



EUROPEAN  
REGIONAL  
DEVELOPMENT  
FUND



GoSmart BSR

**SUMMARY REPORT  
OF APPLICABLE CONCEPTS**

Białystok, March 2018

**Report elaborated by:** Wiesław Urban and Joanna Godlewska.

**Authors of chapters:** Katarzyna Czerewacz-Filipowicz, Joanna Godlewska, Katarzyna Krot, Mirko Kruse, Tytti Lankinen, Māris Ozols, Tautvydas Pipiras, Karolina Popko, Łukasz Sakowski, Joanna Samul, Jan Wedemeier, Anna Wrzesińska

**Authors of reviews:** Joana Albertavičienė, Anna Bagieńska, Alicja Gudanowska, Joanna Godlewska, Lisbeth S. Jensen, Tytti Lankinen, Santa Niedola, Māris Ozols, Tautvydas Pipiras, Patrycja Rogowska, Karolina Popko, Triin Roo, Łukasz Sakowski, Joanna Samul, Anna Tomaszuk, Jan Wedemeier, Urszula Widelska, Anna Wrzesińska.

**Editorial work:** Łukasz Dragun, Justyna Grześ-Bukłaho.

Report prepared within the Group of Activity 3.1 “Review and analysis of applicable theoretical concepts” in the project *GoSmart BSR. Strengthening smart specialisation by fostering transnational cooperation* No #R041 GoSmart BSR financed by Interreg Baltic Sea Region 2014–2020 from Priority 1. Capacity for innovation, Specific objective 1.2. Smart specialisation.

## Table of Contents

|  |           |
|--|-----------|
| <b>SUMMARY .....</b>   | <b>4</b>  |
| <b>1. UPPSALA MODEL (OF BUSINESS INTERNATIONALIZATION) .....</b>                 | <b>8</b>  |
| <b>2. VALUE CHAIN .....</b>  | <b>20</b> |
| <b>3. SUPPLY CHAIN/SUPPLY WEB (INTERNATIONALIZATION VIEWPOINT) .....</b>         | <b>28</b> |
| <b>4. BUSINESS INTERNATIONALIZATION MODELS AND FACTORS.....</b>                  | <b>34</b> |
| <b>5. BUSINESS MODEL.....</b>  | <b>46</b> |
| <b>6. INNOVATION TRANSFER .....</b>  | <b>56</b> |
| <b>7. QUADRUPLE HELIX .....</b>  | <b>66</b> |
| <b>8. BUSINESS CASE STUDIES NOT QUALIFIED TO ANY CONCEPT .....</b>               | <b>77</b> |
| <b>9. RECOMMENDATION FOR TRANSNATIONAL INNOVATION BROKERAGE<br/>SYSTEM .....</b> | <b>94</b> |

## Summary

The review and analysis of applicable theoretical concepts was the first step for designing and developing the Transnational Innovation Brokerage System (TIBS). The following concepts were analysed: Uppsala Model, Value Chain, Supply Chain/Supply Web, Business internationalization models and factors, Business Model, Innovation transfer and Quadruple Helix. Additionally, as a practical point of view, business case studies were reviewed.

The purpose of the literature review and analysis was to understand the internationalization process in a highly competitive environment in the perspective of the network, identify the main determinants and barriers to these processes and how modern business concepts and business models are shaped on international markets. The main result of the review and analysis of the relevant theoretical concepts is the recommendation for the practical methodological basis of TIBS.

Based on Uppsala Model the Transnational Innovation Brokerage System should provide new knowledge and opportunities to SMEs, support commitment decisions, allow entry to new networks/improves position in existing ones, and finally facilitate learning, alike trust building, between potential business partners. It is necessary to adjust the models of internationalisation to the specific business environments in each country instead of creating generally applicable models of internationalisation.

By developing dynamic capabilities of responsiveness, resilience, reliability and realignment, organizations enhance customer value propositions. TIBS must assure bettering these features by international cooperation at list in one of the value chain links.

Supply chain/web implies a big potential for beneficial international cooperation for SMEs by reconfiguration existing supply chains/webs. Supply web implies that when TIBS will be looking for the potential partnerships there should be taken into consideration not only preceding and following supply links but also many more stages of cooperation. The perspective is much more brother than in the Supply Chain concept. It is connected with avoidance of risks in the supply chain process, especially if these chains become more complex, there should be much more information studied. TIBS should consider also supply webs where potential partners exist as channels for transferring technologies. Technology incorporation is additional value which would appear for a company which is joining a new supply web.

According to reviewed Internationalization Business Models and Factors concepts there is a proposal for a multidimensional model that has significant

elements of the existing models and introduces new ones. TIBS staff should be thoroughly familiar with these models to serve support and guidance to targeted SMEs. TIBS system might provide the necessary managerial services for companies, especially small enterprises, which have big innovation potential, however lack managerial resources to expand into foreign markets. It is important to take into consideration during the design of TIBS that international orientation and growth orientation determine the internationalization patterns most.

Using the Business Model of the internationalization process TIBS can help to small and medium enterprises avoid problems connected with the lack of knowledge due to differences between countries with regard to, for example, language and culture, which are important obstacles to decision making connected with the development of international operations. The Methods of Open Business Model Revenue Generation are recommended to a TIBS toolbox. Fora and experts could be added to a TIBS network. The Greiner Model is relevant as all successful SMEs faces growth and/or disruption of business models causing chaos and crisis. The model and guidance are very straight forward and implementable that's why it is suggested as element for TIBS tool box or subject to TIBS training concept. The organization, the process and cooperation between Danish Design Center, global experts and local business could be a learning point for TIBS and source of contacts.

TIBS are expected to support institutional capacities related to smart strategic planning and management at supra-regional level by all partners engaged in smart specializations processes. Thereby knowledge production and acquisition is considered as a key driver in the internationalization of entrepreneurial firms. The important factor in the transfer of knowledge and innovation, despite the increasing digitalisation, is the face-to-face contact and cross-border mobility. It is one of the challenging tasks for the future TIBS how to answer for the need in the Baltic Sea region countries for more integrated transnational cooperation and common smart strategies for innovation.

The Quadruple Helix concept can serve as an architectural innovation blueprint that engages simultaneously (in a dynamically balanced top-down and bottom-up approach) four sectoral perspectives (from the top-down angle government, university, industry, and the bottom-up angle civil society). The inter-sectoral and intra-sectoral as well as the inter-regional and intra-regional knowledge and learning interfaces that are embedded in the Quadruple Helix architectural blueprint determine its efficacy and sustainability. A combination of these four perspectives aims for the conceptualization, contextualization, design, implementation, and evolution of (smart, sustainable, and inclusive) growth-driving entrepreneurship and innovation systems at the regional level.

From the practical point of view the TIBS system can help in presenting companies as reliable partners. It should focus on SMEs that produce unique, niche services or products that have a higher value and may be of interest to larger, developed markets. TIBS should address its services to specific countries and sectors that can provide the greatest added value. The additional lesson learned from the case studies is not to be afraid of international cooperation, do not hesitate to start and do not be afraid of failures at the very beginning.

## Introduction

The review and analysis of applicable theoretical concepts was the first step for designing and developing the Transnational Innovation Brokerage System (TIBS). The following concepts were identified and chosen for analysing: Uppsala Model, Value Chain, Supply Chain/Supply Web, Business internationalization models and factors, Business Model, Innovation transfer and Quadruple Helix. All these theories are directly or supportive related to innovation and internationalization.

The purpose of the literature review and analysis was formulating joint positions and understanding of how innovation is demanded by the competitive forces, and how modern concepts on business functioning and business models are shaped.

Reviews and evaluation of concepts related to innovation and internationalization were conducted by all project partners. 161 academic and business sources, including 32 case studies were reviewed. All partners were involved also in developing the parts of this summary report.

Each of studied concepts is very closely related the fundamental for GoSmart BSR project issues of SME's internationalization and innovations cross-national flow. Each of them gives new light of knowledge on how really internationalization occurs and what are a complex set of factors associated with it, influencing and conditioning it. By reviewing process, a special focus was lied on practical applications of researched theories. Studied business case studies showed how internationalization of companies functions in the reality and in that way, they give practical value to the research.

The main result of the review and analysis of applicable theoretical concepts is indicating recommendation for practice oriented methodological foundation of TIBS.

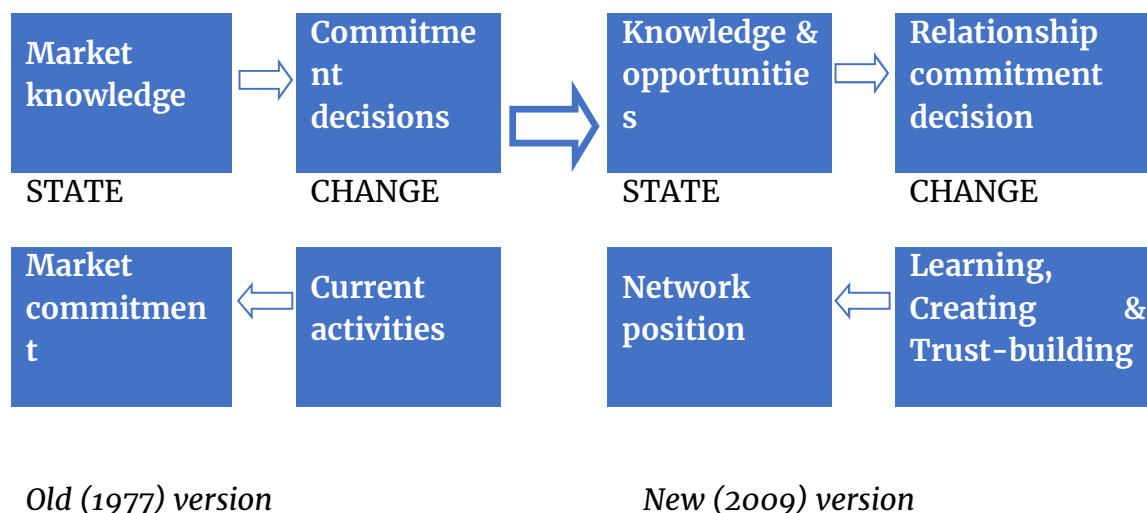
## 1. Uppsala model (of business internationalization)

### 1.1. The overview of the concept

The Uppsala model (Johanson & Vahlne, 1977) is one of the most known models related to the internationalization process. It was based on the internationalization processes of several Swedish firms in the late sixties and seventies. Then (in 2009) it has been revised and developed. The aim of the assumptions of the Uppsala model is to explain the characteristics of the internationalization process of the firm.

The model consists of four dynamic stages – the result from one process is the input for the next step of the process, which will provide input for the next one, and so forth. The model indicates the two variables: the *state* and *change* and each is divided into two aspects. In the first version of the model the focus was laid on a specific firm and its activities in the foreign market and that market's level of uncertainty (Johanson & Vahlne, 1977). In the new model relationships and networks are taken into consideration more extensively (Johanson & Vahlne, 2009). The Figure 1 presents old and new version of the business network internationalization process model.

Figure 1. The business network internationalization process model (the 1977 and 2009 version)



Source: own compilation based on (Johanson & Vahlne, 1977, 2009).

The model from 1997 was founded on four core concepts: market knowledge, market commitment, commitment decisions and current activities. The state variable considers aspects that are temporarily fixed by its nature. Change aspects focus internationalization behaviors in the form of commitment decisions and

current activities that are assumed to be dependent on state aspects, which are in turn affected by the behavior of the firm (Figueira de-Lemos, Johanson & Vahlne, 2011). Market knowledge and market commitment at a certain point of time are assumed to affect the commitment decisions and how the activities are carried out in the subsequent period, which in turn will influence market knowledge and market commitment at later stages (Forsgren, 2002). The underlying assumptions of the model are also uncertainty and bounded rationality. It also has two change mechanisms. First, firms change by learning from their experience of operations and current activities. Second, they change through the commitment decisions that they make to strengthen their position in the foreign market. Experience builds knowledge of a market in firm, and that body of knowledge influences decisions about the level of commitment. This leads to the next level of commitment, which requires further process of learning. Thus, the model is dynamic.

This internationalization process model was revisited in the light of changes in business practices and theoretical advances. A number of studies have demonstrated the role of networks in the internationalization of firms. Nowadays the business environment is viewed as a network, rather than as a neoclassical market with many independent suppliers and customers.

In the updated version of the Uppsala Model the core arguments by Johanson and Vahlne are based on the network theory. The business environment is considered as an international network of relations (Johanson & Vahlne 2009). Companies as a part of different networks are linked in ways that differ in complexity and closeness to other firms. To be successful in foreign markets it is necessary to be part of a strong network. A firm's relations are created out of the social engagements with other firms, in which the involved firms sequentially and interactively develop their relation. Along with evolution of relationship, firms accumulate knowledge and build trust, strong commitment and hence reduce uncertainty (Johanson & Vahlne 2009).

Outsidership, in relation to the relevant network, more than psychic distance, is the root of uncertainty. The knowledge and opportunities aspects were added. Knowledge is related to the knowledge about the foreign market within the firm. This knowledge is even critical in order to recognize opportunities. Opportunities are the most important components of the body of knowledge that drives the process. Other important elements of knowledge include needs, capabilities, strategies, and networks of directly or indirectly related firms in their institutional contexts (Johanson & Vahlne, 2009). In contrast to the resource-based view and in accordance with the network view, the update Uppsala Model argues that the firm can recognize opportunities outside of its boundaries. Hence, knowledge about internal capabilities is as important as knowledge about resources within the whole network

(Johanson & Vahlne, 2009). The next state variable is labeled 'network position' that replaced 'market commitment'. Relationships are characterized by specific levels of knowledge, trust and commitment, and they may differ in how they promote doing well internationalization. The firm is embedded in a business network that includes actors engaged in a wide variety of interdependent relationships. Internationalization is seen as the outcome of firm actions to strengthen network positions by what is traditionally referred to as improving or protecting their position in the market (Johanson & Vahlne, 2009). The traditional view of entry – that is, overcoming various barriers – is becoming less important than internationalizing undertaken to strengthen a firm's position in the network (Johanson & Vahlne, 2009).

It was also replaced the change variable from 'current activities' to 'learning, creating, and trust-building'. The concept of current activities in the first version of model indicates that regular daily activities play an important role, and lead to improved knowledge, trust, and commitment. The second aspect on the change side of the model was 'relationship commitment decisions'. The word 'relationship' has been added to commitment decision in order to clarify that it regards the firms' decisions of further commitment to relationships within a specific country (Johanson & Vahlne, 2009). This variable implies that the focal firm decides either to increase or decrease the level of commitment to one or several relationships in its network. Current activities are still important, but more focus has been put on the outcome of current activities.

All aspects in the internationalization process model are interlinked. A firm's current *network position* is the fundament on which the firm gathers its *knowledge*. The total amount of *knowledge* is related to the ability of firm to perceive *opportunities* upon which *relationship commitment decisions* are taken. The *decisions* in turn lead to *learning, creating and trust-building*, and these components shape a new position within the network. This cycle of actions and events is how the internationalization process is understood by the authors of the Uppsala Model, starting with low commitment and high uncertainty, incrementally increasing commitment as knowledge increases (Johanson & Vahlne, 1977, 2009).

## 1.2. The key elements

In recent decades there has been a growing attention on **organizational learning**, especially in the context of internationalization. The developing **knowledge** is fundamental to internationalization of firm, and in particular that knowledge that grows out of experience in current activities is crucial to the learning process. Learning by experience results in a gradually more differentiated view of foreign markets, and of the firm's own capabilities (Johanson & Vahlne 2009). In business networks knowledge development is not only a matter of learning, but also

an existing knowledge from other actors. The interaction between a buyer's user knowledge and a seller's producer knowledge may also result in new knowledge. The key issues for the model is to determine how the organizations learn and how their learning affects their investment behavior (Johanson & Vahlne, 1977, 1990). A basic assumption of the Uppsala Model is that **lack of knowledge** about foreign markets and how this knowledge can be acquired (Johanson & Vahlne, 1977). However, because of the tacit character of market knowledge, the main source is inevitably the firm's own operations (Johanson & Vahlne, 1990). **Acquiring knowledge** is first of all a question of being active in the new environment rather than of collecting and analyzing information. By operating in the market, the firm not only acquires information about that market, but also becomes closely connected to the market in such a way that it is difficult to use its resources for other purposes (Forsgren, 2002). An important assumption is that decisions and implementations concerning foreign investments are made incrementally due to market uncertainty. Incrementalism can be seen as a management learning process in which 'learning by doing' is the basic logic (Johnson, 1988; Quinn, 1980).

Many researches indicates that organizational learning includes several dimensions with consequences for firms' behaviour (Forsgren, 2002):

- organizations can gain access to the knowledge of other firms, without having to go through exactly the same experiences as these firms,
- organizations can gain knowledge by imitative learning, i.e. learning by observing other firms with high legitimacy and acting in a similar way,
- organizations can get knowledge by acquiring other organizations or hiring people with the necessary knowledge,
- organizations can learn by conducting a focused search for new information rather than through experience from own activities.

The knowledge is highly dependent on individuals and therefore difficult to transfer to other individuals and contexts. "Experience itself can never be transmitted, it produces a change-frequently a subtle change – in individuals and cannot be separated from them" (Johanson & Vahlne, 1977). Consequently, the problems and opportunities intrinsic to a certain market will be discovered primarily by those who are working in the market (i.e. people in a sales subsidiary). For them, the adaptation and extension of the present operations will be the natural solution to a problem or the reaction to an opportunity (Johanson & Vahlne, 1977). Experience generates business opportunities and is thought to work as a driving force in the internationalization process (Johanson & Vahlne, 1990). Knowledge acquisition is seen as a "bottom-up" process (Forsgren & Hagström, 2007). Learning is initiated when a problem is encountered in the current operations and ends when a satisfactory solution is found. The Uppsala Model employs a reactive rather than

proactive perspective of experiential learning. It means acquiring more knowledge about already identified solutions than focuses upon the search for new solutions.

Knowledge and learning influence how the firm perceives foreign markets. **Market knowledge** is a result of experience on foreign markets. Market knowledge is a function of psychic distance between home and host countries (Carneiro, Rocha & Silva, 2008). The more the firm knows about the market, the lower the perceived market risk will be, and the higher the level of foreign investment in that market (Forsgren, 2002). The firm postpones each successive step into a certain market until the perceived risk associated with the new investment is lower than the maximum tolerable risk (Johanson & Vahlne, 1977). Market knowledge affects their subsequent investment behavior (Johanson & Vahlne, 1977, 1990). A given level of market knowledge and **market commitment** will then affect the **commitment decisions**. In turn, these decisions and activities will influence the later stages of market commitment and market knowledge in an incrementally evolving spiral.

The next crucial element is trust. **Trust** plays also an important part in recent research on relationship development and business networks. Trust is an important component for successful learning and the development of knowledge. Trust can also substitute for knowledge, for instance when a firm lacks the necessary market knowledge. Trust keywords and phrases include “integrity”, “reliability”, and that “the word of another can be relied upon” (Morgan & Hunt (1994). In other words, a sense of trust implies an ability to predict another’s behaviour. Trust also assumes that human behaviour is characterized by high ethical standards. Trust may develop into commitment if there is willingness and positive intentions. Thus, trust is a condition of commitment. If trust does lead to commitment, it implies that there is a desire to continue the relationship, a willingness to invest in it, even recognition of the necessity of making short-term sacrifices that benefit another for reasons of long-term interest for oneself.

In the original Uppsala Model, **uncertainty** and commitment are the two factors determining the level of **risk** associated with entering new markets. Uncertainty represents a firm’s lack of knowledge about a market. It needs to change its level of commitment or market knowledge in order to affect the level of risk a firm faces on a certain market (Figueira-de-Lemos, Johanson & Vahlne, 2011). Risk is based on explicit knowledge, while uncertainty is assumed to be related to implicit knowledge. Risk management can be seen as a trade-off exercise between time and money (Reuer, Shenkar, & Ragozzino, 2004) or between country risk and firms’ exposure both to country revenues (Shrader, Oviatt, & McDougall, 2000) and to total debt use (Kwok & Reeb, 2000), or even among financial and strategic actions (Miller, 1992). In the Uppsala model, risk is translated by a mathematical formula,  $R_i = C_i - U_i$  (Johanson & Vahlne, 1977). As originally stated, the formula assumes that  $R_i$ , the

existing market risk situation, is the product function of the existing market commitment -  $C_i$ , and the existing market uncertainty -  $U_i$ . The index  $i$  denotes a certain market. The uncertainty and the possibilities of negative consequences are critical in managers' risk perceptions.

### 1.3. Importance for the business development

There are some implications of the Uppsala model for the business development. First, **the important factor for business development is the network interplay** (Stoian, Rialp, Rialp & Jarvis, 2016). Internationalization depends on a firm's relationships and network. The focal firm to go abroad based on its relationships with important partners who are committed to developing the business through internationalization. These partners may be at home or abroad. The focal firm is also likely to follow a partner abroad if that partner firm has a valuable network position in one or more foreign countries. There are two possible reasons for such foreign expansion. One is the likelihood of finding interesting business opportunities. Partner bases of knowledge are interrelated and are therefore also indirectly related to other members of the network. Relying on a related knowledge base, the focal firm may thus enter networks abroad, where it may be able to identify and exploit opportunities. Being a partner in a business network should be considered an asset, as new knowledge (regarding foreign markets) could be created by interacting with other firms. Given the partner firm is committed to the relationship, the focal firm may gain access to knowledge and other resources, as well as to the network of contacts of the partner(s). New opportunity identification may take place resulting from the dynamic interactions between the parties involved. Companies can obtain second-hand knowledge which can reduce international perceived risk without having to wait until they develop first-hand knowledge, derived from their own experience (Silva, 2012). Being part of a network is important and having a strong position in that network is even more important – this may allow these firms to be more aware of opportunities and threats in the environment and, additionally, to be better prepared to go beyond the liability of foreignness in international markets. Thus, mutual trust and commitment are based not on formal agreements, but on a common history of at least minimally satisfactory, if not successful, joint business experiences. Foreign ownership or relations with a big and strong companies can both inhibit and quicken companies' internationalization.

Second, **by following the partner abroad, the firm demonstrates its commitment to the relationship**. If the firm has no valuable partners, however, it may go where it might be easy to connect with a new firm that already has a position in the foreign market. For example, it may link itself to a middleman such as an agent or a distributor. Eventually, when the focal firm has established relationships with

customers, it may bypass the middleman and establish its own subsidiary. **Short psychic distance will facilitate the establishment and development of relationships**, which is a necessary but insufficient condition for identification and exploitation of opportunities.

Third, the choice of entry mode depends on many variables such as: past experience, psychic distance, political/trade barriers, regulations, competition, size and growth of the target markets, control, distribution, committed resources, resources transferred and motivation as well as time limitations. The position and success on international market is depended on - speed, geography and mode of entry (Wentrup, 2016). The factors are not depended on the type of company. According to the update Uppsala model, insidership has a rapid impact on firm internationalisation, because even if the SME lacks any specific knowledge, it may be substituted by trust on partners. The insiders perform better than outsiders in terms of firm-specific advantages, cost minimisation and international expansion. Service firms may be more prone to choosing higher commitment modes not only because some services require a smaller amount of financial resources (e.g., an office vis-à-vis a factory), but also because they may entail less risk since resources committed tend to be more flexible and more easily transferable to other locations and alternative applications (e.g., personal and managerial skills vis-à-vis factory or other physical facilities) (Carnerio, Rocha & Silva, 2008). As for the relevance of psychic distance, some services may not be affected in the same way as others. Some (though not all) less tangible services may be more prone to a client-following pattern (e.g., consulting, advisory or auditing services); in some object-based (e.g., fast-food) as well as in some people-processing services (e.g., hotels chains) clients may value standardization across countries; standardized services with little influence by contact personnel are more immune to cultural differences since they are less dependent on personal interaction. All these examples make it clear that psychic distance may not universally and homogenously affect all types of services.

Next, **firms start (and continue to) invest in one or a few neighbouring countries rather than investing in distant markets and/or several markets simultaneously**. “Closer” markets are those that are perceived to be close, i.e. markets about which the extent of knowledge and the “comfort level” are higher. These are markets located at a shorter psychic distance, which may diverge from straight geographic distance. Moreover (Forsgren, 2002):

- firms invest in a foreign market at an increasing pace,
- firms sometimes invest in foreign markets without own experiential,

- firms invest abroad without possessing any substantial market knowledge if the perceived risk of investing abroad is lower than the perceived risk of not investing abroad,
- gradual accumulation of market knowledge does not restrain the firm from radical changes in foreign investment behaviour.

There is a limitation of the Uppsala model for the business development. **The key findings suggest that the Uppsala model is not able to describe the internationalisation of SMEs from each country properly** (Tuzová, Toullová, Straka & Kubíčková, 2015). Only some of its assumptions can be applied to the internationalisation process.

#### 1.4. The guidance for the implementation in the business environment

**The Uppsala model has important managerial implications** because it extends the understanding of the complexities of the internationalization process. The risk management view of the Uppsala model advances a model where knowledge and commitment are balanced, prospecting a tool for managers to adjust the firm's risk level through different sorts of knowledge acquisition in an interplay between tangible and intangible commitment scaling (Figueira-de-Lemos, Johanson & Vahlne, 2011). The lack of market knowledge stands for the most critical constraint and causes the increasing challenge to international managers. In this lack of knowledge context, managers have to make decisions based on incomplete information (Figueira-de-Lemos, Johanson & Vahlne, 2011). The amount of available information is such that logical, intuitive, and de-structured decision processes take place. Moreover, managers have to make those decisions attending a range of tangible and intangible commitments.

In the model learning has very much in common with “the learning curve thinking”. The more the organisation does of the same thing, the more knowledge it accumulates about the necessary technology and the better it will perform. Therefore, it will prefer to stick to a certain market/activity and learn more about that market rather than to try new alternatives. Learning is linked to current activities in specific markets. That is, it is by continuing to do what it is already doing that a firm learns more about the actual business and increases its competence to continue with and deepen its activities in that particular market (Forsgren, 2000). The more the firm knows about a foreign market, the lower the perceived market risk will be and, consequently, the higher the actual investment by the firm in that market tends to be.

When the internationalization process starts firms must make decisions about relationship commitment and they must learn one to each other, creating

more connections and building trust. If the company does not have yet relevant partners in foreign markets, the alternative is to go where it is easier to connect to a company already positioned (maybe an agent or a distributor). As result, firms get more commitment with the market and, simultaneously, knowledge and opportunities to gain knowledge improve. By acquiring more knowledge, decision-makers' uncertainty about foreign markets reduces and therefore leads to increased resource commitment.

Additionally, the literature studies on internationalization process show there is a need for managers to be proactive and selective when prioritizing markets (Wentrup, 2016). Relying on regionally close markets may be an easy and natural step. However, the accelerating internet economy and the growth in large consumer markets, for example in Asia should be also taken under consideration. The firms usually choose nearby markets because of their geographical proximity, short psychic distance. Through the lens of economic geography, their choice seems rational. In the Uppsala model the crucial actors in the firm are the ones that acquire and hold market knowledge. The cases show quite strongly, though, that other stakeholders also can shape the internationalization behaviour.

**The Uppsala model has important implications in due to different branch or sector.** Although the attractiveness of the model in large part has rested on its simplicity and incorporation of a dynamic view of internationalization, it seems less well suited to the context of Internet-related firms. The general predictions of the Uppsala Internationalization Process Model do not seem to hold up that well when confronted with the experience of eight Internet-related case companies. Rather than slow and incremental, the process seems to be fast and discontinuous.

Another study's empirical findings show that the revised Uppsala network internationalisation model is generally valid for the small firms from CEE. Networks play an essential role for knowledge creation and exchange. They generally represent the most reliable resource available to small firms. Furthermore, trust is a key ingredient that shapes and consolidates network relationships. Small enterprises, which don't have experience with foreign markets, but want to expand, could create cooperation agreement with other bigger local or foreign well-known brands or could join clusters that include companies with broad internalization experience (Suresh, 2017). Experience is very important for enterprises internalization, the size is not the main factor, therefore small and medium enterprises can succeed in international market by joining networks and creating relationships, through both they acquire the necessary knowledge to internationalize. A firm that does not have a position in a relevant network is an "outsider." If a firm attempts to enter a foreign market where it has no relevant network position, it will suffer from the liability of outsidership and foreignness, and foreignness presumably complicates the process

of becoming an insider. A firm that does not have a position in a relevant network is an “outsider.” If a firm attempts to enter a foreign market where it has no relevant network position, it will suffer from the liability of outsidership and foreignness, and foreignness presumably complicates the process of becoming an insider.

Trust is an important ingredient for successful learning and the development of new knowledge. Trust can also substitute for knowledge, for instance when a firm lacks the necessary market knowledge and so lets a trusted middleman run its foreign business. Therefore, it is indicated:

- to start and continue to invest in just one or in a few (neighbouring) countries, rather than to invest in several countries simultaneously,
- to invest cautiously, sequentially and concurrently with the learning of the firm’s people operating in that market.

Strategies of foreign expansions vary from exporting, through e.g. licensing and joint ventures, to foreign direct investments (Hak & Grebosz, 2016). Several forms of entry enable to choose the satisfying balance between the degree of potential risk for company and oncoming potential profits. The most common way of moving from low profits and risks to high ones is explained by the Uppsala model of sequenced expansion, that is often applicable for both small and big businesses.

The sequence of stages in the Uppsala model was determined as an establishment chain. Although, it has to be outlined that it is claimed that not all companies are likely to move through these stages in the proposed order. The internationalization process may be changed in following situations (Hak & Grebosz, 2016):

- when certain company has a lot of resources (especially financial ones) and consequences of possible defeat would be relatively minor,
- when market conditions are very stable and market knowledge can be obtained in different ways than passing through all stages,
- when certain company has a lot of previous experience according to the similar to which is going to enter market,
- small market size may discourage company from building production unit there.

Other conclusions:

- within high uncertainty and low commitment, if the risk level increases, firms tend to leave the market,

- within low uncertainty and low commitment, if the risk level increases, firms tend to delay tangible commitments and increase their intangible commitments until the accepted level is met,
- within low uncertainty and high commitment, if the risk level decreases, firms tend to commit both tangible and intangible assets until the accepted level is met,
- firms are said not to invest abroad if it assesses the risk of investing as intolerably high,
- the perception of risk connected with particular foreign markets really differs between SMEs from the selected Central European countries.

## Citations & Bibliography

1. Almodóvar P., Rugman A.M. (2015). Testing the revisited Uppsala model: does insidership improve international performance? *International Marketing Review*, Volume 32 (6), pp. 686–712.
2. Carnerio J., Rocha A., Silva J.F. (2008). Challenging the Uppsala Internationalization Model: a Contingent Approach to the Internationalization of Services, *BAR, Curitiba*, Volume 5 (2), pp. 85–103.
3. Figueira-de-Lemos F., Johanson J., Vahlne J.E. (2011). Risk management in the internationalization process of the firm: A note on the Uppsala model, *Journal of World Business*, Volume 46, pp. 143–153.
4. Forsgren M. (2002). The concept of learning in the Uppsala internationalization process model: a critical review, *International Business Review*, Volume 11, pp. 257–277.
5. Forsgren, M. (2000). Some critical notes on learning in the Uppsala internationalization process model. Working paper, No. 2.
6. Forsgren M., Hagström P. (2007). Ignorant and impatient internationalization? The Uppsala model and internationalization patterns for Internet-related firms, *Critical perspectives on international business*, Volume 3 (4), pp. 291–305.
7. Hak A., Grebosz M. (2016). International Expansion Based On Uppsala Model – Cases Of Mcdonald's And Sfinks Poland, Volume 1207, pp. 45–69.
8. Hedemann, L., Rostgaard N.M. (2013). The internationalization of Danish furniture. A value chain perspective, *Erhvervshistorisk Årbog*, No. 2.
9. Jardon C, Molodchik M. (2017). What types of intangible resources are important for emerging market firms when going international? *Journal for East European Management Studies*, Volume 22 (4), pp. 579–595.

10. Johanson, J., Vahlne, J.E. (2009). The Uppsala internationalization process model revisited: from liability of foreignness to liability of outsidership, *Journal of International Business Studies*.
11. Petersen B., Pedersen T., Sharma D. The role of knowledge in firms' internationalization process: wherefrom and where to? *Copenhagen Business School, LINK Workin Paper*, pp. 1-25.
12. Silva S. C. (2012). The Importance of Second-Hand Knowledge in the Revised Uppsala Model: Can European Textiles Producers Export to China? *Journal of Global Marketing, Volume 25*, pp. 141-160.
13. Stoian M.C., Rialp A., Rialp J., Jarvis R. (2016). Internationalisation of Central and Eastern European small firms: Institutions, resources and networks, *Journal of Small Business and Enterprise Development, Volume 23 (1)*, pp. 105-121.
14. Suresh Singh (2017). Impact of sequence of international entries on country exits, *Journal of Transnational Management, Volume 22 (4)*, pp. 260-272.
15. Tuzová M., Toullová M., Straka J., Kubíčková L. (2015). Can Uppsala Model Explain the Internationalisation of Central European SMEs? *European Journal of Business Science and Technology, Volume 1 (2)*, pp. 149-164.
16. Wentrup R. (2016). The online - offline balance: internationalization for Swedish online service providers, *Journal of International Entrepreneurship, Volume 14*, pp. 562-594.

## 2. Value Chain

### 2.1. The overview of the concept

The value chain describes a way of looking at a business as a chain of activities that transform inputs into outputs that customers value. These activities encompass the “full range of activities” needed to bring the product into existence and final disposition after delivery to end users. Value activities are the building blocks by which a **firm creates a product valuable to its customer**. Different value chain configurations can lead to different value propositions. This makes a firm’s Value Chain, composed of primary and support activities. **Primary activities** – inbound logistics, operations, outbound logistics, advertising and sales, and service – involve the physical creation of the product and its sale and transfer to the buyer as well as after-sales assistance. **Support activities** – firm infrastructure, human resource management, technology, and procurement. The firms analyse in which activities they have a competitive advantage and offer they services in order to create the most valuable product with minimus resources. Value chain analysis helps you recognize ways you can reduce cost, optimize effort, eliminate waste and increase profitability. A business begins by identifying each part of its production process, noting steps that can be eliminated and other possible improvements. Businesses can determine where the best value lies with customers, and expand or improve said value, resulting in either cost savings or enhanced production.

Companies could search for value chains not only in their own country, which is the most convenient from geographical point of view, but usually the most innovative value chains are created by foreign partners, as **different countries have various competitive advantages**. Therefore, firms have to internationalize, and connect to international value chains. Firm internationalization through value chain may mean – and typically does – that part – not necessarily the entirety – of a firm’s value chain activities has been internationalized. (Oyson, 2011a). What part of firm is internationalized usually depends on its size and the services that it could provide. If it is a small enterprise probably its whole activities would be internationalized, as small firms often have a narrow range of products and services, therefore they specialize in one task or niche production. Also, small firms face some obstacles while trying to connect into value chains. In comparison to the large firm, there are bigger and more complex challenges faced by the small firm seeking to internationalise. Small firms ‘are not smaller versions of big business’ and are ‘quite different from big firms’. Consequently, the internationalisation processes of small firms are different from those of large firms. However, the world is changing rapidly, as a consequence small firms could find a way to get advantage of it – technologies, faster communications and transactions, coupled with their decreasing costs, have opened greater opportunities for rapid internationalisation by resource-constrained

firms. The small firm possess unique characteristics that can facilitate entry into foreign markets. Small firms exhibit quick decision-making, have structures that are simpler, less formal, and more flexible than those of larger firms and are agile, flexible, and adaptable (Oyson, 2011b).

Value Chain as a business strategy concept is very useful in a context of globalized competition. The company's competitiveness is determined by its position and its relationships with other actors of the same production system. Economic globalization leads to a reorganization of production systems at the planetary scale. Global value chains differentiate themselves depending on the link in which the governance capacity resides, upstream or downstream, according to the types of more or less sophisticated products manufactured therein. As far as public policies are concerned, if globalization calls national industrial policies into question, the conceptual framework provided by the global value chain allows governments to target their actions (on the type of value chain or level of intervention within the value chain) in order to anchor global value chains in national territories and induce backward linkages on their development. (Lancon, 2017).

## 2.2. The key elements

The value chain was constituted as an analytical framework for the vertical structuring of production systems, the production of intermediate and final goods, and forms of coordination between economic agents (Lancon, Template & Bienabe, 2017). The chain can differ depending on the product that is produced, but usually it contains of these activities: product development and design, production, international trade, assembly products, logistics and sales (Yin, Dong & Liu, 2016).

Another key feature of value chain is that **actors should always coordinate their knowledge and technological choices**, they must know what changes is happening in the field that they are working in. The main challenge for firms is the dynamic business environment, which is always changing, therefore the significant advantage of a value chain if it has a convenient technique to transfer the knowledge among its members, and firms should develop an ability to absorb a new knowledge. The value chain approach is **dynamic** because the international market or markets in which value chain activities may be internationalised are always in a state of flux and dynamism. Firm internationalisation is not static since there is a constant shifting of firm value chain activities in foreign markets (Oyson, 2011a). Firms always have to learn how to manage and govern the created value chains in order to maintain its efficiency and **acquire the relevant knowledge** about the market and its changes. Three main areas could be pointed out that determine the efficient flow of knowledge between partners and determine effective management of knowledge transfer in a strategic alliance:

1. Attributes of knowledge can be reduced to the distinction between explicit and tacit knowledge. This is based on the determination of whether knowledge can be codified, passed from one person to another, presented verbally, or systematically documented and recorded.
2. Features of the alliance specify, inter alia, the form of the agreement, the scope of implementation, the main objectives, and other key characteristics.
3. Knowledge absorption skills refer to the company's ability to absorb and replicate new knowledge from external sources (Drewniak, 2016).

Global value chain studies suggest that firms adopt alternative forms of governance of their international value chains depending on three drivers - the complexity of information required in the transaction, the level of codification of the information exchanged and the suppliers' capabilities in relation to a transaction's requirement (Chiarvesio, Di Maria & Micelli 2010).

As it was mentioned earlier, **competitive advantage** is one of the crucial elements of value chains. Competitive advantage distinct critical factors that determine the industry leadership. An analysis of a firm's Value Chain allows the firm to determine which activities are a source of core competence and, hence, of competitive advantage, redefining what the company really does and determining **which activities are value-adding**. Analysing a firm's value chain can show the discrete activities that make up a firm's operations and help assist in determining which of its activities are value adding. Often, a firm does not handle all its value chain activities by itself; some of its value chain activities may be outsourced to other companies (Oyson, 2011b). According to Porter there are **3 different generic strategies** that firms use in order to connect into value chains, firms can follow one or more of three generic strategies: **cost leadership, differentiation or market focus**. A firm follows a cost leadership strategy when it attempts to become the lowest producer in an industry offering undifferentiated products with the lowest cost at a standard market price. **A firm may create a cost advantage:** by reducing the cost of individual value chain activities, or by reconfiguring the value chain. Note that a cost advantage can be created by reducing the costs of the primary activities, but also by reducing the costs of the support activities. Recently there have been many companies that achieved a cost advantage by the clever use of Information Technology. Once the value chain has been defined, a cost analysis can be performed by assigning costs to the value chain activities. Porter identified 10 cost drivers related to value chain activities: Economies of scale, Learning, Capacity utilization, Linkages among activities, Interrelationships among business units, Degree of vertical integration, Timing of market entry, Firm's policy of cost or differentiation, Geographic location, Institutional factors (regulation, union activity, taxes, etc.). A

firm develops a cost advantage by controlling these drivers better than its competitors do. A cost advantage also can be pursued by "Reconfiguring" the value chain. "Reconfiguration" means structural changes such as: a new production process, new distribution channels, or a different sales approach.

With a **differentiation strategy**, a firm seeks to differentiate its products/services by providing a better service level to customers and better product quality at a premium price. Differentiation stems from uniqueness. A differentiation advantage may be achieved either by changing individual value chain activities to increase uniqueness in the final product or by reconfiguring the value chain. Differentiation often results in greater costs, resulting in trade-offs between cost and differentiation. There are several ways in which a firm can reconfigure its value chain in order to create uniqueness. It can forward integrate in order to perform functions that once were performed by its customers. It can backward integrate in order to have more control over its inputs. It may implement new process technologies or utilize new distribution channels. Ultimately, the firm may need to be creative in order to develop a novel value chain configuration that increases product differentiation (Kolivanis, 2011).

In addition, firms can compete based on the market focus strategy by concentrating their efforts on a **specific niche** in the market and offering specialized products for that niche.

### 2.3. Importance for the business development

Multilateral, regional and unilateral trade liberalisation has greatly increased market access and together with sharply falling transportation and communication costs, this has facilitated the emergence of value chains. Production that once was primarily located close to sources of major suppliers of inputs (or near consumers in final markets) is now increasingly carried out wherever the necessary skills and materials are available at competitive cost and quality. This fragmentation of production has created new opportunities for small enterprises to enter global markets as components or services suppliers, without having to build the entire value chain. One of the strengths of a value chain approach is its understanding of **boundary-crossing nature of economic processes**. Value chains are rarely limited to one particular area, but they often cross local and national borders. Scholars have posited that an effective global value chain configuration may have a positive impact on business performance. Some of them are listed below:

- **Inward-outward connections** explains the positive effects on firm growth resulting from the connections between international activities in the upstream and downstream parts of the value chain (Hernández & Nieto, 2015).

- The activities related to the upstream side of the value chain may generate advantages for activities related to the downstream side of the value chain, such as **international sales** (Bertrand ,2011; Di Gregorio et al., 2009; Hätönen, 2009).
- Less research exists, however, into how different firms within a global value chain, generate their performance or how the value is appropriated between the different agents.
- An exception is the study by Kaplinsky (Kaplinsky, 2000) which, from a macro-level perspective, explains that some parties gain and other lose in the global value chain and suggests some movements that could be made by the economic actors to reverse that situation.
- If lead firms are able to leverage power over their suppliers they may appropriate the value generated, since they may **increase flexibility** and take advantage of **external competencies** in terms of better quality or lower costs (Buckley & Strange, 2015).
- Chiu (Chiu, 2014) posits that supplier diversity allows firms to enable new skills and technologies, improve their assimilative power, and broaden perspectives, and all this helps firms to track new discoveries and advances.
- Hence, Dedrick et al. (Hence, Dedrick & al., 2009) describe differences related to how the control of key elements enables some firms to capture supernormal returns on innovation. From a different perspective, focused on the complementary assets of lead firms for making innovations a commercial success.
- Shin et al. (Shin et al., 2009) argue that these firms may capture more **benefits from innovations** even when they are developed by non-lead firms.
- Knowledge gained in Strategic Alliances can be used in fulfilling tasks other than those within the alliance, such as improvement of products, or to gain new markets.
- International activity (SMEs in particular) through strategic alliances with other companies can be a significant step in their development (Drewniak, 2016).

Also, Oyson (Oyson, 2011b) makes observations how value chain concept could be implemented in small firms' strategy, and how this concept could help in the internationalisation of value chain activities:

- Internationalised value chain activities between product firms and service firms differ.
- Export is usually the outbound value chain activity to be internationalised as a first step in internationalisation.
- A firm may change its foreign market entry value chain activity across foreign markets.
- Through time, there are changes in the combination of value chain activities.
- For the small firm, international expansion may involve entering more markets rather than increasing its commitment in a given market.
- Firms do not always expand the scope of their Value chain activities within a given market.
- Off-shoring can be a first step in internationalization.
- Firms engaged in de-internationalisation of value chain activities as they expanded their activities across markets.
- Young firms can focus on international markets from inception.
- Opportunities influence choice of foreign markets.

#### 2.4. The guidance for the implementation in the business environment

The optimal mode for entering a market by **analysing their costs and risks** based on market characteristics and taking into consideration their own resources. The firm can use different entry modes for various value chains that they firm is joining.

Value Chain concept also defied the **gradual, incremental stages of foreign market involvement** proposed by stage theories, because new ventures could start internationalizing immediately after their start-up, if they have supply innovative production, thanks to new technologies which have reduced the cost of transportation, advertisement and communication (Oyson, 2011a).

One of the elements that could help to create a value chains is **internet**, because it reduces, communication, marketing, and other costs. The internet is not the future of the business world. It is the presence. It affects every player and the rules of the game. Online firms are more likely to choose a differentiation strategy while click-and-mortar firms are more reliant to come with a strategy based on cost. Click-and-mortar firms are more likely to combine elements of cost leadership and differentiation strategies than online firms.

The emergence of the Internet influenced the functions of the value chain. New players, new business processes and new tactics help a firm to earn and sustain competitive advantage. The adoption of online management tools, the new ways of communication among the partners, the negotiations with suppliers and the online marketing are factors which have impacts on a competitive strategy (Kolivanis, 2011).

Value chain concept also can be transformed into **Knowledge value chain** (KVC), where smaller companies can **adopt the knowledge about market and its customers**. This partnership can assist an organization to better manage its knowledge resources, from which the company creates value and competitive advantage. The chain of knowledge must be included in the formulation of strategies and must be integrated with the value chain model. Strategic alliances must be equipped with knowledge chains, which should be matched carefully. Companies who are strategic allies must strive to make full use of the knowledge value chain elements in order to strengthen cooperation and quickly achieve bilateral competitive capabilities. Every organization must develop and implement competitive business strategy that satisfies the needs of the target market. The core of any business strategy is the customer value proposition, which describes the unique mix of product and service attributes, customer relations, and overall image that an organization offers. It also explains how the organization will differentiate itself from rivals to attract, retain, and strengthen relationships with targeted customers (Drewniak, 2016).

## Citations & Bibliography

1. Chiarvesio, M., Di Maria E., Micelli, S. (2010). Global Value Chains and Internationalisation of SMEs. *"Marco Fanno" Working Paper*, Volume 118, pp. 1-42.
2. Drewniak R. (2016). Model of the Knowledge Value Chain in Strategic Alliances: Conditions of the Knowledge Flow between Companies. *Global Management Journal*. Volume 8, pp. 116-124.
3. Hernández V., Pedersen T. (2017). Global value chain configuration: A review and research agenda, *BRQ Business Research Quarterly*, Volume 20, pp. 137-150.

4. Kolivanis K. (2011). *A Research of Porter`s Generic Strategies and Value Chain Concept in E-Commerce: An Observation of Two Online Business Models*. Edition. [pdf.] City: Tilburg University, Faculty of Economics and Management, Master in Strategic Development, pp. 1-52. Available at URL [Accessed 31.01.2018].
5. Lancon F., Template L., Bienabe E. (2017). The Concept of Filie` or Value Chain: An Analytical Framework for Development Policies and Strategies in: Sustainable Development and Tropical Agri-chains, ed. Bienabe, E., Rival, A., Loeillet D., Springer, pp. 17-28.
6. Madhani M. P. (2017). Customer-Focused Supply Chain Strategy: Developing Business Value-Added Framework, *Journal of Supply Chain Management*, Volume XIV (4), pp. 7-22.
7. Oyson, M. J. (2011). Internationalisation of value chain activities of small firms: One small step, one giant leap, 8th Australian Graduate School of Entrepreneurship International Entrepreneurship Research Exchange, Swinburne University of Technology, Melbourne, Victoria, Australia, pp. 787-801.
8. Oyson M., J. (2011). Internationalisation of value chain activities of small firms: An international value chain approach, *Small Enterprise Research*, Volume 18 (2), pp. 100-118.
9. Xing L. (2017). Analysis of inter-country input-output table based on citation network: How to measure the competition and collaboration between industrial sectors on the global value chain. *PLoS ONE*, [online] Volume 12 (9), pp. 1-29.
10. Yin X., Dong C., Liu C. (2016). Global Value Chain Restructuring in the Trade of Knocked Down Products. *Transactions of Famena*, [online] Volume XLI-1, pp. 91-98.

### **3. Supply Chain/Supply Web (internationalization viewpoint)**

#### **3.1. The overview of the concept**

Supply chains are often described as multistage production systems, the process of differentiation, by which production is subdivided into ever smaller separable units. From a systems perspective, international supply chains are the basic building blocks of the global production system; an individual supply chain for a particular product is a microcosm of the system as a whole.

Within a supply chain, the strategies of individual firms are interdependent; firms compete when they plan to control the same part of the chain and cooperate when they plan to control the same part of the chain and cooperate when they plan to control different parts of the chain.

In more simple way supply chain covers all movement and storage of materials and goods including inventory of raw materials as well as work-in-process and finished goods from point of origin to point of consumption.

Another definition for a process of supply chain or value web: series of discrete links by which goods are bought, have value added to them, and are sold to the next value-adder – up until an end buyer consumes them. Supply chains are increasingly becoming value webs that span and connect whole ecosystems of suppliers and collaborators; properly activated, they can play a critical role in reshaping business strategy and delivering superior results.

#### **3.2. The key elements**

There are three activities in a supply chain – production, distribution and R&D – and each is carried out in a separate facility: a plant, warehouse and laboratory respectively. The consumers are at the end of the chain, and all are located in country 2. The decision where these activities will be executed is determined by the costs of processes.

The ownership and location of production within and international supply chain are governed by four key trade-offs:

- Alternative Forms of Internationalization,
- Alternative Location Strategies,
- Trading Off Internationalization Savings Against the Cost of Foreign Operations,
- Alternative Firms Organising Integration.

Using Supply chain model its efficiency should be analysed from the perspective of the supply chain as a whole rather than any individual firm; the attention should be paid to all actors benefits and cost rather than to only one individual firm`s benefits and costs.

In supply chain model Value is based on production of goods and services, while in value web thinking Value is based on knowledge exchange that drives proactive production of goods and services. In a world of value webs, the essential goals of traditional supply chain management do not go away. But they are often augmented by new imperatives – like learning, agility and renewal.

### 3.3. Importance for the business development

By undertaking supply chain model **companies can optimize their costs and get competitive advantage** against their rival companies. The analysis shows that optimal supply chain configuration is governed by four key trade-offs between various costs:

- Facilities costs,
- Linkage costs (transport, technology transfer),
- Coordination costs,
- Managing foreign R&D costs.

The model could be used to analyse the **impact of headquarters location** in supply-chain efficiency. This would involve introducing location-specific costs of headquarters operation. The configuration of firms in a given chain will vary according to the economic fundamentals of the industry, including the technology embodied in the product, the institutional environment and the geography of the global economy.

**Customers** are crucial to any business as without customers, there is no sales; and without sales, there is no revenue and profits. **Customer-focused supply chain strategy maximizes value** to the ultimate customers of the supply chain in terms of both satisfaction with the product and/or services and a relatively low total cost of the product and/or service. Customer-focused supply chain strategy with attributes of responsiveness, resiliency, reliability and realignment can boost the competitiveness of the firm, provide best inclass products and services at lowest price, enhance customer satisfaction and strengthen the likelihood that customers will remain loyal to a supplier.

The effective implementation of demand chain management practices in an organization enables creating an environment which is characterized by mutually rewarding inter-functional coordination, cooperation and co-creation of customer value. The study advocates coordination between the marketing and supply chain functions of an organization where marketing focuses on demand creation, while supply chain emphasizes on the demand fulfilment aspect. This is how they complement each other of better results.

Through **sustainable supply chain management**, companies guarantee **long-term profitability** and social consent for running a business. Sustainable supply chain management can now be a source of competitive advantage, especially in developed country markets, where consumers pay less attention to the price of the product and are willing to pay more for a socially responsible product.

The supply chains of **outstandingly large companies** have the following features: firstly, they **are agile**. They respond swiftly to sudden changes in demand or supply. Secondly, they **adapt** to the way market structures and strategies evolve. Thirdly, they **coordinate** the interests of all the companies involved, so that when companies maximize their interests, they also optimize the chain's performance. Only agile, adaptable and coordinated supply chains will give their companies a sustainable advantage.

When companies start to understand that they are operating within supply networks, they realize that their partners are also operating within their own supply networks. They are learning that interactions among these many networks influence their business.

The overall performance of the supply chain significantly affects the financial health of all member companies. Therefore, an effective supply chain performance measurement process should be able to directly address performance areas that create sustainable profitability and financial strength. In order to accomplish this requirement, the performance measurement process will need to provide a reliable indication of the contribution of supply chain operations to the areas like growth, cost minimization, working capital efficiency and fixed asset utilization.

In some publications authors write about **technologies that are reshaping the logistics industry**. There are three emerging technologies described:

- **RFID** (radio frequency identification technologies),
- **cloud integration**,
- **Internet of Things (IoT)**.

Real-time **RFID** insights allow supply chain managers to measure the time it takes for each step in the production cycle. With RFID technologies, products can be scanned, counted, and registered in an organization's system simultaneously, directly saving time and costs once allocated for human labour.

**Cloud-based technologies** reduce the frequency of lost products, synchronizes shipment components, and updates current inventory records in near real-time. Cloud-based technologies are universally accessible, which means systems can be accessed from virtually any location, at any time.

**IoT** in logistics is integrated in the overall management of a supply chain. Specifically, IoT technologies communicate with Bluetooth, RFIDs and cloud technologies to quickly organize, monitor and route products to meet the growing demand of consumers and providers.

### 3.4. The guidance for the implementation in the business environment

In a supply chain model companies should always analyse the existing business environment and be ready to change their role in it, firms must be dynamic and prepared to adapt while using this model. The threat that these firms face may come not from their existing competitors but from future competitors, including firms that have not yet been founded. Where existing firms survive, they may find that, in future, their roles are radically changed – for example they may become subcontractors to firms to which they previously subcontracted.

An organization can own multiple sites that maintain complex relations with each other. The organization as a whole, as well as each of its sites, must also cultivate relationships with external partners that are likewise complex organizations, each with its own logistics network. The result is a meshing of multiple networks, constituting a network of networks, with complex sets of relations and flows of goods, resources, information and money.

Events such as volatile commodity prices, extreme weather, and bribery and corruption can disrupt and have a negative impact on your supply chain, so you must be able to navigate these risks in advance.

Supply chain performance measurement is vital for a company in order to survive in today's competitive business environment. Supply chain performance measurement should be a business-critical process, driven by metrics and supported by business intelligence. Therefore, with Performance Measurement and Business Activity Monitoring systems in place, all parties in a supply chain network can track the real-time flow of goods, money and information across the network. They can

also answer customer questions on the state of the process, no matter who is handling the process at a given point of time.

As technology is evolving rapidly from day to day, supply chain managers have to be updated on the latest technologies that ensure processes to be accomplished in more efficient way.

Developing a strong relationship with customers is vital to achieving the goals of both the customers and the organization.

### Citations & Bibliography

1. Casson M., Wadeson N. (2013). The Economic Theory of International Supply Chains: A Systems View. *International Journal of the Economics of Business*, Volume 20 (2), pp. 163-186.
2. Deshmukh A. K., Mohan A. (2016). Open business models and Closed-loop value chains: redefining the firm consumer relationships. *Journal of Supply Chain Management*, Volume XII (1), pp. 20-36.
3. Hakimi D. (2014). *From network to Web dimension in Supply Chain Management*. Universite LAVAL, Thesis, pp. 1-270.
4. Kelly E., Marchese K. (2015). Supply chains and value webs. *Deloitte Development LLC*, [online], Available at: URL [Accessed 31.01.2018].
5. Liebetruht T. (2017). Sustainability in performance measurement and management systems for supply chains. *Procedia Engineering*, Volume 192, pp. 539-544.
6. Martin K. (2017). Supply Chain in the Cloud: How Tech Is Reshaping Logistics. [online] Inbound Logistics. Available at: <http://www.inboundlogistics.com/cms/article/how-tech-is-reshaping-logistics/> [Accessed 31.01.2018].
7. Madhani P. M. (2017). Customer-Focused Supply Chain Strategy: Developing Business Value-Added Framework. *IUP Journal of Supply Chain Management*, Volume XIV (4), pp. 7-22.
8. McLaren T. (2006). A Measurement Model for Web-enabled Supply Chain Integration. *BLED 2006 Proceedings*, Volume 18, pp. 1-14.
9. Olah J., Zeman Z., Balogh I., Popp J. (2018). Future Challenges and Areas of Development for Supply Chain Management. *LogForum*, Volume 14 (1), pp. 127-138.
10. Sibley S. (2017). Is your supply chain more like a tangled supply web? [online] Thomson Reuters website. Available at: <https://blogs.thomsonreuters.com/financial-risk/risk-management-compliance/has-your-supply-chain-become-a-tangled-supply-web/> [Accessed 23.01.2018].

11. Stefanovič N., Stefanovič D. (2011). Supply Chain Performance Measurement System Based on Scorecards and Web Portals. *ComSIS*, Vol. 8 (1), pp. 167–192.

## 4. Business internationalization models and factors

### 4.1. The overview of the concept

This chapter summarizes the reviewed and analysed academic/business sources of business internationalization models and factors. The summary consists of 13 sources of internationalization models and 13 sources of internationalization factors, and it answers to the questions initially set for the analysis.

In the studied sources for business internationalization, several different models were discovered and explained. The models have common points although they have various visions and perspectives and show different entry modes. These models are:

- Uppsala model,
- Stopford's model,
- The model of Daniels and Radebaugh,
- The model of the product life cycle,
- Contingency models,
- The model of business network,
- Autonomous/cooperative internationalization strategy,
- International entrepreneurship approach,
- The platform-ecosystem form,
- The 3x3 matrix,
- Innovation related/ innovation decision process,
- The lean start-up approach,
- The model of early internationalization/ Born global,
- The risk management model,
- A business model adopted for territorial development,
- A business model as a structural template.

As for business internationalization factors, there are external and internal motives as well as facilitating factors for going international (Johnson, 2004). Globalization and virtual economy are external, and organizational as well as individual (entrepreneur) are internal factors.

### 4.2. The key elements

**The Uppsala internationalization model** is based on the fact, that the domestic companies are becoming multinational (transnational) companies. It is a progressive internationalization model relying on learning and knowledge. In this model adaption to market conditions of target market and modification of the enterprise management, enterprise policies and marketing strategies occurs. In comparison of Uppsala's internationalization model, **the Stopford's model** explains

and opens in more details partial level of internationalization, as well as management decisions about the future orientation of business in foreign markets. Stopford's model explains the process of internationalization of the company business activities undertaking by detecting the partial steps, from simple forms to be establish on a foreign market to the highest stage of business internationalization in the form of wholly owned subsidiaries. **The model of Daniels and Radebaugh** is considered to be a compromise between Uppsala and Stopford's ones. In this model, there is a theoretical integration of internationalization into a single synthetic model.

**The model of the product life cycle** is also a progressive internationalization model and it indicates that the successive modes of internationalization are closely related with the product life cycle.

**The contingency models** for internationalization have REM as factors of influence, which are stages of decision of the company (R factor as reasons for internationalization –external and internal motives–, E factor as environment – where to –, and M factor as the mode of internationalization).

**The model of business network** is an interactive model and it emphasizes the value of commercial, personal and cognitive relationships between its members. This model assumes that the organizational network of the company is a major incentive for internationalization and the companies produce their resources by interacting with other partners.

Companies that use **an autonomous internationalization strategy** have their own foreign sales offices or production facilities in foreign markets. Companies that use **the cooperative internationalization strategy** give up their autonomy, to a greater or lesser extent, for cooperating with a foreign partner. Companies that operate in an autonomous fashion develop and utilise internal resources for internationalization, while companies that cooperate depend (in part) on externally available resources to internationalise. Many scholars argue that due to resource scarcity, SMEs must collaborate with foreign partners when internationalizing.

**The concept of international entrepreneurship** is defined as the development of new international activities by new enterprises. The international entrepreneurship is an important emerging research domain in studying new activities of the enterprise across the national borders.

A platform is a collection of services, tools and technologies, which is the foundation for an ecosystem – a loose network of suppliers, distributors, outsourcing companies, makers of related products or services, technology providers, etc. **The platform-ecosystem form** allows the platform provider to share

costs and risks associated with internationalization with affiliated third parties. The platform-ecosystem form allows foreign affiliates to create complementary offerings designated for foreign users. Therefore, people, who are much more familiar with the foreign market since it is their home market, create complements.

Manufacturing companies increasingly adapt their business models along two dimensions. Apart from vertically integrating the entire product life cycle, traditionally separated tasks are reallocated into new forms of horizontal stakeholder collaborations. Incorporating these two dimensions, a framework of nine business model archetypes – a **3x3 matrix**– that holistically capture the increasing openness of business models towards consumers in the emerging closed loop value chain, is developed.

Business model innovation means that business can be innovated. Internationalization of a company can also be understood, in the frame of this model, as an **innovation decision process**, since business model of innovation is not about product innovation. Business model innovation is development of new, unique concepts supporting an organization's financial viability, including its mission, and the processes for bringing those concepts to fruition. The primary goal of business model innovation is to realize new revenue sources by improving product value and by new delivery decisions.

**The lean start-up approach** aims to reduce product development and commercialization times by adopting business related practises such as combination of experimentation, iterative product releases, and validated learning. The lean start-up allows an agile development, for example by creating minimum viable products (MVPs) whereby owner/managers need to utilize appropriate metrics to evaluate customer feedback, allows decision makers to build, measure and learn, and allows by agile development based on customer feedback offers owner/managers an opportunity to pivot their evolving business models.

**The model of early internationalization** is closely connected to the concept of born global companies. A key characteristic of **born global** companies is their early and strong global orientation; managers in such companies view the whole world as a potential market.

Knowledge of **risk management models** fosters management focused on survival and development of the company, including its international growth. The use of international standards for the risk management process is, in particular in the process of its internationalisation, a favourable and desirable managerial help. The process of internationalisation of the company's activities does not have to proceed and most often does not proceed in the model perspective, and its shape may have the complex form and may not be based on a simple extrapolation formula. The

course of the process of internationalisation shows sometimes the presence of discontinuity, especially with regard to some selected sectors of so-called high technologies.

To support the birth and growth of companies specialized in what could be considered as **the territory's competitive advantage**, local governing institutions should develop a systemic strategy keeping in mind three main aspects. First, individualize such competitive advantage (the business model value proposition) around which orchestrating their common strategy. Second, identify where to find the right human resources, geared with the skills and competences that are required to run such companies. Third, detect the sources of financial capital that such companies demand to start and sustain their business activities.

In order to analyse value creation in international entrepreneurial companies, a business model framework that is based on three sets of parameters is built. First, conceptualization, where identification of the dominant value creation driver (novelty, complementarity, efficiency, or customer lock-in) should be done. Then the design elements of the business model (content, structure and governance). The proposed third parameter investigates value exchange at three main interfaces: upstream suppliers, downstream sales partners and customers (Sainio, Saarenketo, Nummela & Eriksson, 2011).

There are three type of factors influencing the early internationalization of international start-ups: internal company factors, external factors and facilitating factors. Internal are e.g. vision of the founders, international experience, need of foreign financing and high R&D costs. External ones are borderless world, economies of scale, niche markets, need to respond to competitor initiatives, etc. As for facilitating factors, there are e.g. advances in ICT, advances in transportation and advances in process technology (Johnson, 2004).

#### 4.3. Importance for the business development

Small businesses are seen as vital components of a market economy. Their involvement in internationalization processes is considered relevant to the use of market opportunities, growth and innovation opportunities. The main initiative of the internationalization of SMEs comes partly from growing competition in domestic markets and from opportunities to gain new customers in foreign markets.

In order to successfully start and carry on the internationalization process there are three essential conditions. The first condition requires a company to commit itself in the long-term internationalization project, the second one assumes that the company allocates the necessary resources for the project, and the third one

forces the company to create and capitalize the advantages that could allow an advantageous evolution in the foreign markets.

Multinational SMEs in general have more problems of resource scarcity than large MNEs. To obtain resources, cooperation with (foreign) partners may thus be required. Trust is one of the main criteria while searching for new partners in foreign markets, because then companies can be confident that their resources are safe and efficiently used (Gemser, Brand & Sorge, 2012).

SMEs constitute an important part of economic growth and dynamics not only for advanced industrialized countries but also for developing economies. Internationalization is means to increase sales, gain popularity, and introduce niche innovations to foreign markets.

A company adopting the platform-ecosystem form will incur lower liability of foreignness, internationalize faster and be less influenced by psychic distance to the foreign market.

The conceptual model can be used to design appropriate international business models giving management an idea of which processes and elements will be involved. The conceptual model illustrates possible paths of internationalization through business model of innovation. It offers a conceptual model for understanding how international market opportunities can be achieved through business model innovation, which can supplement the usual focus on speed, scope and extend of internationalization processes.

New ventures in high-tech industries need to consider and decide on the following: the location of activities “locus” (i.e. local vs. foreign based activities, inward-outward relationship with space, entry modes, local embeddedness), the relationships with other players and about organizational boundaries “modus” (i.e. insourcing and outsourcing of activities along social and inter-organizational ties inward-outward relationships with other players, strategic alliances), and the selection of activities on which the company’s efforts are concentrated “focus”. These three areas of strategic decision-making (locus, modus, and focus) are required to be integrated into a systematic approach of management that reflect the growth processes that characterize young technology-based companies, whereby entrepreneurship, innovation and internationalization are deeply inter-connected.

No single theory explains the start-up companies’ initial internationalization that supports the holistic nature of factors influencing the process. The resource-based view could to some extent explain internationalization behaviour since management teams in the research are all constrained by limited financial resources, however, they have a degree of social capital and not least via the

international recruitment of experienced members of the small management team that facilitated the exporting path. This also links with the network-based view since existing overseas networks and knowledge of export procedures facilitated rapid internationalization and reduced the perceived risk of operating internationally.

A business model might be the instrument to orchestrate actors' cooperation by combining the focus on territories with a systemic perspective; through the implementation of such common instrument, the system should orchestrate policies implemented by the different leading forces of the territory to assist processes of economic development.

From the perspective of the international entrepreneurial company, it is essential to define the central resources and capabilities that enable the transactions with upstream and downstream partners, and the incentives for the transactions that make the company an attractive buyer or seller from the partner's perspective. International entrepreneurial companies have often been described as niche-oriented and innovative, but at the same time lacking resources, market knowledge and international business experience. Therefore, the interfaces in the business model might produce complementarities or efficiency, which is very valuable for the company.

Falling trade barriers, deregulations and privatizations, maturity in domestic markets, faster information flows, improved communication and transportation networks, high technology investments that cannot be covered by sales in domestic market only, combined with shortening product life-cycles, global sourcing and ideas, globalizing competitors and competition, free movement of capital goods, services, and people etc. – these are all factors influencing decision on globalization of the company and therefore vital for success.

Flexibility, the ability to adapt and quickly respond to the situation enables international new ventures to achieve growth by using early internationalization as a strategy. This kind of early internationalization provides opportunity to reach economies of scale and increase the volume of business. Early internationalization for international new ventures provides an opportunity to get in touch with new customers also to attract resources needed.

The basis for a decision to internationalize is always focused on specific motives and goals. The first being a psychological category and relating to human behaviours in the organization. These may be economic reasons, as managers striving to increase income and job security, or intangible motives as desire to achieve prestige, power, self-realization, adventure, or traveling abroad.

Because managerial competences are scarce, and their replication is not easy, one has to choose between innovation and internationalization, i.e., the strategies are substitutes, at least in the short run. New ventures in particular often view internationalization as a major strategy for recouping heavy investments in R&D, which is generally one of their key cost items. Accordingly, they will internationalize their operations in order to increase the returns on their innovations, reduce the risk of selling a product in a single market and protect themselves against rapid imitation by keeping their R&D-based knowledge tacit as long as possible. Internationalization also helps to increase profits by exposing the company to the knowledge and technologies that exist in foreign markets. This gives it the opportunity to learn new skills, modify existing products, and develop new ones if it only has enough absorptive capacity.

International business activity is one of the key features of the contemporary global economy. The decision to venture abroad involves the evaluation of alternative entry modes, bearing in mind the degree of risk and the suitability of the business environment in a potential host country or region. Political, economic, cultural and other factors are all of vital importance.

The entrepreneur has a paramount role in the distinctive early internationalization of international start-ups. The main factor for going into the foreign market is the international vision of the founder, who identifies specific international opportunities or has valuable international contacts (Johnson, 2004). The position and success on international market depends on customer relationships.

Internationalisation still poses a challenge for SMEs. Researching the patterns that SMEs take may help to predict future changes and developments. The SME manager may perceive the different internationalisation patterns discussed in the literature to be deterministic in nature. However, it is showed that these patterns are not deterministic and that companies may make strategic decisions that change their patterns over time (Olejnik E., Swoboda B., 2012).

#### **4.4. The guidance for the implementation in the business environment**

Resources and competencies of an SME play a central role in international development. They can influence all levels of decision making in SMEs' internationalization process. The internationalization is an important component of the growth and development strategy of the company.

The Stopford's model is recommended for SMEs that do not yet have experience in international business. Within this model, the companies can manage their foreign trade activities systematically. For vulnerable micro companies in an

early stage of lifecycle, the Daniels and Radebaugh's model is recommended (Mura L., Grublova E., Gecikova I., Kozelova D., 2011).

Before doing business in a foreign country, it is a good idea to undertake an analysis of the environment in the country concerned. Detailed market research is required before launching a product in a foreign market, but the better the understanding of a country's political, economic, and cultural environment, the greater the probability of the product succeeding and the less risk to a company's profitability and reputation.

SMEs can become locked in to a particular internationalization strategy. SMEs should be aware of this risk and acquire knowledge of the pros and cons of different entry modes. With this knowledge, SMEs should evaluate their own entry mode choices on a periodical, structural basis, using their resource position as a guiding parameter.

Knowledge of risk management models fosters management to be focused on survival and development of the company, including its international growth. The catalogue of formulas for minimizing presence of unfavourable phenomena and events for the company should be enriched by experiences from the area of project management processes and project formulas of business management.

For SME which do not have large financial resources the role of managers is crucial, and how they are projecting the growth of the company. It is essential that SME's entrepreneurs take risk especially when they have a unique, niche product which requires expansion, because domestic market is too small. But managers must have significant international experience and reliable contacts in foreign markets in order to minimize the probable risk as much as possible.

Attracting the most suitable foreign affiliates and creating for them the right conditions for developing and providing complements may be as strategically important as market choice or entry mode choice.

Every organization must develop and implement competitive business strategy that satisfies the needs of the target market. The core of any business strategy is the customer value proposition, which describes the unique mix of product and service attributes, customer relations, and overall image that an organization offers.

Different business model combinations make companies diverse from each other, even if they are operating in the same target market. Business model decisions are likely to result in companies executing the same strategy in different ways, and

in some instances, business model decisions may trigger strategy change or innovation.

To coordinate the actions of the local main actors (companies, governing institutions, universities), the first step concerns the identification of a clear “value proposition” that the territory needs to offer to external parties and of the assets that need to be catered to create and strengthen such value. Continuous interactions between educational and governing institutions should give rise to a commonly developed project to be designed, coordinated and directed by the means of a business model. To nourish the entire system, the multiple anchor organization could create a network connecting local politics, universities, entrepreneurs and banks/business angels. Finally, to protect future generations, the business model should guarantee sustainability.

As a managerial implication, Authors argue that international entrepreneurs and managers trying to develop effective business models should examine the both sides of value creation in upstream and downstream partner interfaces. Too often a company concentrates only on getting the value from the partner and neglecting the explicit identification and communication of the incentives towards partners to improve the relationship (Sainio., Saarenketo, Nummela. & Eriksson, 2011).

Companies operating in high-tech and technology-based industries may be forced to internationalize more rapidly to avoid obsolescence or imitation processes. Born global behaviour is more depending on innovative skills of the company than on the innovation degree of the industry. One of the greatest challenges to born global companies may be the lack of adequate experiential knowledge and managerial resources.

The lack of previous experience, among international new venture team members, increases costs of early internationalization. International new ventures are incurring lower internationalization costs than previously established companies.

When resources and business external environment are the background factors determining strategic decisions on internationalisation, the role of managers is crucial as decisions made in companies are largely dependent on the managers themselves and their willingness to take the risk associated with international markets.

Personal factors are important for internationalization. Perhaps the most important finding for managers is that internationalization is not a function of demographic factors, but instead is a function of perceptions. If the owner/founder or manager perceives that there is a lower level of environmental uncertainty in a

particular international market or perceives that there is the requisite skill set to internationalize, then chances are high that the small company will be pursuing a strategy of internationalization (Manolova., Brush, Edelman & Greene, 2002).

A service- and trade friendly design of the international framework is recommended. It would also be important to establish marketing events or networking structures to initiate contacts and to reduce transaction costs. To provide information and consultation regarding regulation and legal issues in other respective countries is essential. SMEs have quite often limited financial and personnel resources and they require particular support.

To overcome knowledge barriers, SMEs have started to rapidly acquire knowledge and instantly go global as in the case of born global. To overcome resource constraints, SMEs use the management team's international experience to arrive at decisions and not necessarily depend on the CEOs knowledge. Also, the formation of strategic alliance formation considerably reduces the resource constraints. To overcome both governmental and external environmental barriers, SMEs would need both support and guidance from the governmental organizations and policy makers. Also, active participation of SMEs in promotional programs seems to be necessary. Procedural barriers can be partly overcome by managerial experience and partly with the help of consulting companies. To overcome marketing and task barriers, SMEs need to develop products based on global requirement that would help in standardizing production processes and reduce adaptation costs. Formation of strategic alliances would also help to bring down distribution and logistics cost.

It is important for SME owner/managers to be aware of the possibility to benefit from operating in emerging markets, e.g. to face lower production costs or to access labour. They could help to increase awareness among resource-constrained SMEs that it can be beneficial to operate in emerging markets. Policy makers in higher-income European countries could play an important role in taking away barriers for undertaking international activities for SMEs to operate in emerging markets e.g. by providing (more) information and advice on operating in these markets and by developing specific support programs. Some countries have already developed specific initiatives regarding internationalization of local companies towards emerging markets.

Certain factors influence the internationalization patterns of SMEs. In particular, international orientation and growth orientation are important variables in explaining the differences between traditional, born global and born-again global companies. Communication capability, intelligence generation capability and marketing-mix standardisation have been included in the determining factors. It has been found that the communication capability is connected to the traditional

internationalization pattern whereas the intelligence generation capability increases the likelihood that a company belongs to the born-again global group. While the communication capability seems important to the organisational learning of traditional companies, born-again global companies rely on intelligence generation to coordinate their international activities. Finally, marketing mix standardisation is connected to the born global pattern rather than the born-again global internationalisation pattern. Born global can effectively identify global niches and serve them with an appropriate marketing strategy (Olejnik & Swoboda, 2012).

## Citations & Bibliography

1. Baronchelli G., Cassia F. (2008). Internationalization of the firm: stage approach vs. global approach. 8th Global Conference on Business & Economics, Florence, Italy, pp. 1-33.
2. Belniak, M. (2015) Factors Stimulating Internationalisation of Firms: An Attempted Holistic Synthesis. *Entrepreneurial Business and Economics Review*, Volume 3 (2), pp. 125-140.
3. Crick J. M., Crick D., (2017). Lean Start-Up' Practices: Initial Internationalization and Evolving Business Models in: Leonidou L., Katsikeas C., Samiee S., Aykol B. (eds.) *Advances in Global Marketing*. Springer, Cham, pp. 37-58.
4. Danciu V. (2012). Models for the internationalization of the business: a diversity-based approach. *Management & Marketing Challenges for the Knowledge Society*, Volume 7 (1), pp. 29-42.
5. Fudaliński, J. (2015). Risk Taking Propensity and Firm Internationalisation Process. *Entrepreneurial Business and Economics Review*, Volume 3(2), pp. 85-104.
6. Gemser G., Brand M., Sorge A. (2012). Internationalisation strategies of technology-driven small- and medium-sized enterprises, *Technology Analysis & Strategic Management*, Volume 24 (3), pp. 311-326.
7. Harrison A. (2011). International entry and country analysis. Technical University of Košice, pp. 1-31.
8. Hessels J., Kemna M. (2008). *Internationalization of European SMEs towards Emerging Markets*. Edition. [PDF] Zoetermeer: SCALES initiative - Scientific Analysis of Entrepreneurship and SMEs, pp. 1-17.
9. Jeffrey E. Johnson. (2004). Factors Influencing the Early Internationalization of High Technology Start-ups: US and UK Evidence. *Journal of International Entrepreneurship*, Volume 2, pp. 139-154.
10. Korsakienė R., Baranauskienė A. (2011). Factors impacting sustainable internationalization: a case of multinational company. *Journal of Security and Sustainability*, Volume 1(1), pp. 53-62.

11. Kortmann S., Piller.F. (2016). Open business models and Closed-loop value chains: redefining the firm consumer relationships. *California Management Review*, Volume 58 (3), pp. 88-108.
12. Kranzusch, P., Hoffmann, M. (2017). Internationalisierung im unternehmensnahen Dienstleistungssektor–Formen, Hemmnisse und Unterstützungsbedarfe deutscher KMU, Bonn: IfM-Materialien Nr. 263, pp. 1-55.
13. Kylaheiko K. et al. (2011). Innovation and internationalization as growth strategies: The role of technological capabilities and appropriability, *International Business Review*, Volume 20 (5), pp. 508- 520.
14. Lin S. (2010). Internationalization of the SME: Towards an integrative approach of resources and competences. 1er Colloque Franco-Tch`equ: "Trends in International Business", France, pp. 117-135.
15. Lehtoranta, O., Rilla, N., Loikkanen, T. (2012). Internationalisation of knowledge and innovation activities in Finnish innovative SMEs. *VTT Technology* 64, pp. 1-166.
16. Manolova T., Brush C., Edelman L., and Greene P. (2002). Internationalization of Small Firms: Personal Factors Revisited. *International Small Business Journal*, Volume 20(I), pp. 9-31.
17. Matiusinaite A., Sekliuckiene J. (2015). Factors Determining Early Internationalization of Entrepreneurial SMEs: Theoretical Approach. Kaunas University of Technology, Kaunas: School of Economics and Business, pp. 175-185.
18. Mura L., Grublova E., Gecikova I., Kozelova D. (2011). An analysis of business internationalization models. *Studia UBB, Oeconomica*, Volume 56 (2), pp. 16-28.
19. Narayanan, V. (2015). Export Barriers for Small and Medium-sized Enterprises: A Literature Review based on Leonidou's Model, *Entrepreneurial Business and Economics Review*, Volume 3 (2), pp. 105-123.
20. Olejnik E., Swoboda B. (2012). SMEs' internationalisation patterns: descriptives, dynamics and determinants. *International Marketing Review*, Volume 29 (5), pp. 466-495.
21. Onetti A., Zucchella A., Jones M.V., McDougall-Covin P.P. (2012). Internationalization, innovation and entrepreneurship: business models for new technology-based firms. *Journal of Management & Governance*, Volume 16 (3), pp. 337-368.
22. Pisano V., Ferrari E. R., Fasone V. (2016). The orchestration of business models for territorial development. *Measuring Business Excellence*, Volume 20 (4), pp. 72-83.
23. Rask M., (2014). Internationalization through business model innovation: In search of relevant design dimensions and elements, *Journal of International Entrepreneurship*, Volume 12 (2), pp. 146-161.

24. Sainio L-M., Saarenketo S., Nummela N., Eriksson T. (2011). Value creation of an internationalizing entrepreneurial firm: The business model perspective. *Journal of Small Business and Enterprise Development*, Volume 18 (3), pp. 556-570.
25. Yonatany M. (2017). Platforms, ecosystems, and the internationalization of highly digitized organizations. *Journal of Organization Design*, Volume 6 (2), pp. 1-5.
26. Zapletalová S. (2015). Models of Czech companies' internationalization. *Journal of International Entrepreneurship*, Volume 13 (2), pp. 153-168.

## 5. Business Model

### 5.1. The overview of the concept

According to the research carried out by Cheng et al (Cheng, Song & Chen, 2011), the definitions of business models can be divided into three categories: economic, operational and strategic. The economic business models are defined at rudimentary level, which are viewed as the logic of profit generation. In the economic definition, the constitutive elements include revenue sources, pricing methodologies, cost structures, margins, and expected volumes. The operational definition refers to an architectural configuration of process and equipment, which guarantees the enterprises' capability of value creation. In the operational definition, the constitutive elements include production or service delivery methods, administrative processes, resource flows, knowledge management, and logistical streams. The strategic definition concerns about overall direction in competition. In the strategic definition, the constitutive elements include stakeholder identification, value creation, differentiation, vision, values, networks, and alliances. They argue that these three definitions reveal the three gradual layers of people's cognitions toward the business model. To sum up, Cheng et al (Cheng, Song & Chen, 2011) propose a definition of the business model: "A business model is a concise representation of how an interrelated set of decision variables in the areas of venture strategy, architecture, and economics are addressed to create sustainable competitive advantage in defined markets."

Business model that articulates the economic logic of how an organization creates and delivers value should underlie every performance measurement system and should explain how the important nonfinancial and financial variables in the performance measurement system are related to each other. A business model is an abstract representation of business logic. Serving as a reference framework, it supports practitioners in conceiving, designing and communicating business ideas (Fliegner, 2017).

A business model is a conceptual tool that contains a set of elements and their relationships and allows expressing the business logic of a specific firm. It is a description of the value a company offers to one or several segments of customers and the architecture of the firm and its network of partners for creating, marketing and delivering this value and relationship capital, to generate profitable and sustainable revenue streams.

To be successful and competitive businesses firms need to constantly engage in value creation for the customers as well as stakeholders. Though firms are innovative in their product and their services they grappled with the issue of value creation for customers. For spotting new growth opportunities firms are adopting business model innovation (BMI). Business model innovation enables a firm to uniquely deploy available alternatives with respect to product, technology, process and markets with the view to create new value propositions and appropriate value arising out of the competitive advantage (Waghmare & Golhar, 2017).

Business models can be defined as:

- a careful design of content, structure and governance of transactions so that it creates value.

And/or

- a strategy pertaining to customer interaction, asset configuration and knowledge leverage.

In simple words, a business model is representation of how a business creates and delivers value, both for customer and the company.

## 5.2. The key elements

Particular authors emphasize various elements of the business model. There is no consensus on the number of key components in the business model structure. A few frameworks are fitted to a particular industry such as e-business, whereas others are more general and applicable to various industries. The suggested framework includes a scale of characteristics, which indicates how strong or elaborated performance of a business is in terms of value proposition, target customer markets, channels of delivery (distribution), customer relations, etc. For example, value proposition associated with a more complex portfolio of customized services is evaluated as high and positioned at the end of the scale. In contrast, entrepreneurs who perceive their distinctiveness related to professional conduct in an unbundled and narrow portfolio of services have been positioned at the lower end of the value proposition scale. Similar logic applies to all core components of the business model (Pfeifer, Oberman Peterka & Stanic, 2017).

Whereas when it comes to an updated generic business model framework, it consists of four primary categories, namely, value proposition, value capture, value creation, and value network, and could be useful for a variety of organisations, profit and non-profit, with various mission and vision orientations and interaction with the environment (Perić, Vitezić & Đurkin, 2015).

Fliegner (2017) indicates four the key elements of business model concept of four general areas:

- Product (the value a company offers),
- Customer interface (one or several segments of customers),
- Infrastructure management (the architecture of the firm and its network of partners),
- Financial aspects (profitable and sustainable revenue streams).

Waghmare and Golhar (2017), on the other hand, describe the key elements of the business model in a slightly different way, but also indicates four main areas:

- The Customer Value Proposition, an offering that helps customers more effectively, reliably, conveniently, or affordably solve an important problem (or satisfy a job-to-be-done) at a given price.
- The Profit Formula that defines how the company will create value for itself and its shareholders. It specifies the revenue model, the cost structure, target unit margin and how quickly resources need to be used to support target volume.
- The Key Resources, the people, technology, products, equipment, information, channels, partnerships, funding, and brand required to deliver the value proposition to the customer.
- The Key Processes such as design, development, sourcing, manufacturing, marketing, hiring and training by which a company delivers on the customer value proposition.

On the other hand, in all technological entrepreneurship business models are included more than four pillars which contribute closely to the business models of a number of researchers. The other four pillars include management, finance, consumer relationship and products that interact differently among them. In each organization, these pillars are involved to varying degrees and thus provide it as a competitive advantage. The thesis of the authors of this paper detaches human resources relationships in an organization as a separate pillar. That is produced by their great importance for the success of the organisation because they are the basis of all other pillars. In technology-based organizations, innovation and technology are the most important elements but the real element which can create them is the man (Dicheva Vasileva & Lesidrenska, 2017).

In the case of a model of the internationalization process of the firm it focuses on the development of the individual firm, and particularly on its gradual acquisition, integration, and use of knowledge about foreign markets and operations, and on its successively increasing commitment to foreign markets. In particular, attention is concentrated on the increasing involvement in the individual foreign country. In these cases, the basic assumptions of the model are that lack of such knowledge is an important obstacle to the development of international operations and that the necessary knowledge can be acquired mainly through operations abroad. This holds for the two directions of internationalization authors distinguish: increasing involvement of the firm in the individual foreign country, and successive establishment of operations in new countries. In this paper authors concentrate on the extension of operations in individual markets (Johanson & Wahlne, 1977).

Slightly different approach is presented by Open Business Model Revenue Generation. The first key element to be simply acknowledged here is that Open Business Models are suitable for revenue generation as well as traditional business models. The second key element of Open Business Models is to understand that profit is an end – impact is the end game. Open business models start with inclusivity, participation and universal access. Impact is enabled up front and revenue generation follow. Thirdly, revenue can be generated in multiple ways, however, most can be defined within five methods – often as a mix of these:

- Digital to Physical,
- Direct Connect,
- Matchmaking,
- Value-Add Services,
- Members (Stacey, 2017).

### 5.3. Importance for the business development

At a fundamental level, scholars and practitioners agree that the business model is crucial for the success of today's organizations, especially concerning growth potential, competitive advantage, long-term performance, and as a new source of innovation (Filegner, 2017).

It is possible to do impact of sustainability through separate business model elements focusing on managing human resources in the enterprise. The great significance of human resources in the enterprise is determined by the need for continuous changes that directly affect people – a source of ideas and a core resource (Dicheva, Vasileva & Lesidrenska, 2017).

Business model innovation allows firms to address various potential activities to exploit the opportunities outside its core business that requires different business model. In implementing of business model innovation; Incubation is a stage at which a firm verifies the viability of new initiatives for identified assumptions after testing them in orderly manner for success of business proposition. Hence at this stage focus should be on gathering the knowledge rather than to reap the revenues, using this gathered knowledge firms can realize sustainable profits at acceleration stage. In incubation process the business model framework helps identify new value propositions that have the greatest chance of success and weed out those that contain flows or inconsistencies. Investing a little to learn a lot helps overcome the uncertainty of new business development by enabling managers to modify plans in response to new knowledge. Thus, it is necessary for firms to understand the knowledge creation at incubation to implement the theoretical business model to the successful working (Waghmare & Golhar 2017).

In the case of the model of the internationalization process, it can help in providing a part of the explanation to the understanding of the process by which firms become international or even multinational by stressing the importance of some factors affecting the decision-making process. Internationalization is the product of a series of incremental decisions. All the decisions that, taken together, constitute the internationalization process—decisions to start exporting to a country, to establish export channels, to start a selling subsidiary, and so forth—have some common characteristics which are also very important to the subsequent internationalization. The model is based on empirical observations from the studies in international business at the University of Uppsala, that show that Swedish firms often develop their international operations in small steps, rather than by making large foreign production investments at single points in time. Typically, firms start exporting to a country via an agent, later establish a sales subsidiary, and eventually, in some cases, begin production in the host country. Lack of knowledge due to differences between countries with regard to, for example, language and culture, is an important obstacle to decision making connected with the development of international operations. Authors even claim, that these differences constitute the main characteristic of international, as distinct from domestic, operations. The two state aspects of the model are resources committed to foreign markets—market commitment—and knowledge about foreign markets possessed by the firm at a given point of time. The reason for considering the market commitment is that we assume that the commitment to a market affects the firm's perceived opportunities and risk. The more specialized the resources are to the specific market the greater is the degree of commitment. Johanson and Wahlne (1977) claim that experiential knowledge is the critical kind of knowledge in the present context. It is critical because it cannot be so easily acquired as objective knowledge. There is a direct relation between market knowledge and market commitment. Knowledge can be

considered a resource (or, perhaps preferably, a dimension of the human resources), and consequently the better the knowledge about a market, the more valuable are the resources and the stronger is the commitment to the market. This is especially true of experiential knowledge, which is usually associated with the particular condition on the market in question and thus cannot be transferred to other individuals or other markets.

#### **5.4. The guidance for the implementation in the business environment**

It is very important for any organisation to focus on its core capabilities and outsource other activities or cooperate with partners. Organisations must develop new business models, in which both value creation and value capture occur in a value network, creating a new value system within which different economic players (i.e. suppliers, partners, customers/beneficiaries, distribution channels, allies, and other forms of coalition) work together toward one goal, the co-production of value. Value network, called also as an ecosystem focuses therefore on stakeholder involvement. Additionally, from this network perspective, mostly external interactions occur that can have a great influence on the value creation and value capture of a company. The interaction of a value network and other business models' categories in the form of two-way value-creating processes can have a direct effect on an organisation's processes and internal capabilities as well. For instance, distribution channels, although occasionally treated as a part of a customer dimension, belong to value network and represent an immediate link to delivery processes within the scope of value creation (Perić, Vitezić & Đurkin, 2015).

A business model can have its focus centred on the resources (activity perspective), the value proposition itself, the customer or even focus on the financials at the very beginning. Once the business model is already populated with elements, it can be helpful to see which element is linked to others. This identifies if an element is missing and helps in communicating the whole business model to outsiders (Fliegner, 2017)

Dicheya et al (Dicheya, Vasileva & Lesidrenska, 2017) point out three main stages of implementing a business model in the business environment:

1. Determining the need for adaptivity of the organization and its current level of adaptivity,
2. Identifying the opportunities that are necessary for the organization become adaptable,
3. Identification of necessary business practices and tools to increase adaptivity.

Many firms fail at implementing a business model innovation despite having good business model idea or not able to reap the revenues in later stages of implementation. The reason for this may be that considering assumptions as fact and moving into next stages without checking viability of assumptions considered while designing a business model innovation (Waghmare & Golhar, 2017).

To sustain and compete in the different market and time horizon, firms must reinvent their business model by changing all elements and realigning the way they interact. To satisfy unmet customer needs and to leverage the opportunities which firm have ignored or newly discovered for growth of the firm, they have to go for business model innovation with new customer value propositions and quest for this action should be proactive one.

Personal and intensive relationship with the customer, intellectual capital as the main resource, and 'creativity or idea-centred' costs seem to be stable components of micro business models. These components reflect the standard or the mainstream business models of any service business that is mainly niche-oriented, differentiated and intensively immersed in relationships with customers. In contrast, entrepreneurs' choices related to value proposition, customer targets, channels of distribution, organization of key activities, partnership arrangements, and revenue streams seem to be differentiated (Pfeifer, Oberman Peterka & Stanic, 2017).

In the case of a business model of the internationalization process Johanson and Wahlne (1977) suggested model can be useful in planning and decision making in the firm with regard to international operations as the model indicates how it is related to other internationalization variables than the experience factor thus giving a better base for planning and executing the internationalization process. The best way to quickly obtain and use market experience is to hire a sales manager or a salesman of a representative or to buy the whole or a part of the firm. In many cases this kind of experience is not for sale; at the time of entry to a market the experience may not even exist. It has to be acquired through a long learning process in connection with current activities. This factor is an important reason why the internationalization process often proceeds slowly. Johanson and Wahlne (1977) also suggest to pay attention that market uncertainty is reduced through increases in interaction and integration with the market environment—steps such as increases in communication with customers, establishment of new service activities or, in the extreme case, the take-over of customers.

On the other hand, if we take into account a knowledge-based model of small and medium enterprises (SME) internationalization we should point out that:

- The firm uses intensively the market knowledge acquired during the first phase of internationalization. Among all the factors, it is the most intensively used during this phase. It is to note also that the intensity of utilization of market knowledge decreases as the firm progress in the internationalization path. Instead, other kinds of knowledge are more relied on such as network, cultural and entrepreneurial knowledge.
- Experiential knowledge of foreign markets has been considered as essential for firm internationalization. This type of knowledge results from practice, and 'can only be learned through personal experience. The more the firm has experience, the more it tends to use it in later stages of internationalization. This is supported by process models, in which experiential knowledge has been considered as critical for more involvement in the foreign market.
- Cultural knowledge of a foreign market refers to the knowledge of values, manners, and ways of thinking of people in that market. During the novice internationalization stage, there is a low-intensity of utilization of cultural knowledge, which turns into a high-intensity when the firm becomes more experienced in a foreign market. In fact, it has been found in previous studies (i.e. process models) that psychic distance is influential when considering which foreign country to enter in. Accordingly, a firm would enter the closest market because of the low psychological distance comparing to local market. As the firm accumulates cultural knowledge in some market, it could seek entering in other culturally-close markets.
- Network knowledge involves both social and business networks that facilitate the internationalization of the firm. Interestingly, it has been found in previous literature that network built in pre-internationalization stage was critical for the internationalization start. The network can 'force' or encourage the firm to start to internationalize.
- Entrepreneurial knowledge refers to knowledge of the existence of opportunities and how to exploit them. In fact, opportunity recognition is critical for the survival and the growth of the firm. During the novice internationalization stage, the firm gradually applies the acquired opportunity recognition and exploitation ability. The intensity of utilization of that ability in this stage is low. However, as the firm becomes more experienced in internationalization, decision-makers use more intensively their ability to detect and exploit opportunities (Mejri & Umemoto, 2010).

## Citations & Bibliography

1. Bashir M., Verma R. (2017). Why Business Model Innovation Is the New Competitive Advantage. *IUP Journal of Business Strategy*, Volume XIV (1), pp. 7-17.
2. Cheng, Y.; Song, W.-W.; Chen, X. (2011). Research on the theoretical boundary of the business model concept, International Conference on E-Business and E-Government, May 2011: pp.1-4. Available at IEEE Xplore Digital Library <http://bazy.pb.edu.pl:2078/document/5881711/?arnumber=5881711> [Accessed 01.03.2018].
3. Dicheva V., Vasileva V., Lesidrenska S. (2017). Methodologies of applying business model of Technological Entrepreneurship in Bulgaria. *TEM Journal*, Volume 6 (4), pp. 826-831.
4. Fliegner W. (2017). Analysis of the business model elements and their relationships. *Research Papers of Wroclaw University of Economics*, Volume 474, pp. 53-64.
5. Johanson J., Wahlne J.E. (1977). The internationalization process of the firm – a model of knowledge development and increasing foreign market commitments. *Journal of International Business Studies*, Volume 8 (1), pp 23-32.
6. Mejri, K., Umemoto, K. (2010). Small and medium-sized enterprise internationalization: Towards the knowledge-based model, *Journal of International Entrepreneurship*, Volume 8, (2), pp 156-167.
7. Mind Tools (N/A). The Greiner Curve – understand the crisis that com with growth. Article published on webpage of Mind Tools Ltd. Available at [https://www.mindtools.com/pages/article/newLDR\\_87.htm](https://www.mindtools.com/pages/article/newLDR_87.htm) [Accessed 23.02.2018 ].
8. Perić M., Vitezić V., Đurkin J. (2015). Business Model Concept: An Integrative Framework Proposal. *Managing Global Transitions*, Volume 15 (3), pp. 255-274.
9. Pfeifer S., Oberman Peterka S., Stanic M. (2017). Business Models of Micro Businesses: Empirical Evidence from Creative Industries. *Journal of Contemporary Management Issues. Management*, Volume 22, pp. 1-19.
10. Song, M. (2017). Trust-based Business Model in Trust Economy: External Interaction, Data Orchestration and Ecosystem Value. *Proceedings of the Multidisciplinary Academic Conference*, pp. 92-203.
11. Stacey, P. (2017). Creative Commons. What is an Open Business Model and How Can You Generate Revenue? Article on Medium.com March 6 2017. Available at: <https://medium.com/made-with-creative-commons/what-is-an-open-business-model-and-how-can-you-generate-revenue-5854d2659b15> [Accessed 23.02.2018].
12. Villum, Ch. (2018). 10 Manufacturing companies are ready to experiment with open source. Article published on webpage of Danish Design Center, 6 Feb 2018.

Available at: <http://danskdesigncenter.dk/en/10-manufacturing-companies-are-ready-experiment-open-source> [Accessed 23.02.2018].

13. Wach, K. (2015). Incremental versus Rapid Internationalisation of Firms: Results of Exploratory Investigation from Poland. *Entrepreneurial Business and Economics Review*, Volume 3 (4), pp. 37-48.
14. Waghmare R.B., Golhar D. (2017). Knowledge Creation at Incubation for Business Model Innovation: The Conceptual Understanding. *Journal of Commerce & Management Thought*. Volume 8 (4), pp. 673-683.

## 6. Innovation transfer

The structural change towards service and knowledge societies, innovations, the intensification of economic interconnections in global goods, services and labour markets, the increasing integration of neighbours within the Baltic Sea region will all have considerable influence on the Baltic Sea region. One critical prerequisite for the Baltic Sea region being able to compete globally in future is ensuring its technological capability and innovative power. This requires a broad knowledge base and the ability of its inhabitants to adapt to innovation. In particular, there is a need for excellent conditions for innovation and the expansion of the knowledge-based economies. The concentration of research facilities, universities and specialized clusters as well as highly qualified labour force in the region is a basis for this knowledge-based structural change (Stiller & Wedemeier, 2011).

Innovation is a key factor in the development of competitive and comparative (cost) advantages. The process involves the transfer of an idea or invention into a commercialized good or service (brought) to the market. For this, open conditions for the innovation processes and transfer 'systems' are needed by the enterprises. Moreover, internationalisation is regarded as crucial for this innovation transfer process.

In the following, the policy report gives an overview of concepts of innovation transfer and to internalisation processes relevant for innovation and knowledge transfers (Section 6.1). Section 6.2 presents some key elements of innovation transfers, section 6.3 and 6.4 highlight the importance for the business development and offer guidance for the implementation in the business environment. The report is closed with some recommendations for transnational co-cooperation innovation brokers' development.

### 6.1. The overview of the concept

Open innovation is described to be the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and to expand the markets for external use of innovation, respectively (Huizingh, 2011). Accordingly, Huizingh lists two general processes of open innovation: Inbound open innovation and outbound open innovation. Thereby, inbound open innovation refers to internal use of external knowledge, while outbound open innovation refers to external exploitation of internal knowledge. Inbound and outbound open innovation include multiple activities from whose the author managed to identify three inbound and outbound activities, namely licensing agreements (in and out), non-equity alliances, and technical and scientific services (purchase and supply). One of the existing models of open innovation, cited by Huizingh (2011), contains different temporal stages such as (1) seeking opportunities, (2) evaluating their market

potential and inventiveness, (3) recruiting potential development partners, (4) capturing value through commercialization and (5) extending the innovation offering. Another model of open innovation presented focuses on different phases, namely (1) defining the innovation process, (2) identifying innovation-relevant knowledge, (3) selecting an appropriate integration mechanism, (4) creating effective governance mechanisms, and (5) balancing incentives and controls. Similar to that, Kerry and Danson (2016) present an examination of the links between open innovation, the Triple Helix model and regional innovation systems. Highlighting the importance of boundary-spanning intermediaries, the combined role of these concepts is explored in detail. A conceptual model is then proposed by the authors showing how the Triple Helix model of innovation occurs within regional innovation systems and how it is underpinned by open innovation principles.

Moreover, Foster (2012) tries to identify trends in innovation and technology diffusion patterns. In this context, international technology transfer refers to the process by which a firm in one country gains access to and employs technology developed in another country. Technology or innovation transfer occurs between willing partners in voluntary transactions, but a large contribution is also contributed by non-market transactions or spillovers. Technology flows across borders via a number of formal and informal channels are thereby claimed to make measurement difficult. Moreover, Foster (2012) constructs a system of formal and informal channels showing technology or innovation transfer. Thereby, formal channels include trade in goods and services, trade in capital and intermediate goods, exports and the movement of skilled workers across borders. Equivalently, the informal channels are constituted by the movement of personnel from one firm to another taking with them specific knowledge of their original firm's technologies, data in potent applications and the temporary migration of people, such as scientists and students to universities and research institutes in advanced countries.

Others, such as Kennedy et al. (2017), highlight the importance of sustainability-oriented innovations (SOIs), which are defined as ideas brought to the market to influence the environmental and social performance in comparison to the current performance. Thereby, Kennedy et al. claim that SOI concern the efficient use of resource inputs, the creation of improved products and services, and the formation of new business models: all of which are aligned to traditional business principles. The term directs firms to consider both environmental and social dimensions in the innovation process but does not dictate that a performance improvement of both is necessary for every innovation; i.e. a portfolio of environmentally and socially focused innovations may be more effective to improve overall sustainability performance of a firm. Kennedy et al. further present the concept of SOI and critical organisational practices of the SOI process (the

conceptual model depicts the temporal phases of the radical innovation process and identifies five critical organizational practices through which analysed enterprise's strategic direction enabled the innovation process).

Moreover, characterisations of product SOI are claimed to commonly use two dimensions: The first is an assessment of novelty, relying on the radical and incremental distinction used in conventional innovation research. Incremental innovations are understood as competence-enhancing, small adaptations made on a continuous basis while radical innovations are episodic, 'frame bending' and often replace existing parts or entire systems. A second dimension is the consideration of the extent to which product innovation improves sustainability performance or its 'greenness' in ecological terms. According to the authors, innovations seeking radical sustainability improvements to systems will likely require different practices within the innovation process compared to those aiming for marginal improvements to existing (Kenny et al., 2014).

## 6.2. The key elements

An important factor to analyse innovation transfer is the notion of the existence of different kind of knowledge to be transferred, differentiated into the four groups of know-what, know-why, know-how and know-who by Lundvall (2004).

The key elements of effective innovation transfer are then summarized by Kerry and Danson (2016). The authors highlight the involvement of organizations from science, industry and government, but also operate as intermediaries brokering collaboration between combinations of the three helixes, resulting in innovation generating activities: the Triple Helix model of innovation. Moreover, the authors argue that intermediary organisations operating in the overlapping areas of the three helixes can influence positively the factors that contribute to a successful regional system of innovation. A comparable conclusion is presented by Sinell et al. (2018) analysing the concept of technology transfer offices (TTOs) and emphasizing the central role of TTOs to expand collaboration and thereby contributing to the success of an innovation ecosystem. TTOs can further be distinguished, on the basis of different characteristics, into the groups of common good and entrepreneurial TTOs (Sinell et al., 2018). It needs to be recognised that the specific systems of innovation transfer depend on the institutions included and therefore each country produces an own specific system of innovation (McKelvey, 1991).

Also, Kerry and Danson (2016) identify various additional factors contributing to a successful regional innovation system. These include high-tech industries, firms and university relations and a clustered and specialized labour market. Also, the need of local traditions for co-operation and entrepreneurial activities is regarded as a key element, whereas the cluster environment should enable shared norms, values and trust for mutual understanding and learning. Finally, it is claimed by the authors that ‘open innovation’ landscape is what underpins the emergence of both the Triple Helix model of innovation and the subsequent development of regional innovation systems. Four factors to promote innovation processes are identified by Zimmermann et al (2009): (1) The increasing availability and mobility of skilled workers, (2) a venture capital market that endows entrepreneurs with the necessary capital to compete, (3) external options for previously shelved ideas, and (4) the increases capabilities of external suppliers.

Moreover, Geyer and Uriep (2012) state that internationalization had become inevitable also for SMEs, also related within the organization of innovation processes. For those, an internal orientation alone could constitute a serious drawback in market competition. The authors identify three basic motives for internationalization: (1) Market exploitation, (2) securement of resources (knowledge and commodities), and (3) cost reduction. In this context, Geyer and

Uriep (2012) claim that both push and pull factors play a role so that both opportunities and threats are to be considered when considering internationalization processes in the context of innovation transfers. Cannarella and Piccioni (2003) expand the topic by emphasizing the relevance of innovation for SMEs in the rural area particularly. This analysis holds particularly before the background of a reshaped business environment as a consequence of globalization and increased opened of economies as an additional driver for internationalisation (Schmiele, 2009).

### 6.3. Importance for the business development

According to Cannarella and Piccioni (2003), innovations have been found to have a significant impact on different levels such as technology, economy, finance and management. Accordingly, a textbook issued by the European Commission (2014), focusing on internationalising processes, strongly emphasizes that internationalization plays a major role for the economic performance of all enterprises and for SMEs in particular. In this context, internationalisation can result in competitiveness gains at firm level which may eventually translate into improved economic performance at national and European level: (1) Being internationally active strongly relates to higher turnover growth, (2) SMEs that are internationally active generally report higher employment growth than non-active SMEs, and (3) the relationship between internationalization and innovation is strong. In spite of this, few EU SMEs do business internationally, either inside or beyond the EU. According to a study conducted in 2010, 25 % of EU-based SMEs had been involved in exports (inside Europe and beyond) over the previous three years. Only 13 % of EU-based SMEs addressed growth markets outside the EU.

Thereby, the European Commission (2014) states that size, age and experience of SMEs influence their willingness and their ability to internationalise: (1) The larger an enterprise, the more it tends to internationalise, (2) the more mature an enterprise grows, the more exports and imports tend to increase, and (3) the more active an SME is internationally, the higher is its tendency to start international activities in the foreseeable future. Moreover, some sectors tend to be more suited to internationalization, according to the European Commission: While enterprises engaged in trade, manufacturing, transport and communication and research are the most international, enterprises involved in e-commerce are more even more active internationally than their traditional counterparts. Zimmermann et al. (2009) also exemplify that internationalisation strategies have different implications for young firms compared to more mature enterprises.

The specific relevance of innovation is emphasized by regarding innovation as a way of developing businesses and also as a condition to survive for enterprises before the background of a more and more merciless competition. In this context, universities have an important role due to the creative potential available. The creative potential of the universities should be directed to the needs of local, regional and international communities of firms (Ungureanu, Pop & Ungureanu, 2016) to be turned into account and to contribute to their development. The relevance of innovation transfer holds particularly for developing countries and structurally weak regions. In this context, Sanz et al. (2014) outline the diversity of sectors and applications in which technology transfer can play a major role in developing countries. Given the cross-cutting nature of technology, the coverage is selective

and includes the issues of climate change, health, agriculture and free and opensource software. In general, innovation occurs through the interaction of sectors.

Overall, the main barriers the European Commission (2014) states to be reported by SMEs are a lack of working capital to finance exports, the difficulty of identifying foreign business opportunities, a lack of information to help the internationalizing enterprise to locate / analyse markets, the inability to contact potential overseas customers and the difficulty of obtaining reliable foreign representation. Moreover, a lack of managerial time and a lack of enough staff and / or untrained staff are among the factors working as a barrier to internationalization. However, public support schemes are found to have a significant impact on the turnover in the target market, the overall turnover and job creation of SMEs so that public corrections of market failure (disadvantages of SMEs in internationalisation compared to larger enterprises) prove to be successful (European Commission 2014).

#### **6.4. The guidance for the implementation in the business environment**

Authors such as Caramihai et al. (2017) give direct guidance for the implementation of innovation and technology transfer policies: (1) Simplifying the legislative framework in order to facilitate technology transfer by a reconfiguration of public-private partnerships law, clarifications in the area of joint-venture, exemption/reduction of taxes for the technologies sellers, incentives offer such as flat-rate tariffs for technology buyers, (2) supporting the establishment of structures with facilitator potential within the technology process by establishing business incubators, clusters, and spin-offs, and (3) improving patent activities within public entities by capitalizing the following types of patents: property rights, such as: patents, utility models, designs, trademarks; copyrights, such as: advanced industrial property rights; neo-intellectual rights

Important leverage points to foster internationalisation can be to use external knowledge as a door opener as well as to build up legitimacy particularly for young firms to increase the pace of the internationalisation process. A measure to build legitimacy can be the establishment of strategic alliances (Zimmermann et al. ,2009). Gathering experience on an international level and fostering international cooperation are found to be successful when it comes to fostering internationalisation activities (Schmiele, 2009). However, it needs to be recognised that the type of knowledge to be transferred determines the prospects of success since tacit knowledge is found to be difficult to transfer (Lundvall, 2004).

Moreover, a problem of public support schemes is their lack of visibility. Of EU SMEs not being internationally active, only 10% were aware of their existence

whereas 22% of SMEs with international activities reported to know about the programmes to support SME internationalisation (European Commission, 2014).

## Citations & Bibliography

1. Abernathy W., J., Utterback J., M. (1978). Patterns of innovation. *Reprinted from Technology Review*, Volume 80 (7).
2. Abernathy W., J., Utterback J., M. (1975). A dynamic model of process and product innovation, in: Omega, Volume 3 (6), pp. 639–656. (online), Available at: <http://users.telenet.be/n8duivel/louis/2.%20A%20dynamic%20model%20of%20process%20and%20product%20innovation.pdf> [Accessed 21.02.2018].
3. Bogers M., Chesbrough H., Moedas C. (2018). Open innovation: research, practices, and policies. *California Management Review*, Volume 60 (2), pp. 5–16.
4. Brown, T. (2008). Design Thinking. *Harvard Business Review*, pp. 86–92.
5. Cannarella C., Piccioni V. (2003). Innovation Transfer and Rural SMEs. *Journal of Central European Agriculture*, Volume 4 (4), pp. 371–388.
6. Caramihai (Guda) M., Tanase N.M., Purcarea A.A. (2017). Proposals for Improving Innovation and Technology Transfer Policies in Romania. *Procedia Engineering*, Volume 181, pp. 984–990
7. Caputo M., Lamberti E., Cammarano A., Michelino F. (2016). Exploring the impact of open innovation on firm performances. *Management decision*, Volume 54 (7), pp. 1788–1812.
8. Cheng C.C.J., Yang Ch., Sheu Ch. (2016). Effects of open innovation and knowledge-based dynamic capabilities on radical innovation: An empirical study. *Journal of Engineering and Technology Management*, Volume 41, pp. 79–91.
9. Ericsson Inc (2015). Every. Thing. Connected. A study of the adoption of internet of Things' among Danish enterprises, (online), Available at: <https://www.ericsson.com/assets/local/news/2015/11/every-thing-connected.pdf> [Accessed 20.02.2018].
10. European Commission (2014). Supporting the Internationalisation of SMEs, Guidebook Series “How to support SME Policy from Structural Funds”.
11. Filipescu, D.A. (2010). Internationalisation and Technological Innovation: Empirical Evidence on their Relation, University of Barcelona.
12. Foster N. (2012). Innovation and Technology Transfer across Countries. Research reports, Vienna Institute for International Economic Studies, pp. 1–131.
13. Geyer, G., Uriep, A. (2012). Strategien der Internationalisierung von KMU, HWWI Policy Paper, Volume 65, pp. 1–39.
14. Greco M., Grimaldi M., Cricelli L. (2016). An analysis of the open innovation effect on firm performance. *European Management Journal*. Volume 34, pp. 501–516.
15. Huizingh E.K.R.E. (2011). Open innovation: State of the art and future perspectives, *Technovation*, Volume 31, pp. 2–11.

16. Kennedy S., Whiteman G., van den Ende J. (2017). Radical Innovation for Sustainability: The Power of Strategy and Open Innovation. *Long Range Planning*, Volume 50, pp. 712–725.
17. Kerry, C., Danson, M. (2016). Open innovation, Triple Helix and regional innovation systems. *Industry and Higher Education*, Volume 30 (1), pp. 67–78.
18. Lilischkis, S., Abbas, J. (2016). Internationalisation of Innovation in SMEs: Case Studies, Exemplary Support Practices and Policy Implications, European Commission.
19. Lisowska R., Stanisławski R. (2015). The Cooperation of Small and Medium-sized Enterprises with Business Institutions in the Context of Open Innovation. *Procedia Economics and Finance*, Volume 23, pp. 1273–1278.
20. Liyanage C., Elhag T., Ballal T. (2012). Establishing a connection between knowledge transfer and innovation diffusion, (online), Available at: [http://centaur.reading.ac.uk/28536/1/KT%20and%20ID%20model\\_PREPRINT.doc](http://centaur.reading.ac.uk/28536/1/KT%20and%20ID%20model_PREPRINT.doc) [Accessed 08.02.2018].
21. Lundvall, B. A. (2004). The economics of knowledge and learning, in Product Innovation, Interactive Learning, and Economic Performance. *Research on Technological Innovation and Management Policy*, Volume 8, pp. 21–42.
22. McKelvey, M. (1991). How do National Systems of Innovation Differ? A Critical Analysis of Porter, Freeman, Lundvall and Nelson. Hodgson, G., Screpanti, E. (eds.) (1991): *Rethinking Economics, Markets, Technology and Economic Evolution*, Edward Elgar Publishing, pp. 117–137.
23. Pearson, S. H. (2017). Why content sharing might just be good for business, [online], Available at: <https://medium.com/made-with-creative-commons/why-content-sharing-might-just-be-good-for-business-49c6b0330591> [Accessed 21.02.2018].
24. Rammer, C., Schmiele, A. (2008). Drivers and Effects of Internationalising Innovation by SME. *ZEW Discussion Paper*, Volume 08–035.
25. Sanz A. G., Calovski D., Razo C., Foray D. (2014). Transfer of technology and knowledge sharing for development. *UNCTAD Current Studies on Science, Technology and Innovation*, Volume 8, pp. 1–71.
26. Schmiele, A. (2009). Drivers for International Innovation Activities in Developed and Emerging Countries. *ZEW Discussion Paper*, Volume 09–064.
27. Schultze, S. (2017). Inspiration for Service Design, Danish Design Center, [online], Available at: <http://danskdesigncenter.dk/en/inspiration-service-design> [Accessed 08.02.2018].
28. Sekliuckiene J., Sedziniauskiene R., Viburys V. (2016). Adoption of Open Innovation in the Internationalization of Knowledge Intensive Firms. *Engineering Economics*, Volume 27 (5), pp. 607–617.
29. Selhofer, H., Hornung-Prähauser, V. (2016). Internationalisation of innovation in SMEs. Workshop Report June 13th, Brussel.

30. Sinell A., Iffländer V., Muschner A. (2018). Uncovering transfer – a cross-national comparative analysis. *European Journal of Innovation Management*, Volume 21 (1), pp. 70–95.
31. Ungureanu M., Pop N., Ungureanu N. (2016). Innovation and Technology Transfer for Business Development. *Procedia Engineering*, Volume 149, pp. 495–500.
32. Wang Ch.-H., Chang Ch.-H., Shen G.C. (2015). The effect of inbound open innovation on firm performance: Evidence from high-tech industry. *Technological Forecasting & Social Change*, Volume 99, pp. 223–230.
33. West, J. (2014). Open Innovation: Learning from Alliance Research, in: Culpan, R. (Eds.). *Innovation Through Strategic Alliances*, New York: Palgrave MacMillan, pp. 1–16.
34. Zemaitis, E., Vilys, M., Jakubavicius, A. (2016). High Technology Sector Internationalization: Open Innovation Perspective. *Journal of System and Management Sciences*, Volume 6, pp. 33–51.
35. Zimmermann, J., Grimpe, C., Sofka, W. (2009). Young, Open and International, The Impact of Search Strategies on the Internationalization of New Ventures. *ZEW Discussion Paper*, Volume 09–017.

## 7. Quadruple Helix

### 7.1. The overview of the concept

In 1995 Etzkowitz and Leydesdorff proposed that the three major parties in innovation are industry, universities and public control. In the Triple Helix (TH) innovation model, academia, government and industry constitute the three helices which collaborate with each other in order to create or discover new knowledge, technology, products and services (Etzkowitz, 1998, Arntkil *et al.* 2010). The recent initiatives such as Smart specialization have identified the need for more open and co-creational innovation processes involving societal-based innovation user stakeholders, in addition to those of the Triple Helix, leading to the emergence of the Quadruple Helix Innovation Model (Kim *et al.*, 2011; Carayannis *et al.*, 2012; Leydesdorff, 2013; Plewa *et al.*, 2013). Even though the triple helix theory has been used for two decades for analyzing innovation and innovation policy, it has also been criticized for not producing expected results. In relation to this, dynamic interactions, the activities and potential synergies have recently been stressed as important features in a Regional Innovation Strategy (RIS). It has been highlighted that an important aspect is to find out under what circumstances expanded interactions can be anticipated to contribute to increased synergies. These calls for additional RIS features suggest the need to go beyond the triple helix model to an approach of additional features called the quadruple helix, or the n-tuple, to enhance our understanding of RISs. The fourth dimension is often described as the end user, customer or community.

Quadruple Helix adds another helix and actor group to the TH innovation cooperation model. Arntkil *et al.* define the Quadruple Helix (QH) concept in innovation as well as to explore the roles of various stakeholders within it **with a particular focus on local-regional government**. (Arntkil, Jarvensivu, Koski, Piirainen 2010). These innovations can be anything considered useful for partners in innovation cooperation; they can be, for example, technological, social, product, service, commercial, and non-commercial innovations.

According to the Quadruple Helix theory, a country's economic structure lies on four pillars/helices which are the **Academia, Firms, the Government** and a fourth group, which Fuzi called in his research "the talented and productive **User Community**". Academia and Firms, together with Technological Infrastructures of Innovation provide the integrated innovation system where all forms of creativity can rise. Governments provide the financial support and the regulation system for the definition and implementation of innovation activities. The creative User Community demands for ever innovating goods and services (Fuzi, 2013).

The aim of the assumptions of the Quadruple model is to explain the characteristics of the optimal cooperation and relationships between universities, companies, government and community.

Marcovich and Shin proposes four modifications to the standard Triple Helix innovation model (university, government, industry). First, in view of recent economic, cultural, organizational and ideological changes in many countries, it is now important to introduce a fourth strand to the standard model, namely **society**. Second, authors highlight that strands occur in doublets which they refer to as **binomials**. Examples of doublets include university/society, university/industry, industry/society, etc. Third, the **binomials are organized in a hierarchic mode**; for example, in the university/society binomial, university may be dominant and the society secondary. The hierarchy arrangement improves decisive. Fourth, Helix-driven innovation processes take the form of temporary segmented phases. (Marcovich & Shin, 2011). The research on the Quadruple helix model is developing. Carayannis, Goletsis and Grigoroudis revisit the national and regional Innovation Scoreboards using a multiple criteria decision analysis (MCDA) approach in the context of the Quadruple Innovation Helix (QIH) framework (Carayannis, Goletsis, Grigoroudis, 2017) Carayannis and Grigoroudis explain the linkage between knowledge creation, innovation output and enhancing regional and national competitiveness. Special emphasis is paid to issues of applying the Quadruple Helix approach in the context of RIS3. (Carayannis & Grigoroudis 2016). Carayannisa *et al.* explore the linkages between innovation, productivity, and competitiveness (IPC). These authors present the six major steps that every nation/region should follow to establish a smart specialization strategy based on the basic principles as described in the European Union Research and Innovation Strategies for Smart Specialization (RIS3), accompanied by some examples of excellence from the Nordic countries. They explain the linkage between innovation and knowledge and between innovation productivity and competitiveness. Finally, they discuss **the need to apply the Quadruple Helix approach in the context of RIS3**. (Carayannisa, Evangelos, Grigoroudisb & Pirounakis, 2015).

Scholars try to understand the possible preconditions for the transformation of a regional innovation system (RIS) into a quadruple and quintuple helix system applied to the development of a sustainable forestry-based bioeconomy in Värmland, Sweden (Grundel & Dahlström 2016). Kolchmainen *et al.* explore how can businesses, higher education institutions, governmental organisations and different community groups contribute to the economic growth and social development in regions with underperforming economies, turning peripheral or otherwise less developed regions onto the path of sustainable knowledge-based development (Kolchmainen et al., 2016). Scholars also make observations how quadruple helix model is useful to green economy (Gouvea, Kasscieh & Montoya, 2013).

## 7.2. The key elements

In recent decades there has been a growing attention on the process of value creation in the quadruple helix. Focusing on **the interactive boundary spanning and brokering role of a key agent** of increasing importance for the quadruple helix and publicly funded science, namely the publicly funded principal investigator (PI), who has to create and capture value for multiple helix stakeholders simultaneously, and often co-create value with their own research teams and academic collaborators in other institutions while dealing with scientific and market uncertainties (Cunningham, Menter & O’Kane, 2018). After analysing the QH concept, the authors discovered that it is not yet a very well-established and widely used concept in **innovation** research and in innovation policy. Some existing conceptions are very close to the Triple Helix (TH) concept, some of them deviate more radically from it, and many are somewhere between these two extremes. What is common to all conceptions of QH innovation is that in all of them a fourth group of innovation actors has been added into the TH model. However, there are different views as to **of whom or what this fourth group consists**; in other words, its membership can range from intermediate innovation enablers to different users of innovations (Arnkil Jarvensivu, Koski, Piirainen, 2010).

In order to make some interesting dimensions and possibilities of QH explicit, authors constructed four different types of QH models:

- the “TH + users’ model”,
- the “Firm-centred living lab model”,
- the “Public-sector-centred living lab model”, and
- the “Citizen-centred model”.

These models are ideal-type models and not meant for describing reality as it is. The purpose of these models is to bring forth some essential characteristics of the different QH models more clearly and to provide examples of the possible application possibilities of QH. (Arnkil Jarvensivu, Koski, Piirainen, 2010).

In the National/Regional innovation systems framework, four main interacting actors are involved, this leading to the concept of the Quadruple Innovation Helix (QIH) framework. Within the QIH framework, **academia and industry interact and collaborate** while **government coordinates and facilitates** applying top-down **policy instruments** according to visions and perspectives for the future, while **civil society** forms the fourth helix **interacting** with all the above in a bottom-up fashion (Carayannis, Goletsis & Grigoroudis, 2017).

Scholars examine: the linkage between innovation and productivity/competitiveness, (Carayannis, Evangelos, Grigoroudis, Pirounakis,

2015), explore how the four helices of industry, academia, government, and civil society interact in a smart specialization initiative, and the strategic practices that emerge from this interaction (Hoglund & Linton, 2018). In particular, the study has focused on the micro activities of (1) provision of knowledge, (2) demand-side activities, (3) provision of constituents of the RIS, and (4) support services (Hoglund & Linton, 2018).

Development of a R&D-based growth model with productive public expenditure in order to provide the Quadruple Helix (QH) innovation concept with a theoretical framework.

The introduced model confirms theoretically the notion that increases in: (i) complementarities between distinct productive units, or (ii) in productive government expenditure, lead to higher growth.

Studies revealed the importance of adequate regulations and have introduced a need for society awareness. **Civil Society** has thus **become an essential helix of innovation systems** (Afonso, Monteiro, Thompson, 2012) Carayannis and Alexander also argue that the TH is not a sufficient condition for long-term innovative growth and that a fourth element, i.e., civil society, needs to be incorporated in order to play an active role in **knowledge creation**. This fourth helix is explained by the **influence of media** to the public reality which influences at the same time national innovation systems. The consequence of the **diversity of agents involved in the innovation process** within the QH model may result in a knowledge and innovation-based democracy continuously being shaped by “the mutually interacting and influencing citizens and the dominant designs of the underlying cultures and technological paradigms” (Carayannis & Alexander, 2002). Whereas a triple helix can be seen as the core embedded in a quadruple helix system, Campbell et al. (2015) developed the innovation model further into a quintuple helix system where the fifth helix represents the natural environment of society (Grundel & Dahlström 2016).

The research results were confirmed that organizational culture has positive relationship with commitment towards open innovation (Parveen, Senin, Umar, 2015). Grundel and Dahlström stress that involvement of civil society in the innovation system could contribute to a larger societal transformation that aims to change consumer behaviour, production patterns, technological developments, infrastructure, norms and values. System is not yet fully developed due to a lack of involvement and participation of civil society in the innovation system (Grundel & Dahlström 2016).

### 7.3. Importance for the business development

There are some implications of the quadruple helix model for the business development. First, the important factor for business development is **cooperation in innovation**. Quadruple Helix Innovation model's cooperation in innovation place a stronger focus on, and in particular, on the dynamically intertwined processes of co-opetition, co-evolution, and co-specialization within and across regional and sectoral innovation ecosystems that could serve as the foundation for diverse smart specialization strategies. Quadruple Helix model puts innovation users at its heart and encourages the development of innovation that are appropriate for users (civil society). Users or citizens in this context own and drive the innovation processes (Carayannis & Grigoroudis, 2016).

The research results show that the **initial phase** Quadruple Helix Innovation models was dominated by the **university strand**. In a second phase – the entrepreneurial strand became dominant. The relationships between university strand and the binomial enterprise strands vehicles the same general expectation of developing a practical routine tool – one for commercial purposes, the other for research purposes. In a third phase – the mature firm emerged and began production and sales of the products, **research was largely conducted inside** the enterprise or was selectively co-sponsored by the firm and users who had introduced novel adaptations in the course of their local application of nanolithography. The final phase is largely dominated by the societal strand in combination with the enterprise strand (Marcovich & Shin, 2011).

The most important constituent element of the quadruple helix – apart from the active “human agents”—is the **resource of knowledge**, which through a circulation known as circulation of knowledge, between social subsystems, changes to innovation and know-how in a society and for the economy. The Quadruple helix, thereby, visualizes the collective interaction and exchange of knowledge in a state by means of the following four subsystems (Carayannisa, Evangelos, Grigoroudisb & Pirounakis, 2015):

- Education System in reference to academia, universities, higher education systems and schools (human capital),
- Economic System consists of industry/ industries, firms, services, and banks (economic capital),
- Political System formulates the direction of where the state/country is heading in the present and future, laws, etc. (political and legal capital),
- Civil Society (media-based–culture-based) integrates and combines two forms of capital: culture-based public-tradition values etc. (social capital) and media-based public-television Internet newspapers (capital of information).

Having estimated the different preferences of innovation stakeholders, it is possible to develop policies and practices oriented towards specific QIH actors or helices or potentially involve to a different extent the QIH actors in existing policies and practices (Carayannis, Goletsis & Grigoroudis, 2017). Interdependence of institutions is, indeed, the distinguishing feature of innovation economies. Scholars research results show that an increase in productive public expenditure does increase the economic growth rate of QH economies (Afonso, Monteiro, Thompson, 2012). The helix concept cannot only be useful in terms of participation but also in terms of sustainability and sustainable transformation (fifth helix: natural environment of society). A quadruple helix system is not necessarily the result of a well-developed triple helix system. It is rather the outcome of close relations between actors that drive innovation together with civil society (Grundel & Dahlström, 2016).

The following models are discussed in the literature:

- a) **The TH + user model** is otherwise same as the traditional TH model except for the systematic collection and utilization of user information. Its focus lies on the development of commercial high-tech innovations based on latest scientific research knowledge. The owner of the innovation process is a firm, a group of firms, a university or a group of universities. In this model, the degree of user involvement could be characterized as ‘design for users. Users are treated as informants, not as developers. (Arnkil, Jarvensivu, Koski & Piirainen, 2010).
- b) **The Firm-centred living lab model** also focuses on the development of commercially successful innovations. They can be based on latest research knowledge, on new applications or combinations of “old” research knowledge and/or on user knowledge. The owner of the innovation process is a firm or a group of firms. In this model users are treated as both informants and developers. In other words, they also participate in the development work, for example, of new products and services together with R&D experts (Arnkil, Jarvensivu, Koski & Piirainen, 2010).
- c) **The Public-sector-centred living lab model** focuses on the development of public organizations and services. In this case the owner of the innovation process is a public organization or a group of public organizations. The goal of innovation activity is above all to develop public organizations so that they can function better and offer new and better products and services to their clients, to the citizens. In order to succeed in this, public organizations have to systematically gather information and feedback from the clients. This can be realized by means of more traditional information gathering methods (e.g. surveys,

interviews) or by organizing dialogue forums (virtual and real) or living lab type of development environments for the citizens. Also, in this model, users participate in the development work of public services together with R&D experts (Arnkil, Jarvensivu, Koski & Piirainen, 2010).

- d) **The Citizen-centred QH model** focuses on the development of innovations that are relevant for citizens. In this innovation model, citizens are in the driver's seat. The owner of the innovation process is a citizen or a group of citizens (i.e. a development community). In this model, the degree of user involvement could be characterized as 'design by users', i.e. new products, services and ways of doing things are developed by users. Besides making most of the development work, citizens also decide which kinds of innovations are needed and developed. The role of firms, public authorities and universities is above all to support citizens in their innovation activities (e.g. to provide tools, information, development forums and skills needed by users in their innovation activities). Firms and public organizations also utilize the innovations made by citizens. (Arnkil, Jarvensivu, Koski & Piirainen, 2010).
- e) In **Academia-driven model**, based on university resources, the focus is on providing facilities and consulting spaces for both researchers and firms. The owner of the Living Lab environment is the university where the co-creation with different stakeholders takes place. As in the above-mentioned models, in this model the degree of user involvement could be characterized as 'design with users' as well (Fuzi, 2013).

#### 7.4. The guidance for the implementation in the business environment

Quadruple helix model studies suggest that **local and regional authorities** have an important role in QH, via strategic use of resources, integrating knowledge and skills in innovative thinking, community building, procurement and regulation, grants, rewards – but they also have big needs for their own ability and skills development and many constraints in terms of inflexibilities and bureaucracies (Arnkil, Jarvensivu, Koski & Piirainen 2010).

As it was mentioned earlier the five models presented in section 7.3 could be treated as **potential possibilities for innovation development in the region**. In this sense, each model could serve as a “thematic tool” to first explore the situation, and then move from designing an innovation network action plan to its execution (Arnkil, Jarvensivu, Koski & Piirainen, 2010):

- For public authorities promoting the Triple Helix + users model means mainly supporting the development of high-tech firms with the help of firm-industry R&D projects and financing.

- Promoting the firm-centred living-lab type of activities refers first and foremost to supporting the network-building of LL actors and promoting the development and diffusion of LL.
- Promoting the Public-sector-centred living lab kinds of activities refers to supporting the development of public service development.
- Promoting the Citizen-centred QH development refers to facilitating citizen innovations, informing and promoting participation, developing decision-making interfaces and building individual capabilities.

Scholars have posited that firms need to create **products and services that are based on customer needs**. Towards this end, firms are looking for new ways to make their research and innovation practices more closely linked to customer needs. In other words – the creative User Community demands for ever innovating goods and services – be ready to involve and serve them accordingly (Fuzi, 2013).

**Innovation** is considered as a key driver to economic growth and competitiveness. Traditional industrial economies are now transformed to **knowledge economies** where innovation is considered to one of the main drivers for sustained economic growth. Regions are more dynamic and responsive than nation states, regions can better exploit knowledge advantages and stocks, and they can focus on region specific capabilities, while interaction and cooperation (and clustering) are feasible at the regional level (Carayannis, Goletsis & Grigoroudis, 2017).

Innovation-driven competitiveness is critical for sustainable economic performance in today's knowledge-based global economy. Innovation may improve national productivity, which in turn gives the ability to compete globally (Carayannis & Grigoroudis, 2016).

Scholars suggest that (Hoglund & Linton, 2018):

- the fourth helix is human-centred and that innovation systems should serve the civil society and the people,
- the 'soft infrastructure', such as networking and collaboration over borders that do not usually collaborate, can have positive impact on a RIS,
- the fourth helix it becomes clear that the government, industry and university helixes can be part of the fourth helix.

On the theory of the helix models, scholars highlights also the need to better focus efforts on operationalisation aspects at the territorial level, need for populating the science-policy interface with easy-to-use instruments which would facilitate both the understanding as well as the integration of these approaches into

strategic regional development, urgent need to fill data gaps and, possibly, to define new indicators for a more accurate measurement of the innovation performance of the spheres (Cavallini, Soldi, Friedl & Volpe, 2016).

The QH model which to be constructed depends on the perspective that one chooses (Parveen, Senin, Umar, 2015). QH studies drew attention to the fact that it is necessary take action against too broad definitions of civil society, which vary across customers, consumers, users, organized groups, making it difficult to define the role of civil society in a RIS. To be able to meet future challenges and a transformation to sustainability, different kinds of knowledge are required; however, citizen-based knowledge is often seen as diffuse and difficult to embed in policy-making processes. Very important is to identify not only current stakeholders but also potential ones, and use media, town meetings, volunteer and community-oriented programmes, as well as online platforms to inform stakeholders (Grundel & Dahlström, 2016).

The individuals, people acting in regions are fundamentally important from the point of view of regional development dynamics. It is important to notice that civil servants, researchers and entrepreneurs are also members of these communities. If there exist decentralized competences to active behaviour and network-building, then the regional or local system can possess structural dynamics. If the right conditions for envisaged development are missing, some stakeholder or responsible actor will have to take the innovative initiative towards shared action. Especially in rural, peripheral and otherwise less-favoured regions the questions of regional development come closer to people's personal lives than in bigger cities. Some individuals in these communities can be acting in more than one role in a quadruple helix model or shift between them. These people usually make a difference (Kolchmainen et al., 2016).

## Citations & Bibliography

1. Afonso, O., Monteiro, S., Thompson, M.J.R. (2012). A growth model for the quadruple helix. *Journal of Business Economics and Management*, Volume 13 (5), pp. 849-865.
2. Arnkil R., Jarvensivu A., Koski P., Piirainen T. (2010). Exploring Quadruple Helix - Outlining user-oriented innovation models. University of Tampere, Institute for Social Research, Work Research Centre.
3. Carayannis, E.G., Barth, T.D., and Campbell, D.F. (2012). The Quintuple Helix innovation model: global warming as a challenge and driver for innovation. *Journal of Innovation and Entrepreneurship*, Volume 1:2.
4. Carayannis E., Grigoroudis E. (2016). Quadruple Innovation Helix and Smart Specialization: Knowledge Production and National Competitiveness. *Foresight*

- and STI Governance,  
Volume 10 (1), pp. 31-42.
5. Carayannis E.G., Goletsis Y., Grigoroudis E. (2017). Composite innovation metrics: MCDA and the Quadruple Innovation Helix framework. *Technological Forecasting & Social Change*.
  6. Carayannis E.G., Evangelos Grigoroudis E., Pirounakis D. (2015). Quadruple innovation helix and smart specialization knowledge production and national competitiveness, *Tech Monitor*, pp. 19-27.
  7. Cavallini, S., Soldi, R., Friedl, J., Volpe, M. (2016). Using the Quadruple Helix Approach to Accelerate the Transfer of Research and Innovation Results, European Union Committee of the Regions.
  8. Cunningham J. A., Menter M., O’Kane C. (2018). Value Creation in the Quadruple Helix: A Micro Level Conceptual Model of Principal Investigators as Value Creators. *R&D Management*, Volume 48 (1), pp. 136-147.
  9. Etzkowitz, H. (1998). The norms of entrepreneurial science – Cognitive effects of the new university-industry linkages. *Research Policy*, Volume 1 (27), pp. 823-833.
  10. Fuzi A. (2013). Quadruple Helix and its types as user-driven innovation models. Cardiff School of Management, Cardiff Metropolitan University, pp. 1-27.
  11. Gouvea R., Kassicieh S., Montoya M.J.R. (2013). Using the quadruple helix to design strategies for the green economy. *Technological Forecasting and Social Change*, Volume 80 (2), pp. 221-230.
  12. Grundel, I., Dahlström, M. (2016). A Quadruple and Quintuple Helix Approach to Regional Innovation Systems in the Transformation to a Forestry-Bases Bioeconomy. *Journal of the Knowledge Economy*, Volume 7, pp. 963-983.
  13. Hoglund L., Linton G. (2018). Smart specialization in regional innovation systems: a quadruple helix perspective. *R&D Management*, Volume 48 (1), pp. 60-72.
  14. Kim, Y., Kim, W., and Yang, T. (2011). The effect of the triple helix system and habitat on regional entrepreneurship: empirical evidence from the U.S. *Research Policy*, Volume 41 (1), pp. 154-166.
  15. Kolchmainen J., Irvine J., Steward L., Karacsonyi Z., Szabo T., Alarinta J., Norberg A. (2016). Quadruple Helix, Innovation and the Knowledge-Based Development: Lessons from Remote, Rural and Less-Favoured Regions. *Journal of Knowledge Economy*, Volume 7, pp. 23-42.
  16. Leydesdorff, L. (2013). Triple Helix of university-industry-government relations.  
In: Carayaniss, E.G. (eds.), *Encyclopaedia of Creativity, Invention, Innovation and Entrepreneurship*. New York, NY: Springer. pp. 1844-1851.

17. Marcovich A., Shin T., (2011). From the Triple Helix to a Quadruple Helix? The Case of Dip-Pen Nanolithography, Minerva: Springer, Volume 49, pp. 175-190.
18. Parveen, S., Senin, A.A., Umar, A. (2015). Organization Culture and Open Innovation: A Quadruple Helix Open Innovation Model Approach. *International Journal of Economics and Financial Issues*, Volume 5, pp. 333-342.
19. Plewa, C., Korff, N., Johnson, C., Macpherson, G., Baaken, T., and Rampersad, G.C. (2013). The evolution of university– industry linkages–a framework. *Journal of Engineering and Technology Management*, Volume 30 (1), pp. 21-44.

## **8. Business case studies not qualified to any concept**

### **8.1. A short object presentation**

The main idea of the GoA 3.1 is to fully review and assess the main concepts related to innovation and internationalization, including such theoretical concepts like Uppsala model of business internationalization, supply chain/web and value chain from the internationalization viewpoint, Quadruple Helix, and others. However, to ensure practicality and business-applicability of the data gathered, a review and analysis of a number of business cases studies were conducted to prepare solid foundations for the elaboration and further development of the proposed Transnational Innovation Brokerage System.

The business case studies have been sourced from published releases or a published 'company case study' or interviews directly acquired from a companies. In this way 33 business sources have been analysed by projects partners.

A unified template for review and analysis has been prepared and used throughout the activity to ensure consistency and clarity of the data obtained. Each business case study analysis begins with a short presentation of the enterprise analysed and includes the key characteristics of its functioning such as products or services offered, present and prospective markets, scale of operations. The company has been thoroughly checked regarding its internationalization process to explain how the company entered the international market and what products or services were offered on the global market. The causes of internationalization, i.e. the reasons or premises to begin or broaden its presence on international market were scrutinized to better understand the motivations behind such a business move. In addition, the analyses conducted were aimed at establishing the key factors that supported, impaired or even hampered the internationalization process. Each business case study concludes with a set of recommendations provided by the company that has already began operating on a global scale and aimed at companies willing to follow.

The business case studies range from small (even micro) to large enterprises from a variety of industries, however their common denominator is the fact that their either have entered onto or have broadened their presence on one or many foreign markets. The below-mentioned data regarding the internationalization show that this issue is of rather individual nature. It was not possible to indicate any specific markets that companies tend to choose, as well-developed countries like the USA, Germany, or Norway were mentioned as often as less-developed countries like the Bulgaria, Belarus, or Uzbekistan. The reasons behind internationalization were more homogenous, i.e. the companies were eager to increase their profits, diversify

their revenue sources and ensure stable development and expansion of the enterprise.

Described business case studies were prepared using the content analysis method that allows for systematically transform a large amount of text into a highly organised and concise summary of key results.

In case of **Bison Chucks S.A.** from Poland the production of goods from the very beginning assumes sales (exports of goods) to foreign markets. The company has been operating for over 60 years. However, only from 2002 the company directly cooperates with foreign countries, previously it was done through third parties. The products offered by the entrepreneur are very specialized and due to this the Polish market is limited. Due to the fact that the demand for the client's products is becoming smaller in the country, the company must focus on foreign markets. Nowadays regular customers are from: USA, Canada, Japan, Taiwan, Australia, New Zealand, China, South Korea, Russia, Azerbaijan, Iran, Iraq, Ukraine, Belarus, Lithuania, Latvia, Estonia, Czech Republic, Slovakia, Slovenia, Hungary, Croatia, Germany, Italy, Great Britain, Iceland, Norway, Finland, Sweden, South Africa, Uzbekistan, Bulgaria. The company draws its knowledge of foreign markets and cooperation opportunities mainly from existing contractors and distributors who regularly share information about political moods, current difficulties at borders or in customs offices. In addition, as part of the search for new contractors, the company sends inquiries to commercial departments of embassies, the Polish Chamber of Commerce and chambers of commerce, and participates in international trade fairs. Bison Chucks also maintains regular contact with the Investors and Exporters Service Center and the Trade and Investment Promotion Sections of Polish Embassies and Consulates (WPHI). The company mainly uses the services of external entities offering free assistance in the field of international operations: Chambers of Commerce or The Network of Investors and Exporters' Service Centres (COIE).

**Medgal** (the company from Poland) offers a wide range of implants: intramedullary nails blocked, bone and blocked plates, bony screws, implants for maxillofacial surgery, endoprosthesis, instruments (also translucent for X-rays), veterinary implants, instruments for implants. Since its inception, Medgal has been constantly developing its business by launching new products and construction and technological solutions. It invests in top-class machines and processing equipment that allow to make details with a very high degree of accuracy. The company has been exporting its products since 1998. The export decision was made in order to increase the company's profits, diversify revenue sources and to ensure stable development and expansion of the company. The company has a very large export potential, which is confirmed by the constant increase in sales of products on foreign markets. The company is located in the European Union – which is a competitive advantage and is

a good image element. It should be stated that in the face of relatively low-quality price competition from countries such as China or India, products originating from Poland, characterized by high quality at a relatively competitive price, are a very good proposition for foreign recipients. Labour costs in Poland are still lower than in Western countries, while high quality of products, confirmed by certificates of a reputable notified body makes the company interested in customers and distributors from various foreign markets. The possession of a modern machinery park and the employment of highly qualified and experienced staff are of significant importance. The high export potential is also determined by the fact that the company constantly develops the offered products and constantly carries out research and development work in cooperation with scientific units. Medgal has established cooperation with Spain, Greece, Albania, Kosovo, Serbia, Bulgaria, Romania, Slovenia, Lithuania, Estonia, Belarus, Cyprus, Italy, Ukraine, Russia, Iran, Libya, Lebanon, Malaysia / Singapore, Iraq, Vietnam, Thailand, Turkey, Morocco, Egypt, Tunisia, Chile, Kuwait, Portugal, Saudi Arabia. Contacts with foreign partners are established during participation at international trade fairs, conferences and through direct marketing. The company cares about for the security in the context of international cooperation by signing contracts or bank guarantees for conducted financial transactions.

**P.H.P.U. "UNIA" Sp. z o.o.** is the Polish manufacturer of cotton and cotton-acrylic blankets for various purposes. Besides household textiles the company specialises in the production of acrylic blankets for airline and railway companies. The company has a stable position on the internal market and is searching for further development prospects. The company already cooperates with companies from Germany, Austria, Switzerland, Czech Republic, Slovakia, Russia, Lithuania and Latvia and is interested in entering the Scandinavian markets. The company decided to export its products when production plant has purchased together with the machinery park and the existing base of contractors. The investment allowed to increase the company's potential and enter with its products to new markets. The economic expansion abroad aims at acquiring recipients in all countries located in the nearer and further vicinity of Poland. P.H.P.U. "UNIA" Sp. z o.o. has established cooperation with Spain, Switzerland, Germany, Belarus, Lithuania, Russia Slovakia and Czech Republic. Contacts with foreign partners are established during participation at trade fairs, conferences, Enterprise Europe Network and through direct marketing.

**EkoHerba** is a Polish family herb company located on the edge of the Bialowieza Forest. The company is engaged in the purchase and sale of raw materials originating mainly from the natural state and ecological plantations as well as conventional crops. EkoHerba products are used for direct consumption, as well as are widely used in the health and cosmetics industry. EkoHerba is run by specialists and enthusiasts who are able to tailor the offer to individual customer needs. The company offers in

total over 200 species of herbs, including fruits, flowers and health-promoting fungi, for food, pharmaceutical, cosmetics, spirits and as animal feed.

The EkoHerba company is involved in international cooperation - export of goods for 10 years. Company decided to expand to other countries due to the search for new orders. Competitive advantages used by the company in sales to foreign markets are the quality of products. The strongest part of the company is a wide portfolio of raw materials (about 300). In the company, a special employee deals with the issues of international cooperation. Costs associated with international cooperation are quite noticeable for the company. The company has established cooperation with France, the Netherlands, the Czech Republic, Spain and the USA. When selecting countries for cooperation, the company was guided by market knowledge. The company's experience shows that not all international transactions are fruitful. Sometimes the factor that determines the resignation from a given market is price. The problem is also visible differences in the treatment of foreign partners. The company draws its knowledge of foreign markets and cooperation opportunities mainly from the Internet, Enterprise Europe Network, trade fairs and intermediaries. EkoHerba uses paid services of external entities that offer assistance in the field of international activities - brokers, debt collection and insurance companies. In the field of international cooperation, the company expects from this type of entities mainly assistance in finding subsidies for participation in fairs, assistance in customer verification or legal assistance.

**Odlewnia Białystok S.A.** is a Polish modern, innovation-oriented plant enabling the manufacture of a wide range of castings characterized by above-average utility properties tailored to the individual needs of the market. The company is a strategic partner providing high quality products to various industries: agricultural, railway, construction and other.

The company has a stable position on the internal market and is searching for further development prospects. It already cooperates with companies from Germany and Austria. Odlewnia Białystok S.A. decided to expand their business abroad because in these markets there are the most related industries that could use products produced by the company. In these markets, they have the highest chances to get orders, mainly for unusual and large products, which original manufacturers may not want to do. An additional reason is that the products offered by the company are so specific that when choosing foreign markets, they are guided by two principles: the products should be produced in large amount to be able to export them and products must be ordered from neighbouring countries to be profitable to export, especially for small parts.

Contacts with foreign partners are established during participation at trade fairs, conferences, distributors and through direct marketing. The company cares

about the security by signing contracts or bank guarantees for conducted financial transactions and engaging low company. In the company, the issues of cooperation are dealt with by delegated employees in the sales department, inquiries are made through distributors or cooperating companies.

**Indeform Ltd** is a Lithuanian innovative full-service IT company developing advanced custom software, interactive technologies and digital graphics solutions for energy, industrial, medical sectors and businesses. The company chose all that sectors for internationalization. They were looking for technology partners which would be direct customers of the services they provide. From the start of the business, the company immediately decided that it would focus only on economically developed markets because of the technological complexity of the company's products/services and higher prices. The company's products/services provided by the company are not mass-use, therefore, an exclusive, solvent, innovative client is needed. The main challenge when trying to internationalize was how to create a professional impression of ourselves, how to distinguish ourselves from similar companies offering services/products, how to gain the confidence of foreign partners.

**AEDILIS, JSC** is a Lithuanian engineering company providing services in energy infrastructure projects. They have established also R&D group for innovations in energy. This group develops web-based SCADA system to help their customers to visualize, track, access and work with their data. Furthermore, they develop different software and electronics devices which could be suited for different business cases. Until 2010 their main aim was to cover 70% of the local market, which they successfully accomplished. After that they changed their company's strategies and they set a goal that until 2014 their export should amount 50% of their turnover. Even though countries that they are working with are changing, they think that Swedish and Netherlands markets will provide the best opportunities for them.

The path of internationalization wasn't very easy from the beginning, as more developed countries like Sweden or Denmark considered companies from Eastern and Middle Europe as not innovative enough or unreliable. As a consequence, they had to work hard trying to convince foreign companies that they could provide high-quality services. First attempts to enter the Swedish market was made with a "cold-call" for local business consultants which assisted them in obtaining the necessary certificates. This was a breaking moment which allowed them to find the first partner in Sweden. Working with them they gained a reputation of reliable company which has qualified engineers. Later on, they have managed to find more partners in energy sector as Swedish companies were sharing positive feedbacks about experience of working with Aedilis' experts. The positive references are necessary for further expansion in developed countries where competition is very high.

Looking for new markets is a natural developing procedure for the company. The main criteria for Aedilis while looking for new foreign markets is number of energy infrastructure projects in that country. The key markets for them are Sweden, Norway, Denmark, Netherlands, at the moment these countries are the most comfortable with the resources they have. They also have completed more than 600 projects in different countries: in UK, Lithuania, Estonia, Latvia, Sweden, Finland, Norway, Netherlands, Belgium, Czech Republic, Germany, Kenya, Brazil, Canada and Russia. However, not all of them are very convenient for developing business partnership, as there is a geographical distance also their business model involves high-risk working environment, therefore it is essential to control all business processes, however it is hard to do that from a long distance.

The other criteria for selecting foreign partners is an opportunity to create value. They are looking for partners which ask them to provide high value services. Aediles has limited quantity of qualified human resources; therefore, they want to be engaged in projects which require the full spectrum of various engineering services which could be done in Lithuania.

For different products and services, they pick various strategies which are the most suitable to work in foreign markets. When they work with energy infrastructure projects, they are involved in the value chains as a subcontractor. Usually these projects last for a certain period of time, therefore it is costly to open new companies' branches. However, while working with technological projects they are creating the whole new product and service, they are establishing their own value chain. As a consequence, when entering a new market, they are looking for partners who know the market and local language and would be interested in co-establishment of a new firm.

**PEPI RER, Ltd.** from Latvia is the leading foam polyethylene producer in the Baltics. Company with a rich experience of more than twenty years, a united team and developed materially technical base. The high-quality foam polyethylene is widely demanded in industrial packaging, construction, used as various insulating materials and in many other industries.

PEPI RER was an ambitious project from its very early start. After privatisation process a couple of guys had empty production premises and they started to think about production of something. One of ideas was to produce packaging materials. They started to look for equipment. This is how they found Korean business partners. Company was founded as a joint venture with Korean partners but soon it became clear that one of main interests for partners was to sell its machinery to Latvians. At that point Latvians only started to learn how to make business. They had now equipment, bank loans but no clue about polyethylene production.

Thanks to the excellent teamwork and many sleepless hours in 1999 the equipment was finally adjusted to the best possible shape for that time and production started. The next step was to start making sales. There was a great effort put on marketing team that continuously presented production to the potential customers. As a result of active marketing, foam polyethylene products from a little-known product became a widely demanded material in the construction and packaging market.

Today PEPI RER is a well-established export-oriented manufacturing company. Total exports count for 85% of production. Direct and company partner delivery destinations are located in 30 countries worldwide. The company has installed four modern polyethylene and bubble film extrusion lines, several lines for material cutting, lamination and duplication. Warehouse area has increased ten times. Recycling line of unused material is also present letting to make non-waste production.

**Mevea Ltd**, is a Finnish spin off company of Lappeenranta University of Technology founded in 2005. Their business idea is to commercialize simulation technologies. Mevea develops real-time simulators for product development and user training, and their technology can be utilized in any moving machine, eg. forest harvester, harbour crane or excavator.

When Mevea got new investors, the company strategy was updated. One of the main goals in the new strategy was internationalization. Although in Finland, there are quite many producers of labour machines, in order to widen business, it was necessary to start looking for new customers from new market areas. For cost reasons, it was considered to start from closer market and the company faced first Central-Europe. The plan was that after getting good references from the market nereby, it would open up possibilities to go further to Asia and North-America.

The method of going international of Mevea is so called Born-Again Global. In Mevea case, the company had existed and functioned in internal markets for a few years, but then due to changes in company's owner base and strategy, the idea of internationalization became actual. For making this possible, Mevea needed more resources, both financial and experienced personnel. The Board of Mevea had decided that the internationalization will be started in the German speaking Central-Europe and France. After closer and more careful study (eg. the number of labour machine manufacturers in different countries, their market share in the world, the number of domain visits by country), Germany and France were selected as the first two target countries, of which Germany the main one.

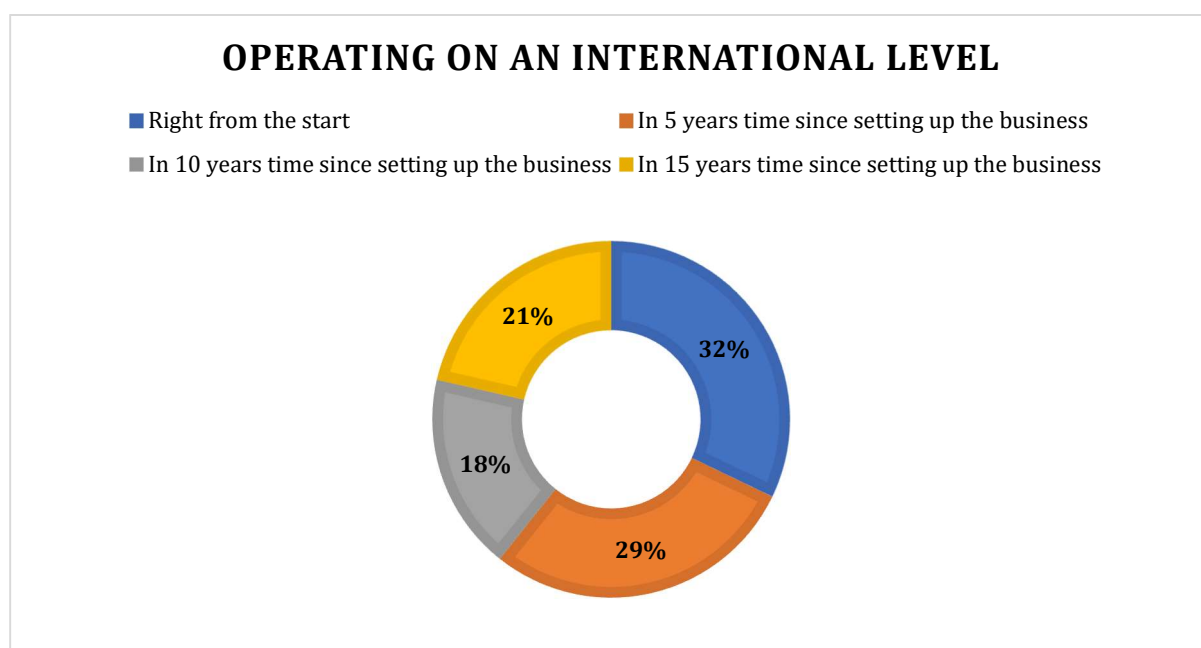
## 8.2. Basics of the internalization

When the basics of internationalization are concerned, the following issues should be addressed: method of internationalization, internationalization field, time of internationalization.

The analysed business case studies do not indicate any particular method of internationalization – in general, the companies have established some contacts with foreign distributors, representatives or clients/customers and just began co-operating, learning how to do international business on the go. The most common internationalized field (present in all business case studies) were sales. Each company was interested in establishing a new revenue source, diversifying its income source and making independent from national market, therefore ensuring further development, expansion and growth for the enterprise.

All of the companies analysed indicated that they have taken into consideration establishing business relations on an international level at some point of their operation (Figure 2). Some of the companies began operating of foreign markets right from the start, others decided to first focus on preparing solid national foundations, then move into more changeable and less favourable foreign markets. One third (32%) of the companies analysed decided to operate on both national and foreign market and one third (29%) began international activities in 5 years since they began doing business. The remaining companies decided to enter foreign markets in 10 (18%) and 15 (21%) years after commencing business.

Figure 2. Operating on an international level



Source: own research.

### **8.3. Causes of internalizations**

The need for facing up competitors and the wish to build the competitive advantage on the market contribute to enterprises' expansion on foreign markets. Motives lying behind enterprises decision when starting expansion abroad vary and they depend on individual market situation of the company. According to literature motives of foreign expansion can be classified in many ways. The report was based on eight main groups of motives pointed by respondents:

- Increase of company's profits,
- Difficulty on growing on national market,
- The strategy of the company,
- Cost reasons,
- Geographical location,
- By accident,
- Market demand.

#### **Increase of company's profits**

The first aspect is the company's development. 30 % of surveyed companies answered this cause as the most important. The point is that internationalization is the tool that guarantees the most versatile development. This is not only about increasing the commercial offer, but also about expanding the entire sales channels, as well as increasing the company's flexibility. If you look more closely at the motives that encourage entrepreneurs to internationalize, the willingness to increase the company's turnover plays a huge role. It is obvious that gaining new markets means gaining new customers. In general, each entry to another country means an increase in the number of recipients, which is consequently an essential argument for increasing turnover. This ultimately translates into higher revenues and, in time, also income.

#### **Difficulty on growing on national market**

Companies pointed difficulty of growing on national market as very important factor -17%. Offered products are often too specialised or dedicated to unique niche to find their clients on national market. Sometimes it is advantage and also disadvantage for the company. Without foreign sales market it would be difficult to or even impossible to evolve further.

#### **The strategy of the company**

Many companies from the very beginning included in their development strategy internationalisation process. Going international is basically vital condition for an SME since the business environment changes constantly. In the context of active globalisation processes, companies are no longer confined to local markets. If they want to grow they should be oriented towards creation of global products/services and global markets. 17 % surveyed companies answered it as important cause. Good strategy and planning is the foundation of success.

### **Cost reasons**

Only 2% of companies pointed cost reason as cause of internationalisation. The company decided to start from closer market to reduce possible cost of internationalisation.

### **Geographical location**

Geographical location is one of the less but not least internationalisation factor (6%). The natural step to start cooperation on international market with the closest neighbours. Location of the company close to border simplify first contacts because demand of market are known and shipment problems are reduced to minimum.

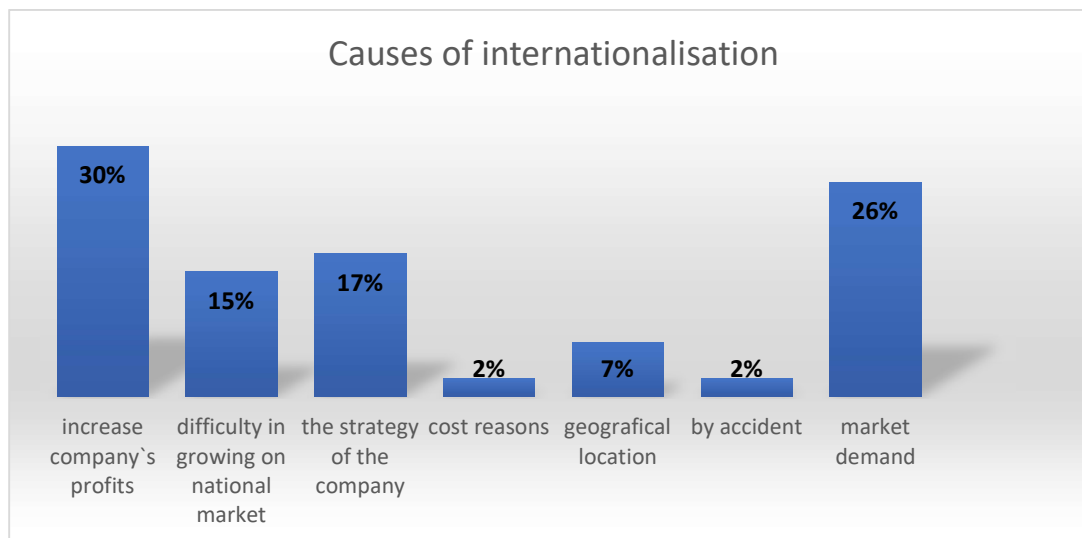
## By accident

In some cases (2%) process of internationalisation was triggered by accident. In this case product was designed to local market and became so popular that was noticed abroad. That is why company decided to enter new market. Finally, one transnational project generated more income than two or three local ones.

## Market demand

Market demand was one of the most often pointed cause of internationalisation 26% (Figure 3). Companies when following market trends usually see that client demands are changing. From some time, it appeared that there was increasing demand for good to superior quality products. Very good value for reasonable price is also very important on foreign markets especially in Western Europe. Offered products are often too specialised or dedicated to unique niche to find their clients on national market. Without foreign sales market it would be difficult to or even impossible to evolve further.

Figure 3. Causes of internationalization

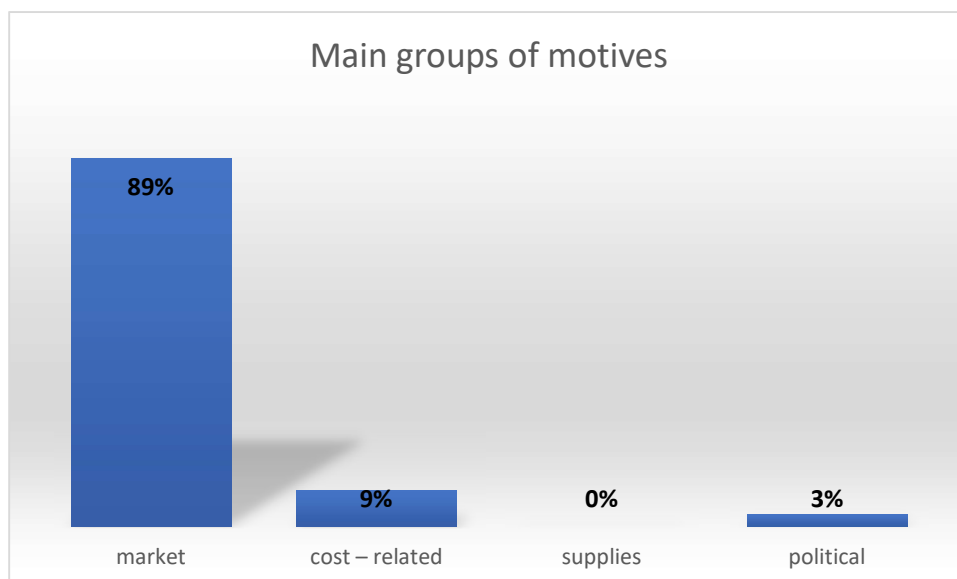


Source: own research.

Taking into account the analysis of answers companies moves to start (to broaden) internationalisation because they think about it from the very beginning and they include this in their development strategy but also the market generates the demand for the product to be internationalised. Causes of the internationalisation often evolve in time and change. It depends on external environment of the company. Causes of the internationalisation can be divided into four main groups of

motives: market (expanding the market), cost – related (reduction of expenses), supplies (reducing production costs) and political (Figure 4).

Figure 4. Main groups of motives



Source: own research.

#### 8.4. Key factors of internalization

Companies wanting to enter new foreign markets have to make decisions based on a number of important factors. Among them, it is possible to distinguish historical and cultural factors, knowledge about a given market, product characteristics, market, geographical and legal factors as well as globalization issues. The key factors of internationalization collected below based on information obtained during interviews with entrepreneurs.

##### 1) Historical factors, chance

The choice of countries to cooperate was mainly a coincidence, since cooperation with these countries was started. Historical turmoil also influenced the decision, e.g. in Soviet times, tenders were automatic (obligatory) only in the communist countries.

##### 2) Cultural factors

Cultural factors may also be a key factor of internationalization in relation to individual contractors. Sometimes business is only carried out with people who are on command or with someone who is very well known to them. Running a business sometimes requires spending years to develop good relationships. An important issue of internationalization are the issues of culture in business. Company needs to get acquainted with the specificity of a given market and the rules prevailing there. The company should be flexible towards the orders of foreign customers, have a good

relationship with the business partner with whom he worked. Establishing mutual trust among contractors is a very important issue in internationalization.

### **3) Knowledge**

Possibilities of cooperation with foreign markets sometimes comes from the experience and knowledge of people (employees of the company) involved in the promotion of the brand, company and products abroad. The best way to do business abroad is having a reliable partner. It is very important to have a partner / agent who knows locally low and speaks fluently in the local language. Very good knowledge of your industry, both at the national and international level, is important to use this knowledge in practice.

### **4) Product**

Companies should compete not only for price, but also product quality - customers are becoming more and more aware of the importance of price / quality ratio. The uniqueness, global nature of the company's products / services, the local market is too narrow for them, the inadequate local business environment, the competitiveness of their products and services - high quality at a lower price. The company competes with foreign competitors primarily with price and quality of services, own design and high-quality products that can be adapted to the needs of customers / the market and a wide range of products offered that customers find interesting. Important factors are also the high level of communication and customer service, the development of a new product and its innovation in relation to foreign contractor's products.

### **5) Market factors**

The most important factor to start internationalization is the company's profits, revenue diversification and company development. Getting new markets means gaining new customers. Basically, every entry is an important argument for increasing turnover.

Domestic markets are relatively small, insufficient, which is why companies decide to look for new markets for their products. Also included are niches and shortages in the new foreign market as well as the market demand for the products.

### **6) Geographical factors**

The most important factor to start internationalization was to increase development opportunities. Companies want not only to increase their commercial offer, but also to increase the company's flexibility. Getting new markets means gaining new customers. Basically, every entry to the foreign market means an increase in the number of customers, which is an important argument for increasing turnover. This is favored by a good location (proximity to companies operating on the border) and willingness to cooperate with neighboring countries.

## 7) Globalization factors

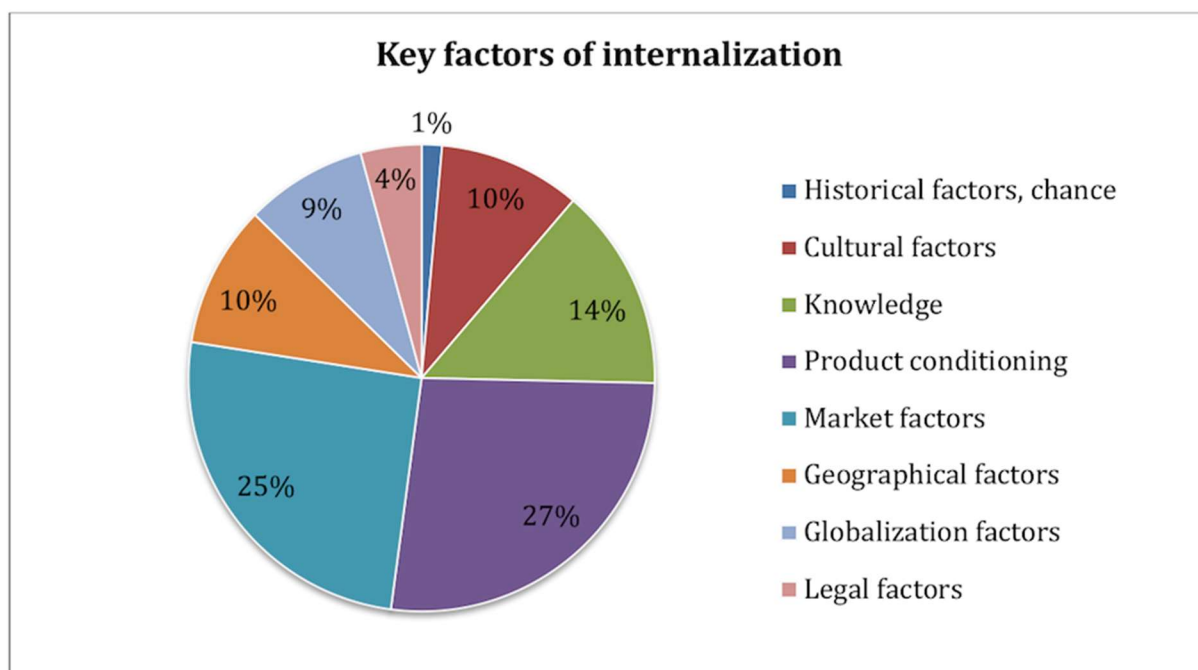
International openness (i.e. Openness to international flows of knowledge) moderates / enables the effects of international externalities that favor national innovation. Globalization, especially in the IT industry, is becoming more and more common, while products are gaining a more global character.

## 8) Legal factors

The key factors of internationalization are also changing in law, e.g. housing and real estate legislation. There are many legal, logistical and embargo restrictions that it is very difficult to break through. An important issue of internationalization is the flow of current information about changes in international law (eg. Questions of customs offices).

Based on all business case studies, it is possible to identify the main factors that contributed to the internationalization of companies. Taking into account the difference between each company and the key factors assigned to it, a pie chart was created (Figure 5), illustrating the percentage of each of the important factors that the company took into account when companies were going to foreign markets.

Figure 5. Key factors of internationalization



Source: own research.

## List of studied sources

1. Indeform Ltd.
2. Medgal Sp. Z o.o.
3. P.H.P.U. "UNIA" Sp. z o.o.
4. Aedilis JSC,
5. Bison Chucks S.A.
6. JG Global Janusz Gałązka
7. UT JUREWICZ
8. LINGUO Sp. z o.o.
9. P.U.P.H. MONROL
10. Borowski-Borowski Sp. z o. o.
11. ANT
12. KBH „Sokołowski-Sobex” Mirosław Sokołowski
13. Jumitex Sp. zo.o.
14. W.AWRUK Sp. z o.o.
15. ZMB Dystrybucja
16. A2M Andrzej Markiewicz
17. Balinvest Sp. z o.o.
18. Eko-Herba. Sidoruk K.
19. HAMECH Sp. Z o.o.
20. REDO Sp. z o.o.
21. Odlewnia Białystok S.A.
22. Modeste sp. z o.o. sp. k.
23. Pepi Rer, Ltd.
24. Sandori, Ltd.
25. Wunder Latvia,
26. Ltd. DABBA, Ltd.
27. FunGenerationLab, Ltd.
28. Bang&Olufsen.2017. <http://danskdesigncenter.dk/en/recreate-bang-olufsen-releases-innovative-open-source-product>
29. Propentus Ltd Kyrö Distillerie Mevea Ltd
30. Kyrö Distillerie
31. Mevea Ltd
32. Real Estate Company (not named)
33. Finnish SMEs (studied by VTT)

## 9. Recommendation for Transnational Innovation Brokerage System

Each of studied concepts is very closely related the fundamental for GoSmart BSR project issues of SME's internationalization and innovations cross-national flow. Each of them gives new light of knowledge on how really internationalization occurs and what are a complex set of factors associated with it, influencing and conditioning it.

The review and analysis of applicable theoretical concepts gave the foundation for working out recommendation for the future Transnational Innovation Brokerage System (TIBS). From studied concepts a framework for the TIBS design has been emerged.

### Uppsala Model

Uppsala Model (UM) is on business cross-national cooperation so that it forms a fundamental for GoSmart BSR project framework. According to UM firm's current network position is the fundament on which a company gathers its knowledge. The knowledge is related to perceived opportunities upon which relationship commitment decisions are taken. The decision to engage into new cross-national relationships leads to learning, creating and trust-building, and these components shape a new position within the network. Whilst establishing TIBS it should be considered it provides **new knowledge and opportunities to SMEs, support commitment decisions, allows entry to new networks/improves position in existing ones**, and finally facilitate **learning, alike trust building**, between potential business partners.

Each country has its unique business environment and conditions and therefore it is more appropriate to take these differences into account and focus more on the specific conditions in each country and **adjust the models of internationalisation to these specific business environments** than creating generally applicable models of internationalisation.

Goal of business network coordination is **joint productivity** of a set of relationship partners, which is difficult to implement as it involves coordinating the partners' activities. The joint productivity growth is a key issue whilst internationalising, it can serve in TIBS as a **measure of prospects whilst matching partners**.

It is important to create an environment where enterprises can **build trust and get more information** among and about each other. Apart the moral and behavioural meanings of trust, like reliability, honesty and predictability of another's behaviours, the knowledge referred to potential business partners as well as another

market condition, seems to be the crucial issue of primary importance for TIBS design. The **access to the knowledge**, trust building and gradual increase of involvement by direct contacts between potential business partners can form a corner stone of this system.

Entrepreneurs from emerging economies should be conscious of the relevance networks have for international business development, not only for bridging their way into foreign markets but also for **resource sharing, learning opportunities, knowledge exchange and development**. This is important to teach them the inevitability of these internationalization enabling factors and convince them to be engaged in them.

A special aspect of learning from other organizations is **learning through the existing business relationships**. It has been shown that access to a network of business relationships creates the opportunity to learn from other firms. Inter-organizational learning in a business network implies that deep and long-lasting business relationships facilitate the assimilation of tacit knowledge from the different actors in the network. In TIBS, whilst matching business partners, this is advisable to evaluate potential attractiveness of partners by the attractiveness of their network.

### The Value Chain

The value chain encloses basic sources of company's competitiveness, by internationalize chain links companies can obtain better competitiveness as well as better economic outputs. The view from value chain perspective is promising because of the opportunity to obtain significant company's growth and development.

The value chain implies a firm must effectively allocate its resources, earn and sustain competitive advantage in order to remain and succeed in a market. Each chain's link has a potential to affect the value captured by a company. Internationalization potential analysis must take into consideration each value chain link.

A company much be helped in better understanding its own value chain links in the context of internationalization prospects. It should be indicated what kind of partnership and internationalization forms are desired, e.g. for in other countries: import, export, outsourcing, distribution, licensing, subsidiaries.

Firms should search for internalization opportunities in different countries, where they see a competitive advantage of their services and products seen from the point of view of value chain links.

Value chain analysis should go hand in hand with knowledge assets understanding. The information about knowledge deficits and unique knowledge assets is substantial when matching business partners from different regions/countries. The complementarity of knowledge in value chain within matching partnership can be a condition of its durability and success probability.

Organizations must **ensure a high level of consensus and cohesiveness** around the belief that its existence relies on being responsive to the needs of its customers.

By developing dynamic capabilities of responsiveness, resilience, reliability and realignment, organizations enhance customer value propositions. TIBS must assure bettering these features by international cooperation at list in one of the value chain links.

## Supply Chain/Supply Web

Supply chain/web implies a big potential for beneficial international cooperation for SMEs by reconfiguration existing supply chains/webs. Whilst identifying cooperation possibilities within supply webs existing business environment must be considered and business actors should be ready to change their hitherto roles for gaining additional value. Supply web implies that when TIBS will be looking for the potential partnerships there should be taken into consideration not only preceding and following supply links but also many more stages of cooperation. The perspective is much more broader than in the Supply Chain concept.

Risk management in internationalization process is crucial. There are several steps to be taken by companies to mitigate risks when dealing with /developing supply chains/ supply webs. As these chains become more complex, there should be much more information studied in order to avoid risks in the supply chain process. Companies should not save on supply chain professionals, because they are a part of core assets for firms.

To keep in track with the advancements in technology, **continuing education is necessary** for supply chain managers and other similar STEM (Science, Technology, Engineering and Mathematics) careers in logistics sector. Supply Webs are natural environment for spreading some widely utilised technologies like Internet of Things and Artificial Intelligence. TIBS should consider also supply webs where potential partners exist as channels for transferring technologies. Technology incorporation is additional value which would appear for a company which is joining a new supply web.

## Internationalization Business Models and Factors

There is no universal recipe for an internationalization model of business. The management should carefully analyse which model is the most convenient for their business and/or what actions and steps can be taken from different models for the most appropriate internationalization structure. There is a proposal for a **multidimensional model that has significant elements of the existing models and introduces new ones**. TIBS staff should be thoroughly familiar with these models to serve support and guidance to targeted SMEs.

Focus should be put on finding a solution to **reduce risks** when going into foreign market or searching for foreign partners. **Knowledge of risk management models** fosters management focused on survival and development of the company including its international growth. A catalogue of formulas for minimizing presence

of unfavourable phenomena and events for the company should be enriched by experiences from the area of project management processes and project formulas of business management.

A business model construct offers an alternative perspective for running an internationalizing venture that concentrates on the key process of value creation instead of managing disparate international activities and functions. TIBS should thoroughly know a wide variety of internationalization models and formulas to assist managers in their work on figuring out the most appropriate for different options of international partnerships. TIBS staff can offer a comprehensive advisory in this field.

TIBS should **promote unique innovative products/services creation**, since this could provide companies the necessary resources to pursue an internationalization strategy despite the size of a company. Companies could **use a theoretical model to identify the strongest and weakest factors** that may affect the internationalization process. The model clearly shows interoperability of factors and dependency of each other.

Internationalization as a growth strategy is advisable when there really are more unused managerial capabilities than are needed for innovation activities and the replicating processes are not too sticky or tacit. **TIBS system might provide the necessary managerial services for companies, especially small enterprises, which have big innovation potential, however lack managerial resources to expand into foreign markets.**

It is important to take into consideration during the design of TIBS that **international orientation and growth orientation determine the internationalization patterns most.**

## Business Model

TIBS has to work towards workforce professional development. It helps evaluate and develop them in a workplace in two important elements: **the degree of adaptivity to technological changes and the need to stimulate the creative thinking of human resources and their generation of new ideas in the enterprise depending on the intensity of technological innovation.**

Using the model of the internationalization process **TIBS can help to small and medium enterprises avoid problems connected with the lack of knowledge due to differences between countries with regard to, for example, *language and culture*,**

which are important obstacles to decision making connected with the development of international operations.

The methods of Open Business Model Revenue Generation are recommended to a TIBS toolbox. Fora and experts could be added to a TIBS network. A lot of material, tools and experts on subjects like open business model, open source, content sharing are open and available to public.

The Greiner Model is relevant as all successful SMEs faces growth and/or disruption of business models causing chaos and crisis. **The model and guidance is very straight forward and implementable why it is suggested as element for TIBS tool box or subject to TIBS training concept.** TIBS staff must easily operate with business models as a practical methodology (tool) of business strategy formulation. It will be employed in the subject of strategy of internationalization.

**The organization, the process and cooperation between Danish Design Center, global experts and local business could be a learning point for TIBS and source of contacts.**

## Innovation Transfer

**TIBS are expected to support institutional capacities related to smart strategic planning and management at supra-regional level** by all partners engaged in smart specializations processes. Thereby **knowledge production and acquisition** is considered as a key driver in the internationalization of entrepreneurial firms. Building a competitive strategy on knowledge is, however, problematic as knowledge is characterized as a public good (free rider). Therefore, the traditional approach of producing knowledge through investments in R&D is mainly done by secretive in-house processes. But external sources have also become more readily available, e.g. through the improvement of information and communication technologies.

**Internationalising innovation activities is generally beneficial to an SME's economic performance in its home country.** However, public support for internationalisation can take effect also in other areas. **Policy instruments** geared towards internationalisation, for instance, can also be effective in terms of stimulating innovation as well as measures geared towards research and development can be aimed towards internationalisation, too.

Innovation capabilities highly contribute to the growth and welfare of the Baltic Sea region. The lagging behind and moderate innovators will profit from their proximity to the established knowledge-based economies such as Finland and

Germany. **One important factor in the transfer of knowledge and innovation, despite the increasing digitalisation, is the face-to-face contact and cross-border mobility.** It is one of the challenging task for the future TIBS how to answer for the need in the Baltic Sea region countries for more integrated transnational cooperation and common smart strategies for innovation.

## Quadruple Helix

Each locality/region **identify their particular stage** of development, challenges and opportunities by means of the four basic QH models and the good practices identified in them, and designs and executes, together with the necessary stakeholders, a local-regional learning process with a distinction of a short-term and a long-term opportunity perspective. The recommendation is to make a careful **self-assessment** against the different QH models, goals, types of innovations produced, and the roles, skills and activities needed from public authorities to support innovation.

The role of the regional and local authorities should include **providing coordination and building platforms and forums for dialogue, participation and co-production**, and of course, the more traditional role of a financier or co-financier.

**Smart specialization strategies** frequently developed for regional economic development and innovation competitiveness **need to be extended towards the societal dimension** to give them more long-term impact. **Civil society plays a central role** in driving user-centric innovation, this QH actor should be included in policy and business planning processes as much as possible.

The Quadruple Helix concept can serve as **an architectural innovation blueprint** that **engages simultaneously** (in a dynamically balanced top-down and bottom-up approach) **four sectoral perspectives** (from the top-down angle government, university, industry, and the bottom-up angle civil society). **The inter-sectoral and intra-sectoral as well as the inter-regional and intra-regional knowledge and learning interfaces that are embedded in the Quadruple Helix architectural blueprint determine its efficacy and sustainability.** A combination of these four perspectives aims for the conceptualization, contextualization, design, implementation, and evolution of (smart, sustainable, and inclusive) growth-driving entrepreneurship and innovation systems at the regional level.

## Case studies

The process of internationalization of SMEs can be very different depending on the business sector in which the company operates. To succeed in internationalization, SMEs must recognize their own resources and be able to use them efficiently in enterprise networks while identifying resources that are not there. To determine what the company needs, **a basic study of the target markets and or the target country should be carried out.** And then, to solve these missing resources, **the company should find appropriate and complementary partners with these resources.** **Knowledge and skills are the key to success.** Switching to international markets is not a quick decision or a short action, it requires a careful study and sufficient knowledge of target markets. It is helpful to be ambitious and creative in solving equal types of challenges. A good attitude and appropriate character traits of those responsible for internationalization are as important as market research.

**Companies wishing to establish international cooperation should focus on a very good knowledge of languages (mainly English), contacts with embassies and logistic forms and participation in various meetings of chambers of commerce, fairs and missions,** in order to gain new contacts and knowledge about foreign markets. Companies should go abroad and look for opportunities themselves. Good communication from the very beginning is very important.

**The availability and quality of importers should be examined** before making any decision to enter the market. Similarly, in the case of competition, an in-depth analysis of it is necessary before the decision to enter the market can be made in a credible manner. Companies increasingly rely on knowledge generated outside of them (external knowledge), and even large multinational companies recognize that they cannot rely on internal research and innovation capabilities, such as networking, collaboration in both the vertical (value chain) and the level (competition). Indirect support could facilitate the international activities of SME.

Moreover, it is important **to find an entity that supports international contacts, facilitating the establishment of first contacts with foreign partners.** Companies should actively search for business environment organizations that help SMEs in collecting market data and traveling abroad, such as **the Enterprise Europe Network.** Companies need highly specialized consulting services, such as product certification, compliance of standards. **Such support can be provided in the form of programs, incubations, financial instruments, loans and grants, as well as activity in cooperation with the science sector.**

Entering new markets requires a **reliable partner abroad, which the company can trust and which will represent the company on the foreign market.** Clusters are one of the examples of an effective business development tool. It is very important

to establish strong relationships with foreign companies that want to feel safe in connection with the services received. This is a big challenge, which is why the **TIBS system can help in presenting companies as reliable partners**. In addition, **companies should be patient in terms of communication and negotiations with foreign partners**. The experience gained in this way will result in later contacts with foreign countries.

It is also very important to have **high quality products at a reasonable price**. Ensuring the quality of products is the first step for companies wishing to establish international cooperation. **The TIBS system should focus on SMEs that produce unique, niche services or products that have a higher value and may be of interest to larger, developed markets**. It is also important to look for markets on which the company's prices are attractive, through a proper examination of demand and niche areas. Investing in a certification process may facilitate access to many international markets.

Countries have limited resources, which is why **TIBS should focus on specific countries and sectors that can provide the greatest added value**. Market factors are the most important reason for starting the internationalization process. There is a demand for a full service related to internationalization. Such a **service should include providing data on potential markets, the economic situation in a given country, searching for partners, advisory services related to strategy development, legal regulations, taxes and duties as well as assistance in preparing a company to participate in fairs**.

A very important issue for a company that wants to internationalize is to prepare for the process and strategy. **Good strategy and planning is the foundation of success**.

And the last lesson learned from the case studies is **not to be afraid of international cooperation, do not hesitate to start and do not be afraid of failures at the very beginning**.