distances of the countries/markets. When Luostarinen talks about the operation modes, Kutschker and Bäurle stress that important are the value-added activities that the operation modes generate. According to the authors, the firm is more international when more value-added is generated abroad of the home country. When Luostarinen talks about the product, Kutschker and Bäurle talk about the international integration of the firm. An impression may emerge, that these are different topics and sure enough we cannot put the equals sign between them per se. Nevertheless, the comprehension that all the value-added activities of the firm identified by Porter (1985) are related to the product and the product is that integrating element of the organizational system, traversal of which as no other element, phenomenon or dimension can reveal the organizational structure and its integration, lifts up the seeming confusion away. Besides, the integration is the context-sensitive dimension requiring more precise definition and when we look for that definition with questions about integration of which resources, number of people involved in exchange about what, the purpose of the development of the contextuating orientation and the organizational infrastructure flexibility's purpose will eventually lead to the same topic of the product and its appeal to the customers.

The consideration of the fourth dimension, the time, adds the dynamism to those three mentioned above static dimensions. By time, the authors refer to the four critically important phenomena for the internationalization strategy: "timing, duration, chronological sequence and velocity of different internationalization moves (Kutschker & Bäurle 1997)." These elements of time are important to consider along those static dimensions as they show when a certain move in a market, by which operation mode and with which product should be taken, for how long, in what order and how quickly should the firm move in order to secure the competitive advantage. The addition of time (T) complements the beauty of the POM dimensions by enabling the scalability of application of the model for both the routinely operational management activities and for the strategy development.

Sullivan (1994) proposes another way of measurement of the DOI by **the linear combination of five dimensions** instead of the widespread unidimensional use of foreign sales as the percentage of total sales (FSTS). In order to minimize the measurement error and the confusion in results from measurement of the single dimension, the author suggests the use of multiple dimensions. After the investigation and statistical analysis of nine dimensions, the linear combination of five elements provided the highest measurement reliability of an *alpha* 0.79. Those dimensions are the 1) FSTS, 2) foreign assets as a percentage of total assets (FATA), 3) overseas subsidiaries as a percentage of total subsidiaries (OSTS), 4) top managers' international experience (TMIE) and 5) psychic dispersion of international operations (PDIO). Each element is a fraction of one. As the linear combination (FSTS + FATA + OSTS + TMIE + PDIO = DOI), the result of the measurement of these elements adds up to a fraction number with zero showing no internationalization efforts and five pointing to the absolute possible degree of internationalization. These elements comply with the theoretical expectations for the DOI of the firm to consider the three attributes (Sullivan 1994): the *performance attribute* (Vernon 1971) is met by the FSTS dimension, the *structural attribute* (Stopford & Wells 1972) is met by the FATA and OSTS dimensions and the *attitudinal attribute* (Perlmutter 1969) is met by TMIE and PDIO units. It is worth mentioning that these dimensions replicate those suggested in the POM model: the FSTS represents the international demand for the product, the FATA and OSTS represent the operation modes across the markets and the TMIE and PDIO represents the managers' attitudes towards markets that the firm decides to enter.

The reviewed theories for measurement of DOI lead to the set of conclusions. The first one is that the measurement of the DOI has to take into account multiple dimensions. The second conclusion is that those dimensions need to address the performance, structural and attitudinal prerequisites. The third conclusion is that the consideration of Product-Operation mode-Market + Time dimensions meets these requirements and adds the dynamism to the measurement of DOI.

2.1.4. Internationalization theories

The internationalization and global research has evolved around two schools of thought: the economic school and the process school (M. Gabrielsson & Kirpalani 2004). The

economic school asserts that the economic decisions including those related to internationalization are rational and originate from the search of efficiency by utilization of the transaction cost economies approach (Williamson 1975, 1981). The process school originates from the behavioral theory of the firm (Cyert & March 1963) and the theory of the growth of the firm (Penrose 1959), and observes how internationalization process happens.

Economic theories of internationalization

The main economic theories of internationalization are transaction cost theory (Coase 1937; Commons 1931; Hennart 2000; Williamson 1991, 1996a, 1996b), internalization theory (Buckley 2009; Buckley & Casson 2009; Hennart 2000) and the eclectic paradigm (Dunning 2000). The theories consolidated in a single paradigm explain the international behavior of the firms in their search for the foreign market entry advantages. The **transaction cost economics** (TCE) explains the governance of the organization and the reasons for selection of certain transactions over the others based on the costs incurred as a part of the economic exchange. The internalization theory expands the arguments of the TCE theory by placing the boundaries of the organization. The **internalization theory** argues that the firm should internalize the process, when the cost of transactions in the market is higher than those costs incurred within the organization and vice versa. The **eclectic paradigm theory** unifies and summarizes the theories into one perspective but further expands their applicability to the international economics context, particularly to the context of FDI and operation mode (OM) selection. It recognizes the export, licensing and foreign direct investment (FDI) as the basic forms of international economic activities. According to the theory, in the selection among these market entry modes, the firm is seeking to gain three categories of advantages: Ownership, Location and Internalization (OLI) advantages. Depending on the accessible advantages, the firm will select the mode with higher resource commitments. According to Dunning, the ownership advantages are fundamental in the internationalization decision. If there are only ownership related advantages, the firm is advised to select the licensing entry mode. With the presence of the ownership and internalization advantages, the exporting is advisable. The FDI, being the most capital-

intensive operation mode, requires the presence of all mentioned above advantages for the firm to pursue their investment goals.

From the firm-level perspective on internationalization, the eclectic theory has limited applicability to this research, while the TCE and internalization theories are still useful. The eclectic theory falls short because it takes the industry and country level perspective (Dunning 2000). The TCE and internalization theories, contrary, serve well the goal of our research in the area of product portfolio formation process because it takes the industry-level and the firm-level determinants in consideration. According to Andersen (1993), the economic theories have better application for decision-making on the later stages of internationalization than the process theories. Meanwhile, their independent applicability for the explanation of the internationalization patterns is outside of the scope of this research.

Process theories of internationalization

There are two widely recognized behavioral patterns of internationalization and another model that is less publicly acknowledged but gives a different perspective on internationalization. They are the Uppsala model (Johanson & Vahlne 1977), the International New Ventures or Born Globals (Oviatt & McDougall 1994) and the POM-model (Luostarinen 1979). The first two patterns of the internationalization are based on the market-level perspective and the latest pattern stems from the firm-level perspective on the internationalization. Next, we will briefly introduce the models, their distinctive arguments and evaluate the existing knowledge about their differences and similarities.

The stage pattern of internationalization – market-level perspective

The **Uppsala model** (UM) (Johanson & Mattsson 1988; Johanson & Vahlne 1977, 2009; Johanson & Wiedersheim-Paul 1975; Vahlne & Johanson 2013), also called stage pattern of internationalization, describes the gradual international expansion of the firms in the foreign markets. The stage pattern originates from the behavioral theory of the

firm (Cyert & March 1963), the theory of the growth of the firm (Penrose 1959) and the theory of foreign investment decisions (Aharoni 1966). The model arguments, that the firms gradually increase their commitment to the markets along with their increasing experiential knowledge of the market. The more knowledge about the market leads to more commitment to the market (see **Figure 4**).

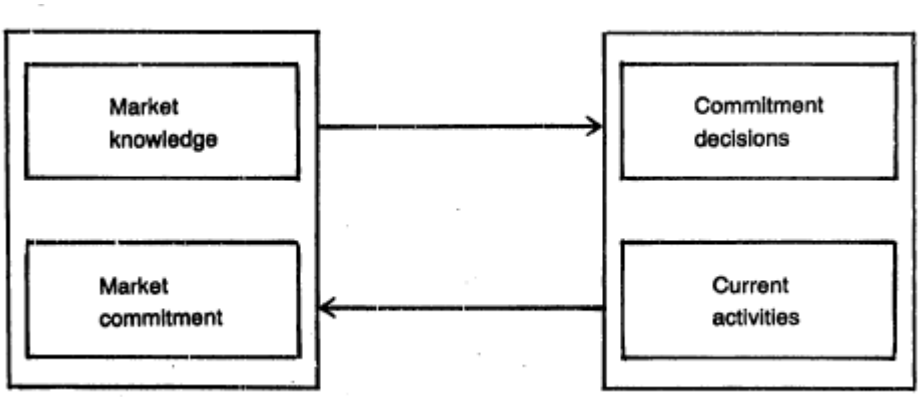

Figure 4. The basic mechanism of internationalization - state and change aspects (Johanson & Vahlne 1977: 26)

According to this approach, the firms gain their initial experience from the operation in the domestic market. Their international operation these firms start from the culturally and geographically close markets in terms of psychic distance with less resource demanding operation modes. According to Johanson and Vahlne (1977), the psychic distance is the sum of factors that prevent the flow of information from and to the markets. With additional knowledge and experience acquisition, the firms move towards culturally and geographically more distant markets with higher commitment operation modes in clearly recognized stages. They move from no international operation stage, to sales via an agent, further, to sales subsidiaries and, finally, to local production. As such, the Uppsala model approach takes the market-level perspective on the internationalization process (Luostarinen 1994; Luostarinen & Gabrielsson 2006). It was the target for the numerous challengers from the raising number of researches about the young firms that did not follow same pattern. Walking through the suggested internationalization steps is time-demanding and may not fit well every firm, which brings up the opposing observations to the proposed pattern.

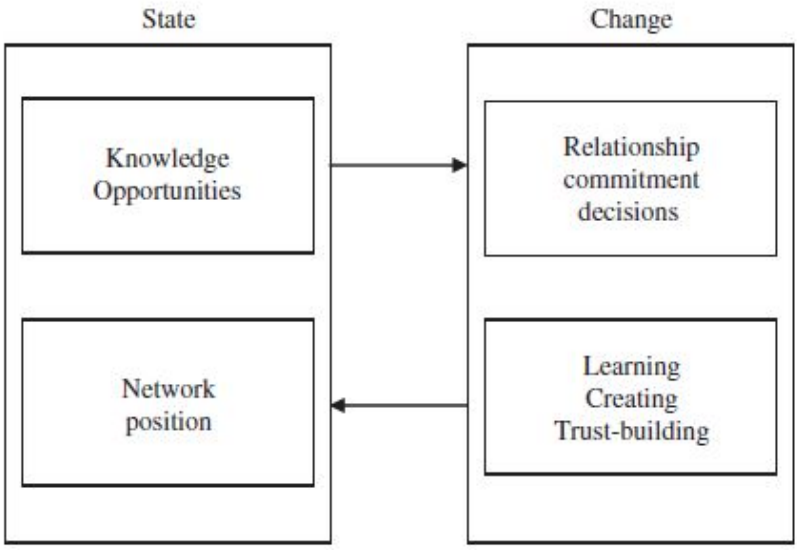

Figure 5. The business network internationalization process model (Johanson & Vahlne 2009: 1424)

In 2009, Johanson and Vahlne (2009) have proposed a revision of the Uppsala model based on the network view. It should be upfront stated that the revision aimed at no new proposition, but tries to justify the validity of arguments of the initial model in the changing scientific context. Particularly, this revision allows the authors to account for the rapidly growing popularity of the INV phenomenon and, thereby, compensate for the criticism and explanatory "omissions" in the initial model, while keeping the same argument and mechanism as in the former one. Since INVs are known for their heavy reliance on the networks for internationalization (see, for example, the discussion by Freeman, Edwards, & Schroder 2006), the adaption of the network view to terms of Uppsala model bridges the gap. Just as in the initial model, the decision depends on the familiarity of the decision-maker with the market and correlated risks/opportunities perceptions, i.e. psychic distance, which leads to commitment of resources in terms of operations mode choice. In the revised version, the network view ascends the network position as the state from which firm can decide about the network commitment. The firms struggle, thus, with the liability of outsidership to the network when former model

suggested the liability of foreignness. The mechanism of the revised model is presented in the **Figure 5**.

Technically, this revision is an attempt to resuscitate the interest to the 1977 model, but instead of changing the model it changes the context perspective. Though bringing in some novelty, the model does not alter the core of the proposed argumentation. Instead of countries/markets, the revised model considers the companies in its network as the decision-making context and the rest of the discussion logically flows from the context. The revised UM (Johanson & Vahlne 2009) is still a part of the market-level perspective with its core advantages and limitations mentioned before. Considering the revised UM does not add more understanding to the pattern of internationalization of the firm than the traditional UM since the mechanism remains the same. The difference with this model is that a decision-maker is invited to consider the network position, still external to a firm context, while the foreign market context attracts secondary attention. Although, the updated version moves the focus from a foreign market to a network market, the foreign market dimension remains present and needs equally cautious consideration.

In 2013, authors proposed another update of the UM with some variations (Vahlne & Johanson 2013). The update aimed at addressing the criticism of the transaction cost economies theory. Instead of strengthening the argumentation of own theory, the authors started an offense on the work of its critics and ended up proposing the “theory-of-all” in internationalization. The update does not propose something essentially (!) different from the original argumentation though. The theoretical framework is presented in the **Figure 6** below. There are still the state and change variables, still discussion about the knowledge and commitment familiar from the previous writings. Authors admit: “Although we have extended the model, the structure and general content of it remains the same as the original developed in 1977 (Vahlne & Johanson 2017).” In other words, what is left of the original model is a frame but the extension comes from the content adopted from elsewhere, leaving unclear is the model still an UM and, if so, what makes it such. The summary by Vahlne and Johanson is enough to reaffirm the claim that UM is still the milli-micro-level perspective and move on to the

next point of the literature review as it condenses the development of the theory, if it would not be for the confusing claims of the UM 3.0 version makes.

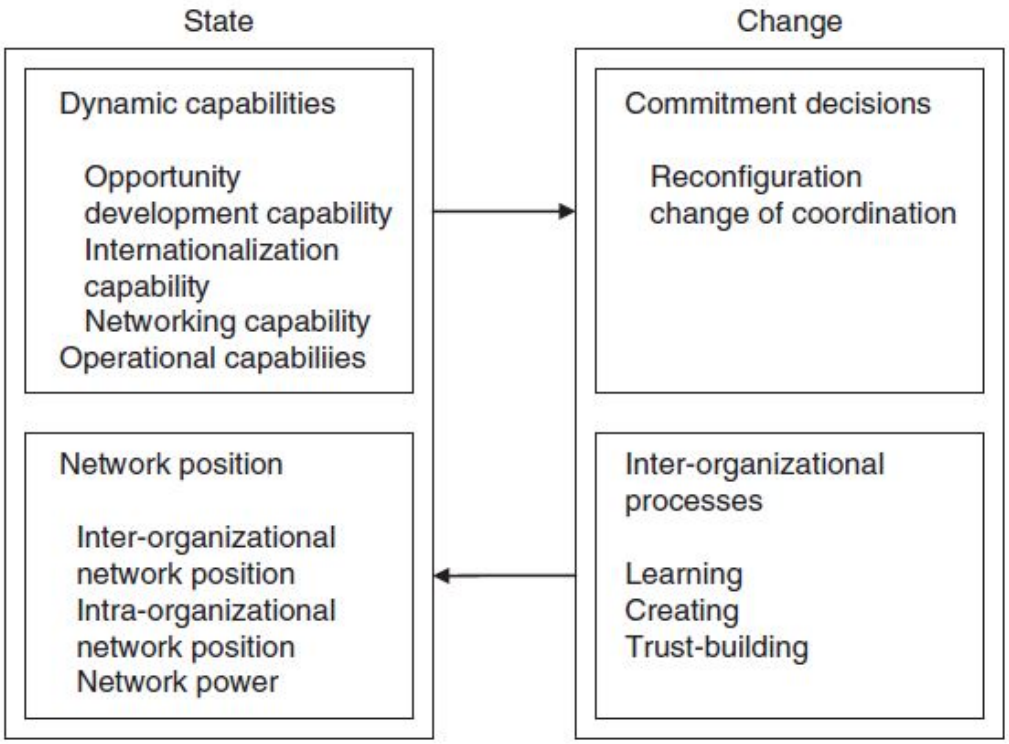

Figure 6. The Uppsala model of MBE evolution (Vahlne & Johanson 2013: 200)

Despite of the extensions and claims, the model still shows the consistency with the milli-micro-level perspective presented in the **Table 1** despite of the attempts to strengthen the arguments through the use of other recognized theories. If the 1977 and 2009 version of UM are the clear case of milli-micro-level perspective, the 2013 version is slightly more complicated version of the same perspective. Just as a wig compensates for the absence of natural hair coverage, the authors use the elements of network theory, dynamic capabilities theory, theory of entrepreneurship and theory of management of uncertainty (Vahlne & Johanson 2013, 2017). Each of these theories allows for the compensation in every area the original 1977 version model is weak. They serve as crutches in the shaky construct. As such, dynamic capabilities helps address poor strategic depth of the original model, theory of entrepreneurship and network theory –

for weak explanatory power of evolution of INV phenomena, theory of uncertainty – for the deterministic nature of the original UM model. If the 1977 UM is the clear case of the original thought, the 2009 model comes as UM plus network theory; the 2013 model is a surrogate of UM as the frame plus the four theories as the braces. The trend is obvious and the progression is expected to grow in the coming developments.

The main criticism and the core issue of the UM is that it claims it is a model for strategic decision-making, when in fact its use is tactical. When distinction between tactics and strategy is not made clear, appears confusion as tactics are inherent in a strategy and discussing one it is easy to confuse it with the other. On the example of UM, we will present the case yet it is typical to models developed based on the market-level perspective (see also the theory of effectuation (Sarasvathy 2001) common among INVs). Commonly used definition of the strategy and tactics is based on the time dimension: strategy is long-term oriented, when tactics are short-term oriented, - which is imprecise and often not true. Time-based only definition leads to incorrect perceptions.

To understand the point, one needs to understand the differences between the tactics and strategy. Both of these terms draw their origin from the military science. Given the origin of the terms, one needs to consider such ideas as war, objective of war, strategy and tactics prior to using the terminology frivolously. For the definitions, we refer to the one of the most fundamental works on military science, which has originated in the eighteenth century as the “On War” by Carl von Clausewitz (Clausewitz 1989), but still retains its relevance especially for businesses.

According to Carl von Clausewitz, war, objective of war, strategy and tactics are closely connected. Clausewitz defines war as “an act of force to compel our enemy to do our will (Clausewitz 1989: 75).” Nevertheless, in its essence “war is only a branch of political activity. …War is not a mere act of policy but true political instrument, a continuation of political intercourse, carried on with other means (Clausewitz 1989: 87, 605).” War needs a clearly defined ultimate objective of what are the expected outcomes and aims to achieve. Discussing the objectives of war, author argues that no one in his senses starts a war without first being clear what he intends to achieve and how he intends to conduct that war. The intentions represent war’s political purpose; the

later represent war's operational objective (Clausewitz 1989: 579). "The objective is the governing principle which will set the course, prescribe the scale of means and effort which is required, and make its influence felt throughout down to the smallest operational detail (Clausewitz 1989: 579)." Thus, objectives govern the use of strategy. Strategy, in its turn, is the use of the battles for the purpose of war (Clausewitz 1989: 177). A strategic plan determines when, where and with what forces an engagement is to be fought (Clausewitz 1989: 128).

According to Clausewitz, tactics and strategy are two activities that permeate one another in time and space but are nevertheless essentially different (Clausewitz 1989: 132). Discussing the relation between tactics and strategy, the author states that "tactics teaches the use of armed forces in the engagement; strategy, the use of engagements for the object of the war (Clausewitz 1989: 128)." Tactics looks at each single engagement in its individual complexity. This is all it is concerned with – success in the engagement. The scope of a strategy is significantly broader. It focuses on "the restoration of peace (Clausewitz 1989: 147)" preferably on the winner's terms. The success of the strategy is formed through tactical successes of engagements for the objective of the war. Tactics do not contradict a strategy. They both are tools that are employed at **different levels** of use in the same process for the same purpose. They refer to the same objects, use similar vocabulary, and consider the same issues. When both are correctly defined, tactics penetrates and becomes a part of strategy. That is why it is easy to err talking about the strategy, while, in fact, discussing the tactics.

There is a critical difference between the strategy and tactics as decision-making principle, which comes at significant cost should it be ignored. The reason for that comes from one of the best lessons one can take from von Clausewitz – the strategic miscalculations are impossible to compensate with tactical successes (Clausewitz 1989: 128, 143, 177, 182, 206-208, 237, for more details see book 2 and 5). Selection and even victory in individual battles does not have a strategic significance for the entire campaign if they are selected based on tactical principles (Clausewitz 1989: 237, 386). When tactics is used for the decisions-making principle even with well-defined objectives, the decisions loose the scale and perspective unless the decision-maker is confident in the tactical outcome (Clausewitz 1989: 386). Tactical offenses can lead to a

trap, energy swamp and lead to defeat in otherwise successful endeavor. One needs to consider the whole of war down through strategy lens into tactics of each battle, not in a reverse pattern (Clausewitz 1989: 363 - 364).

The theory of war has many parallels with theories of internationalization. By entering and expending in a foreign state, a firm engages in an “attack” on the foreign market soil engaging in less aggressive political activity – the economic trade. The foreign company, as extension of a foreign state, uses soft economic “offenses” on the other country’s market making its way among the domestic and foreign firms in that market. No wonder protectionism arises. States protect their domestic firms from foreign intruders. That is why internationalizing firms need the clear notion of the objective it aims to achieve, what strategy it plans to employ to reach the goal, what steps it needs to take and how those steps translate into action. The more markets a firm penetrates, the more complexity it faces, the more clarity it needs in the area of objectives of its internationalization. Internationalization strategy concerns with the aggregated entire process consisting of many market engagements, the goal of internationalization of a firm, the current state of affairs of entire firm internationalization effort, in what order to enter markets with which operation mode and products given the goal of the firm; in terms of internationalization tactics, the concern relates primarily to each individual market – what is the knowledge of the market, what a firm can do to successfully enter and penetrate the foreign market, how to engage the foreign market, operation mode choice. It is easy to jump into tactics before setting the strategy. As in military science (Clausewitz 1989: 363), internationalization tactics are much easier to theorize than a strategy. Tactics are more tangible and easy to formulate, see and follow. Should it bring to a success, tactics risk to establish itself as the operational principle of all strategic plans (Clausewitz 1989: 386). Should the tactics fail, without an orienteer in the form of clear goals and strategic plan, a firm is left to the mercy of a chance in try-and-fail attempts to find another suitable scenario.

UM proposes gradual internationalization based on the gradual expansion into those markets that are familiar to it. Such proposition resembles with a movement of blindfolded army on the minefield. Should it rush or move slowly, it may encounter some losses or major losses depending on the minefield defense intensity and

committed to the offense resources, but it will definitely gain the experiential knowledge for the future engagements, which may or may not be of much use. When a firm chooses to engage in internationalization with a perspective of gradual crawling internationalization into foreign markets without a clear objective and strategy, it falls into a trap of path-dependence. No one dares to estimate what potential casualties it will encounter from the strategic error even when there are some tactical victories in markets or subsidiaries.

Given the discussion about the tactics and strategy, we return to the claim that UM 2013 version is a tactical decision-making model based on the milli-micro-level perspective with a number of arguments. First one, the model still remains two-dimensional. When the evaluation and rationalization of network position, the nature of dynamic capabilities, strength of the relationship and other state and change variables are considered, the final decisions still concerns the operations modes and M (Vahlne & Johanson 2013: 205). Here, we agree with the authors (Vahlne & Johanson 2017). In essence, not much has changed indeed.

Second argument relates to the diluted boundaries of the firm, where a subsidiary or business unit acts as an independent part of a firm with its own center of control. Though plausible and in line with the network theory, such perception of a firm serves well the purpose of strengthening the position of the departments or subsidiaries over the headquarters. Such independence favors tactical decisions-making with focus on the immediate outcomes in a given market. This indeed is practiced and seems reasonable at the initial and penetration stages of internationalization, but leads to significant costs increases when firms aims at global expansion and synergistic operation of entire firm becomes the key to global success (see discussion about the internationalization process under point 2.3 based on Craig & Douglas 1996; Douglas & Craig 1989; Geringer, Beamish, & DaCosta 1989; Hitt et al. 1994). The division of the firm into a smaller independent “other parties” is the evidence that the UM 2013 version is still tactical decision-making tool guided by the milli-micro-level perspective.

Third argument relates to the second and concerns the power residence and assignment of the key decisions-making role. UM 2013 still assigns control to the parts, departments, subsidiaries of the firm, leaving the headquarters primarily with tools for

financial control over the operation of the firm (Hitt et al. 1994; Vahlne & Johanson 2013). According to the UM 3.0 version, the headquarters are assigned with no more hierarchical means to enforce decisions, including those of strategic nature. It has to "sell" its strategy to "the other parties (Vahlne & Johanson 2013: 201)," thus, making clear where the control actually resembles. The business units are assigned with more power over their own fate, which is the exact outcome of the milli-micro-level perspective. The other parties take care of their own market, which works well to a certain degree of internationalization (Craig & Douglas 1996). According to UM 3.0 version, the headquarters has mainly financial control over the operation of the other parties in the firm by the means of budgeting. Such tool is employed predominantly when the other means of control do not work, which is an evidence of impotency of the headquarters and strength of the other parties, typical for firms on the initial and market penetration stages of internationalization (see also Hitt et al. 1994). The approach to budgeting does not matter although the authors highlight the "affordable loss" criterion as superior to profit budgeting with rather vague objectives (Vahlne & Johanson 2013: 199). Similar approach is applied to the subsidiary management. Following this logic, we conclude that the budgeting is defined with each market in mind under the influence of marketing department argumentation. It is also self-evident where the flow of resources will go – according to the marketing department goals. When a firm operates on global scale, the stage at which synergic operation of the entire firm is the key not only to success but to survival too, exactly this kind of independence of the business units or subsidiaries from the headquarters comes at the increasing coordination costs discussed later.

The fourth argument relates to the tools produced by the UM. To the best of our limited knowledge, UM has managed to produce only one tool to help with internationalization advancement in 40 years of its existence. The tool itself vividly illustrates the milli-micro-level nature of the model. The authors propose a risk management model based on the UM principles: $R_i = C_i \times U_i$, where R is risk, C – commitment, U – uncertainties and i – market(s) (Figueira-de-Lemos, Johanson, & Vahlne 2011). The authors mention that it is possible and necessary to consider multiple markets since risk "can be a part of a combination of the risk of all markets in which firm operates (Figueira-de-Lemos et al. 2011)," but do not show how to do it. The risk management tool considers individual

market separately from the others, which is clearly milli-micro-level perspective. If the authors for any reasonable explanation, as originators of the idea, cannot show how this is possible, perhaps, it is not possible within the limits of their perspective. Alternatively, we conclude that the model is incomplete and implicit. Thus, the authors propose engagement in the scientific guess work for the levels of risk management complexity beyond a single market level. There are other unanswered questions arising from the construct of the risk management model. What are the uncertainties? Who evaluates them? Who is the decision-making agent in this situation? How firm identifies the level of knowledge for decisions-making – sufficient or insufficient? Is it subjective estimation of the decision-maker, group, or entire firm? If it is connected to an individual, knowing that knowledge is sticky, what happens to a firm when an individual, who gains experiential knowledge, leaves a firm? Following the logic provided in the risk management model, the firm's level of risk has increased, when the person, who engaged in development of trust and experiential knowledge left. In the light of the changed risk context, the dynamic capability resource has left, should a firm reduce the international presence too? The answers are unclear.

One observation that weakens the strength of the UM arguments is that it is "very general (Vahlne & Johanson 2013: 205)." The authors justify the generality of the theory by the vast variety of "individual personalities" of MBEs and the need to accommodate the other theories within the IB field. In fact, the authors struggle developing any more precise theory, because it will require of them another level of argumentation, depth, complexity. The milli-micro-level perspective sets the lower limits on the theory, unless Vahlne and Johanson want to go into discussion on the individual-level. The same perspective sets glass-ceiling stepping beyond which the original UM model cannot go without losing its only aspect of individuality, the knowledge-commitment frame, which is left of the original model. If it dares to rise to the firm-level discussion there is the POM-model (Luostarinen 1979), Johansson and Vahlne desperately ignore for the past 38 years. Because the vertical progression in theory development is limited, the authors grow their theory horizontally, in width, by integrating other theories. Thus, we see the 1977 as original UM, 2009 is UM 1977 version plus one: network theory, 2013 – UM 1977 plus four: network theory, dynamic

capabilities theory, theory of entrepreneurship and theory of management of uncertainty. Such state of affairs vividly shows the crisis of ideas yet provides convenient survival space for theoretical maneuvering.

The theory is so general that authors can successfully build an extension or an update into the completely unrelated field. The UM, being based on the knowledge-commitment relationship, suits any relationship context. Its arguments equally successfully apply to friendship, family relationship or parents-children relationship development. For example, if the change in level of experiential knowledge leads to change in a commitment, the family version of UM would sound the following: as more a man learns about a woman, the more it leads to commitment; the more he is committed to relationships, the more knowledge he gains, which leads to stronger commitment: from meeting decision, to dating decision, to wedding decision, to children decision and so on. Without significant intellectual effort, one can identify market, operation modes choice, commitment, etc. One can employ more complex concepts for the discussion as well, e.g. dynamic or entrepreneurial capabilities, yet the core remains the same – too general.

The fact that model is very general – and in our opinion, too general – brings other side-effects along. The model is imprecise, overcomplicated on the surface and oversimplified at the core, implicit. In almost bullet-point fashion, we present the evidence for such assertions.

One example of imprecision is reference to a focal company adapted from network theory. The model does not define whether it is a battleship company or the follower firm (Vapola, Tossavainen, & Gabrielsson 2008), which makes perception of arguments significantly easier. Another example is the term “a firm (Vahlne & Johanson 2013, 2017).” The use of too general reference to “a firm” leaves unclear who, for instance, learns, creates, trust-builds, makes decisions: the whole firm which includes the collective learning, collective risk assessment and decision-making starting from a janitor to CEO, senior management only, midrange managers, some departments or individuals? An easy example of overcomplicated on the surface and oversimplified at

the core claim is that after all manipulations with state and variable dimensions the decision is anyways concerns the operations mode and M. To see how the model is implicit rather than explicit one needs to see how often the authors use of other theories as arguments that authors as well meant the same in their previous work. Especially this is the case in 2013 and 2017 publications.

The goal of this study is to observe the pattern of product portfolio formation along internationalization process, which is far beyond the intention to criticize and propose a solution for UM. In line with our goal, we observe the potential of the UM to provide theoretical explanations of processes happening in physical realm. If the use is the measure of usefulness, the UM use is as a tool for tactical milli-micro-level decision-making. Within this limitation, UM serves well the purpose of selection of the market and operations mode.

The rapid pattern of internationalization – market-level perspective

The Uppsala internationalization model dominated the theoretical domain of the internationalization until the mid-90s, when the researchers voiced concerns about the irregularities in proposed by the stage pattern organizational behavior. They noticed that some firms take significantly less time for their domestic operation and from their inception rapidly move to the global scale of operation with sales in multiple unrelated markets (G. A. Knight & Cavusgil 1996; Oviatt & McDougall 1994). Those firms benefited from the changing global environment by pursuing the global customer (Yip 1992: 12) and seemingly ignored the stage pattern suggestions about the gradual steps of international presence development. These firms followed the pattern of rapid internationalization.

Regrettably, in the course of the studies, the firms following such behavioral pattern were described by numerous various names, which create challenges for the research. The extensive variety in names and definitions significantly impede and complicates the

research advancement while they intend to describe the same phenomenon. The **Table 2** summarizes the variety of those names.

Table 2. Variety of terms describing rapidly internationalizing firms, adapted from Luostarinen and Gabrielsson (2006)

Name	**Source**
Deviations, inconsistencies, and variations from the mainstream stages pattern	Johanson & Vahlne 1977; Johanson & Wiedersheim-Paul 1975; Luostarinen 1970, 1979, 1982, 1989; Luostarinen, Korhonen, Jokinen, & Pelkonen 1994; Welch & Luostarinen 1988
"Leap-frogging" firms	Hedlund & Kverneland 1985
New, technology-based firms	Autio 1995; Autio, Kaila, Kanerva, & Kauranen 1989; Luostarinen et al. 1994
High-technology start-ups	Alahuhta 1990; Jolly, Alahuhta, & Jeannet 1992
Born Globals	Autio, Sapienza, & Almeida 2000; Cavusgil 1994; Kirpalani & Luostarinen 1999; G. A. Knight & Cavusgil 1996; J. Knight, Bell, & McNaughton 2001; Madsen & Servais 1997; McKinsey&Co 1993; Rennie 1993; Sasi, Gabrielsson, & Myllyrinne 2000
Global start-ups International New Ventures	McDougall, Shane, & Oviatt 1994; Oviatt & McDougall 1994
Gazelles	Birch 2001; Vahcic 1995
Born internationals	Majkgård & Sharma 1999
Instant internationals	Dana 2001; Preece, Miles, & Baetz 1999
Global, knowledge-intensive firms	Almor 2000
International entrepreneurs	Jones 1999

Although the most spread name for the phenomenon calls these firms the "Born Globals," we share the voiced by Hashai (2011) concern of inaccuracy of such name. The "Born Global" firms are not genuinely "born" globally dispersed, but rather *increase their internationalization level rapidly from their inception* by expanding 1) their geographic scope represented by the number, spread and diversity of target foreign markets and 2) the extent of foreign operations reflected in the extensiveness of the commitment of value chain activities to foreign markets (Hashai 2011). The term International New Ventures (INV) better represent the phenomenon and will be used throughout the study to describe the firms engaged in the rapid internationalization.

The rapid internationalization pattern is built on the open opposition to the stage pattern. Oviatt and McDougall (1994) define the INVs as "a business organization that, from

inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries." The difference postulate of the INV from the stage pattern internationalizing firms is that INVs take *global perspective* instead of the country or regional perspective, rely on their *business network* in their internationalization efforts and *increase quickly their engagement* in the global market often prior to development of their commitment to the domestic market (Autio et al. 2000; Cavusgil 1994; G. A. Knight & Cavusgil 1996; J. Knight et al. 2001; Madsen & Servais 1997; McDougall et al. 1994; McKinsey&Co 1993; Oviatt & McDougall 1994; Rennie 1993; Sasi et al. 2000). **Table 3** summarizes the list of criteria commonly shared by the INVs.

Table 3. Defining criteria of the INVs, adapted from Gabrielsson and Kirpalani (2004)

Criteria	**Examples**
Vision and strategy to become global/ international	G. A. Knight & Cavusgil 1996; Oviatt & McDougall 1994
Small technology-oriented and knowledge intensive companies	Almor 2000; Bell 1995; G. A. Knight & Cavusgil 1996
Time to become global/international, varying from immediate to three years	G. A. Knight & Cavusgil 1996; J. Knight et al. 2001
Minimum requirement of 25% of the total sales coming from foreign sales or a minimum number of countries reached outside the home country	G. A. Knight & Cavusgil 1996; Oviatt & McDougall 1994
Geographical expansion outside the home continent with a minimum of 50% external sales	Luostarinen & Gabrielsson 2006
Management had existing connections in the industry	J. Knight et al. 2001
Niche markets	J. Knight et al. 2001
Rely on the network for international markets penetration and operation	Gabrielsson & Kirpalani 2004; Oviatt & McDougall 1994; Vapola, Tossavainen, & Gabrielsson 2008
B2B customers more important	Luostarinen & Gabrielsson 2006

Despite of the contraposition to the main stream theory, rapid internationalization pattern is the extension of the stage pattern research and evolves from it. Like yin and yang in the eastern philosophies, these patterns are coexistent and interrelated but also complementary to each other. In the times, when there are obstacles for the cross-border trade, the stage pattern dominates the international trade; when the international trade

barriers decrease, the more rapidly internationalizing firms appear. One can see the pattern in the history: the stage pattern dominated the trade scene in the seventies-eighties, when the cross-border trade was still challenging (Johanson & Wiedersheim-Paul 1975; Luostarinen 1970, 1979; Root 1994) and the reduction of the trade barriers in the nineties and thereafter led to the raise of the rapidly internationalizing firms (Oviatt & McDougall 1994; Rennie 1993). As those rapidly internationalizing firms existed in the seventies, so the stage pattern internationalizing firms do still exist today. Their fraction varies as well as the behavior. Often those traditionally internationalizing firms (TIFs) choose to internationalize rapidly after the long domestic or regional operation, becoming what is known as “born-again global” firms (Bell, McNaughton, & Young 2001; P. Gabrielsson 2004). Should there appear conditions requiring the limitations of the cross-border trade, the rate of the firms choosing the cautious internationalization by the stage pattern is expected to rise.

The internationalization behavior of INV was explained through arguments of the theory of effectuation (Sarasvathy 2001). The behavior of INV was defined as entrepreneurial in its nature and here the parallels with effectuation model become obvious (Andersson 2011). Theory of effectuation explains the behavior of entrepreneurs and entrepreneurial organizations in search for and pursuit of opportunities as selection of the best possible next step given the goals and availability of resources at hand. This model serves well its purpose given the risk and uncertainty INV experienced in daily operations. Yet, as with UM discussion, it is important to notice that the nature of the arguments and solutions is tactical with milli-micro-level perspective at the core.

The INVs operate in the global niche markets competing along the MNC with their distinguishable product offer (Luostarinen & Gabrielsson 2006). According to Rennie (1993), the INVs compete on superior quality and value at competitive price in their niche. Their superior attention to customer needs lead them into “owning” the customers instead of being merely the product manufacturer. The focus on a niche with homogenous global customer need, which also translates into the standardization of the product offer, allows the INV firms to reach the benefits of the economies of scale.

These firms often operate in the following business areas (Luostarinen & Gabrielsson 2006):

- **High-tech firms** – utilize advanced innovative technologies in their products with R&D expenditures often exceeding 5% of total sales.
- **High-design firms** – use unique product design and heavily invest in creation of distinctive, attractive design.
- **High-service firms** – provide exceptionally high quality service (ex. private security agencies (armies)).
- **High-know-how firms –** sell licensable, unique, protected by trademark or a patent know-how as their product.
- **High-system business firms –** sell sophisticated system solutions, which combine physical goods, service and/or know-how to address customer-specific needs.

One distinctive characteristic of the INV is the **high rate of their termination**, merger or acquisition by other companies. For example, within 1.5 years of Luostarinen and Gabrielsson's study (2006), 10.1% of the observed firms ceased to exist as independent entities or were in the process of liquidation. Another research showed that the INVs go through the number of survival phases related to the liability of foreignness, liability of newness and liability of smallness (Grönroos 2010). Their ability to address these liabilities in the process of global market presence development along with consideration of many other challenges related to the industry growth rate, the amount of resources and managerial experience, the existence of substantive and dynamic capabilities, high network capabilities, product scope optimization, and a lower level of both product adaptation and entrepreneurial orientation in decision-making affect the firm survival and potential growth (Grönroos 2010). Bearing in mind the complexity of the listed factors, the scale and scope of international operations and numerous limitations of the INVs, the low survival rate is foreseeable.

The stage pattern of stage internationalization – firm-level perspective

Although, the POM-model is generally attributed to the stage internationalization pattern group based on the theoretical claims, the description of the model makes more sense once the former two patterns are presented because they share the common milli-micro-level perspective. Contrarily, the POM-model looks on internationalization from the firm-level perspective.

The POM-model is based on the four fundamental theories. It originates from the behavioral theory of the firm (Cyert & March 1963) and the theory of the growth of the firm (Penrose 1959); and, additionally, on the strategic decision-making theory of the firm (Ansoff 1975), and the system theory (Ackoff 1971; Bertalanffy 1968; Laszlo 1975; Simon 1994). The addition of the strategic decision-making theory and system theory significantly increases the breadth and the scope of the model beyond the reasoning of the UM and INV patterns.

On the one hand, the scope of the model is broadened by dealing with the nature of the internationalization behavior of the firm as featured by *lateral rigidity* and as illustrated by the strategic internationalization decision-making process (Luostarinen 1989: 196). The author insists that decision-making is influenced not only by the organizational learning as depicted in the behavioral theories (Cyert & March 1963), but also by the involved lateral rigidity (Luostarinen & Gabrielsson 2006). The lateral rigidity is represented by the willingness of the management of the firm to select those alternatives, which are known to them and trying to avoid those alternatives, which are unfamiliar. This means that the decision-making behavior of the company is rigid in lateral direction i.e. towards new alternatives but is elastic forwards, which is, towards known alternatives. Because most strategic decisions are new, innovative and genuine by nature, a high degree of lateral rigidity and forward elasticity usually means passive strategic behavior but active operative behavior (Luostarinen 1989: 35). Lateral rigidity and forward elasticity explain that at the beginning of the internationalization process a company usually has no predefined holistic strategy to guide the internationalization within the potential product-operation-market scope (similar observation comes from Halman, Hofer, & Vuren van 2003 about the sequence of product families strategies development discussed later in the review; Luostarinen 1989). Usually, it is only in the later stages of the internationalization that the company increases the preparedness to

direct its internationalization development through strategy formulation and activates information and sales promotion functions to match the growth of the number of internal impulses in relation to external market opportunities (Luostarinen 1989 p. 196). Thus, internationalization may be regarded as a result of continuously changing mixture of lateral rigidity and forward elasticity (Luostarinen 1989 p. 179).

On the other hand, POM-model concentrates on the major determinants of internationalization, on the importance of internationalization as a growth strategy and on the determination of the *product, operation and market strategy* within the internationalization of the firm (Luostarinen 1989 p. 196). These factors and their interaction in the growth strategy represent the internationalization as a systemic action of the whole organization rather than the scattered efforts of individual departments related to their direct functional responsibilities: marketing department – in markets search and communication, R&D and manufacturing – in product development and production, and the managerial efforts – in organizational structure necessary for successful operation internationally.

The POM model takes into account three dimensions: product (P), operation mode (O) and market (M), and aggregates them into company's target market penetration pattern (Luostarinen 1979; Luostarinen & Gabrielsson 2006). These three dimensions follow the stage pattern from less involving towards more involving commitments. Because of the complexity of relations, the pattern of development of each individual dimension is presented independently first. Hereupon, the interrelation of the dimensions in the stages pattern, which is called the POM-posture, is reviewed.

The POM dimensions change in four stages. Separately, firms introduce products in the following four-step sequence: goods, services, know-how and systems with the former two sometimes switching the sequence. The operations mode pattern consists of four stages: non-direct investment marketing operations (NIMO), direct investment marketing operations (DIMO), non-direct investment production operations (NIPO), direct investment production operations (DIPO) with non-direct investments followed by the direct investments modes and with marketing followed by production operations. Firms penetrate markets also in the stage pattern with first entering the markets with the

shortest business distance, which is a combination of geographic, cultural and economic distances, and later move to more distant in terms of business distance markets.

The dynamic chronological interrelation of the POM dimensions constitutes POM-posture. The change in POM-posture happens in four growth stages: starting stage of internationalization, development stage, growth stage and mature stage (Douglas & Craig 1989; Luostarinen 1989 p. 183). The change in posture of the company takes place only when there is a transition from one product, operation and market category to another. Change in posture has to include the change in mode and/or product, otherwise, if only the M-dimension changes, the whole posture remains unchanged. The dynamics of the POM-posture along the internationalization stages is presented in the **Table 4**.

Table 4. Summary of the internationalization dynamics (Luostarinen 1989)

Stages of internationalization	**POM-posture**
Starting stage	Product: the first product introduced to foreign markets is a physical good (usually marketed first in domestic markets)
	Operation: the first operation method utilized for the introduction of the physical good to a foreign market is a non-investment marketing operation (NIMOS: either indirect or direct export operation)
	Market: the first foreign market where the introduction of the physical good through an export operation takes place is one with a very short business distance
Development stage	Product: the company has introduced goods and services to foreign markets and/or
	Operation: the company is utilizing both non-investment (NIMOS) and direct investment marketing operations (DIMOS) (DIMOS usually replace NIMOS in the penetration chain of the target country markets)
	Market: goods are sold through NIMOS to various countries with differing business distances; DIMOS are substituted for NIMOS in very close business distance countries; services are introduced in very close but also in more distant markets.
Growth stage	Product: in addition to goods and services the company has also introduced systems to foreign markets and/or
	Operation: in addition to NIMOS and DIMOS, the company also utilizes NIPOS types of operations in foreign markets
	Markets: the company's operations are more and more reaching countries with long business distance.
Mature stage	Product: in addition to goods and services the company also started to sell know-how and systems to international markets and/or
	Operation: in addition to NIMOS, DIMOS and NIPOS the company has also started to utilize the DIPOS type of international business operations
	Market: in addition to close, very close and distant countries the company has also started to operate in very distant target countries.

Based on the reviewed literature, we identify the potential for development of the model. The POM-model tells in what sequence firms engage in product, operation mode

and market commitments along the internationalization process. Nevertheless, the model provides blurry idea when the firms actually start engaging each element of the POM-posture and their entire combinations during the internationalization process. In other words, it talks about the sequence, but omits timing. This study aims at developing the POM model and addressing the timing issue.

By integrating multiple internationalization dimensions and considering the decision-making process, the POM-model provides the superior way to approach the multilateral challenges of the internationalization process and internationalization strategy development comparing to the previously reviewed UM- and INV-approaches. Additionally, because of the firm-level perspective, the POM-approach can serve as the reference point for the comparison of the UM-pattern and INV-pattern of internationalization.

The comparison of the UM and INV patterns of internationalization

In their study on the globalization and marketing strategy of the INV originating from the countries with small open economies (SMOPEC), Luostarinen and Gabrielsson (2006) have noticed that the vast majority of the existing research of the INVs has took the market-level perspective on the internationalization of the firms. The perspective and the corresponding research posture led to the conclusion about the significant differences in the internationalization patterns and organizational behavior (see for example McDougall et al. 1994; Oviatt & McDougall 1994; Rennie 1993). Unlike the most, the authors researched the INVs from the firm-level perspective and questioned the differences from the whole POM$ICA pattern (Luostarinen 1994).

The POM$ICA pattern is based on the POM-model and globalization marketing strategies ($ICA). If the POM dimensions were mentioned above, the $ICA dimensions need an introduction. The authors noticed the gap in the marketing strategies research about the pricing ($), intermediate (I), customer (C) and advertising (A), and address the gap in their study.

The thought provocative conclusion of the study is that INVs follow the same stage internationalization pattern with the *main differences related to the pace* and the marketing strategy originating from differences in *the customers' needs and the product specific characteristics*. Is the speed of internationalization that significant differentiating factor to coin a theory for it - remains an open question in our case with a negative answer. The pattern of product, operation and market internationalization behavior of the INVs replicated the behavior of traditionally internationalizing firms. At the same time, the high-product characteristics, based on the new to the world technology, determined the focus on the niche global market segment as the broad customer range was expensive to acquire with available resources. The high-product firms quickly find that the demand for their product is limited within the borders of the SMOPEC country so they need to target the global market instead. The need to penetrate the global segment explains the *faster pace* of the internationalization and the difference in the marketing strategy ($ICA) at least on the initial stage of internationalization. The summary is presented in **Table 5.**

Table 5. Findings about the internationalization pattern of the INVs (Luostarinen & Gabrielsson 2006)

Dimension	**Findings**
Product strategy	Proceeds through the traditional stages, but at faster pace: goods – services – know-how – systems
	Product offering consists of many product categories or systems
	Product is based on the new to the world technology and is focused on the niche segment
Operation strategy	Followed the traditional stages, but at a faster pace: NIOS came before DIOS
	Cooperative operation modes were used at the early stage or rapidly thereafter
Market strategy	Followed the conventional stages, but at a faster pace
Marketing strategy	Cost-based pricing was inapplicable; instead, the value-added-based pricing was common. Below-cost pricing was used to obtain the first reference customer deal.
	Focus on global niche segment as broad customer range was impossible due to limited resources. The reference customers are used to convince the early customers.
	Business-to-business (B-to-B) more important than business-to-customer (B-to-C) segments
	Own global brand important and developed early for targeting the end customers
	In B-to-B relations, the own branding was less critical; no branding, private label, original equipment manufacturer brand was common
	Conventional single channel was not sufficiently effective for INVs

Defining criteria of the scale of internationalization of the firm

The existing criteria for determining the scale of internationalization of the firm often focuses on the product and market dimensions while ignoring the operations mode. This is hardly a surprise because it is quite challenging to find the room for this factor given the common market-level perspective approach, which focuses primarily on the mentioned two dimensions. Such state of affairs is, at the least, worrying and, at the most, deceiving. A firm may be wrongly considered global based on its sale of products to the markets, when it actually does not have international/global operations, on the same grounds as the one engaged in international trade with widely spread global operations. Their supply chains and operations will differ, but this will not be accounted in the definition of their internationalization status. For example, a domestic firm that runs online shop and ships the final product to end customers globally through cooperation with a shipping company cannot be considered equally global to a firm that actually operates on few continents and too serves the global customer.

Until the arisen interest in the INV phenomenon in the mid-nineties, there was little concern about the definition of the internationalization scale of the individual firms. The notable emergence of the INVs required the new list of criteria for segregation of the traditionally internationalizing firms and those following new behavioral pattern. Therefore, there appeared numerous names of the phenomenon mentioned in **Table 2**. **Table 3** shows that the definition of the INV was based on the contrast to the TIFs and predictably focused mainly on the market and product sales related factors criteria for determining the INV as an entity. Except for the reference to the reliance on the network for markets penetration and operation, the definitions did not account for the operation mode dimension as the significant determining point.

The firm-level perspective, which stems from the POM model, insists that internationalization process is the sum of the company's target country penetration patterns (Luostarinen & Gabrielsson, 2006) and accounts for the operation modes dimension. For the consistency with the POM model dimensions, it is fair to identify a firm as global or international by *the sum* of penetration level of their products,

operation modes and markets. Here, the consideration of the sum of penetrations plays the key role to the judgement.

In **Table 6**, we present alternative way to perceive the scale of internationalization and classification of firms based on the POM model (Luostarinen 1979, 1982, 1989). The POM dimensions serve as the main determining factors of the internationalization criteria and the findings of the Luostarinen's research determine the scale. Based on the Douglas and Craig (1989) stages of internationalization (domestic, international entry, international penetration and global rationalization), the firms are sorted in 5 categories according to their internationalization efforts: domestic, internationalizing, international, globalizing and global. Keeping in mind the findings about the similarities in the internationalization pattern of firms (Luostarinen 1994; Luostarinen & Gabrielsson 2006), the classification has wide applicability despite of selected internationalization pattern. For consistent classification, we suggest 1) focusing on the sum of three POM dimensions, 2) that the determination of the internationalization state should happen according to the lowest scoring dimension of those three, 3) using the current data about target firm's total sales as the product dimension, operation modes and the sum of markets. It is preferred to judge the firm by its actions, rather than hopes with the lowest level of actions as the bottleneck. The analyzed aggregated results verified against the table factors will provide the better judgement of the internationalization state of the firm.

Table 6. Scale of internationalization of the firm

Internationalization scale	**(P) Sales (of total)**	**(O)peration Mode**	**(M)arket**
Domestic	Up to 10% foreign	Unsolicited exports	Domestic
Internationalizing	10-50%	NIMOs, DIMOs	Domestic continent
International	over 50%	NIMOs, DIMOs, NIPOs, DIPOs	Domestic continent
Globalizing	under 50%	NIMOs and DIMOs	Non-domestic continent
Global	over 50%	NIMOs, DIMOs, NIPOs and DIPOs	Non-domestic continent

A few examples will clarify the reasoning behind the scale. A **domestic firm** is the firm that serves the domestic market with the foreign sales not exceeding 10% of the total sales generated by the unsolicited exports. If the firm engages mainly in foreign marketing operations without either contractual or own manufacturing operations within home continent, it is an **internationalizing firm**. Similarly, the engagement in direct or indirect foreign manufacturing operations makes the **firm global or globalizing**, when the firm establishes the production operations on another continent than domestic. If the firm sells to global markets while engaging in no foreign production operations as many INVs initially do, it is fair to consider it an internationalizing firm even if it has the global aspirations (see also reasoning about value added activities by Kutschker & Bäurle 1997 in this context). When over 50% of the sales revenues come from the international markets, whose foreign markets are located on their domestic continent makes the firm **international**, and those in the attempt to reach this target are internationalizing. When over 50% of sales revenues come from non-domestic continents, it makes the firm global and those moving in direction of this target are globalizing. This classification is used to preselect the firms as research objects.

2.2. Product from firm-level perspective

The role of product in determining the internationalization pattern is easy to underestimate because it is so immense, obvious and tacit. It pierces the entire operation of the firm all the way through the R&D, manufacturing, marketing and sales, customer need satisfaction and the after sale services. The result of the Luostarinen and Gabrielsson's (2006) study emphasizes that the product has the power to influence the entire firm strategy (see similar conclusion from more recent research by Taylor & Jack 2013). The differences in the nature of the product affect the firms in such way that they need to choose between the internationalization patterns, adjust marketing strategy and adjust the pace of internationalization. Since the product is that important part of the internationalization process, it is important to review it in more details.

This section reviews the product from the firm-level perspective. We first start with delimitation of the line of sight to the perspectives of the primary value chain functions.

Then we separately review the marketing and operations management (OM) perspectives on product and product strategy. Our goal is to understand how product is viewed within the main functions of organizational system. Just as it is with the internationalization theories, the product within the primary value chain functions is understood and approached differently. Different perspectives can create confusion, misunderstandings and unnecessary conflicts. This section reviews how the product is perceived from marketing and OM functions. The understanding of the differences in their approach to product becomes handy especially when the context of internationalization process discussed later on comes into the picture.

To be consistent, when we approach the internationalization from the firm-level perspective, the same level perspective should apply to the product consideration. This means that the product should be viewed from the perspective of the entire firm or at least its main functions. Since the scale of the entire firm is too complex and volumetric, we reason that restraining the overview to the perspectives of the primary value chain activities better suffices the purpose of the study. Based on the Porter's (1985: 36–52) value-chain model, all of the firm's activities are directly or indirectly related to products, which again justifies and supports the consideration of the product from the entire firm level. Understanding the product allows broader backtrack understanding of the entire organization and the efforts employed in the transformation of the product from materials into final output and its path to the targeted consumer. Interaction of each organizational function with a product leaves a mark on conceptual perspective, terminology and scientific discussion, as well as leads to proposition of diametrically different solutions and, eventually, decisions. These differences are at source of numerous conflicts, which are hard to avoid, but, under the condition of complex/systemic understanding of the product within each field’s perspective, a reasonable solution is more likely to appear. This is especially urgent within the context of internationalization process with all the issues arising along the way. That is the reason we review the way marketing field and OM perceives the product and PP in these many details.

The section follows this order. First, we delimit the perspectives by the primary value chain activities, in particular, the marketing and OM functions. Second, we present the

marketing point of view on products, in particular, definition of product according to the respective field, product categorization (e.g. perishability or target group), levels of individual product and finish with the overview of proposed product strategy. Third, we overview the main topics of OM discussions and limit perspective to the operations strategy, review the issue of product strategy in terms of common approaches to new product development (NPD), view proposed product strategy and identify the terminology difference.

2.2.1. Product within the value chain

The Porter's value chain model (1985) is based on the business system concept (Buaron 1981; Gluck 1980), which captures the idea that a firm is a series of functions (e.g., R&D, manufacturing, marketing, sales channels), and that analyzing how each is performed can provide useful insights. The value chain model, thus, serves the purpose of disaggregating a firm into strategically relevant activities in order to understand the sources of competitive advantage. According to Porter (1985), the value chain activities can be divided in two broad types, primary and support activities. *Primary activities* are those activities involved in the physical creation of the product, its sale and transfer to the buyer along with the after-sale assistance. *Support activities* support the primary activities and each other by providing purchased inputs, technology, human resources, and various firm wide functions. The support activities are not associated with particular primary activities but support the entire chain. (Porter 1985: 38). For the purpose of the study and in line with its aims, the product is perceived from the primary value chain activities point of view, abstracting from the support activities perspective.

According to Porter (1985: 39), primary activities of any firm can be divided into the five generic categories: inbound logistics, operations, outbound logistics, marketing and sales, and services. The *inbound logistics* activities are associated with receiving, storing, and distributing inputs to the product, such as material handling, warehousing, inventory control, vehicle scheduling, and returns to suppliers. *Operations activities* are associated with transformation of the inputs into the final product form, such as machining, packaging, assembly, equipment maintenance, testing, printing, and facility

operations. *Outbound logistics activities* are related with collecting, storing, and physically distributing the product to buyers, such as finished goods warehousing, material handling, delivery vehicle operation, order processing, and scheduling. *Marketing and sales activities* are linked with provision of a means by which buyers can purchase the product and with an induction them to do so, such as advertising, promotion, sales force, quoting, channel selection, channel relations, and pricing. *Service activities* associated with providing service to enhance or maintain the value of the product, such as installation, repair, training, parts supply, and product adjustment. (Porter 1985: 39 – 40).

Another way to look at the primary value chain activities is by following the flow of value down- and upstream of the chain with the production as the central activity and the main reference point (Porter 1985). The *downstream activities* are more marketing-oriented activities (Hollensen 2011). They relate to the certain operations in a supply chain that involve the flow of the finished product to the end customer/consumer (Slack, Chambers, & Johnston 2010 p. 669). The *upstream activities* are more production-oriented (Hollensen 2011: 27) and relate to the operations in a supply chain that involve the flow of the resources (typically the raw materials, components, services) into the firm before the production (Slack, Brandon-Jones, & Johnston 2013; Slack et al. 2010). The production activities are the focal point where the value added activity of the firm happens. Although perception of the value chain from the broad categories of the downstream and upstream activities is handy in observing the flow of value creation, it blurs the edges between the organizational functions especially when we attempt to see the way the product is perceived within the context of the entire organizational system or at least the main organizational functions.

With an unaided eye, one can see that the primary value chain activities divide in those related to the (OM) and the marketing departments. Of course, some of the activities intersect and the division is more functional than factual. This said, the OM primarily coordinates the inbound logistics, operation, outbound logistics and service. The marketing primarily coordinates the marketing and sales activities. The function of the after-sale services is shared by both OM and marketing. The OM activities are inward oriented (i.e. focus on the internal processes and functions) and when performed well

are implicit and hidden. The marketing activities are, contrary, outward oriented (i.e. focusing on customers, their needs and prospects of better sale) and are explicit and public. Stemming from the discrepancy in the focus of the activities and the motivation behind of each of these primary functions, often firms find themselves in the state of tension. Taking into account that the firm is a system, good fortune of which depends on the successful cooperation of its subsystems, a clear understanding of the marketing and OM processes and their points of interaction represent the highest interest.

2.2.2. Product – the marketing view

Marketing has walked a long way to recognition from the generally ignored "stepchild of the business" (Levitt 1960) into becoming capricious and mischievous child often requiring enormous attention of the firm. Any consideration of the marketing budget of some MNCs in comparison to the GDP of some developing countries graphically demonstrates the point. The marketing importance dominates not only over the MNCs. Some INV startups spend considerable amounts of their sales income on marketing (P. Gabrielsson, Gabrielsson, & Seppälä 2012; Grönroos 2010). Besides, almost every strategic decision today involves marketing consideration, to say the least, but often is shaped by the marketing perspective.

The marketing has achieved its recognition through the consistent persuasion in the importance of the customer-orientation over the product- and production-orientation. The marketing philosophy stems from the recognition of the common among businesses trap of focusing on products and production, and the self-identification by the product rather than the customer need that the product satisfies. Levitt has called this attitude the marketing myopia (1960).

The recognition of the myopia leads to the acknowledgement of the five common orientations in developing the marketing strategy philosophy: the production, product, selling, marketing and societal marketing orientation (Kotler & Armstrong 2012 pp. 9–11). *The production orientation* assumes that consumers will favor products that are available and highly affordable; therefore, management's role is to focus on improving

production and distribution efficiency. *The product orientation* surmises that consumers will favor products that offer the most in quality, performance, and innovative features; thus, the continuous product improvements become meaningful. *The selling orientation* holds that consumers will buy enough of the firm's products only when it undertakes a large-scale selling and promotion effort. *The marketing orientation* holds that achieving organizational goals depends on knowing the needs and wants of target markets and delivering the desired satisfactions better than competitors do by finding the right products for the customers. *The societal marketing orientation* concerns with an idea that marketing strategy should deliver value to customers in a way that maintains or improves both the consumer's and society's well-being through consideration of consumers' wants, the company's requirements, consumers' long-run interests, and society's long-run interests. (Kotler & Armstrong 2012: 9–11). To a certain degree these orientations represent the progression of the marketing mentality with most rudimental understanding being described as production orientation and the most developed sharing the value of the societal marketing orientation. At different points, the firms may recognize itself under the influence of the one or another of these orientations. Bearing this in mind, next, we review the way the marketing literature talks about the product.

Definition of product – the value offer

From the marketing perspective, product is an umbrella notion for a broad array of anything that a firm offers to its customers for sale ranging from goods, services, experiences, know-how, systems (Luostarinen 1979; Luostarinen & Gabrielsson 2006). According to Kotler and Armstrong (2012: 224), "a product as anything that can be offered to a market for attention, acquisition, use, or consumption that might satisfy a want or need." The notion of products does not only refer to the tangible goods, but also include events, services, persons, places, organizations, ideas or a mixture of these (Kotler & Armstrong 2012: 224; Kotler & Keller 2012: 325). Jain (1988: 410) defines the product as "a bundle of attributes that satisfies a customer demand. It may be offered in the form of a tangible item, a service or an idea." The author further explains that the

customers do not simply buy products in the physical sense; they buy satisfaction, which is derived from the product's attributes, various features, and characteristics of the product (Jain 1988: 410). Coupled with Kotler and Armstrong definition of products, Jain explanation lays the ground to state that *product is a bundle of attributes that create a value offer that satisfies a want or a need.*

Product categories

The marketing stream classifies the nature of products according to the product perishability or the target group of customers. Although on the micro-level such detailed description of the nature of products with their detailed classification may first seem unnecessary, these same attributes and their clear distinction will prove its high importance once we see it in the context of internationalization with their tacit effects on standardization or adaptation domain, which are discussed in the next section.

The *perishability* of a product is affected by the durability and tangibility of the product and distinguishes three categories of products – durable goods, non-durable goods and services (Kotler 1984: 465-467; Kotler & Armstrong 2012; Kotler & Keller 2012: 327). *Durable goods* are tangible goods that normally survive many uses (for example, refrigerators, machine tools, clothing) and normally require more personal selling and service, command a higher margin, and require more seller guarantees. *Nondurable goods* are tangible goods, which are normally consumed in one or a few uses (for example, milk, toothpaste, grounded coffee) with frequent rate of purchase and require broad availability in many locations with the charge of a small markup and heavy advertisement to induce trial and build preference. *Services* are intangible, inseparable, variable, and perishable products (for example, haircuts, legal advice, postal delivery) that normally require more quality control, supplier credibility, and adaptability.

The classification of products according to the *target group* distinguishes two categories according to the type of product's use into consumer products and industrial products (Kotler & Armstrong 2011: 226–229). If the consumer products are purchased by the final customers for personal consumption, the industrial products are acquired by

individuals or organizations for further processing or for the use in conducting a business (Kotler & Armstrong 2011: 226–229). The determining factor according to this classification is the *purpose of use* of the product. If a consumer uses the land mower, for example, in daily home routine, this product is the consumer product; if the same land mower is used for the landscaping business, it is the industrial product (Kotler & Armstrong, 2011: 227).

Kotler and Armstrong (2011: 244) divide the *consumer products* in three main categories: goods, services and experiences. According to the authors, the product categories consist of two extremes: pure products and pure services. First extreme is purely the tangible goods with such products as soaps, bread, toothpaste and salts. The main distinguishing point of this category is that it does not accompany any service. The other extreme is the pure services, which may take a form of activity, benefit or satisfaction offered for sale that is intangible in its essence and results in no ownership of anything as in cases of telephone call, wire transfer of money or a haircut in the hair salon. As these are the extremes, there are many goods-and-services combinations on the market. The third category of products, the experiences, is harder to define as often they can be considered as services. Nevertheless, the experiences are the category of products that does for or does something with the customers (Kotler & Armstrong 2011: 225). The experience creates an impression, a mood, a memory as in example of the musical concert or an opera, the restaurant dining, usage of the operational system on a device or the visit of an amusement park. It is something that is connected to the product or service, but goes beyond mere usage to create the experience. Although the experience is the extension of either a product or a service, the experience is more related to service judging by the characteristics of services – intangibility, perishability, heterogeneity and variability (Hollensen 2011: 461–462; Kotler & Armstrong 2011: 237).

The *industrial products*, according to Kotler and Armstrong (2011: 227-228), amount to another three groups with materials and parts in the first group, the capital items in the second and the supplies and services in the last group. The *materials and parts* include raw materials, manufactured materials and parts. Some examples of raw materials are farm products (wheat, cotton, livestock, fruits, vegetables) and natural resources (fish,

lumber, crude petroleum, iron ore). Manufactured materials and parts consist of component materials (iron, yarn, cement, wires) and component parts (small motors, tires, castings).

Capital items are industrial products that aid in the buyer's production or operations, including installations and accessory equipment. Installations consist of major purchases such as buildings (factories, offices) and fixed equipment (generators, drill presses, large computer systems, and elevators). Accessory equipment includes portable factory equipment and tools (hand tools, lift trucks) and office equipment (computers, fax machines, desks). They have a shorter life than installations and simply aid in the production process. (Kotler & Armstrong 2011: 227).

The final group of industrial products is *supplies and services*. Supplies include operating supplies (lubricants, coal, paper, pencils) and repair and maintenance items (paint, nails, brooms). Supplies are the convenience products of the industrial field because they are usually purchased with a minimum effort or comparison. Business services include maintenance and repair services (window cleaning, computer repair) and business advisory services (e.g. legal, management consulting, advertising). Such services are usually supplied under contract. (Kotler & Armstrong 2011: 228).

Each individual product consists of three levels (see **Figure 7**): core customer value, actual (physical) product and augmented product (Kotler & Armstrong 2012 pp. 225–226; see also Kotler & Keller 2012 p. 326 where authors identify five levels of a product by adding elaboration to the three product level model). The *core customer value* addresses the implicit customer need. Often the customer purchases more than goods or services. They pay for the value that the particular good or service brings by addressing a problem or satisfying a need. The *actual product* is the tool with particular physical characteristics that helps address the core need. Those characteristics are brand name, quality level, packaging, design, features. The *augmented product is* built around the core benefit and actual product by offering additional consumer services and benefits. The examples of the augmented product elements are delivery and credit, product support, warranty and after-sale services. Nevertheless, it is important to keep in mind that the product is a bundle of all three levels and all of these levels create the conditions for the consumer experience with the product.

Levels of individual products

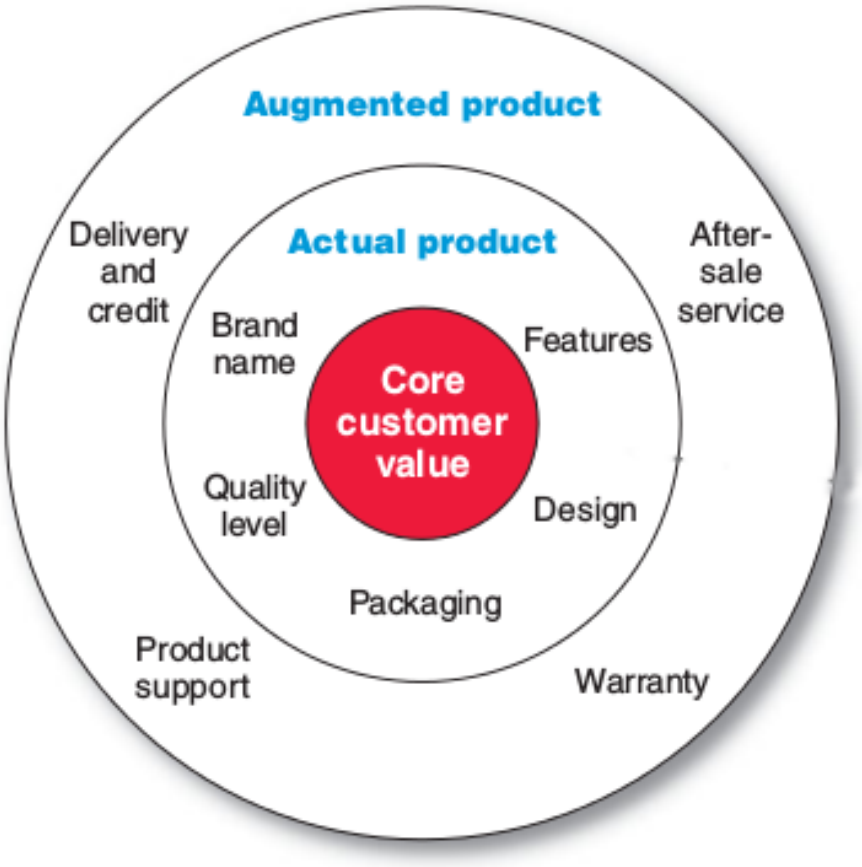

Figure 7. Levels of product: content of individual product category (Kotler & Armstrong 2011: 226)

Hollensen (2011: 460) extends the provided by Kotler and Armstrong description of the individual product by adding more details to each product level and the possibility of standardization of product elements. Thereby, core product benefits include the functional features performance, perceived value, image, technology. The product attributes are comprised of brand name, quality, packaging, design, size and color variants, country of origin, price and staff behavior. The support services include the delivery, installation, guarantees, spare parts and such after-sale services as repair and maintenance. Additionally, Hollensen notices that it is much easier to standardize the core product benefits than to standardize the support services because of it changing nature. Although the author does not further elaborate on this statement, such assumption leads to the conclusion that the core individual/organizational needs are

globally similar and the particular ways the needs are met with actual products and services may vary. The variety in the ways to satisfy the need/want, perhaps, is the reason why some products have higher global appeal and other products require more attention to their local adaptation limiting their global spread.

Marketing perspective on product strategy

The marketing perspective distinguishes three levels of the product strategy: individual product, product lines and product portfolio. Since the marketing perspective on individual products was discussed above, we will look into the concepts of product lines and product portfolio. *Product line* is "a group of products that are closely related because they function in a similar manner, are sold to the same customer groups, are marketed through the same types of outlets, or fall within given price ranges (Kotler & Armstrong 2012)." *Product portfolio* or *product mix* is the set of all product lines and individual products that a particular firm has for sale (Kotler & Armstrong 2011: 235).

Product portfolio has four dimensions: width, length, depth and consistency. Product portfolio *width* refers to the number of different product lines the company carries. Product mix *length* refers to the total number of items in its product lines. Product mix *depth* refers to the number of versions offered for each product in the line. The *consistency* of the product portfolio refers to how closely related the various product lines are in end use, production requirements, distribution channels, or some other way. (Kotler & Armstrong 2011: 235–236; Kotler & Keller 2012: 336–337).

These product portfolio dimensions help with defining the company's product strategy with four potential scenarios. (1) It can add new product lines, widening its product mix, where the new lines build on the company's reputation with its other lines. (2) The firm can lengthen its existing product lines to become a more full-line company. (3) It can add more versions of each product and thus deepen its product mix. (4) The company can pursue more product line consistency—or less—depending on whether it wants to have a strong reputation in a single field or in several fields (Kotler & Armstrong 2011:

236). The necessary manipulations within the product portfolio happen on the product line level.

2.2.3. Product – operations management view

Unlike the marketing, OM has had limited pressure to confirm its importance for the operation of the firm. De facto, the contemporary economic advancement started with and is fueled by the search of competitive advantages related to the better OM practices. It started with the Adam Smith's specialization of labor in manufacturing dated as early as 1776 (see the historical development and main contributions to the OM field summarized in Krajewski, Ritzman, & Malhotra 2013: 23-24; Kumar & Suresh 2008: 2-3) and developed into multilateral and multifaceted field with numerous practices influencing the entire operation of a firm. Since here we consider the product from the OM perspective, it is important to mention the definition of OM, the main topics the field covers and allocate the area the product discussion relates to within the field.

OM broadly defines its role in an organization. It is the systematic design, direction, and control of processes that transform inputs into services and products for internal, as well as external customers (Krajewski et al. 2013: 22; Slack et al. 2010: 6). In other words, the operations management integrates the activities of various other organizational functions and plays the hub role between the marketing, human resources, financial and accounting functions (Slack et al. 2010: 4; Taylor & Jack 2013: 5). In practice, there is not always a clear division between the functions. This leads to some confusion over where the boundaries of the operations should be drawn. In this research we follow a relatively broad definition of operations suggested by Slack, Chambers, et al. (2013 p. 5). We treat much of the product development, technical and information systems activities and some of the human resource, marketing, accounting and finance activities as coming within the sphere of responsibilities of the OM. We view the operations function as comprising all the activities necessary for the day-to-day fulfilment of customer requests, which also include sourcing products and services from suppliers and transporting products and services to customers (Slack et al. 2010 p. 5).

In academia, the introductory OM courses tend to focus on the following four "modules": 1) process analysis, 2) supply chain modeling; 3) world class production systems; and 4) operations strategies (Chase & Zhang 1998; see also Krajewski et al. 2013; Russel & Taylor 2011; Slack et al. 2013, 2010). Next, we will briefly define each of the streams. It is necessary to do in the context of this work because International Business field of academia is dominated by marketing perspective. An alternative perspective allows scalability of thought, which we aim at here, to propose a model that truly concerns the entire firm at the firm-level, includes ideas beyond the limits of milli-micro-level perspective.

The process view of operating systems provides a convenient analytical framework for managing operations as a business function. The operations performance measures such as capacity, cost, lead time, quality, flexibility and worker productivity can be analyzed under a general process view (Chase & Zhang 1998). The external environment requirements and/or business strategy about the desired flexibility can be matched by selecting an appropriate process design from a variety of process types such as project, job shop, batch flow, mass production on an assembly line and continuous production (Slack et al. 2010: 91–93). Such arrangements facilitate the incorporation of various quantitative modeling techniques as tools for understanding the process performance (Chase & Zhang 1998).

The main advantage of the process view is its ability to provide the relevant means of representing the way the firm works than the department view. Departments (marketing, financial, IT, R&D, human resource, etc.) have their own objectives, a set of resources with capabilities empowering the attainment of those objectives, and managers and employees responsible for performance. Processes can have its own set of objectives, involve a work flow that cuts across departmental boundaries, and require resources from several departments (Krajewski et al. 2013: 23).

The process view recognizes that for every process and every person in the organization, there is an internal or external customer (Krajewski et al. 2013: 24). The external customers may be either the end users or intermediaries between the firm and the end users buying the firm's finished services or products. The internal customers may be employees in the firm whose process inputs are actually the outputs of earlier

processes managed within the firm. Either way, processes must be managed with the customer in mind. Similarly, every process and every person in the organization relies on suppliers either external or internal.

The process view recognizes two types of processes: services and manufacturing (Krajewski et al. 2013: 25). Those dimensions one uses to differentiate the goods and services familiar from the marketing (see, for example, Kotler & Armstrong 2012: 236–238; Kotler & Keller 2012: 327) are valid for the differentiation of the processes too. The manufacturing and service processes differentiate along a continuum of the tangibility, durability, possibility to store the output in the inventory, response time to customer demand, capital or labor intensity, measurement of quality and customer contact required for the process performance (Krajewski et al. 2013: 25). Manufacturing processes convert the materials into goods that have physical form (Krajewski et al. 2013: 25). The transformation process changes materials on one or more of the following dimensions: 1) physical properties, 2) shape, 3) size (e.g., length, breadth, and height of a rectangular block of wood), 4) surface finish, 5) joining parts and materials. If the process does not change the properties of materials on at least one of these five dimensions, it is considered a service (or nonmanufacturing) process.

The process view of a firm is helpful for understanding how services or products are produced and why cross-functional coordination is important, but it does not shed any light on the strategic benefits of the processes. The missing strategic insight is that processes must add value for customers throughout the supply chain. **Supply chain management** is the synchronization of a firm's processes with those of its suppliers and customers to match the flow of materials, services, and information with customer demand (Krajewski et al. 2013: 22). The supply chain management involves introduction of the more traditional quantitative methods such as forecasting techniques, economic order quantity and Newsboy models, linear programming-based approaches for production planning and resources allocation, materials requirement planning principles, and scheduling theory (Chase & Zhang 1998). The concept of supply chains reinforces the link between processes and performance, which includes a firm's internal processes as well as those of its external customers and suppliers. It also focuses

attention on two main types of processes in the supply chain, namely (1) core processes and (2) support processes (Krajewski et al. 2013: 26; Porter 1985).

The core and support processes differ by the customers they serve. A core process is a set of activities that delivers value to external customers. Managers of these processes and their employees interact with external customers and build relationships with them, develop new services and products, interact with external suppliers, and produce the service or product for the external customer. A support process provides vital resources and inputs to the core processes and is essential to the management of the business. Firms have many support processes. Examples include budgeting, recruiting, and scheduling. Support processes provide key resources, capabilities, or other inputs that allow the core processes to function. (Krajewski et al. 2013: 27)

The third commonly spread module is the **world class production systems,** which develops the capabilities to meet the ever changing competitive environment. Such topics as total quality management (TQM), just-in-time (JIT), theory of constraints (Goldratt & Cox 2004) and supplier management provide for the best practices in approaching operations as a business function (Chase & Zhang 1998).

Finally, the last module commonly discussed in OM related academia is **operations strategy** (Chase & Zhang 1998). Operations strategy specifies the means by which operations implements corporate strategy and helps to build a customer-driven firm. It links long-term and short-term operations decisions to corporate strategy and develops the capabilities the firm needs to be competitive. Operations strategy is at the heart of managing processes and supply chains because the firm's internal processes are only building blocks, which require administration to ultimately be effective in a competitive environment. Operations strategy is the linchpin that merges these processes together to form supply chains that extend beyond the walls of the firm, encompassing suppliers as well as customers. (Krajewski et al. 2013: 27). The operations strategy includes broader issues such as product and process positioning strategies, technology choice, and new product development (NPD). (Chase & Zhang 1998).

Taking into account the OM modules spread in the academia, it is important to distinguish the direction of discussion in this research. When we talk about the product

from the OM perspective, we talk about it within the context of the operations strategy perspective. Nevertheless, since operations strategy builds on the elements of the other three lines, certain points of intersection with those lines are possible but they are not the main to the direction of research.

Product – operations strategy

The OM literature seldom commits to extended discussions about the product portfolio (PP) or product mix because this topic is predominantly the responsibility domain of the marketing department and strategic management. OM literature seldom uses the same terminology as marketing because it concerns with different spectrum of tasks. The processes and the supply chain activities required to deliver the product to a customer determine the way OM approaches the product. When a marketing department builds a product portfolio to meet the customer niche needs, adequately explain the availability of product to the addressee, it mainly takes into account the final customer viewpoint (Kotler & Keller 2012: 124); OM focuses on both the internal and external customers as it was mentioned earlier (Krajewski et al. 2013: 24). There, where marketing talks about the product portfolio – product line – individual products, OM talks about the *product platform – product family – individual products* (McGrath 1995; Meyer & Lehnerd 1997; Meyer & Utterback 1993). This is more than terming the same phenomena differently and can create misunderstandings and unnecessary tension within the organizational system of a firm as well as confusion in the research. That is why it requires more elaboration. First, we will briefly look into the foundations of the NPD and track the connection to the way OM approaches the product and product portfolio issue.

Two approaches to NPD: one-at-a-time and product platform

Not all processes in the value chain are made equally important. The most fundamental yet strategical among them is the process of NPD which has far reaching impacts. The NPD process merges the efforts of the marketing, R&D, manufacturing, production in

creation of the value proposition. In addition, the quick introduction of the new products to the market and continuous product line renewal leads to the long-term success of the firm (Meyer & Lehnerd 1997) and development of the competitive advantage, which reasserts the importance of NPD.

Besides well accepted practices of acceleration of the time-to-market by using design teams, concurrent design, design for manufacture concepts, and CAD/CAM systems (Russel & Taylor 2011: 160–169), the traditional approach to NPD usually fails to deliver in the long run. The main reason is that firms typically design new products in one-at-a-time mode (McGrath 1995: 41; Meyer & Lehnerd 1997; Meyer & Utterback 1993). Such approach dilutes senior management attention across the range of all products, the resources required for development of individual products overlap, the repetitive update and improvement of individual products becomes both challenging and expensive, the differences in products can confuse the sale force – and these are just to name the few of potential problems (McGrath 1995: 41). The focus on meeting individual customer needs with individually developed products results in "a failure to embrace commonality, compatibility, standardization, or modularization among different products or product lines" (Meyer & Lehnerd 1997: 2).

At the most fundamental level of the NPD and product strategy, there is a decision whether to design the new products one-at-a-time or build a product platform (PPl) (Meyer & Lehnerd 1997: 2). The one-at-a-time product development approach talks for itself. It implies the development of the odd individual products, which are integrated in product lines and product portfolio. This approach is driven by the basic marketing philosophy of reaching more customers with the targeted, therefore, diverse product offer. Manufacturers seek for expansion of their product lines and differentiation with an intuitive belief that high product variety may stimulate sales and bring higher revenue (Simpson, Siddique, & Jiao 2005: 11). As Halman et al. (2003) research shows, this approach is common on the initial stage of operation when the short-run urge to acquire and expand the customer base exceeds in importance the long-term economic benefits of costs optimization through platform development. Bowman (2006: 21-22) asserts that one-at-a-time product development approach fits better for the new and undefined markets where specific customer requirements are satisfied for the first time.

Admittedly, the implementation of the principles of platform development is not a cure and panacea. On the early stage of operation, the implementation of the platform is unjustifiably expensive, irrational and can cost the firm its existence. It does not fit yet.

The alternative approach of the NPD is the PPl development. Next, we provide the review of the PPl concept definitions and highlight the goal of the PPl implementation. The concept can be defined either narrowly or broadly. Meyer and Utterback (1993) narrowly define it as "encompassing the design and components *shared* by a set of products." McGrath (1995: 39) explains the PPl as "a collection of *common* elements, especially the underlying core technology, implemented *across* a range of products." Meyer & Lehnerd (1997: 7) defines it as "a set common components, modules, or parts from which a stream of *derivative* products can be efficiently developed and launched."

Robertson & Ulrich (1998) broadly defines the concept as "the collection of assets (specifically four categories of them: 1) components, 2) processes, 3) knowledge, 4) people and relationships) that are *shared* by a set of products." Sawhney (1998) recommends even broader application of the platforms by spreading the principles over the entire firm's value chain instead of applying it solely to the products. The author arguments that the development of the high-variety strategy requires paradigm change from the product portfolio thinking towards platform thinking. According to the author, the platform thinking is "the process of identifying and exploring *commonalities* among a firm's offerings, target markets, and the processes for creating and delivering offerings (Sawhney 1998)." Platform strategy evolving from such thinking accounts for five most important dimensions: 1) the product platform, 2) the customer platform, 3) the brand platform, 4) the process platform and 5) the global platform (Sawhney 1998). The review suggests that the product platforms definitions range from being product and industry specific to general and abstract, which points to the greater value and potential multitude of PPl applications within the firms.

The repeating topic of commonality among the provided definitions points towards the goal of the product platforms. Unlike individual product development, the goal is not to directly develop a product, but to create the pieces or elements that enable the development of subsequent products (McGrath 1995: 44). This difference in goals leads to difference in investment criteria, planning, and actual development.

The primary goal of the *platform-based product family* development is providing economical variety (Simpson et al. 2005: 13). The "economical variety" consists of two areas: *economy* with reference to the cost side or the ability to supply the products efficiently, effectively, optimally; and *variety*, which refers to the demand side and takes the customers' view point. The detached consideration of the economic aspects or the customer preferences leads to unbalanced performance and eventually to the higher costs expressed in either the market opportunity losses or the considerable operational costs. A comprehensive platform-based product development requires the consideration of customer needs, function requirements and technical solutions at grade with the product realization, which includes the production processes (Simpson et al. 2005: 14). The goal is indeed in "the artful balance between commonality and distinctiveness (Bowman 2006: 21)." Only the balanced approach leads to the implementation of the PPl to the best of its capacity and thus enables greater scale and scope economies as well as it facilitates the synergetic operations of the entire organizational system.

Product strategy in operations management

As briefly mentioned, there is a gap in common marketing and OM language. There, where marketing strategy talks about the product portfolio – product line – individual products, OM strategy talks about the product platform – product family – individual products (McGrath 1995; Meyer & Lehnerd 1997; Meyer & Utterback 1993). To a large degree, this is more than terming the same phenomena differently. Such lack of a common language and set of operating terms can often disorganize the efforts of engineering, marketing, and product management functions. It can also create confusion, disagreements and stasis both within a working process and the academic research results.

Figure 8. Strategic planning (Russel & Taylor 2011: 17)

Figure 8 visually portrays the typical strategic planning process, which can serve as an illustration to the raised concerns. The process starts with delimitation of the type of business the firm is involved with through the mission and vision statements. They serve as the ground for the corporate strategy, which in turn guides the development of the marketing, operations and financial strategies. Following this process, the product strategy thereby becomes fragmented on the department level with department specific interpretations of the meaning of the corporate strategy, which later is expressed in the corresponding strategy formulation. The language and department-specific interpretations run the risk of becoming a delayed-action bomb triggering the confrontation between the departments once the firm needs to work as an integrated system.

McGrath (1995: 14) proposes the four-level structure model for product strategy. Although at its time, this model was designed and targeted mainly at the high-tech companies, with a few provisions in definitions of its elements it can be successfully employed almost by any firm. Following this model, one can reduce the threat of poor strategy design and implementation. According to the author, the product strategy consists of vision, product platform level, product line and individual products. The development of the product strategy flows from top to bottom and from general to more detailed and specific. Such approach to product strategy development eliminates the department specific biases mentioned above. Here, the strategic vision is the source of the product strategy pyramid (see **Figure 9**).

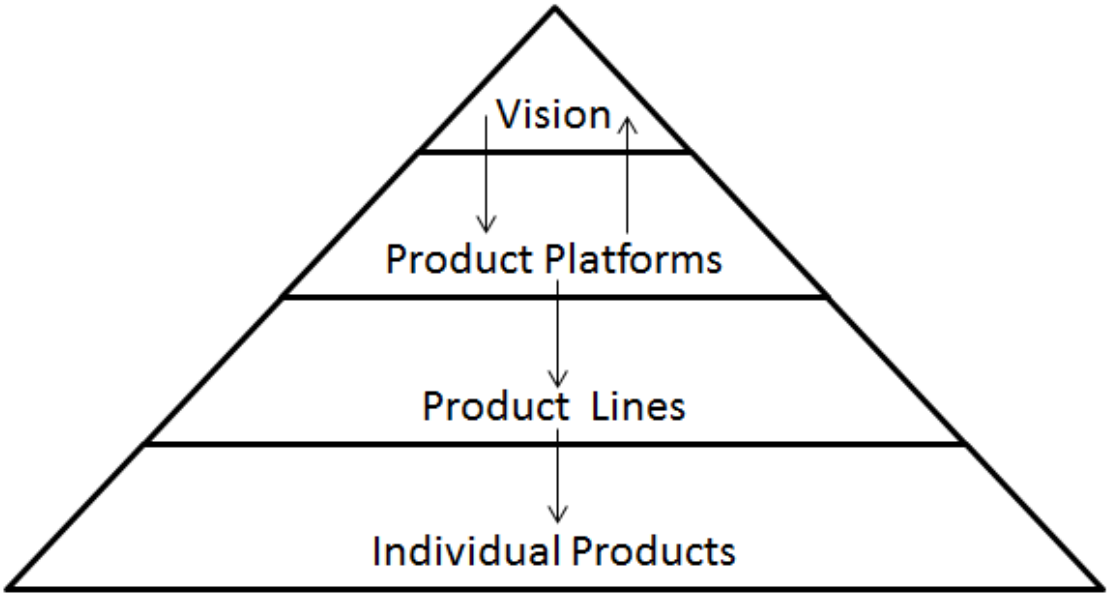

Figure 9. The Four-Level Structure of Product Strategy (McGrath 1995: 14)

Product platforms are derived from this vision, as it guides the nature, timing, and competitive positioning of product platforms. Product lines derive from product platforms, and individual products are released over time as part of a product line. The top three levels of this pyramid are the primary strategic levels. The bottom level is the execution level where product development takes place.

The two main alternatives to the product strategy development are according to a single product and platform-based product development (McGrath 1995; Meyer & Lehnerd 1997; Meyer & Utterback 1993). Single product development approach is dominated by the marketing influence and fits well the purpose of matching varying customer needs. Firm develops and manufactures those products that marketing department found in demand. Products are developed and set in the traditional concept of the product portfolio. Such approach is often selected by the firms in their initial stage of operation including the initial internationalization efforts; single product development is well justified for the purpose of meeting varying needs in new or undefined markets (Bowman 2006; Halman et al. 2003). The platform-based product development fits better operations on the global scale because it is significantly more complicated, costly and allows flexibility only within the limits of the platform but eventually returns in optimized costs (Bowman 2006; McGrath 1995; Meyer & Lehnerd 1997).

To see the differences in terminology between marketing and OM, we need to look closer into the platform-based product development concepts. This approach groups products according to product platform, product family and individual products. The **product platform** concept was defined above. Because this research focuses on the firm-level perspective, the narrow definition of the PPl as “a collection of common elements, especially the underlying core technology, implemented across a range of products (McGrath 1995: 39)” and “a set common components, modules, or parts from which a stream of derivative products can be efficiently developed and launched (Meyer & Lehnerd 1997: 7)” is used. The underlying technology and the set of common components serve as the main differentiator for the set of products. It also serves as the foundation for the series of closely related products (Meyer & Utterback 1993) that form a product family.

Product family utilizes a common technology to address the need of a market segment and the particular product target niches within the segment. The definitions of the product family emphasize duality of technology and market application as determining factors for the concept. Meyer & Utterback (1993) define the product family as a group of products “that share common platform but has specific features and functionality required by different sets of customers.” Similarly, Meyer & Lehnerd (1997) define

product family as “individual products that share common technology and address related market application.” Krajewski et al. (2013: 529) talk about product family as about “a group of services or products that have similar demand requirements and common process, workforce, and materials requirements.” When McGrath (1995: 62) explains the product strategy for the high-tech firms, he uses the term product line, which is commonly used in marketing, in the meaning of a product family. Such use creates unnecessary confusion. According to McGrath, “a product line consists of multiple products released over time from a common platform.” The marketing describes the product line seldom if ever referring to the platform or the underlying technology. It merely focuses on the similar functionality of the products and similar marketing communication to similar customer group (e.g. Kotler & Armstrong 2012: 235).

Table 7 compares the product family and product line. The concepts appear to have a lot in common when one perceives them only by the market application and similar function as a planning unit between the IPs and PP/PPl (McGrath 1995 p. 62). The critical difference between them lies in the area of common technology. Ignoring the factor of technology consideration is inefficient with the effects often remaining tacit until arises the need to manage products.

Table 7. Product family and product line comparison

Factors	**PF**	**PL**
Market application	Common	Common
Function as planning unit	PPL to IP	PP to IP
Common technology consideration	Present	Absent

Provided the firm has implemented PPl, the management of products according to PPl is easier, clearer and more efficient way than using common PP management models. There are at least three reasons that make the portfolio management models ineffective in case of implemented PPl. First, unlike PPl, the PP is a collection of unrelated entities (Sawhney 1998). It aggregates all of the firm’s products in one comprehensible

structure, but it does not discriminate the products in other ways than by the marketing principles that guide the PL formation. Next, as Mather (1995: 375) points out, seldom the full PP is reviewed at once to see if it is optimal for the business. The full PP review is complex, overcomplicated, time and resource consuming process and not many firms can afford such luxury. The third reason is that a PP may consist of more than one PPl with its related PFs (McGrath 1995; Meyer & Lehnerd 1997), which unnecessarily match the PLs structure leaving the portfolio management models ineffective. For example, the management of a firm applies the classical portfolio management approaches such as Boston Consulting Group or Product Life Cycle models (e.g. Boston Consulting Group 1970; Levitt 1965) and decides to remove certain products or even a PL from its PP. Ignoring or being ignorant of the PPl and PF, they may cut an IP or even the whole PL, while there may still remain the same count of platforms with other PFs attracting the same resources leading to minor changes overall. In this case, management of products according to PPl serves better the purpose of product management.

2.2.4. Summary to product section discussion

The presented overview shows that the marketing-oriented view on product and the process-oriented OM perspective discuss the issue of a product differently leading to confusion. The first main difference is the terminology use. Both marketing and OM talk about three elements of PP, which makes it tempting to conclude they are the same, when they are not. When marketing talks about product portfolio, product lines and individual products (PP-PL-IPs), OM talks about the product platform, product families and individual products (PPl, PFs and IPs). Just as PP is not PPl, PL does not mean PF. Differing vocabulary leaves room for misinterpretations, confusion and unnecessary conflicts especially when representatives from marketing and operations departments with these ideas come to work together.

Differences in terminology and notions bring up more fundamental differences in perspectives. Marketing and OM perceive product from different orientations. Marketing perceives from outward perspective of a customer. OM considers the

outward and inward perspectives; the outward consideration comes from direct interactions with customers or through the communication with marketing department. Different perspectives lead to different outcomes: marketing orientation leads to single product development, when matured OM perspective favors product platform development. These perspectives affect also the product strategy and, eventually, the overall strategy of a firm.

Another aspect of differences in marketing and OM approaches relates to application of PP management models. The portfolio management models consider PL, which, as we mentioned, are not the same as product families. Termination of a PL may leave rudiments of PF, which, in the end, have minimal effect on overall operational efficiency, when the left behind product still need the elements and their production, storage and processing may grow in cost because of reduced scale.

Thus, the literature review shows the different approaches to the product issue within an organization, which are at source of potential problems and needs to be accounted for before the engagement in significant internationalization commitments. These differences become especially significant when considered in the light of internationalization process, the topic of the next point, where the complexity of small details become even more complex, when considered within a context rather than in abstraction.

2.3. Internationalization process

So far, the domain of internationalization and the product was reviewed independently from each other. At the same time, as we previously argued, the internationalization process is directly related to product – firms internationalize their products or, in other words, make their product offer available in other countries by building the necessary infrastructure that supports the international advancement of their products. Although this may seem to some obvious and implicit, it is quite easy to lose the focus and the aim of internationalization when the product is not mentioned within the context of internationalization discussion. In this part, we look at the interplay of these two domains – product and internationalization process. First, we start by looking at the

stages of the internationalization process, then, at the standardization/adaptation dilemma and its connection to product; next, we review the complexity issues related to increased product and international diversification, and, finally, review the marketing and operational management dynamic interaction along the internationalization process.

2.3.1. Internationalization stages – overview of the process

Internationalization of a firm is a complex process. As a process, internationalization can and should be perceived within the bounds with international market entry at the beginning of the process and the optimal to the firm degree of internationalization/globalization as the end. Within those boundaries, internationalization should be viewed in its entirety as well as in numerous steps and stages that comprise the process. Such detailed elaboration and refinement is necessary for the clarity and specificity while discussing the aspects important at each stage of internationalization.

Douglas and Craig (1989, 1996) observed the internationalization process and distinguished the main stages. They suggest that there are four internationalization stages: pre-internationalization, initial market entry, international markets penetration and globalization or precisely the global alignment stage. The first stage, pre-internationalization, refers to the operation of the firm in its domestic market and it serves as the introduction to the internationalization. The other three stages with its key descriptions relate to internationalization and are presented in the **Table 8** below. Each stage has its related key objectives, focal points requiring primary attention, key levers that firms aim to use and corresponding strategic decisions. According to the authors, firms gradually internationalize from stage to stage pursuing scale economies during the entry phase, scope economies on the international expansion phase and the synergistic global operation on the global alignment stage.

Table 8. Internationalization stages adapted from Douglas and Craig (1989)

	Int. Entry	**Int. Expansion**	**Glob. Rationalization**
Key Objective	The geographic expansion of operations: identification of foreign markets for existing products and leveraging potential economies of scale in production and marketing by reaching them	Developing established local markets and exploiting potential economies of scope built upon the existing geographic base	Attention shift to consolidation of overseas expansion initiatives, improved coordination and integration of operations to take advantage of potential synergies in multinational operations
Focus	Geographic expansion with existing products and product lines	Geographic consolidation and growth within each country centers around expansion of the product lines	Rationalization of product lines across country boundaries; transfer of product lines and ideas with global market targeting
Key Int. Levers	Economies of scale: leveraging domestic positions aiming to achieve the economies of scale	Economies of scope: leveraging the established market relations across broader range of products aiming for economies of scope	Synergies: leveraging internal skills and market experience across national boundaries in search for maximum advantage from synergistic multinational operations
Strategic decisions	Choosing the most attractive markets to enter, mode of operation, timing and sequencing of entry. Search for geographical extension without incurring major incremental marketing or production costs	Development of local market potential through product modification, PL extension, and development of new products tailored to local market needs. Identification of opportunities of joint utilization of resources (e.g. assets, R&D knowledge, market insights) across PLs and product businesses	Patch work of fragmented local operations by radically restructuring the org. structure and management system for better global coordination and integration. Efficiency improvement through elimination of efforts duplication and downward costs-driving. Selection of product businesses mix worldwide; global strategy development.
Strategy evolution	Nationally-oriented multi-domestic strategic planning	Shift from "export" of domestic strategy to development of strategy on country-by-country basis	Adoption of regional and global strategy with global customers and segments in focus
PP devel. pattern	Use existing (i.e. domestic) product offer in foreign markets with minimal adaptation of products or marketing strategy. Adapt or develop new products for local markets	PL extension: introduction of new or related-products businesses tailored to local needs	Individual product and PLs standardization across countries with attention to complementarity in meeting production, resource and cash-flow requirements

Douglas and Craig (1989) describe the evolutionary development of the firm through internationalization stages which applies to majority of firms although some firms choose not to follow it. Despite of the selected internationalization pattern, gradual or

rapid (UM or INV), the firms go through these same stages unless they choose to leap over them by means of inorganic internationalization. When by *organic growth*, we mean a firm's gradual evolutionary development of necessary own international operations, the *inorganic development* is based on quick expansion of international operations by means of cross-border acquisition or cooperation. It includes international merges and acquisitions, engagement in international alliances and involvement in transnational joint ventures. If organic development of the international operations can take significant time and resources, the firms which choose the inorganic internationalization pattern can become international or even global almost overnight with significantly fewer investments (although the bigger challenge of inorganic growth is the integration of the entire firm after acquisition or during the cooperation). Among other implications, inorganic internationalization usually has immediate impact on the size of the product portfolio. Although the inorganic internationalization is beyond the aim of the study, it is important to be aware of such disruptions in evolutionary internationalization process because of its impact on the pattern of the PP formation.

Noteworthy is the pattern of product portfolio formation along the internationalization stages and strategy evolution. Craig and Douglas (1996) observed the persisting trend towards increasing complexity of the PP and marketing efforts along the first two internationalization stages stemming from the need to adapt to the local markets. The fate of the PP on the global alignment stage though remains unclear. Douglas and Craig propose that at global alignment stage firms rationalize the product lines across country boundaries by transferring the product lines and ideas with global market targeting. Theoretically, there are two potential patterns: the first is towards increasing standardization by reduction of the PP, the second – towards increasing standardization by extending the concept of a "standard" and expansion of the PP into related product categories. The literature stays on the side of the diversification in related businesses (Benito-Osorio, Guerras-Martín, & Zuñiga-Vicente 2012; Peng 2008: 259) and more advanced product categories (P. Gabrielsson, Gabrielsson, Darling, & Luostarinen 2006). At the later stage, the strategy also changes from multi-domestic with attention to the local needs and, thus, adaptation of the product offer, marketing efforts and operations towards the pursuit of regio-centric or global with thrust towards increasing standardization and operational synergies.

Among others, Douglas and Craig's research (1989, 1996) leads to observations about the progressively increasing role of standardization along the internationalization process; another observation that directly relates to the standardization is the increasing importance and value contribution of the OM on the later stage. They are the topics we turn to next.

2.3.2. Internationalization dilemmas

The debate about the standardization or adaptation of the marketing mix and the product, as a part of it, dates back to the 60-70s of the past century (Buzzell 1968; Keegan 1969) and it seems far from conclusive answer or solution even today. In fact, it is hardly possible to talk about internationalization without standardization-adaptation discussion. Such discussion ranges from the standardization of the product strategy (Boddewyn, Soehl, & Picard 1986; Hill & Still 1984; Levitt 1983), advertising strategy (e.g. Peebles, Ryans, & Vernon 1977) or the entire marketing mix standardization (e.g. Jain 1989; Shoham 2002; Sorenson & Wiechmann 1975; Tan & Sousa 2013). The discussion about standardization or adaptation is rather abstract and calls for consideration of numerous aspects, which easily divert the attention. Retaining the focus on products, first, we review the three common approaches to the discussion; next, we call the important environmental factors that condition the standardization-adaptation decision; third, we will look closer into marketing mix standardization relative to the product; last, we summarize and transit to the OM position within the topic.

One must admit that both managers' and academicians' responses to the challenging discussion is greatly affected by their own beliefs about the nature of the global business environment (Hollensen 2011: 19). These beliefs are summarized in the ERPG framework with its four orientations, namely ethnocentric, polycentric, regiocentric and geocentric (Perlmutter 1969; Perlmutter & Chakravarthy 1985). Each orientation will eventually express in corresponding marketing strategy development. Those perceiving the business environment from the ethnocentric and polycentric perspectives tend to organize and structure their international operations in similar ways in new markets as in their home market or consider each foreign market as unique and therefore target

them in different yet relevant way. Those perceiving the business environment from regiocentric and geocentric point of view organize and structure production and marketing operations on regional or global scale integrating the numerous markets in regional or global network and meet the customer need with according dimensional scaling with focus on standardization. Depending on the point of view, thus, one pursues adaptation or standardization of the operations and marketing.

2.3.3. Three approaches to standardization/adaptation discussion

There are three common approaches to the standardization-adaptation discussion – the standardization, adaptation and contingency approaches (Theodosiou & Leonidou 2003). These approaches stem from the common beliefs about the external environment presented in the ERPG framework, and produce corresponding product strategy solution. Before we go into details about these approaches, it is important to contemplate the continuum with standardization and adaptation/localization aspects at the extreme sides. Thus, we can talk about the degree of standardization or localization with those three approaches being distributed along this continuum.

The proponents of the *standardization approach* interpret the globalization trends as the driving force behind greater market similarity, technological uniformity, and higher convergence of consumer needs, tastes, and preferences (Hollensen 2011; Levitt 1983; Ohmae 1985). They suggest that this strategy offers a number of appealing benefits among which are significant economies of scale in all value-adding activities, particularly in research and development, production, and marketing; the presentation of a consistent corporate or brand image across markets; and reduced managerial complexity due to better coordination and control of international operations (Douglas & Craig 1986; Levitt 1983; Ohmae 1985; Theodosiou & Leonidou 2003; Yip, Loewe, & Yoshino 1988). The globalizing and global firms have better fit to implement the standardization strategy. Such fit is supported by the regiocentric and geocentric attitudes predominant in such firms. It is reasonable to conclude that firms following standardization approach aim at developing modified or standardized product strategy

with more disposition towards standardization (P. Gabrielsson, Gabrielsson, Luostarinen, & Darling 2006; McGrath 1995; Takeuchi & Porter 1986).

Despite increasing globalization tendencies, supporters of the *adaptation approach* claim that variations between local markets in such dimensions as consumer needs, use conditions, purchasing power, commercial infrastructure, culture and traditions, laws and regulations, and technological development necessitate the adjustment of the firm's marketing strategy to the particular conditions of each foreign market. They criticize standardization strategy as a new kind of marketing myopia, representing an oversimplification of reality. According to the protagonists of adaptation, the whole idea of standardization contradicts the marketing concept (Boddewyn et al. 1986; Douglas & Wind 1987; Sheth 1986; Wind 1986). They reason that the ultimate objective of the firm is not cost reduction through standardization, but long-term profitability through higher sales accrued from a better exploitation of the consumer needs across countries through consistent adaptation of marketing mix (Onkvisit & Shaw 1990; Rosen 1986; Whitelock & Pimblett 1997). (Theodosiou & Leonidou 2003). The internationalizing and international firms have better fit to implement the adaptation strategy. Such fit is supported by the ethnocentric and polycentric attitudes. Firms following adaptation approach aim at developing localized product strategy with a rare propensity towards modified product strategy (P. Gabrielsson, Gabrielsson, Darling, et al. 2006; McGrath 1995; Takeuchi & Porter 1986).

The third group of researchers supports *contingency perspective* on the standardization/adaptation debate, which helps to overcome the radical polarization. In this line of thought, standardization or adaptation should not be seen in isolation from each other, but as the two ends of the same continuum, where the degree of the firm's marketing strategy can vary between them; the decision to more standardize or more adapt the marketing strategy is situation specific, and should be the outcome of thorough analysis and assessment of the relevant contingency factors prevailing in a specific market at a specific time; and the appropriateness of the selected level of strategy standardization/adaptation should be evaluated on the basis of its impact on company performance in international markets (Cavusgil & Zou 1994; Jain 1989; Onkvisit & Shaw 1990; Quelch & Hoff 1986). Hence, the goal of the international firm

is to determine the specific strategy elements feasible or desirable to standardize or adapt, under what conditions, and to what degree. (Theodosiou & Leonidou 2003). Hereby, this approach supports the *glocal* marketing strategy, which strives to achieve the fit between the firms offer and environment guided by the slogan "think globally but act locally (Hollensen 2011: 21)." This approach supports development and sale of products or services intended for the global market, but reasonably adapted to suit local culture and behavior. Thereby, the name of the strategy unites these two dimensions in glocal. We expect that firms following the contingency approach are more inclined to pursue the modified product strategy with scaling of the product offer development, production and distribution to account for the regional needs (P. Gabrielsson, Gabrielsson, Darling, et al. 2006; McGrath 1995; Takeuchi & Porter 1986).

2.3.4. External environment – standardization/adaptation strategy choice

As mentioned before, the choice of the standardization/adaptation approach significantly depends on the interpretation of the external environment. The interpretation leads to the conclusion and corresponding internationalization actions. Thus, it is important to discern the factors and their relative importance in understanding the external environment. Among these factors, product, which is objectively an internal to a firm factor, plays rather significant role in defining those substantial external factors. Next, we review product's impact on standardization/adaptation factors, highlight products' differences in their degree of standardization and draw the connection to the internationalization potential of the firm, identify the set of important product-related external factors for standardization/adaptation strategy within internationalization context.

Product itself plays the leading and often determining role in the internationalization potential of a firm and, as a part of that, the standardization or adaptation decision. It is the product related factors that play most significant role in determining the potential of a firm to expand internationally, at what speed and in what markets (Albaum & Duer 2011 pp. 618–619). The product-imbedded attributes also determine the resources necessary for the internationalization. The general variety in products to a reasonable

degree explains the abundant multiformity of internationalization experiences, which are often hard to compare without significant reservations (Albaum & Duer 2011: 619; Birnik & Bowman 2007). It is also a product that influences the marketing mix decision of a firm (Theodosiou & Leonidou 2003). The internationalization literature suggests selecting for internationalization those products that already have the higher internationalization potential (Albaum & Duer 2011: 619; Govindarajan & Gupta 2000). Such preselection settles the firm in a better position to cope with the challenges of external environment at different stages of internationalization.

Just as there is the DOI of a firm (Kutschker & Bäurle 1997; Sullivan 1994; Welch & Luostarinen 1988), there is the degree of standardization (DOS) of products, which theoretically and practically relates to each other. Wang (1996) proposed a contingency framework for global marketing standardization. The framework synthesizes product characteristics, country characteristics and consumer segment characteristics as main contingency variables to facilitate the development of feasible global marketing strategy. We deduce that DOS of marketing strategy is essentially product-related decision with other decisions evolving out of the product factor since products are internal to the firm variable, where firm has full potential to influence and alter the factor. The country and consumer segment characteristics are external factors with limited power of a distinct firm to affect the factor; they are taken by default. This also means that DOI continuum is parallel to the DOS with some products having potential of global market appeal with full standardization and others carrying minor commonalities from market to market (Quelch & Hoff 1986). For example, the power converter has higher DOS than canned pea soup. With its function to satisfy rather standard customers' need around the world, power converters have also potentially higher DOI than canned pea soup with its particular taste, texture and mode of preparation varying from market to market. Although there are some exceptions (e.g. Coca-Cola, Marlboro), which in fact reaffirm the claim, the standardization related literature lays the ground to believe that there are product-related factors that predetermine the potential of the firm to internationalize. This is particularly important observation for the purpose of selection of the product/firm for the research.

The abundant standardization-adaptation discussion touches numerous conditions under which a policy of either standardization or localization of marketing mix is desirable. Rosen (1986) summarizes the important factors that concern the marketing mix into four clusters of factors: competitive, market, product and the internal to the firm factors. Based on the observed conditions, the author proposes the course of actions, which are summarized in the **Table 9** bellow (Rosen 1986 cited by Albaum & Duer 2011: 621). With these factors at hand, firms can follow either standardization strategy and globalize or adaptation strategy and localize their international activities.

Table 9. Factors for global marketing strategy

	Globalize when:	**Adapt to markets when:**
Competitive factors		
Strength of competition	Weak	Strong
Market position	Dominant	Non-dominant
Market factors		
Homogeneity of customer preferences	Homogenous	Heterogeneous
Potential of growth of currently small segments	Low	High
Consumer purchasing power	Uniform	Varied
Willingness of customers to pay for differentiated products	Low	High
Need satisfied by product in markets served	Shared	Individual
Conditions of use	Uniform	Varied
Product factors		
Importance of scale economies in manufacturing	High	Low
Opportunities to learn from small-scale production of innovative products	Low	High
Type of product	Industrial	Consumer
Codes and restrictions	Uniform	Varied
Companies factors		
Scope of international involvement	Many or large markets	Few or small markets
Company resources (financial, personnel, production)	Limited	Abundant

Obviously, factors affecting the choice of standardization or adaptation vary in their significance and can be grouped by their impact. In their study, Vrontis, Thrassou, & Lamprianou (2009) have researched the factors affecting marketing mix (or as authors call it, the “marketing tactical behavior”) relative to standardization or adaptation. The factors pulling towards standardization or adaptation of marketing mix bear different degree of importance and can be divided in “significant” and “peripheral.” **Figure 10** graphically presents the findings of their research. The authors assert that market

development, difference in physical conditions, legal reasons, political reasons are among the significant factors pulling towards adaptation of the tactical behavior. On the other side, stock cost reduction, easier planning and control are those significant reasons for favoring standardization. Noticeable is that the factors in favor of adaptation are related to the external environment and fall into the sphere of direct influence of marketing field. Similarly, the factors in favor of standardization are related to the internal environment of a firm, fall into the sphere of influence of operations management, and relate more to management.

Particular interest calls the findings that the most referred factors for both standardization and adaptation fall into the peripheral categories (Vrontis et al. 2009). This study observes that the heaviest arguments in favor of standardized or adapted strategy development are secondary when it comes to the marketing mix decision. The peripheral factors that pull towards adaptation are the economic and cultural differences, customer perception and level of customer similarity, technological, sociological and marketing infrastructure. Similarly, the economies of scale, research and development, global uniformity and image, promotion, synergistic and transferable experience, consistency with the mobile consumer are only peripheral reasons pulling towards standardization. It does not imply that they are insignificant if they are peripheral, but that they affect the marketing mix tactics to a lesser extent despite their common use to strengthen the argumentation of each side.

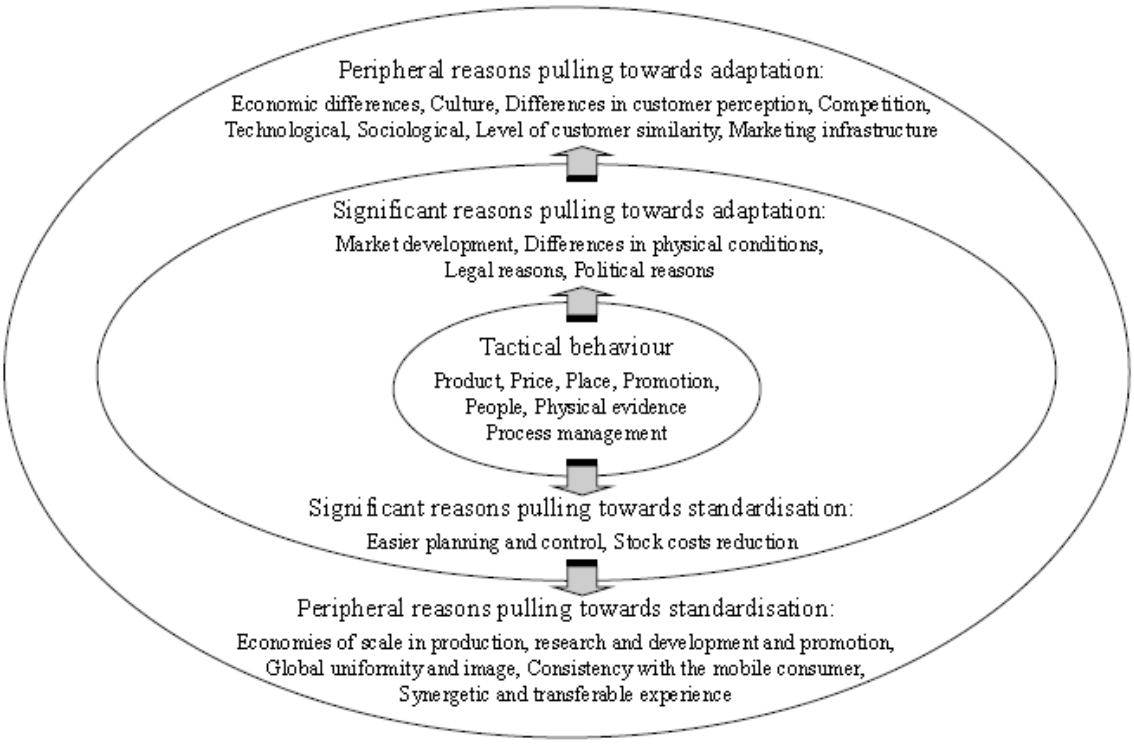

Figure 10. Significant and peripheral reasons towards standardization or adaptation (Vrontis et al. 2009: 492)

One of the conclusions stemming from Vrontis et al. (2009) research is that full standardization or complete adaptation of the marketing mix is irrational. The full standardization is reasonable under clearly defined set of circumstances and certain product categories. Similarly, the complete adaptation is also a mistaken approach when the global market becomes increasingly homogenized. The mentioned authors recommend standardizing tactics (i.e. marketing mix) where possible and adapt them only when necessary (Vrontis et al. 2009).

In their systematic literature review on marketing mix standardization in multinational corporations, Birnik and Bowman (2007) likewise aggregate and segregate the evidence in favor of standardization and adaptation of the marketing mix. They present a synthesis of the impact of environmental factors on marketing mix standardization.

Table 10 summarizes the factors that have the stronger and the weaker evidence in favor of standardization or adaptation.

Table 10. Contextual factors and influence on standardization (Birnik and Bowman 2007: 311)

	Stronger evidence	**Weaker evidence**
More standardization	Industrial products High-tech products Market similarities Product in same stage in PLC Fully owned subsidiaries	Essential products Luxury products Indirect entry modes Parent and subsidiary have similar competitive positions High degree of communication between parent and subsidiary Foreign operations centralized in an international division Strategy based on either (a) cost-based competition or (b) product/innovation Centralization in decision-making
Less standardization	Consumer products High local competitive intensity	Products used at home Culture bound products Direct entry modes Local in-country production Customer-based strategy
Inconclusive		Size of local markets Country of origin of parent company International experience of parent

What brings the studies by Rosen (1990), Vrontis et al. (2009), Birnik and Bowman (2007) together and directly relates to our study is their undeniable attention and attribution to the role of a product in standardization or adaptation decision. Thus, it becomes more evident that the product related factors play most significant role in determining the potential of a firm to expand internationally, at what speed and in what markets. It is a product that influences the marketing mix decision.

All three studies provide their lists of product-related factors with their weighted valuation. We noticed five product-related factors distinguished by the authors, which are important to consider in standardization/adaptation decision: 1) the type of products, 2) legal and political environment of a foreign market(s) with either varied or uniform regulations and restrictions for the product type, 3) difference in physical conditions or, in other words, cross-market need similarities, 4) ease of planning and control, 5) the

prospect of stock reduction. These factors clearly relate to both the external and internal environment, and call for the management with the firm-level rather than with the market-level perspective.

Unsurprisingly, product takes its key role because it is one of the most important factors of a marketing mix decision. Noticeable is that the earlier introduced lists of factors (i.e. presented in tables above by Birnik & Bowman 2007; Rosen 1990; Vrontis et al. 2009) omit references to pricing-, promotion- and distribution-related factors. They mainly manipulate with the interference of the product-related factors with the external environment. Although, to some it means that environmental factors are objectively foremost important, on the subjective firm-level though such bold interpretation turns the other way around and remains rather vague in the light of certain observations. In particular, Theodosiou and Leonidou (2003) noticed that among the marketing mix, product remains the most standardized factor and the other three elements of the 4P model are significantly more adapted.

> Theodosiou and Leonidou say (2003): "**Product-related issues** exhibited the most standardization. … Of these, product attributes, namely quality, design, and features, were the least adapted. The same was also true of branding decisions, which were partially adjusted. …Packaging was slightly more adapted. … Product line changes in overseas markets seem to be common, resulting mainly from differences between home and foreign environments, the development of new products for specific overseas markets, or financial limitations in supporting specific products abroad due to high entry cost."

This observation has far-reaching tacit meaning. Since firms are restrained in their ability to affect the external environment to a reasonable degree, they can manipulate mainly with their internal environment. That is why the product is the most standardized element with other three elements of the 4P remaining more adapted to the external environment. We deduce that by keeping the product more standardized, firms bypass the common marketing logic that market has the supreme rule guiding what firms produce. The logic reverses: firms produce what they can, find the market and the mentioned fit between external environment and internal capability, convince the market in the supreme value of their offer and sell to the market, which is ready to pay for the product. Thus, the standardization or adaptation decision is mainly the matter of

perspective. When one looks on the marketing mix from marketing perspective, he sees the need in adaptation to the external environment; when perceived from the managerial perspective, one sees the need to standardize. That is another argument to pursue the standardization or adaptation decision from the firm-level perspective, which encompasses both viewpoints.

Moreover, the standardization and adaptation decision should be reasonable. Forsooth, the comprehensive standardization of the marketing mix brings positive impact if feasible, when standardization of non-product related factors leads to negative impact (Birnik & Bowman 2007; Theodosiou & Leonidou 2003). A similar conclusion comes from Vrontis et al. (2009) research that full standardization or complete adaptation of the marketing mix is irrational.

Thus far, we looked at the relationship of the internationalization of the product offer to the external environment generally omitting the effect of internationalization on the internal environment of a firm. The provided evidence shows the importance of products within internationalization context and the degree of standardization. Besides significant interconnection and dependence on the external factors for internationalization, product is even more significant factor affecting internationalization when perceived from internal environment context.

2.3.5. Internal environment – internationalization and product portfolio complexities

The paradox of internationalization is that along with many opportunities for greater performance, defined as either accounting or market returns (Hitt et al. 1994), it carries also intraorganizational pitfalls related to social and technical complexities (Closs et al. 2008; Geringer et al. 1989; Hitt et al. 1994). These complexities directly relate to product and international diversification. Before delving into the literature related to the PP and internationalization complexities, we recall the stages of internationalization process and notice the proposed pattern of PP development. Next, we review the two main options available to MNE managers seeking to extend their firms' competitive advantage: diversification of products or international diversification (Geringer et al.

1989; Hitt, Hoskisson, & Harrison 1991; Porter 1985). Each alternative represents a valid choice though, as literature shows, each has uneven return. Additionally, each of the choices leads to the related complexities, which set a glass ceiling on further product and/or international diversification by triggering costs increase.

As discussed previously, the entire internationalization process consists of three stages (Craig & Douglas 1996; Douglas & Craig 1989) and each stage differently affects the product portfolio. On the initial entry stage, firms are attracted by the benefits of the scale economies from extended international operations. Firms mainly take their existing products and sell abroad somewhat extending the PP, sometimes – not. On the local market expansion stage, firms extend the established market presence aiming to benefit from the scope economies. By increasing their engagement, firms learn about the fine differences between markets and, thus, increase their product offer to match the varying customer needs. This leads to increase in architectural complexity of the PP over various markets (Closs et al. 2008; Jacobs & Swink 2011). Because of the rising complexities, the global rationalization stage requires attention to consolidation of overseas expansion initiatives, improved coordination and integration of operations to take advantage of potential synergies in multinational operations. This converts into rethinking of product lines across country boundaries with transfer of product lines and ideas with global market targeting rather than focusing on independent local markets. The expected trend in PP formation is towards reduction of the PP (Hitt et al. 1994). Thus, if on the initial stage of internationalization, responsiveness to market with appealing products' variety improves the performance of a firm; later on, this same responsiveness becomes a costly liability.

Despite of the stage of internationalization, there are two areas that play key role in strategic and international behavior of the large companies – product diversification and international diversification (Geringer et al. 1989; Hitt, Hoskisson, et al. 1991; Hitt, Ireland, Harrison, & Hoskisson 1991). These have critical effect on firm outcomes relevant for global competitiveness (Buhner 1987; Franko 1989; Hitt et al. 1994; Hoskisson & Hitt 1988; Rugman 1976). By product diversification we understand the "expansion into product markets new to the firm (Hitt et al. 1994)." The literature discerns two categories of product diversification: related and unrelated to the core

business activity (Geringer et al. 1989). International diversification (similar to the given before definition of internationalization) refers to expansion "across country borders into geographic locations that are new to the firm (Hitt et al. 1994)."

Even though the product diversification plays a significant role in firms' performance, its impact differs along the internationalization process and by its relation to the core competence of a firm. If on the initial stage of internationalization, responsiveness to market with appealing products' variety improves the performance of a firm, later on, this same responsiveness becomes a costly liability (Hitt et al. 1994). Fernhaber and Patel (2012) noticed that developing a complex portfolio of products benefits young firms through increased sales growth and competitiveness. Yet, the benefits from a complex PP are often outweighed by complexity-driven rising costs, resulting in an inverted U-shaped relationship between complex PP and performance (Fernhaber & Patel 2012; Geringer et al. 1989; Sievänen, Suomala, & Paranko 2004). Grant, Jammine and Thomas (1988) found that the relationship between product diversity and return on assets was positive during initial diversification efforts; as diversification increased, the performance became level and then negative. Additionally, Geringer and colleagues (1989) found that unrelated product diversification does not bring improvement in performance and is significantly more complex than assumed (Hitt et al. 1994). Meanwhile, focusing on related product diversification has improved the performance, especially when product diversification downscoping is accompanied with international diversification (e.g. General Electrics, (Hitt et al. 1994: 298-299)). Over time, product diversification has a neutral impact on firms' performance under the most favorable conditions (Hoskisson & Hitt 1990). Still, MNEs implementing related product diversification strategies over an extended period of time tended to attain significantly superior performance (Geringer et al. 1989).

Product portfolio complexity

When majority of research linked with product portfolio diversification investigates the issue on rather surficial level (related vs. unrelated diversification), the fundamental product-related challenges lay on the level of PP architectural complexity. Jacobs and

Swink (2011) noticed that product portfolio complexity (PPC) studies mainly focused on related and unrelated diversification. Often research takes the business line/unit level with PP as a whole either diversified or related instead of seeing in more specific and detailed view of each element in the entire PP and its architectural complexity (see, for example, Closs et al. 2008; Geringer et al. 1989; Hitt et al. 1994; Jacobs & Swink 2011; M. V. S. Kumar 2009; Lu & Beamish 2004; Wan & Hoskisson 2003). The mix of product variants, feature sets and component choices of the entire PP requires significantly more attention in the light of their effect on performance (Closs et al. 2008) rather than broader and relatively vague scope of the business line level view. PPC therefore is defined as "a state of processing difficulty that results from a multiplicity of, and relatedness among, product architectural design (Closs et al. 2008)." Jacobs and Swink (2011) extended the definition of the complexity by narrowly outlining its three dimensions. According to the authors, PPC is "a design state manifested by the multiplicity, diversity, and interrelatedness of products within the portfolio (Jacobs & Swink 2011)." In simple terms, the more product variances, features, options are available the more complex is the PP.

In their research on PPC, Closs and colleagues (2008) identified a number of environmental drivers of individual product and product portfolio complexity. They cover the areas of technology dynamism, control over technology, product durability (thus, support requirements), number of product functions, market/use diversity, value of product performance increments, regulation (thus, certification requirements), industry standards, retrofit (backward capability) requirements, product reliability requirements, size of capable supply base, recurring/non-recurring life cycle costs, time to market pressure, price sensitivity of demand (pricing power), economics of product development (Closs et al. 2008). Noticeable is that these drives are touching technical aspect of the complexity in context of the value chain process execution. Each product can rate differently against these drivers. Significant challenges with one drive for one product can be insignificant at all for another because of the nature of the product and in relation to its technical complexity.

On the general level, there are two drives that facilitate PPC: market diversification with linked adaptation decisions (Closs et al. 2008; Jacobs & Swink 2011) and agency

problem (Hitt et al. 1994). While *operating in multiple markets*, executives must repeatedly balance between increased product complexity requirements for sales growth and requirements for superior operational efficiency through product optimization and rationalization (Salvador, Forza, & Rungtusanatham 2002). Just as it is hard to define the optimal level of international diversification (Geringer et al. 1989), the optimal levels of product complexity are difficult to determine in the face of conflicting cost and revenue implications; the PPC related decisions are neither simple nor singular (Fisher & Ittner 1999). Naturally, myriad management decisions made in numerous functional areas over extended time periods (Closs et al. 2008) significantly slow down adequate decision-making and often lead to the state, when PP is not reviewed at one time to ensure the optimality (Mather 1995: 378; Simpson et al. 2005: 2), thus, exponentially increasing PPC. The *agency problem* too leads to the overly complex PPs (Hitt et al. 1994). By diversifying the PP, senior management lower the risks related to their personal employment. The wider is the product offer the lower is the risk of a firm to fail – the longer the management stays in the office (Hitt et al. 1994). In the short run, such logic pays off bringing up significant challenges to later operation. The magnitude of the effects of these drives increases along the internationalization of a firm.

Consider the example of combined degree of complexity the management experiences, if we set the discussion within the context of international product life cycle (iPLC). The iPLC theory was developed by Vernon (1966, 1971, 1979). The author observed that the product introduction to local and international markets follows three stages: new product stage, maturing product and decline stage. This same model is more familiar these days as product life cycle and because of increasing globalization trend (Vernon 1979) evolved into four stages: introduction, growth, maturity and decline (C. R. Anderson & Zeithaml 1984). One key observation from the iPLC model is that in different markets firms offer different range of products. Different products have different PLCs which layer down on each other. Sometimes firms have to give up on still profitable product in the periphery markets because it is losing sales positions in the lead markets favoring an introduction of a product upgrade/update. Thus, firms are set to choose between two strategies: the incremental strategy where products, alike to a waterfall, are sequentially introduced to the key markets and later spread to the other markets and the periphery, and simultaneous strategy where products, alike to a shower,

are synchronically offered to all markets at the same time (Hollensen 2011: 277–278). When on the initial steps of internationalization such choice does not create many complexities, the existence of many varying products in many markets significantly complicates the management of the related complexities. Even if the sales of the wide product offer is possible from the marketing perspective, the production side of the supply chain may experience significant stress due to increased costs (Closs et al. 2008). Obviously, the extended international presence pushes firms towards more standardized product and marketing strategy.

PPC conceals both challenges and opportunities although one can form an impression that presence of such complexity is a negative state. While PPC aggravates supply chain process execution in the area of product development, manufacture, delivery, and support (Closs et al. 2008), reasonable PPC increases sales potential through greater product differentiation (Kekre & Srinivasan 1990; Lancaster 1979; Quelch & Kenny 1994). Under these diametrically opposite pressures comes a point when the cost associated with additional complexity outweighs the differentiation related revenue benefits with inverted U-shaped relationship between PPC and performance (Fernhaber & Patel 2012; Geringer et al. 1989; Lancaster 1979; Quelch & Kenny 1994; Robertson & Ulrich 1998; Sievänen et al. 2004; D. V. Thompson, Hamilton, & Rust 2005). The combination allows talking about the optimal level of PP and related complexities, which can and must be managed. Optimal and most effective PP, thus, include the mix of product variants, feature sets and component choices which match the ability to be managed through the existing collective set of decisions, supporting processes, value system and initiatives (Closs et al. 2008).

Internationalization-driven complexity

Research evidence suggests that internationalization of a firm produces stronger positive performance than product diversification (Geringer et al. 1989; Hitt et al. 1994), but equally raises complexity-related risks at higher levels of diversification. Among others, international diversification promises greater possibilities for exploitation of transaction cost, scale and scope economies (Grant et al. 1988), regardless of the industry – higher

returns and lower risks (Kim, Hwang, & Burgers 1993). These significant opportunities come at a cost on the later stages of internationalization outweighing the expected benefits (Geringer et al. 1989). Just like product diversification, international diversification has limits associated with complexities in managing highly diversified operations, which are discussed next.

Internationally diverse firms are difficult to manage regardless of the level of product diversification (Hitt et al. 1994). At some point, additional internationalization steps produce costs related to considerable managerial complexity exceeding the expected returns. Geringer and colleagues (1989) found that this point relates to the degree of internationalization of a firm. Authors noticed that theories of foreign direct investment and of the MNEs fail to agree whether there is or may exist some optimal degree of internationalization. However, they found that, as the degree of internationalization of multinationals reached higher values, performance also exhibited increased values but then peaked and exhibited diminished levels of performance (Geringer et al. 1989). The graph bellow illustrates this relationship (see **Figure 11** below, where Profit-to-sales ---; profit-to-assets - - - - (Geringer et al. 1989)). Authors infer that the peak in MNE performance represents a critical "internationalization threshold." This verge for many MNEs represents the optimal degree of internationalization, beyond which any endeavor to maintain profitability become more challenging. Same research suggests that institution of new organizational structures and controls help reverse the negative performance trend.

High levels of international diversification produce management-related complexities. What is then the nature of these complexities? Research suggests that product diversified and internationally diversified firms produce information asymmetries for top executives (Hitt et al. 1994). The asymmetry stems from the need to meet the varying markets' needs with adapted product offer. On the one side, top executives rarely understand all of the diverse product markets in unrelatedly diversified firms, on the other, the managers of the local branches know the market as no one else. Thus, the strategic control drifts away from the senior leadership towards regional and milli-micro-level management. Similar to highly product diversified firms, top executives experience information asymmetries related to increasing international diversification.

Geographically diverse markets with different cultures, laws and competitive structures hamper effective management and coordination of activities of a large number of general managers in those markets. Top executives lose the strategic control and resort to the use of financial controls (Hitt et al. 1994; the solution UM proposes discussed earlier Vahlne & Johanson 2013). It is fair to notice that related diversified firms perform better and encounter less product/business-related challenges along the internationalization although remain vulnerable to diverse internationalization complexities. (Hitt et al. 1994).

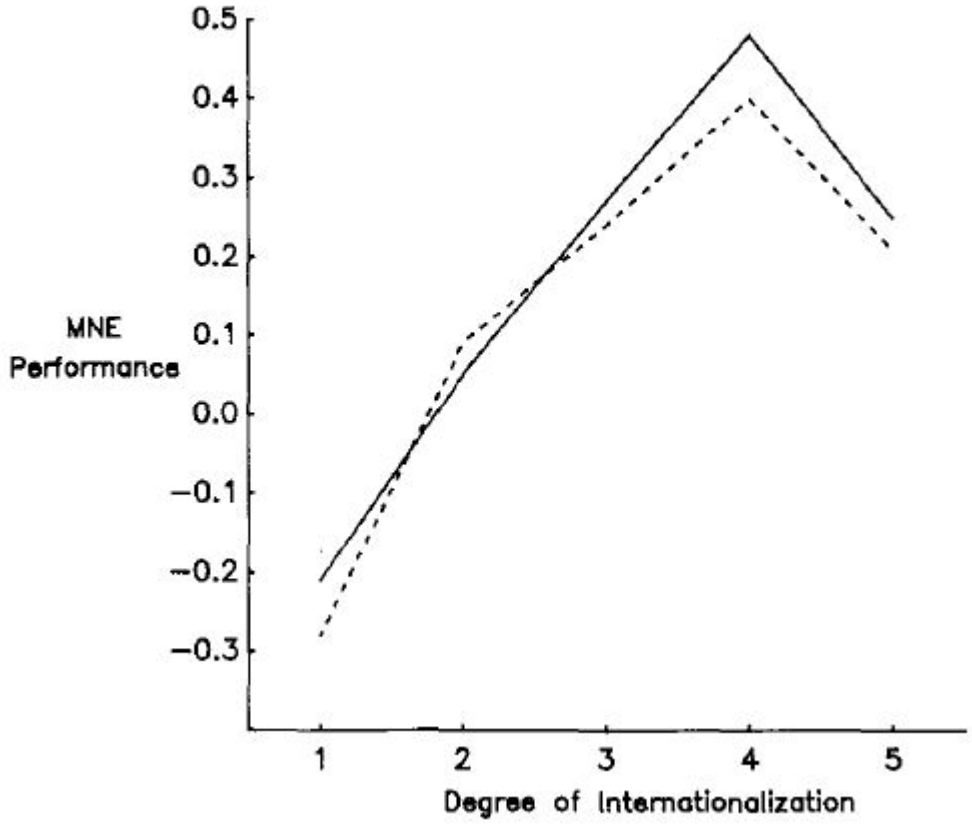

Figure 11. Relationship between the degree of internationalization and MNE performance (Geringer et al. 1989: 117)

Hitt et al. (1994) infer that firms do not encounter the complexities linked with increasing international diversification all at once after reaching a specific level of diversification and can take steps to address the challenge. This implies that there is no universal level of diversification applicable to all firms. More likely, firms gradually encounter more complexity at their individual pace and each reach a point where current structure, controls and management information systems are insufficient to match the complexity efficiently. As a result, a downturn in performance occurs. If managers identify the issue and timely make appropriate incremental adjustments in the structure, controls and/or information systems, the negative trend reverses. These adjustments can reoccur along international diversification growth. Thus, the actual shape of the curve is more accurately described as incremental multiple waves. (Hitt et al. 1994).

At some point, further changes in structure, control systems and/or management information systems no longer increase efficiency bringing the positive trend of the slope to an apex of the reversed U-shaped curve after which the trend becomes negative despite of the continued implementation of changes (Geringer et al. 1989; Hitt et al. 1994). The breakpoint is distinctive to each firm and is affected by industry, PP diversification and size. Simultaneously arising additional complexities from government regulations, trade laws, and cultural diversity in multiple markets, logistical costs, access to raw materials, trustful suppliers and skillful employees add up to the aforementioned challenge. The role of the management is to offset those complexities with knowledge and capabilities. Authors therefore conclude that the maximum point of international diversification is where internationalization-related complexities equal to management's ability to cope with them (Hitt et al. 1994), which is similar to the proposed optimal PP level (Closs et al. 2008).

Joint complexities – systemic solution

Both product and international diversification activate technical and social complexities, driving systemic crisis which requires systemic resolution. Socio-technical complexity relates to the internal environment being an effect of interactions with the external environment factors. Since a firm is a system operating within other systemic

environments, an approach to the resolution of the socio-technical complexity issues hence is also a systemic one. This resembles with the proposed by Cherns socio-technical system (STS) design theory (Cherns 1976, 1987; see also Clegg 2000; Closs et al. 2008), which proposes a process-oriented view of work systems combining the social and technical systems to jointly optimize the interdependent systems to attain combined positive outcome (Closs et al. 2008; Patnayakuni & Ruppel 2010). The principles touch such areas as compatibility, minimal criteria specification, variance control, boundary location, information flow, power and authority, the multifunctional principle (explains employment choices for new functions), support congruence, transitional organization and incompletion (Cherns 1976, 1987; Closs et al. 2008). Based on their research, Closs et al. (2008) proposed the application of the principles of STS design to the PP complexity management. Since, as previously discussed, firms internationalize their products, it is logical that an implementation of the same values are equally valid to an internationally diversified firm. By implementing the principles, firms can systemically challenge the related complexities. The STS design becomes practically indispensable for the firms that globalize and require rationalization of the activities in order to achieve the desired synergies (Douglas & Craig 1989).

Hereby, we saw that both product and international diversification are limited by the arising complexities. As research shows both product and international diversification are the key ways to reach competitive advantage. Firms engaging in related and unrelated product diversification show better performance results although unrelated product diversification leads to a faster arousal of complexities and correlated costs. International diversification promises better performance results than product diversification, though the extended international diversification leads to complexities with information asymmetries and loss of strategic control. Thus, firms have the choice to either sustainably implement a broad PP in fewer related international markets or fewer products in multiple markets. Optimal level of PPC and optimal degree of internationalization of a given firm are determined by the firm’s ability to manage the arising alongside the diversification complexities. We argued that both product and international diversification complexities are socio-technical in its nature thus requiring adequate socio-technical solution. The STS design principles provide the foundation for

development of an environment where sustainable management of the complexities is possible.

2.3.6. Dynamics of marketing and operations management contribution along internationalization process

Since, an organization is a system, the impact of each stream of the value chain is critical although the contribution accents are not evenly distributed along the internationalization process. As we focus only on the primary value chain activities, here we consider only the marketing and OM contribution. Thereby, we first contemplate the contribution of marketing and OM streams along the internationalization process, review the conflicting interests of these streams and finish with reaffirmation of the firm-level perspective on internationalization.

Dynamics of marketing and OM contribution

The contribution of the marketing and OM streams is uneven along the internationalization process with marketing input playing the key role on both initial domestic and international market entry stage, when, on the later stages, the input of OM catches up and matches the contribution of the marketing stream and often exceeding it. The marketing impact is undeniably immense along the entire internationalization process, but especially critical on the initial internationalization stage (Grönroos 2010; Luostarinen & Gabrielsson 2006). Then firms need market exposure the most, as markets know little about the availability of the product and the brand is unfamiliar. Grönroos (2010) noticed that INVs' survival depends on the ability to find a market and reach prospective customers. Without intense and aggressive marketing, INV are doomed to failure. The scenario is somewhat different for the TIFs since they can rely on domestic market to fuel their international expansion. Nevertheless, the initial internationalization and penetration pattern of growth stems from finding new markets and expanding there. That is why marketing contribution is dominant in both cases. The role of OM on this phase is to guarantee the availability of the product and to the best of its ability, not to stay in the way of the market and marketing progression (Wheelwright & Hayes 1985). Marketing function often exploits

“ownership” and influence over the functions that are not directly related to its area of responsibility such as inventory, production rates and often goes as far as affecting the overall corporate strategy.

The more internationally exposed is a firm and the more markets learn about the product, the more recognized is the brand and lessen is the need in marketing dominance for a firm’s success, while the growing influence and unobtrusive contribution of the OM sets it in the vanguard of the strategic competitive advantage (Hayes & Wheelwright 1984; Porter 1985; Vernon 1966; Wheelwright & Hayes 1985). On the global rationalization stage (Craig & Douglas 1996; Douglas & Craig 1989), when markets already know of the product offers and the brand, so typical to the initial stage behavior of chasing another market or market niche is less beneficial and often becomes more of a liability than sources of an advantage (Geringer et al. 1989; Hitt et al. 1994) as observed from the preceding discussion. As PPC and international diversification research shows, there is just that amount of markets that firms can cover with given resources profitably (Closs et al. 2008; Fernhaber & Patel 2012; Geringer et al. 1989; Hitt et al. 1994). The expansive strategy promoted by the marketing function becomes obsolete here. When the sole orientation on the external factors (i.e. new markets, new customer niches) fails to return significant benefits, the optimization and rationalization of the internal operations, when coupled with other functions (e.g. market insights from marketing department) in an integrated system has a full potential of significantly improving the profitability (Hayes & Wheelwright 1984; McGrath 1995; Meyer & Lehnerd 1997 provide numerous examples of such change with verifiable results). At this point, the role and contribution of the OM as the drive of profits increases and matches the impact of marketing stream. It happens by rationalization of the processes, value chain optimization, introduction of global product and global marketing - in other words, by means of synergic operations, costs decrease and become the sources of additional “profits” (Slack et al. 2010).

When perceived within the context of internationalization, the increasing role of OM resonates with the four stage of operations contribution presented bellow in the **Figure 12** (Hayes & Wheelwright 1984; Wheelwright & Hayes 1985 quoted in Slack, Brandon-Jones, et al. 2013: 71–72). Hayes and Wheelwright argue that the OM contribution

follows such pattern: 1) Internal neutrality – inward-looking and reactive role with the goal of being unnoticed through avoidance of mistakes; 2) Externally neutral – when company starts comparing itself with similar companies or organization in the market (being "externally neutral") and attempts to implement the best practices; 3) Internally supportive – firms with this type of operations are among the best in their market achieving this results by clearly perceiving the competitive and strategic goals and developing appropriate operations resources; 4) Externally supportive – where companies look at the operations function to provide the foundation for its competitive success in the long term (Hayes & Wheelwright 1984; Slack et al. 2013, 2010; Wheelwright & Hayes 1985).

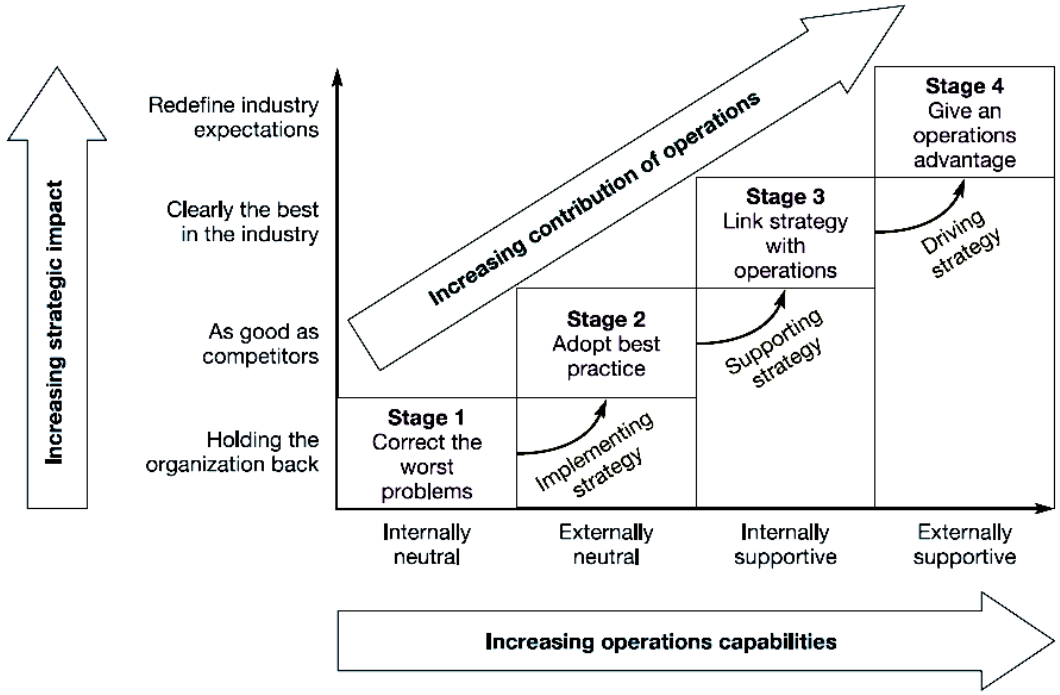

Figure 12. The four-stage model of operations contribution (Wheelwright & Hayes 1985: 3)

A vivid example among many to the viability of the model one can find in Halman et al. (2003) research about the raising importance PPl development along the firm growth and international expansion. The authors found that on the initial phase of operations the product platforms are not planned or defined as a part of product development

process (except for the Skil, which at the moment of research was the budget brand/division of Bosch; their focus on PPl, we explain by an extensive international and global experience shared by the new owner). This shows that the role of OM is considered secondary just as Hayes and Wheelwright argue. Along the expansion and international growth, the definition and implementation of PPl has become the highest priority on the agenda of the researched firms. Technically, it echoes the four stage model of OM contribution.

Predictably, such model has triggered rigorous criticism from the marketing side skeptics. They suggested that the model should stop at the third stage. The OM should devote its resources to understanding the market needs, obviously, as they are defined by the marketing function in the organization (Slack et al. 2013: 72). Noticeable is that such hostile antagonism and irritation is typical to representatives of the marketing side of discussion especially whenever it comes to the OM contribution (see, for example, the ideologist of such attitude - Levitt 1960), which is important to evaluate for the objectivity purpose especially within the context of their differing contribution along the internationalization process. And within this context, an honest valuation of marketing contribution leads to a conclusion that marketing alone fails delivering supreme results at the global alignment stage because it has no tools to address the challenges/complexities arising at this phase. When the synergy and standardization is important, when product strategy needs reconsideration and PLs need revision, as the best solution, marketing can propose only the standardization of marketing strategy across the global markets (Hollensen 2011). The toolbox allowing synchronizing, rationalizing and improving performance in pursuit of synergistic operations belongs to the strategic and operations management with feasible for the task gears. Nevertheless, this does not stop the marketing function from claiming its supreme value and role. This needs to be recognized because the conflict of interests originates from the conflict of philosophies.

Conflicting interests – conflict of philosophies

The conflict between the marketing and OM has its long history with its offences and typical recurring accusations, which originate in fundamental philosophical differences. The differing perspectives prompt differing orientations especially when it comes to the

domain of product-related variances. Based on their perspectives, they produce the unnecessary confrontation and tension within organizational system.

Marketing has developed from being a “stepchild” (Levitt 1960) into a stepmother with its final say even in areas that go far beyond its intentional reach. Back in time, when marketing was considered a supporting function in organizations with main purpose of convincing the customers in the need of the product, Levitt insisted that firms will benefit from concentration on the customer needs (Levitt 1960). Orientation on product rather than customers in defining the industry within which the firm operates the author called **marketing myopia**. Some commentators suggest that the modern marketing originates from this idea. It became so popular that marketing has expanded customer-oriented perspective and its influence in practically all areas of the organizational system and related scientific discussion.

In context of internationalization, just because of the positive impact on the initial internationalization stages, the marketing tends to be the “Jack-of-all-trades” from the proverbial saying. Besides its direct function, it engages in strategy development, suppliers’ relations, production, etc. – you name it, there is a marketing opinion about that. The same success and prove record from the initial internationalization steps sets the limits to the potential of grasping on the changing environment and development of the adequate feasible strategy on the later stages of internationalization. It seems that the marketing field suffers from the cognitive bias called the halo effect (Rosenzweig 2014) just as the strategic and operations management suffered from marketing myopia back in time.

Besides the issues with overinflated perception of own importance, the marketing function can stay at source of **principal-agent problem** inside a firm (Eisenhardt 1989). This problem occurs when an agent, a person or an entity, can act on behalf of or impacts in any way the principal, a person or an entity. It occurs when agent is motivated to act in own interests contrary to the interests of the principal and when parties have differing interests and asymmetric access to information. The marketing department has access to the market insights, which is critical strategic information. Under a threat of diminishing influence and loss of the leading hard-earned role during the initial international diversification in favor of operations department required for

better synergic development of an organization, the natural behavioral pattern is to protect own achievements and hard-reached positions. The intrafirm politics often takes over the pragmatic judgement. By having access to strategic information about the marketing state of affairs and most updated markets insights, marketing can present the information and manipulate the strategic management and OM to make decisions that advances the agenda of a department rather than long-term interests of a firm. From these conflicting interests stem typical organizational problems such as silo effect, knowledge sharing impediments, agency problem not to mention the trivial contest over the budget distribution. The key role of strategic management is in administering the synergic operations in such a way that the firm-level interests are promoted over departmental interests.

Conflicting interests originate in the fundamental contralateral differences in the marketing and OM philosophies for success providing various orientation points. As outward-oriented and consumer-/customer-driven perspective, *marketing philosophy* explains and justifies the extended international diversification and variety of product offers by the necessity to meet the heterogeneous customers' needs and wants for the sustainable existence of a firm (Hollensen 2011; Kotler & Armstrong 2012; Kotler & Keller 2012). The product heterogeneity is important for the goals and targets of the marketing department, but eventually translates in higher overhead costs from increased degree of complexity and costs of managing the numerous materials, components and processes that become the side effect of the heterogeneity of the product offer (Kekre & Srinivasan 1990). The OM is guided by the *production philosophy*, which is inward-oriented and looks at the product from the organization's perspective. It stresses the optimization of the internal operational processes to reach the highest degree of efficiency and effectiveness during the transformation of the inputs into outputs (S. A. Kumar & Suresh 2008; Russel & Taylor 2011; Slack et al. 2013). Overstressing this approach often leads to the detriment of the combined value offer that final customer gets for the sake of quantity and savings, which eventually leads to the wobbling sales and profit results. These variances in orientations create adverse approaches to the same issues especially within the internationalization process context.

As nowhere else, the conflict between the marketing and OM reveals itself when it comes to the areas of product-related **variances**. OM aims at reduction of the variances for cost saving and the marketing aims at profiting from more variances. OM looks at variances mainly from the internal organizational perspective; marketing, contrary, - mainly from the customer perspective. The goal of OM is the effective and efficient use of capacity, processes and available resources, and, thus, is more concerned with the standardization of the organizational processes with aim of minimization of variances. It looks at creation of the standardized process, consistent quality, realistic production schedules, reasonable inventory levels that efficiently utilize the organizational capacity. The marketing approaches portfolio of products with the customer segments in mind often disregarding concerns about costs or being ignorant of it as long as sales targets are met. The aim of marketing side of organization is generation of sales which comes from meeting the varying customer segment needs. The **Table 11** summarizes the contradicting differences between the two organizational functions.

Table 11. Difference between the operations management and marketing

	Operational Management*	***Marketing*** **
Perspective	Internal and external	External
Aim	Reduction of variances to meet cost objectives	Increase of variances to meet customer need
Variety	Standardization for product cost control	Maximal possible variety for sales growth
Ground for rewards	Fail-safe supply, cost savings	Sales growth
Capacity planning	Minimize stock cost	Provide product availability
New product introduction	Minimization of product portfolio complexity	Maximization of product portfolio complexity

The content is summarized based on the following sources: * - Closs et al. 2008; Hayes & Wheelwright 1984; Krajewski et al. 2013; S. A. Kumar & Suresh 2008; McGrath 1995; Meyer & Lehnerd 1997; Russel & Taylor 2011; Slack et al. 2010; ** - Hollensen 2011; Kotler 2002; Kotler & Armstrong 2012; Kotler & Keller 2012

The conflicting interests and philosophical differences within the main organizational functions lead to a stalemate calling for alternative solution. The backed by the customer demand marketing requests for the product variety often loses sight of the development, manufacturing and operational costs. The marketing theories provide minimal if any tools to the cost domain consideration seriously limiting the sight of the

recommendations only to the variety aspects. The OM alone has access to the costs, but because of primary focus on internal organization can miss on the market opportunities identified by the marketing. Only the balanced consideration of both marketing and OM contributions leads to balanced solutions, which brings back the topic of firm-level perspective and need in firm-level strategy, which accounts for the differences.

Firm-level perspective and strategy

The preceding review reverts again and again to the same topic of the need in firm-level perspective for internationalization strategy. The ascending challenges along the internationalization process call for a perspective and derivative strategy which supports impartiality and balance within organizational structure, and symmetrize both costs and market opportunities concerns. A perspective which integrates the entire firm into a structure/system with the same agenda and, simultaneously, the one that has a capacity to account for opposite views while retaining freedom to be uninfluenced. Firm-level perspective fits well the purpose for balanced internationalization strategy development. It does not diminish the impact of each department/subsystem, but, contrary, asserts the importance of each part of the operations of the firm for achievement of the goal of sustainable long-term development.

3. THEORETICAL FRAMEWORK

Based on the literature review, here is the list of propositions and theoretical framework for the study. The propositions P1 and P2 relate to the entire study. This is the reason they are not assigned the specific area on the diagram.

Proposition (P) 1: TIF and INV firms follow the same pattern of internationalization when considered from the firm-level perspective. Thus, the differences are reduced to the speed of internationalization and internal challenges originating from the limited resources, which are needed for the quick internationalization and globalization.

P2: The POMT model is a tool for analysis and forecast of the internationalization state and potential of a firm.

P3: There are 4 stages of internationalization (P3.1). The motion from one stage to the other is theorized to be distinguished by the change in markets penetration, more intense involvement in foreign operations modes and expansion of the product portfolio (P3.2). Hereby, there is the pattern of product portfolio expansion as presented on the theoretical framework bellow (P3.3).

P4: Product portfolio tends to grow exponentially. Firms follow this pattern of product-to-market penetration: goods>services>know-how> systems/bundles

P5: The operations modes-to-market penetration follow such pattern: 1) non-direct investment marketing operations (NIMO), 2) direct investment marketing operations (DIMO), 3) non-direct investment production operations (NIPO), 4) direct investment production operations (DIPO).

P6: At some (what?) point firms tend to rationalize PP in quest for superior efficiency, to refocus and gain the momentum for the additional global expansion. This may happen on the later international diversification stage or on the early global rationalization. (The particular moment is of interest for this research.)

P7: The following expansions of the product portfolio on the global rationalization stage happen in the area of related products diversification.

P8: The domestic, international entry and international diversification stages are driven by adaptation strategy and marketing efforts; the global rationalization stage favors standardization and OM contribution. On the global alignment stage, the role and contribution of the marketing and production side of the value chain evens out with the trend towards increasing strategic impact of the production management. The marketing and production strategy evolve from adaptation towards standardization strategy.

The presented propositions are plotted on the **Figure 13** for better visual representation.

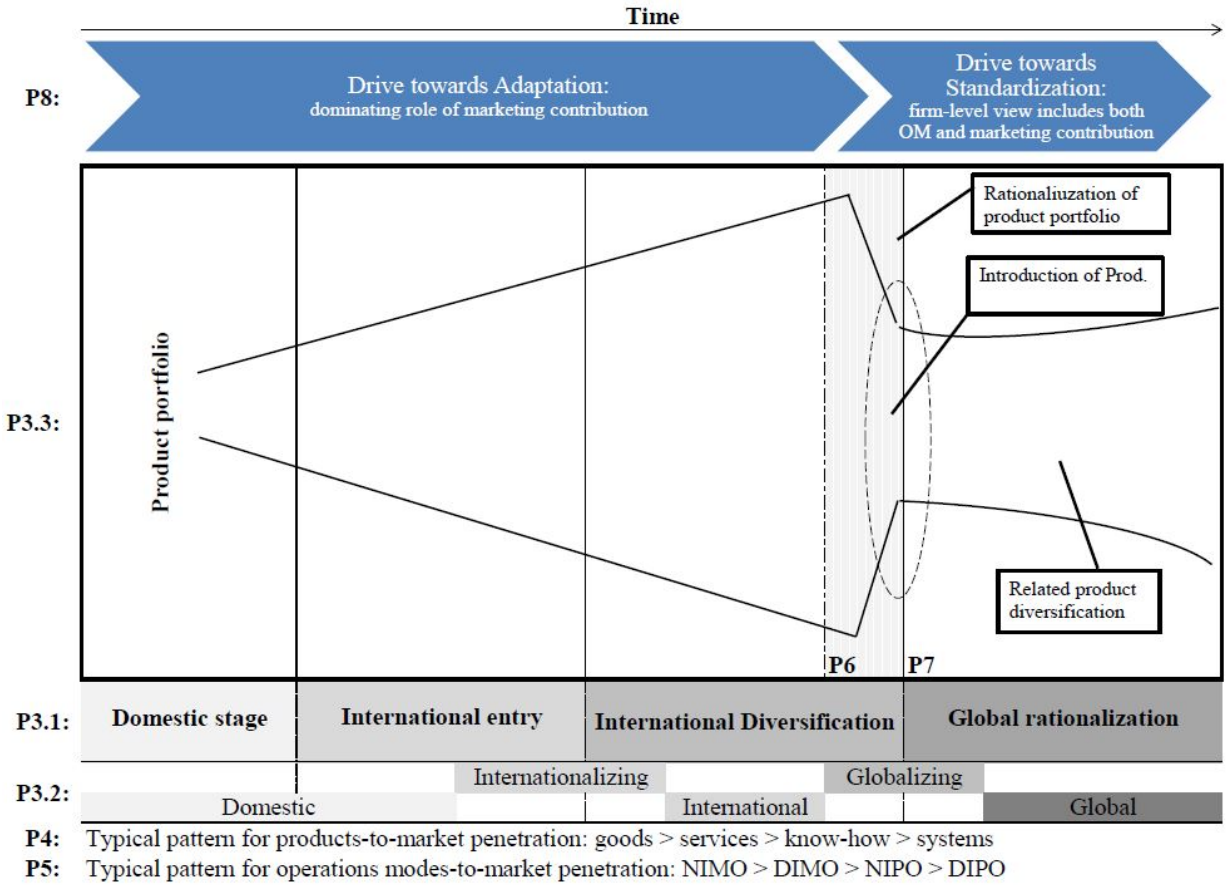

Figure 13. Theoretical Framework: Pattern of product portfolio formation along internationalization stages

4. PROPOSALS RELATED TO THE METHODS AND SAMPLE

Based on the literature review, this chapter proposes the suitable research methodology for the study in four steps. First, the methodology chapter discussed the research approach suitable for the study aim. It is followed by propositions about sample selection with the units of analysis requirements. This is then followed with the data collection. One stipulation prior to proceeding with methodology: this study contains no data and data analysis. The details about such situation are discussed in “Data as research bottleneck” in the section 6.3, “Data collection.”

Given the limited time for the study and available resources, we decided to finish the thesis without collection and analysis of the data. Instead of changing the format to fully theoretical approach with stress on, for example, systematic literature review, we purposefully leave the structure of the thesis in such way, that whoever gains access to data may plug it in with minimal need for other manipulations yet to gain the same result as proposed here.

4.1. Research approach

The aim of the study is to observe the pattern of product portfolio formation along internationalization process of a firm from the firm-level perspective. This aim consists of three clearly distinguished topics: pattern of product portfolio formation, internationalization process and the firm-level perspective. The goal is questioning the previous knowledge to propose the review and modification of the internationalization theories towards the more up-to-date state, validation of the new perspective and visualization of the internationalization process which considers products.

Keeping in mind the purpose of the study, we decided to follow the interpretivist philosophic paradigm (Maanen 1979). The interest of interpretivist approach is not in generation of new theories, but in critical analysis and refinement of interpretive theories. Since the philosophical foundation of the interpretive research is hermeneutics

and phenomenology (Vandermause & Fleming 2011), it is critical to keep the analysis within its context, which is required for consistent results (Reeves & Hedberg 2003: 32). Instead of using predefined dependent and independent variables, interpretive research focuses on the bursting complexity of human sense-making in the emerging situations (Kaplan & Maxwell 1994). This is exactly what is necessary for the goal of this study.

When approaching a process, it is consistent to approach it from the corresponding perspective with corresponding research method. Both internationalization and pattern of product portfolio formation are processes. When we talk about the pattern within the context of the process, we talk about a **process**, which deals with a **sequence of events**. Instead of using variable theory, it is consistent to observe processes from the process theory perspective (Mohr 1982) with application of the process data collection method (Langley 1999).

Besides numerous challenges originating from the fact that processes are messy and cluttered, process theory and process data collection has four strong arguments, according to Langley (1999), to favor this approach for the research over the others. First, the process data deals with and provide explanations as sequence of events, leading to an outcome (e.g. do step A, then step B, reach step C). Temporal, sequential ordering and probabilistic interrelation between the entities helps understanding patterns of events (Mohr 1982). Van de Ven and Poole (1995) suggest that most common pattern found in scientific literature is the linear sequence of “phases” that occur over time to produce a particular result. Second, process data considers multiple units and levels of analysis with ambiguous breadth that is difficult to separate from each other. Such breadth helps with taking account of the context (Langley 1999). In case of the given research, the data about the internationalization is contextual in its nature to the PP data. Third, process data is embedded in time, which is indicated in the “event” notion. One of the aspects of the time embeddedness is that it requires the researcher to combine historical data collected through analysis of documents and backward-looking interviews with the current data collected in the real time (Langley 1999). Four, despite of primary focus on events, process data tend to be eclectic reflecting the complexity of organizational phenomena (Langley 1999). Simplistic neat linear progressions with

well-defined phases leading to well-defined outcomes raise many questions among researchers. They call for steps beyond surficial description of a process towards the in-depth infiltration of logics behind the recognized temporal progressions (e.g. Van de Ven 1992). Noteworthy is the fact that interaction of small number of simple deterministic elements describing a process may generate necessary complexity with richness and dynamism of understanding (Langley 1999), we conclude that such theoretic and data characteristics of a process fit the goal and scope of the study. This method is used by Garud and Van de Ven (1992), Langley and Truax (1994), Mintzberg, Raisinghani, & Theoret (1976); Nutt (1984); Van de Ven & Poole (1995). That is why this method can suit the purpose of this study too.

Among the process data analysis strategies for sense-making, visual mapping strategy suits better the purpose due to several of its advantages. Process data analyzes the manipulation of words (for example, ground strategies or narrative strategies), of numbers (quantification), or of graphical forms and matrix (Miles & Huberman 1994). Visual mapping strategy allows the representation of large volumes of information in reasonably concise space. When it comes to graphical representation of multiple dimensions, demonstration of precedence, parallel processes and passage of time, the value of visual mapping strategy is hard to match. Thus, this approach is useful for development and verification of theoretical propositions. (Langley 1999). The drawing or schematic representation of data is not yet a finished theory. It serves as an intermediary step between the raw data and abstract conceptualization. An analysis and comparison of several cases of such representation aid with more general understanding, when common sequences of events and common progressions are identified at the source of influence (Langley & Truax 1994). Another strength of the visual process mapping is that it allows for representation of some dimensions of data ambiguity and exception of the others according to author's needs (Langley 1999).

In Weick's criteria (Weick 1979) of accuracy, simplicity and generality, visual mapping strategy scores average in all categories (Langley 1999), which points out to the important to consider tradeoffs of this strategy. It offers means for data reduction and synthesis with significantly more flexibility than when applied quantification strategy, which points to moderate *accuracy*. Unless supported by other methods, the derived

conclusions have rather superficial, mechanical quality dealing with external structure of activity sequence than with the underlying dynamic forces beneath them. This leads to moderate *generality* of the derived conceptualization. The approach produces valuable typologies of process components, yet the immersion to deeper levels of generalization brings to stingy outcomes because too many variables make it difficult to predict which one will occur and why. Thus, the level of *simplicity* is also moderate. (Langley 1999).

To improve the accuracy, simplicity and generality scoring in this research as well as to collect different voices with their meaningful complexity, we propose the use of visual mapping followed by qualitative data collection (Langley 1999). Visual mapping, at the least in this research, is quasi-quantitative, statistical data collection process, which intended use is to represent event-history analysis. The collected data, when coded, allows for manipulations with consequent visual data representation. The typical drawback of quantitative strategy is that it drastically simplifies the data. The use of a combination of approaches should compensate for the simplification with richness of the data from its contextualization in evidential nuances for confirmation of “mechanics of mathematical models” (Garud & Van de Ven 1992; Langley 1999; Van de Ven 1992). To retain its richness, we propose the use of semi-structured interviews to verify the events, conclusions and the context around the collected event-history data.

4.2. Sample selection

In line with firm-level perspective, it is important that the sample companies are perceived consistently as well. Thus, the unit of analysis is the microeconomic unit, a firm **without** its connections to its network, subcontractors, suppliers, etc. Only the product portfolio, operations modes and markets entered by the actual firm are taken into consideration. This limits confusion and reduces unnecessary complexity to consideration of only one unit of analysis, its PP and its separate internationalization process. In this context, special concern should be voiced about firms with numerous subsidiaries. When a subsidiary is an extension of the firm in foreign markets, its PP is considered a part of the holding company PP even when it is different at any given time

from the holding company PP. Any associate or affiliate firms should be considered as independent entities and sorted out from the sample data.

The sample company has to comply with the following list of criteria:

- Originate from SMOPEC countries. Companies from SMOPEC, those with big domestic market or those originating from developing economies have different initial conditions for their internationalization. To sort out these differences, it is consistent to take into account homogenous conditions for the sample. We propose selection of SMOPEC countries for the ease of access to data.
- Be representative of either TIF or INV. To meet the generality criteria for visual mapping discussed by Langley (1999), the method requires five to ten or more cases in moderate level of details to begin generating patterns. Sample, thus, has to consist of minimum ten units of analysis: five TI and five INV.
- Be a global firm at its latest internationalization stage, preferably at global alignment stage. This means that 1) about 50% of current total product sales come from non-domestic continent, 2) AND has direct investment or non-direct investment in production operations on, at least, two continents, 3) AND manufactured products (goods, services, know-how and bundles of these) are intended for the industrial use.

4.3. Data collection

The interpretivist philosophy requires collection of different voices, thus, the research has to take two steps. On the first step, we suggest collection of the quasi-statistical data for event-history analysis. When the data is processed and analyzed, we propose conduction of semi-structured interviews with firms' senior management.

The data for the first stage of research consists of the elements of the POMT model discussed in the literature review. We need to take snapshots of the annual historical data of a firm. For this, we collect data on the year-to-year basis for each of POM dimensions to observe the change dynamics in PP (Benito-Osorio et al. (2012) call for time period consideration in portfolio development studies) and internationalization

development. An access to the broadest available historical data, for example, the past twenty or more years of operations is of critical value for the research depth. It allows for tracking the progression of internationalization with better refinement.

The source for POM dimensions is data from bookkeeping. The data about the product (P) dimension consists of two categories: a) stock keeping unit (SKU) necessary to get the portfolio size (Novak & Eppinger 2001) or any other way the product is identified in the books of the firm (GTIN, ISBN, ISSN, etc.) and b) description about the product sufficient for understanding of the nature of a product for further classification. When it comes to operation modes (O) data, we need data about each choice and change of modes in each market over time. This data provides evidence about the speed of markets penetration. The accounting data may be insufficient here. It needs simultaneous cross-check or separate data collection with one or more well-informed about the matter representatives of a firm. Once the data is collected, it needs coding and categorization according to proposed by Luostarinen groups (NIMO, DIMO, NIPO, DIPO). The market (M) dimension data originates from the bookkeeping records. It is parallel with the sales of products. This data shows the context within which PP changes.

Once the data is collected and coded, it needs to be processed and visually mapped. The final outcome represents numerous historical snapshots of yearly progression of product, operation modes and markets a firm engaged. For example, supposedly, in 1985, a company is present in five markets with three product lines and two different operation modes, in 1990, the same company is present in 15 markets with four product lines and three operation modes. This shows a progression we aim to observe. When plotted on a map, such data shows both the pattern of PP formation and internationalization advancement. This is sufficient for the first step of the research.

The next step is collection of more detailed data through semi-structured interviews. The content of the interviews depends on the collected and analyzed data. Interviews are used to verify the events, conclusions and the context around the collected event-history data. One of the focal points of the research requiring separate data collection is the context surrounding the progression to the global rationalization stage. Next, it is important to verify if the progression to global rationalization stage correlates with

introduction of the PPl. What is the context supporting the introduction of the product platform? If PP is rationalized, does it lead to its size reduction? If so, verify the context surrounding the reduction of PP size. Is the reduction of the PP size aims at rationalization and global expansion? Is PP revision driven to optimization of poorly performing products?

Once this data is collected and analyzed, it is ready to be cross-checked with the results gained from all case companies. The junction of the results will produce the answers to the theoretical propositions. Unfortunately, this study does not provide the answers due to the absence of access to data, which brings the discussion to the bottleneck of the research.

Data as research bottleneck

In the past 4 months, we contacted 32 senior level representatives of 10 companies by sending them invitation letter with introduction to participate in the study. The addressees were top executives, operations or product officers. After one week of no reply, we sent a reminder. Out of those contacts only two replied. None agreed to participate in the study. They provided the feedback too. The propositions of the study sounded too theoretic to them with benefits mainly on the academia's side. They expected to get something tailored for the immediate use. One of them suggested contacting their local subcontractors for data, which is unacceptable due to the precise sample requirements.

There are a number of issues requiring close attention for collecting the data for such investigation. First, the required data is too sensitive and has strategic value, which is closely guarded by companies. Next, access to such data is hard to gain without trust relationships within company. The access to necessary data is granted by the top level management. Last, top level management is hard to reach. Their openly available contact information is limited to emails. Even when reached, they are equally hard to convince in the value of the research for the both parties. These factors need to be taken into account.

5. DISCUSSION AND CONCLUSION

This chapter returns to the research questions raised in the first chapter and discusses the actual and potential contributions of this work. Although, without the gathered and analyzed data, it is hard to discuss the findings of the research, they are mainly concealed in the comprehensive literature review.

The research question and the sub-questions guided the multilateral consideration of the problem. They sound the following way:

- *How product portfolio changes along the internationalization process from firm-level perspective?*
    - *What pattern product portfolio follows?*
    - *Is the pattern of product portfolio of stage and rapid internationalizing firms differing, when considered from firm-level perspective along entire internationalization process?*
    - *How product portfolio helps identify at which stage of internationalization each individual firm is?*

In order to answer them, an extensive literature review was necessary. Without the collected data, such review is, perhaps, the main contribution of the study. Throughout the review on many occasions we show a profound need in more studies and revisions of the theories that were designed for the context which is too different from the contemporary. Those theories downplay the role of product and product portfolio within the internationalization process as a given under the strong influence of marketing perspective, which also needs revision. There is a desperate need for a theory that considers a full picture comprehensively approaching the internationalization problem from inside and outside of a firm instead of considering it internationalization in small steps, parts, fragments. International Business field needs an eclectic behavioral theory that can guide the strategic internationalization decision-making instead of dated and widely criticized tactical, step-by-step theories talked above.

This review identifies and contributes to the International Business field in a number of ways. These contributions are sorted in two main categories: theoretical and methodological. They are presented in a compact and condensed way under bullet points below.

Theoretical contributions

- Identification of the market-level, tactical, and firm-level, strategic, perspectives on internationalization that, when applied to various theories, both economic and behavioral, clarify the starting point and posture of the discussion.
- Identification of surficial differences in TIF and INV internationalization paths rooted in omission of the operations modes consideration along other dimensions in discussions. Proposition of an alternative perspective to the popular models of internationalization, the POM+T model. Addition of the Time dimension to Luostarinen's POM model to address the dynamism criticism of the original model.
- Help consistently classify companies in their internationalization endeavor according to POM dimensions. This helps a firm identify at which stage of internationalization a firm is and proceed with relevant decisions.
- Emphasize the need in a firm-level perspective over the departmental perspectives in development of internationalization strategy, especially critical for firms at the global alignment stage.

Methodological contribution

- The proposed method provides structure for the longitudinal research on product portfolio and internationalization process. Longitudinal research is more favorable in case of internationalization process discussion.
- Proposition of a mechanism for identification of the DOI to be used for internationalization strategy development, which consists of three steps: 1) classification based on Table 6 of firm's current state of internationalization, 2)

based on the POM+T dimensions creation of visual mapping to verify the step 1 results, 3) use of the direction from Table 8, Internationalization stages (Craig & Douglas 1996; Douglas & Craig 1989), as guide for further actions relevant for the identified stage.

In conclusion, this study looks at the key role of product in the internationalization process. By observing the pattern of PP formation along the internationalization stages, firms gain access to big picture with profound insights about their internationalization state. Such knowledge reduces ambiguity about the current state of affair and the DOI of a firm. It empowers with grounds for more rational tactics and strategy development for the future. The complexity of formation of product offer within the internationalization context requires systemic approach to the issue. That is a strong argument in favor of firm-level perspective on internationalization.

Despite of the urgency and need in such study, it has a number of limitation. First and foremost is the lack of access to data. This leaves the discussion raised in the study without evidence, limited to theoretical domain and on the level of propositions. Second, the proposed categorization of firms according to their internationalization endeavor from Table 6, although logical, is purely mental model, thus, is speculative and requires empirical verification. Third, the literature review limits its consideration to the behavioral theories of internationalization leaving the economic theories without profound analysis. Fourth relates to the sample selection. The study does not account for the rapid internationalization by means of acquisition. Some companies follow such path and become international and global overnight. This study does not consider this path as part of discussion. Fifth as well relates to the sample. Selection which subsidiaries, as part of parent company, suit the scope of the study is rather complex issue requiring more attention for the sample selection. In this study, we consider any subsidiary as part of parent company which acts as an extension of the firm in foreign markets. Such definition is rather broad which leaves room for variances and affect the precision of the analysis. Sixth, we propose companies originating from SMOPEC as units of analysis omitting large number of other firms and their markets.

These limitations lead to the future research propositions. First, gain access to data and conduction of research. Second, if the propositions discussed in the study find their

proof in data, this opens the door for the research studies in the area of the optimal for each individual firm degree of internationalization. Since optimum is the most desired state of operation of a firm, being able to find where optimum is for each individual firm at their internationalization stage is one interesting area for future research. Third, this study proposes the research of firms that produce output intended for the industrial use. Perhaps, the conduction of research of firms offering consumer products will open doors for new findings. Fourth, companies originating from SMOPEC differ in their market conditions from such economies with big internal market as the USA or those coming from developing markets. Consideration of different context opens possibilities for new findings.

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