Networking as a Tool for Internationalization of Biotechnology SME´s

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Abstract

The object of this study is to investigate the phenomenon of internationalization and globalization and the impact of networking to the internationalization process of small and medium sized enterprises (SMEs). The study concentrates to examine the benefits that networking driven by a focal company can offer SMEs in general and in their internationalization process in particular. The literature suggests that there are a number of approaches to SME internationalization. In this paper three internationalization models are presented; the traditional Uppsala model, the new Born Global model, and the Industrial Network model. This case study on three different biomedical companies analyzes how these models can be used as a guide in the internationalization process.

Keywords: SME, internationalization, networking, focal company, internationalization models

Introduction

Everything, what is happening in the economy – increasing internationalization, rapid technological evolution, rapidly increasing business complexity, and pervasive globalization – is also affecting on every SME, and on every business network, in which SMEs are involved. One of the most significant paradigm shifts of modern business environment is that individual companies no longer compete as solely autonomous entities; rather, the competition is between closely coordinated, cooperative business networks (Lambert, Cooper & Pagh 1998, Christopher 1998, Best 1990). Each company today is somehow integrated into a business network of selected suppliers, customers and value-added resellers, and even with competitors. Networking seems to be a common trend in today's international business and industry practice. According to Johanson and Mattsson (1988), the network has a significant effect on SME internationalisation.

The objective of the study is to investigate the phenomenon internationalization and globalization from SME's point of view. Comparing with the large company, the internationalization process of SMEs is totally different, and more difficult, not a least because of the lack of resources and know-how. In this study the authors have examined, what networking with the focal company can offer to the SMEs in general, and in their internationalization process. Our research question is: what kind of internationalization opportunities networking with the large company can offer for the SMEs? In this paper we present the answers to the research question and provide a general overview of the business network as an internationalization source and development environment.

Our paper is descriptive in nature and it is based on qualitative material (interviews, documents and observations) analysed as an entity. In practice, this paper consists of empirical research conducted as case study in the three Finnish companies in bio and medical industry sector between the years 2004-2005. In this empirical study the authors have examined the internationalization processes and the impact of network environment to these processes in the three different case companies, and tried that way to create new knowledge of the SME internationalization possibilities, especially in Oulu area in Finland. *Firstly,* the authors have studied business networks as the internationalization source and development environment for the SMEs from theoretical perspective, and also by reviewing networking and internationalization literature. The literature suggests that there are a number of approaches to SME internationalization. In this paper three internationalization models are presented; the traditional Uppsala model (Johanson and Vahlne 1990), the Networking model (Håkansson and Snehota 1995), and the new Born Global model (McKinsey & Co. 1993). *Secondly,* the authors have examined how internationalization process has been done in three case companies and analyzed how these models can be used as a guide in the internationalization process in these case companies. *Finally*, the authors have analyzed how networking with the focal company benefits the SME in their international process.

SMEs in Networks

Definition of the SME

Small and medium size company (SME) is defined as non-subsidiary, independent firm that employ less than 250 workers, and an annual turnover is 40 M€ or less and/or a balance-sheet valuation not exceed 27 M€ (in the European Union). In Finland, there are ca. 220 000 SMEs, which means more than 99% of all firms are SMEs (Statistics Finland 2002; cited by Federation of Finnish Enterprises 2003). Thus, SMEs have a huge influence to the economy of Finland, and as OECD (2000) states, same situation is dominant in the whole Europe. SMEs have a recognized the importance to economic activity, employment, innovation and wealth creation in many countries. SMEs generate societal growth in terms of new jobs and revenues, they create innovations, and also, they are active actors in the global business networks. (Pasanen 2003) The number of SMEs operating internationally has been growing, slowly but steadily, and the time lag for SME internationalization has become shorter (Hurmerinta-Peltomäki 2001). So, more and more of the business research should focus on SMEs instead of the large companies, and to their possibilities to grow – or at least survive - in the international markets. According to Miesenbock (1988), there is still space for the empirical studies considering the international activities of SMEs.

SMEs in Networks

Traditionally large companies have performed all manufacturing in-house, but today they have reassessed their basic make-or-buy decisions in favour of outsourcing. These companies are focusing on their core competencies and outsource their non-core businesses (Hamel and Prahalad 1994). They have started to seek access to other companies' competencies, which support their own internal core skills. Networking seems to be the most significant paradigm of today's modern business environment, and networking with the large company seems to offer plenty of opportunities for SMEs. Hence, SMEs' success is often closely associated with the larger company's success. A highly specialized innovative, globally operating large company, which has adopted a niche market strategy focus on its core business, also usually needs numerous suppliers. These large companies are also affected by the globalization and the changing demands of the customers in the international markets, which forcing they act and think more globally, and forcing their suppliers to do similarly. That kind of development presents new opportunities for SMEs. In Finland, globally operating large corporations are outsourcing their functions, but there are relatively few middle-sized firms who are capable to respond to the larger entities of outsourced businesses.

SMEs in Finland have traditionally focused on domestic markets and many will continue to do so. But in growing intend SMEs are becoming to operate in global markets. About 25% of manufacturing SMEs are now internationally competitive and this share should increase. The market adds additional pressures for faster and flexible response, and at the same time customers demand variety, customized solutions and the ability to match small market segments, even to product markets for individual customers (Schary and Skjøtt-Larsen 2001). Networking allows SMEs to combine the advantages of smaller scale and greater flexibility with economies of scale and scope in larger markets – regional, national and global. Relative to larger firms, SMEs can better respond to changing market conditions, evolving consumer preferences and shorter product life cycles by customizing and differentiating products. SMEs are becoming more involved in international strategic alliances and joint ventures, both alone and in SME groups. Larger multinationals are partnering with smaller firms with technological advantages to economize on R&D, minimize the lead-time for new products and serve emerging markets. (OECD 2000)

Typically, SME manufacturers are subcontracting companies that produce components or products for one or few focal customers. If the SME's are competitive in their production activities, the repute will rise, and this will provide new opportunities to make new customer relationships. In addition, there can be some niche market segments that are not attractive for large focal companies. These niche market segments can be then very valuable for a small firm. Also in general, according to Cambell (1997), SMEs should concentrate upon a specialisation/niche strategy. Above all, SMEs via network are able to get direct view of the market demand. Focusing on the core competencies and outsource non-core businesses, is a widely accepted managerial paradigm. Also, this phenomenon arise the need for the new companies in many industries. There are many cases, where this kind of new company is established by MBO (management buy out) operation. In such case, the new company has already from beginning good contacts to international markets via the existing network.

New communication tools make it easier for small firms to reach foreign partners. The advent of Internet-based electronic commerce offers considerable opportunities to SMEs to expand their customer base enter new product markets and rationalise their businesses. Smaller firms can use e-commerce to customise products and services, manage supply processes and inventories, and reduce the time between order and delivery. SMEs generally adopt technologies more slowly than the average firm, and this also applies to the adoption of Internet technologies. This may be because of remaining internal barriers to SME adoption of e-commerce, including limited understanding of the complexity of electronic operations, inadequate skills and high initial investment required to develop a viable e-commerce strategy. Other impediments to small-firm use of e-commerce are external, such as infrastructure access and costs. (OECD 2000)

The network is a remarkable source of innovation. Innovations are crucial success factors in practice for every industry. Khalil (2000) states, that innovation represents the important connection between an idea and its exploitation or commercialization. The innovation does not have to be new to the world; rather it is viewed as the first use of an idea within an organization, whether or not the idea has been adopted by other organizations already. According to Kolehmainen (2001) innovative networks are such relationships that canalize new information, knowledge, technology and other enabling resources for development and learning to the enterprise. The network can offer an access, at least in some level, to the R&D of large companies and research institutes. The network offers possibilities for SMEs to join large research projects which are normally made by large companies and research institutions.

In the business networks the role of individual persons is important. With right contacts the level of uncertainty may be diminished. Assistance from partners decreases the risks and provides critical market information. Personal relationships give security and trust. Good relationship network is of major importance in order to compete in today's markets (Nieminen 1999). Also, the network can offer the company new business opportunities. For already existing SMEs, the network can offer, especially in fast growth business such as electronic industries was in the resent years, a possibility to expand their business, even into the international markets. In many cases this kind of expansion has not been only an offer – but a strict demand. The efficiency in the network is based on social relations and trust between people, even when the value creation process is vital. Social relations create a structure of rational selection of partners and form the basis for future co-operation. In complex and dynamic environments, long term relations can remove insecurity and increase productivity and innovativeness. (OECD 2001)

However, many of the traditional problems facing SMEs – lack of financing, difficulties in exploiting technology, constrained managerial capabilities, low productivity, and regulatory burdens – become more acute in a global, technology-driven environment. Small firms need to upgrade their management skills, their capacity to gather information and their technology base. Also, to improve SME access to financing, information infrastructures and international markets are needed. Providing regulatory, legal and financial frameworks conducive to entrepreneurship and small firm start-up and growth is a priority. Fostering public-private partnerships and SME networks and clusters may be the most expeditious path to a dynamic SME sector.

Networking with the Focal Company

One solution for network structure is a SME supplier network, where the group of small companies are responsible for the system deliveries (Hyötyläinen 2000). Another, more prevalent, is an extended business environment, where the collaboration network includes a dominant company, which imposes the rules of the cooperation (Christopher 1998). A focal company – usually a large corporation in global business - can take a hub role in the network structure. Moreover the strategic center, a focal company is responsible for value creation with its suppliers in the network, as well as being a leader, role setter and capacity builder (Lorenzi & Baden-Fuller 1995). SMEs' success is often closely associated with the larger company's growth. A highly specialized focal company, which has adopted a niche market strategy focus on its core business, also usually needs numerous suppliers. Starting in a small domestic market, as in Finland, very soon a focal company will face the need to expand the market areas from national to global markets, and the suppliers have a possibility to follow the focal company's footsteps.

SME suppliers have a great possibility to adopt a slice of the success of the focal company. On the other hand, strategic alliances with the unsuccessful focal company may enable the total failure for the smaller player.

A focal company can structure its suppliers into network in different ways. One way is according to how the suppliers can be organised, another is according to the number of suppliers (Gadde & Håkansson, 1993), and one way is a combination of these two. A focal company can organise the suppliers into systems of suppliers, with suppliers on different tiers depending on their activities and resources. One of the goals with systems of suppliers is that the number of suppliers, which are in direct contact with the focal company, is reduced. There are several advantages that can be reached by reducing the number of suppliers a focal company is in direct contact with. One benefit of having fewer suppliers, according to Dyer and Ouchi (1993), is the positive effect on quality. Variation increases and reliability decreases when more suppliers are used for one component. They also state that by reducing the number of suppliers in direct contact, costs can be lowered at the same time as quality improves. The size of the suppliers' companies is diminishing by every tier. The suppliers fit differently in the network depending on their size, competencies and resources, and according to Gadde and Håkansson (1993), depending on their knowledge and activities.

In addition to the role of the focal company, there are several different roles and positions for suppliers in the network. According to Ford et al. (2002), suppliers may attain the position of a system supplier, which has a direct relationship with the buying company, and they may also have relationships with companies in the second and third tiers of the network. These second and third tier suppliers normally do not have direct contact with the buying company, as they operate through the first tier supplier. The evident trend is towards the tiered structure and has become the paradigm of the best practice (Stuart et al. 1998). Partnerships, while necessary and beneficial, are costly in terms of the time and effort required, and that is why it is important to ensure that scarce resources are dedicated only to those relationships which will truly benefit the partnership. The company in the first tier is responsible for product development, systems undertakings and JIT delivery. Second tier suppliers are more specialized into a narrower field of expertise. They work with, for example, processing and/or production and have a narrower range of products. Suppliers, which are less sophisticated in terms of activities and competence, can be found on the third tier. At the fourth tier one can find very small companies. Sometimes a fifth tier supplier might even exist. (Gadde & Håkansson 1993)

SME suppliers have typically two networking strategies with the focal companies; direct bilateral co-operation with the focal companies (often via subcontracting agreements), or co-operation with the group of the small companies, who together fill an order from the focal company, whereas individually they would be unable to do so. The typical economic logic of SMEs subcontracting with focal companies lies in the fact that large companies can do some things better than small ones but other things less well. The smaller companies' limitations, which make assistance and collaboration of the focal company important, typically fall in the areas of access to technological information and guidance on quality control, access to finance, assistance in purchase of materials of equipments, in workplace organisation, in financial management or in the other determinants of effective performance, and market stability (security of demand over a period of time).

For developing a common network, the focal company and its suppliers need a shared vision and equally understood aims, goals and objectives about interdependency and the principles of collaboration. Efforts focus on providing the best end-customer value regardless of where, along the supply chain, the necessary competences exist. Relationship integration requires a willingness of the supply chain partners to create structures, frameworks, and metrics that encourage cross-organizational behaviour. The following sections introduce the capabilities that drive relationship integration (Bowersox, et al. 1996): Firstly, role specification is the capability to clarify leadership processes and establish shared versus individual enterprise responsibility. Secondly, the guidelines create the rules, policies, and procedures needed to facilitate collaboration, leverage, and conflict resolution between the partners. Thirdly, information sharing involves the willingness to exchange key technical, financial, operational, and strategic information with others in the supply chain. Finally, gain and risk sharing capabilities are derived from a willingness to apportion rewards and penalties appropriately across partner firms.

Internationalization and Globalization

The Concepts of internationalization and Globalization

In this study, the term “internationalization” is used in the same context as that defined by Welch and Luostarinen (1988): “the process of increasing involvement in international operations, which requires adapting the firm’s strategy, resources, structure, and organisations to international environments”. According to Nicholas and Maitland (1998), the term “globalization” instead can be defined as a part of internationalization and stems from the interdependencies across subsidiaries or the value chain of an international firm, which needs to be actively managed. For some companies globalization means standardizing the product and selling into the world, for others, it denotes an approach to management in which decision-making is centralized at corporate headquarters (Lasserre 2003). One perspective that relates to globalisation is the dissolving of different hinders concerning business and social exchange and information (Ohmae 1995).

According to Lasserre (2003), global industries are the industries, in which, in order to survive, competitors need to operate in the key world markets in an integrated and coordinated way. Global companies are the companies that operate in the main markets of the world in an integrated and coordinated way. Globalization is the phenomenon of the transition of industries, whose competitive structure changes progressively from multinational to global. Global integration and co-ordination are the organizational structure and management processes by which various activities scattered across the world are made interdependent on each other. (Lasserre 2003)

Internationalization strategies concern the internationalization of the firm in order to service international markets and to enhance or maintain competitiveness in the home market. It involves the adoption of at least one of the modes of international business, although such a strategy does no necessarily imply that that the firm should aim ultimately to become a foreign direct investor. Protection and liberalization both have impacts on internationalization strategy. While tariff and trade barrier-jumping are well documented, the firm may in order to learn from newly deregulated markets to improve their competitiveness and to heighten their readiness for deregulation at home and in third markets. (Lasserre 2003)

It seems that time horizons in internationalization strategy have become extended and firms´ behavior has become more cognitive. The world has become more borderless, it behaves firms to anticipate developments in the international environment earlier rather than later. Boundaries between nations have been radically removed through free-trade arrangements worldwide and between nation states. One important issue in 1999 has been the opening of trading arrangements between China and the U.S. This was followed in 2001 by the inclusion of China as a WTO-member. Politically new open policies have been pursued against foreign trade and investments, e.g. in China, East Asia, and Latin America and in the Eastern Europe.Trade and investment opportunities therefore is being enabled more freely than ever before in history in the late 1990s. (Törnroos 2005) Apart from environmental initiatives, technical and technological forces are also at work, influencing internationalization strategies. Product life cycles have become progressively shorter time over which to recoup their development and research costs. (Lasserre 2003)

Drivers towards Internationalization and globalization

There are many reasons for internationalization and globalization. Globalization became a necessity at the beginning of 1970s because of the convergence of several political, technological, social and competitive factors. The main political factor has been the development of free trade among nations. According to industrialized countries, third-world nations progressively have adopted more positive attitudes towards foreign direct investments. The law was designed to attract foreign investors induce to produce locally, but later it has evolved toward more open stance, favouring cross-border investments. As seen earlier, the political factors consist of liberalization on trade and investments, which are based on the political decisions between nations. (Lasserre 2003)

One driver of globalization is believed to be the development of advanced communication technology i.e. an industry described as having high degree of globalization will by definition be characterized by having information transferred easily and faster than in industries less globalized. This increased access to information may decrease the psychic distance between countries, which have previously been seen as a major obstacle for international expansion of firms (e.g. Johanson and Vahlne 1977, Lasserre 2003).
Another set of push factors for globalization is related to technological progress that has lowered the cost of transport and communication as well as the unit cost of production through economies of scale or the localization of productive capabilities and sourcing in low-cost economies. Progress in manufacturing technology gave an impetus to the need to concentrate production in world-class factories benefiting from huge economies of scale and thus encouraging rationalization and integration of production systems. Besides manufacturing concentration, companies have been able to source components or services from low-cost countries, either by setting up their own operations or by purchasing locally (Lasserre 2003). Convergence of customer behaviour and needs has facilitated by urbanization and industrialization of societies. The less cultural and the more technical is the product, the more likely it can be standardized and appeal to masses of consumers in all countries. The use of TV, movies and travelling has increased the effect of social factor. The effect demands favour standardization and the branding must be built globally.

In competition a global approach has been a benefit for big companies in Japan, America, and Europe etc. The companies have not had many national subsidiaries and the international expansion have occurred at the time of the opening of the trade barriers. The operation needs some global brands and efficient production systems to achieve the cost advantage to increase competitive advantage in global markets. At the same time there may be the effect of globalization of customers. Typically this effect induces integration and co-ordination of production. (Lasserre 2003)

According to Shrader et al. (2002), there are three types of firms that enter new markets; pioneer, early follower and late entrants. This entry order has been added to by other researchers, who state that there are four conditions of internationalizing firms, that all have different outcome on the continuation of the firm’s internationalization process. These respect to the firm’s degree of internalization and the market’s degree of internationalization. A high degree of internationalization of the foreign market refers to the firms in this market having many connections with outside markets. A low degree of the markets internationalization indicate the firm having business connection within the own nation (Lilja and Lindhe 2003).

Internationalization Models

In this section, the authors will present three internationalization models; the traditional Uppsala model according to Johanson and Vahlne (1990), the Industrial Networking model according to

Håkansson and Snehota (1995), and the new Born Global model according to McKinsey & Co. (1993).

Uppsala Internationalization Model

One of the most famous and classical internationalization models is the Uppsala Internationalization model that states that internationalization as an incremental process that depends on the firm's experiential knowledge of foreign markets (Johanson and Vahlne 1977). This U-model, also known as the process theory of internationalization (PTI) or the stages model, contains different steps that describe the firms' level of internationalization.

In the beginning, the firm has no regular export. According to the model, a company often initiates its internationalization process by directing exporting to a foreign country. After few years, the company starts exporting with the help of representatives abroad. This so called indirect exporting is not regular but it is based on business opportunities abroad. The following step is to develop sales subsidiaries in a foreign country. The subsidiaries may be led from main country, but the operations are organized locally in foreign country. There are three different ways to establish the subsidiary abroad: 1) start with so called greenfield investment abroad i.e. make totally a new investment, 2) acquisition of the company abroad or 3) establish the joint venture abroad. The first alternative is the most expensive, but others are more flexible. (Ahokangas et al. 2003) In the fourth and last stage, company establishes a production/manufacturing facility abroad. The basic assumption of the model is that one cycle of events constitutes the input of the next. At the same the model indicates that the present state of internationalization is an important factor in explaining the direction of further internationalization.

The Uppsala model of the internationalisation process is very illustrative of the implicit assumptions of incremental and continuous growth (Johanson and Vahlne 1990). The model pictures internationalisation in the context of interaction between state aspects and change aspects. The state aspects are constituted of market knowledge and current commitments, the change aspects of commitment decisions and current activities, see Figure 1.

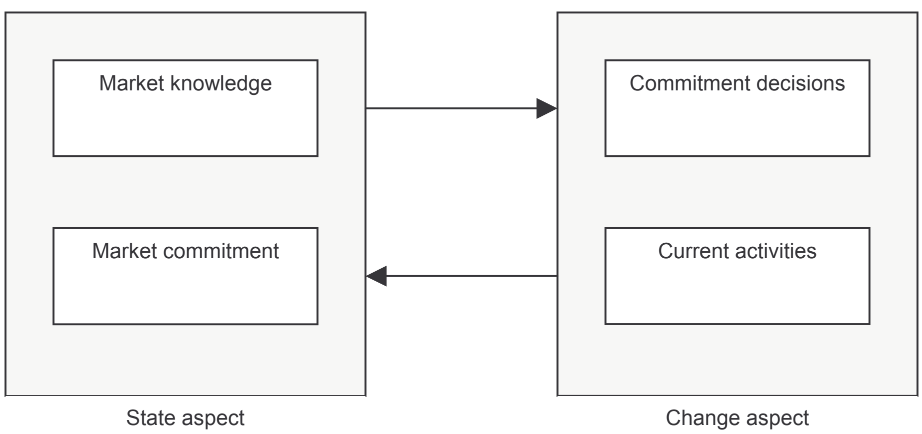

Fig. 1 The Uppsala Model (Johanson and Vahlne 1990)

Born Global Model

The Born Global concept was brought up in a survey for the Australian Manufacturing Council by McKinsey consultants (McKinsey & Co. 1993). There are also other concepts that have been developed to name firms that exhibited immediate internationalization, like "*international new* *ventures*" (INVs) (McDougall et al. 1994), "*instant internationals*" (Preece, et al. 1999), and "*global startups*" (Oviatt and McDougall 1994).

Luostarinen and Gabrielsson (2002) states, that traditionally it has been natural that the first years' activities of the firms take place in the domestic markets. If foreign business is considered at the establishment stage it is included in the long term planning. Its role has been that of the follower, that is, it has been decided that if domestic business will be successful and will bring enough cash flow then one day, perhaps after 5-10 years the firm will enter to foreign markets also. The mission, raison d'être of the firm has thus been based on the domestic customers and their needs at the beginning of the life cycle of the firm. Only if something unexceptional has taken place, for example, an unsolicited order is received from abroad; the export entry may have taken place earlier but even then usually as a sporadic and temporary activity. (Luostarinen and Gabrielsson 2002)

As the name suggests, the Born Global are argued to behave just in the opposite way. The firms starting direct to international markets are difficult to classify according to old models. Comparing the Born Global companies with other companies, there are some main differences, e.g. short experiences from exporting operations, the growth of company is better than average and the starting export operations the company age is shorter (Ahokangas et al. 2003). Rennien (1993) paid attention to, that born global companies start export average at the age of two years. In a normal category, according to Lindqvist (1997), for born global company to start export operation is the age of three years

The features of the Born Global companies are (Luostarinen and Gabrielsson 2002):
- start international operations even before or simultaneously with domestic operations
- base their visions and missions mainly on global markets and customers from the inception
- plan their products, structures, systems and finance on global basis
- grow exceptionally fast on global markets
- plan to become global market leaders as a part of their vision
- utilize different product, operation and market (POM) strategies as firms have traditionally done and
- follow different global marketing strategies

In usual, the discussion has focused on company, but the main focus should be on entrepreneurs and on boards of companies, thus they make the decisions of internationalization process. The export operations abroad may be easier to carry out than the same arrangements at domestic markets. The easiest way to learn new possibilities and operations is, when the organization is young. There are not the old methods limiting thinking and operations on some area, which are limiting to learn new systems in business operations fast. Also the meaning of old experiences is remarkable and that is why there are internationally experienced persons in board and leading positions in the company. (Ahokangas et al.2003)

The Industrial Network Model

The Industrial Network Model is introduced by Håkansson and Johansson (1992). The Industrial Network Model (Fig. 2) has three main components; actors, activities and resources. These components are closely related to each other in the overall network structure.

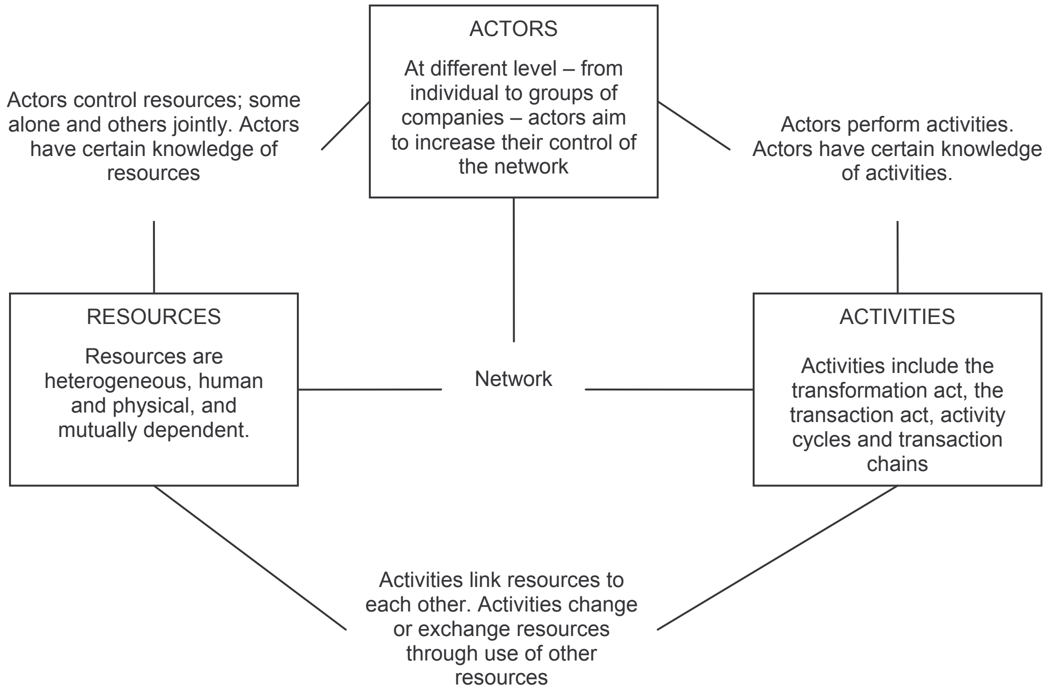

Fig. 2 The Industrial Network Model (Håkansson and Johansson 1992)

An actor can be defined in many different ways and it can also be described in different levels. This means that an actor may be defined on the individual level, department level, or organizational level. However defined, the actor is always in control of resources and activities. The function of an actor is to perform and control activities, to develop relations through process exchange, to base their activities on control over resources, to be goal oriented and to develop knowledge through experiences from network activities. (Håkansson and Johanson 1992)

An activity occurs when one or several actors combine, develop, exchange or create resources by utilizing other resources. The activities do not occur in isolation. A single change in one activity always has some effect, great or small, on other activities in the network. There is significant need for coordination because of various dependency relationships between the activities. The dimensions of co-ordination are for instance; time, technical function and form of supply. The dependencies can be sequential, whereby some activities must be carried out before others. There may also be shared dependencies, whereby two or more activities may be mutually dependent because they are all linked to some other single common activity or resource. (Håkansson and Johansson 1992)

In the case of the individual company, five types of resources can be identified, that can be transformed through industrial activities. They are; input goods, financial capital, technology, personnel and marketing. They also show the scope and variety of the word. Resources are therefore characterized as heterogeneous. There are many different types and characteristics of resources which make it difficult to group them any further than as resources. Resources represent opportunities for the actors who control them. There are two ways for an actor to access control of a resource. Either the actor possesses direct control, in that the company formally owns the resource or the right to use it. Another way to control a resource is indirectly, by developing a close relationship with the actor in control of the resource and which allows the use of it. (Håkansson and Johansson 1992)

The Industrial Network Model describes markets as industrial systems, in which firms interact with each other and with the other parties in order to gain control over business transactions in their business environment - in their business network. The network approach can be used to explain different structural business relationships and how they affect each other. These relations can have both cooperative as well as competitive features.

Designing a Global Strategy

A company business strategy is a set of fundamental choices, which define its long-term objectives, its value proposition to the market, how it indents to build and sustain a competitive business system and how it organizes itself. A business strategy is global, when a company competes in the key markets of the world and when the business system is made of integrated and co-ordinated activities across borders. According to Lasserre (2003), a global strategy is the way a company defines its long-term objectives for the world market; selects its value proposition for the world market; builds and integrates and co-ordinates its business system to gain and sustain a global competitive advantage and puts in place an organization to manage its operations worldwide. Global strategy consists of four major components: a global strategic ambition, a global strategic positioning, a global business system and a global organization (Lasserre 2003).

The global strategic ambition expresses the role of company wants to play in the world marketplace and how it views the future distribution of its sales and assets in the key regional clusters of the world. There are possible identify four typical roles of company based on operations. Global player aspires to establish a sustainable competitive position in the key markets of the world and to build an integrated business system of designs spread over those key markets. A regional player defines its role as to capture a strong competitive advantage in one of the key regions of the world – and to be a marginal or relatively weak competitor in the other parts. A regional dominant global player is a company, whose role is more than regional player, but it is not yet selling across the key markets of the world. A global exporter is company, whose role is to sell across the key markets of the world products manufactured or services operated in its home country and who builds foreign operators only to support the export drive. A global operator is a company, that procures a large fraction of its products components in factories located outside its base market and which concentrates its sales in its domestic market. Global positioning consists of two types of choices (Lasserre 2003):

- Choice of countries in which the company wants to compete and the role that those countries have to play in the global country portfolio.
- Definition of the various value propositions for the products or services of the company, corresponding to the type of segments and countries in which the company wants to compete.

In choice of countries it is possible to separate key countries, emerging countries, platform countries, marketing countries and sourcing countries. Value propositions are understood as a definition of a customer's value attributes that the company is offering to the market. Value attributes are the elements of the products or services that customers value, when making their purchasing decisions. Customer segments are understood the groups of customers, that have similar value curves (Lasserre 2003).

Global business system consists of decomposing the company value chain in to elements that are spread and integrated across the world. A company value chain is the set of activities that a company employs in order to design, produce and deliver the value proposed to the customer. There is possible to distinguish three major generic components of a value chain; innovative activities, productive activities and customer relationship activities. The final element of a global strategy is the design of an organizational architecture, which is able to support and implement the global ambition, global positioning and global business systems. Internationalisation means that a firm is acting in one or several foreign markets and thus working in an international context.

For SMEs internationalisation is a component of growing importance in their strategic behaviour. Internationalisation of SMEs must be considered with respect to the three levels of strategy proposed in next few sentences. Internationalisation theories of SMEs are concerned with the choice of foreign target markets, products or services to be offered in selected foreign markets and the market entry strategies. Market entry strategies in the international field are concerned with export, licensing and management contracts as well as establishment of sales or production subsidiaries. Thinking about SMEs export is mostly discussed. Market entry strategies are also concerned with internal development versus acquisition strategies and different owner strategies. The strategies and the level of internationalisation should also be studied in relation to the entrepreneurial motivations, values, attitudes and objectives of the SME manager. (Analoui 2003)

Empirical Study

Case 1: Suomen Bioanalytiikka Ltd – Alone Towards Global Markets according to Uppsala Internationalization Model

Suomen Bioanalytiikka Ltd (SBA Sciences Ltd) is established in the year 1995. SBA Sciences Ldt develops novel immunoassays for bone metabolism studies and diagnostics. The company provides the product brand “BoneTRAP® kit” for detection of bone metastasis and follow up of osteoporosis treatment. The products represent an extremely innovative and important family of products that has achieved an impressive degree of success in the bone research market. SBA's core technology is directed to the determination of a key marker of osteoclast activity, in serum and plasma. The main idea of the company has been the technology transfer and R&D in medical biotechnology and co-operation with local University. The company is located in Oulu in Northern Finland. In the beginning of year 2005, the company was bought by the American company IDS Inc, and have nor the role of a subsidiary.

The company started internationalization process in the beginning of year 1995 with occasional contacts to international researchers working in the common research group. The co-operation between researchers was intensive and the target of the research was clear. During this period the contacts were created with international co-operators and customers. The process continued by starting occasional export in small quantities and with more intensive co-operation. After that the managers of the company took contact with commercial agents in Germany and made an agreement with one of the importing companies. In this phase the development from indirect exporting to sales subsidiary was not exactly according to model. Another difference compared to the Uppsala -model came out, that there existed a company, ready to start the import of products. During this period the operators got an idea to establish a production plant in Germany. Soon after that the company started the building of production plant and the production started up on year 2000 and directed to European markets. Production started so effective, that the most of product needed in Finland was also imported from Germany.

The internationalization process continued on the year 2000, when the local financier in Finland bought the part of the shares of the company and invested heavily into the company. Based on the opinion of one the board member, the decision of internationalizing was made and the operation expanded to 25 countries with the help of local agents in the targeted country. In that time in Oulu area, it was typical for the companies, that they have a strong support based on local university, local high-technology business environment and local financiers.

Totally the process of internationalization has taken 10 years, and it has demanded a peaceful period to develop the basic product and production ready. Typical for a biomedical company is to start the company by developing a product and after that develop the facilities for the company. The basic idea for internationalization has come from the board members by making a strategic decision not to grow up locally, but to grow up by internationalization. The final step was on 2005, when the international company from England bought the company. The importance of financier is remarkable in internationalization process, exceptionally in Northern area, because a lot of investment is needed to achieve international markets. During the last years the only international operation has been to expand the agent network and grow-up the company by internationalization. Compared to Uppsala Internationalization –model SBA Science Ltd is located partly in the fourth step; production/manufacturing facilities abroad and partly in the second step; internationalization by representatives/agents. Totally thought the internationalization process of the company is situated on the highest level, but the internationalization phase may varies between different target countries.

Case 2: Pharmatory Ltd – Towards Global Markets according to Industrial Network Model starting with the Focal Company

Pharmatory Ltd is a specialized and confidential Finnish cGMP (current Good Manufacturing Practice) custom synthesis provider for pharmaceutical R&D companies and hospitals located in northern Finland, in Oulu.. Pharmatory Ltd was founded in the beginning of 2001 by the head company Medipolar Ltd (which can be seen as a focal company in the case network). Pharmatory Ltd is now an independent company owned by experienced pharmacy professionals and selected corporate investors. Medipolar Ltd was a Finnish drug and medicine producing company and the factories located in Finland, in Oulu and Turku. Medipolar Ltd was absorbed to company Orion Pharma Ltd and the manufacturing of drugs was suspended.

Pharmatory Ltd specializes in the custom contract development and cGMP manufacturing of the APIs and the key intermediates. The main product is service, which consists of know-how of production technology and chemistry in drug and medicine production and the product is delivered in projects. The key components in all projects are customer intimacy and operational excellence with high confidentiality. The new plant consists of an organic synthesis laboratory, an analytical laboratory and a multi-purpose, modern pilot plant, all operating under cGMP. Pharmatory has been routinely inspected by the Regulatory Authorities. All the network partners are situated in Finland, but they have a lot of international partners and contacts.

The networking for internationalization process started as a project of innovation and cooperation among pharmaceutical companies in Oulu region in 1998. PharmaCluster was a network of Finnish pharmaceutical operators, including Pharmatory Ltd. The network includes established pharmaceutical companies, technology and service companies, units from universities, research institutions as well as science and technology parks. *Phanomed*-consortium was established after that consisting of cGMP production services, contract research products, custom contract development and cGMP manufacturing of APIs and biocomputing techniques. *Phanomed* is comprised of four Finnish pharmaceutical companies. The network includes both consortium and partners specialized on narrow areas of biomedical processes and business and they are included in this pharmaceutical industrial network. In addition confidential collaboration and partnerships have become more crucial to create value for partners and simultaneously serve customers better. Each external relationship receives high priority, whether it is in discovery, research, manufacturing, development or in marketing.

The internationalization process continued more effective in the beginning of 2001, when the main part of Pharmatory Ltd workers moved from Medipolar Ltd to Pharmatory Ltd. The old customer contacts, created during co-operation, were retained and slowly confirmed. Also in this case, the strong local support in the beginning from the side of university, business environment and financiers, Technology Development Centre (TEKES) and Finnvera, has been important. Nowadays the strong grip of the owners in business has pushed internationalization process of Pharmatory. The strategic decision to start internationalization by the help of focal company in the beginning has been the easiest, fastest and cheapest way to expand business facilities for the company. The start-up was helped by focal company Medipolar Ltd by utilizing business know-how, old customers and other contacts. When the operation of focal company ended, Pharmatory Ltd had a strong enough network to continue the international operations effectively.

The companies in network operate as actors by controlling resources and operations. Typical for this network is, that all the partners have also “own business” but when the common business in networks is activated, it has a priority. The actors, e.g. the salesmen in Pharmatory, know the activities on pharmaceutical business, based on offers and sales on the markets. The operations in the network are led by regular meetings of salesmen and managers of the partners and co-operation between companies in network is very intensive. The actors participate on international exhibitions, sales events, negotiations and in case of order, the development projects are managed like special projects are management in general.
The partners have resources with knowledge on narrow sectors of the specific business areas e.g. in chemistry, special chemical analyses, laboratory services, drug process technology, contract manufacturing etc. The personnel in companies are educated and they have also a lot of tacit knowledge on their own business areas and extra knowledge is available by help of international partners. The agreement with customer normally consists of a total drug development process with project management services.
The signature of sales agreement activate the resources; input of goods, financial capital, technology, personnel and marketing. The customers and manufacturers have a need, in this business area, to develop better and more effective medicines by biological methods. Those activities collect the resources of the partners and link them in co-operation. Pharmatory Ltd acts as a sales company on international markets and the resources are activated in case of sales agreement with customers.

The effect of the company has increased based on the new share owners and financiers and as seen in the previous case, it has an important meaning to the effect of internationalization. The benefit of the focal company has been remarkable in the beginning of Pharmatory´s lifecycle by giving know-how, educating persons, contacting old customers etc. The future development of the company is dependent on the effect of the business network and the intensity of co-operation.

Case 3: Fibrogen Europe Ltd – Born Global

FibroGen Europe Ltd is a biotechnology company focused on the development and commercialization of recombinant collagens and gelatins in Europe. The company's expertise in the extra cellular matrix technology, coupled with its substantial intellectual property position, allows FibroGen Europe to assume a leadership position in the European recombinant collagen and gelatin marketplaces. FibroGen Europe will focus its efforts on supplying its novel biomaterials to European companies in the medical device and pharmaceutical industries, as well as commercializing products of its own design. The company headquartered is Helsinki in Finland and it is a subsidiary of FibroGen Inc., San Francisco in California. The main production facilities are located abroad, but the company, FibroGen Europe Ltd, was established in 1996 in Oulu by international research group and owners. The business idea of the company based on the invention of the collagens and gelatins production method discovered by the group of researchers in the University of Oulu. The research group continued as a subcontractor in co-operation with the company FibroGen Europe Ltd.

Rather fast after establishment the company started internationalization with R&D co-operation with main company FibroGen Inc. and local Research Center in university of Oulu. It is remarkable, that in the beginning internationalization of the company continued in co-operation with international research groups. The starting-point of the company was global because of the part of establishers was international operators. The main production facilities situated in California USA and the Research & Development laboratory was established in Oulu in Medipolis Center. The company operated globally; R&D in Finland and production in California in USA. In year 2002 the R&D laboratory moved to USA and the head office have operated all the time in Helsinki in Finland. In business strategy the company has divided the marketing areas so, that

FibroGen Europe Ltd has mainly directed to European markets and FibroGen Inc to American markets.

FibroGen's potential was recognized by several investors, most notably, the Finnish public sector. In 1996, FibroGen Europe received funding worth $28 million from the Government of Finland to accelerate development of the company's Recombinant Collagen Program through the Finnish development agency, The Technology Development Centre (TEKES).
The TEKES funding was a unique type of financing in the form of grants and low interest "equity loans" which are based on completion of developmental milestones. The program has been so successful for FibroGen and for Finland that in April 1999, TEKES renewed the agreement to fund 50% of FibroGen's program costs. The meaning of investors has been remarkable for international operations and interests. Nowadays the company has a lot of global investors and co-operators based on the new innovation, effective R&D management and globalization soon after establishment.

The operations have started first globally and then after that in domestic scale. The strategy and vision has been global and the main start in research has occurred abroad and afterwards moved in Finland. FibroGen is a research-driven, drug discovery company leading the industry in cutting-edge science and breakthrough discoveries related to tissue fibrosis, diabetic complications, matrix biology, fibroproliferative cancers and metastasis, and HIF-mediated physiology. Their objective is to continue to develop a portfolio of clinical candidates that address major market opportunities. Their responsibility is to generate significant returns to our shareholders. Finance and systems are on global base and there is an idea to grow on global markets. The product is typical for born global company; developed in Finland and USA, innovative, new and development has taken five years. FibroGen is the only producer of highly purified, fully characterized recombinant collagens and synthetic gelatins intended to replace similar animal- or plasma-derived materials currently used in a variety of medical, pharmaceutical, and consumer applications. The selling of product has started nowadays and the expectations of sales are high.

The company represents a typical Born Global company; the innovation level is high, markets are global, a lot of operations are concentrated in R&D, international financiers are keen on investments, changes in company operations are fast etc. The big kick off for the company happened, when financiers invested heavily for R&D to improve the companies' economical facilities. In this case, the Fibrogen Europe Inc moved abroad near the global markets.

Discussion

What is meant by successful SME internationalisation process? Since business is a process with different stages showing differing results, small steps in the right direction might be considered a success by management, while researchers and financiers often measure success by profit or turnover (Kjellman and Ramström 2004). According to Peters and Waterman (1982), characteristics of successful firms are their capability to adjust to changes in the business environment. Building business networks based on strategic alliances, is a strong and visible trend in the today's business environment. But why do companies build business networks more than before? One answer is to achieve a power against the globalization and internationalization. For SMEs, one of the main goals is to achieve the access to the international markets and expand the market possibilities. The SME internationalisation process is influenced by the network structure and facilitated by the accumulated effect of pull-push forces, learning, tacit knowledge and social contacts. The impact of increased level of internal internationalisation or network competence is a form of network effect on an individual firm (Ritter 1999). It is claimed that this type of network internationalisation process is different from the Uppsala incremental model (Johanson and Vahlne 1977) and more close to the process of born global. A firm can get gradually involved in international business operations through its input channels, mainly through purchasing and logistical operations (Luostarinen and Welch 1988)

In this case-based study, the authors have examined the internationalization processes of the three case companies in bio- and medical industry sector in Oulu in Northern Finland. When comparing case processes based on the Uppsala Internationalization model, the situations are different. SBA Science Ltd was clearly on the second level of the model, and the decision to expand by internationalization compared to the final result was good. The next step will be more resources demanding because of larger investments and increased operations. In Pharmatory case, the company operated in the business network based on a huge effect of the focal company, at least in the beginning. In normal business operations, the company is estimated on the first level of Uppsala Internationalization model. By comparing the third FibroGen Europe Inc case on Uppsala model, it is clearly seen that there is no steps in Uppsala –model for this case. Born Global model is such a dynamic, modern way to internationalize, that Uppsala model seems to be too inflexible to use. As outlined, Uppsala model seems to be old-fashioned and unsuitable for evaluating the modern companies, exceptionally bio-companies, which have long lead-times in R&D operations in the beginning of the companies' lifetime. In the literature, there has been a lot of critique towards Uppsala model earlier. There is an obvious need for an internationalization model with enough flexibility to take account of the full range of foreign market servicing options available to firms. The proposed model should be based on the strategic choice framework (Chryssochoidis et. al. 1997). The Industrial network model is more suitable for internationalization and globalisation because of better focused resources and flexibility. And, also as said earlier, the competition today is between the business networks.

In these three cases, the role of financier or some new operator was interesting. The change in the combination of the board members of directors will improve, in a suitable and right moment, the internationalisation and globalisation speed and effect of the company. Similarity, the new member brought the new resources into the companies, like funding, know-how, marketing channels, better environment, contacts etc. Exceptionally, in slowly developing bio- and medical companies it is important, that all the members understand the global strategy in the same way, and there should be consensus about the time scale. Internationalisation and globalisation must bee seen more a strategic choice than a change of daily operations without a better though of why.

In the 1980s and 1990s, there had occurred a progressive reduction in trade barriers around the world, culminating in several agreements e.g. North American Free Trade Area, European Economics Area etc. Freedom in competition means, that marketers are released from restraints imposed by tariff or non-tariff discrimination and also the customers have a greater ability to source on a truly competitive markets (Chryssochoidis et. al. 1997). At the same time the facilities to communicate via the Internet globally makes transactions faster and more effective. That is why the need for new internationalization and globalisation models are demanded. There should be accentuated more a strategic aspect in internationalization and globalisation before realization of the operation. The main idea should be to operate on the strategic level without operation with big risks and start the operations, when the risks are away. Another interesting topic should be focused in a strategic lifetime of networks; in this case it is danger for opportunism.

Despite the increased opportunities for SMEs to produce and distribute abroad, there are still many risks and barriers. According to (Manalova et a. 2002), internationalisation might spread a small firm's resources too thinly or it might present internal co-ordination problems. Barriers to internationalisation might consist of limited financial and managerial resources, a centralised and autocratic management, underdeveloped strategic planning systems, and the lack of developed administrative and control systems (O'Gorman & McTiernan 2000). Networking with the globally operating large company, gives SMEs benefits in their international operations in the way of operational or strategic skills and knowledge, and in some cases, in a way of financial add.

Conclusion

Business today is more international that ever before. Firms operating in the international markets form cooperative business networks, which compete with other business networks. The large global companies focus on their core competencies and they seek potential co-operation partners, who can take care of some of their none-core businesses. SMEs are in important role in responding these outsourced businesses.

Globalization and internationalization will continue to escalate, bringing about fundamental changes in the traditional boundaries of nations, industries and markets. This increased globalization creates great opportunities, but also poses significant challenges for SMEs. By networking with the large focal company, SMEs have a challenge to take a slice of the large company's success. In this study, the authors have investigated the phenomenon internationalization and globalization from SME's point of view. SMEs have several ways to internationalize and the authors have examined the internationalization process in three cases in the medical and bio industry sector. They all are good examples of how different internationalization models become concrete.

Our research question was: What kind of internationalization opportunities networking with the large company can offer for the SMEs? As we have seen above, the network offers many opportunities for SMEs, but those opportunities will realise to benefits only, if SMEs are active actors in the business network. To conclude, the co-operation with the focal company gives SMEs some advantages, also in their internationalization process. However, networking seems to be the most efficient way to do business and with the focal company's footsteps the SMEs have opportunity to take a slice of the success of the globally operating focal company. Our findings can be summarized as follows: Networking clearly gives benefits to the SME's by:

expanding market possibilities – new customers and new orders,
visibility of the whole supply chain – visibility of the customer's orders, and
opportunity to develop into supplier or component supplier – more value-added work.

Future research should examine more in-depth the internationalization process of the SMEs and how the traditional internationalization models actually illustrates the phenomenon. Also, even it seems that networking is a common trend in today's business and industry practice, maybe tomorrows competitive advantages are different. Thus, more research in the area gives us more understanding of the success factors to industry companies, and to SMEs.

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