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STRATEGIC ALLIANCES AS AN INTERNATIONAL ENTRY STRATEGY

Finnish cleantech SMEs and the Indian market

Master´s Thesis
in International Business

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3.9.2012
Turku

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1 INTRODUCTION

1.1 Background to the study

During the last few decades, the growing global concern about climate change and sufficiency of energy and resources has resulted in remarkably rapid growth of environmental technologies and businesses worldwide. Also among business scholars the discussion has rapidly shifted from the restricting effect of environmental degradation on economic growth to new business opportunities and competitive advantage it can create (e.g. Shrivastava 1992). One of the sectors with the most future growth potential is clean technologies.

According to Sitra (2007, 9), the Finnish Innovation Fund, clean technologies include *"all products, services, processes and systems that result in fewer harmful impacts on the environment than their alternatives."* They can be related to, for example, air protection, clean processes, energy efficiency, green construction, measuring analysis and automation, renewable energy, waste management and water and waste water treatment (Cleantech Finland website a). If used on a large scale, they would enable an increase in the standard of living of the global population without increasing the environmental load. This is why investors have become interested in the field, and increasing amounts of venture capital are being invested in clean technologies (Deloitte 2009, 7).

The demand for clean technologies is growing worldwide, but the need is especially high in countries in which the rising economy and rapid industrialisation have led to increasing energy needs. This is especially true in the case of India which ranks sixth in the world in total energy consumption. The energy consumption in India is certain to increase in growth and providing energy security in the future will requires a shift to renewable sources of energy. (Cleantech Finland 2010, 2.) At the same time, there are also other acute environmental issues that need to be taken into consideration. In its National State of the Environment Report of India 2001, the Indian government named five priority key environmental issues that need urgent actions, namely land degradation, decreasing biodiversity, air pollution with special reference to vehicular pollution in urban areas, management of fresh water resources and hazardous waste management (Loikala et al. 2006, 15–17).

The sheer size of the Indian market has raised its significance not only in the eyes of environmental regulators but also among international clean technology companies and investors in the search for growth. Sitra (2007, 161–164) has estimated that varied business opportunities exist in the country for Finnish companies, especially in the fields of environmental monitoring and measuring, especially air pollution control,

clean technologies, solid waste management and renewable energy. This information has reached the decision-makers of Finnish clean technology companies as well: according to a survey executed among the members of Cleantech Finland, a cooperative network of companies in the Finnish clean technologies cluster, India was estimated to be the fourth most important market in the future (Hyytiä 2011).

Finland has been ranked high several times in environmental comparisons, and the country benefits from a strong environmental image. There are several Finnish companies active in the clean technologies industry and high-quality products and services have been developed especially in the fields of energy intensive industrial processes, combustion and gasification technologies, cogeneration of heat and power, biofuels and pollution control in transportation, wind power, waste management and recycling, just to name a few. (Sitra 2007, 15–17.) At the moment the turnover of Finnish environmental technology companies is estimated to mount 4.5 million euro. Nevertheless, this number can hardly be regarded as satisfactory: the early growth among Finnish companies in the 21st century has been about three per cent whereas the global markets have been growing a lot more rapidly, about 10 % a year. (Sitra 2007, 12.) This clearly shows that the full potential of Finnish cleantech companies has not been fully exploited.

1.2 Clean technologies and Finnish cleantech companies

Clean technologies is a relatively new industry that has emerged along with the rising awareness of energy and resource scarcities during the last few decades, but because of the young age of the industry, no clear definition or established conception exist in the field of what the term actually includes. Reviewing previous writings, no clear distinction seem to be drawn between clean technologies, green technologies, environmental technologies, climate technologies or sustainable technologies. For the purpose of this thesis, therefore, the term clean technologies, or cleantech as they are generally referred to, is adopted as a synonym for all of them. Clean technologies are defined according to the above-mentioned definition by Sitra (2007, 9) as

> *"all products, services, processes and systems that result in fewer harmful impacts on the environment than their alternatives."*

For comparison, a similar definition is applied for climate technologies in the report of Tekes, the Finnish Funding Agency for Technology and Innovation, describing them as technologies related to the prevention of or adaptation to the climate change (Vanhanen et al. 2006, 2). The definition by Sitra is adopted because it does not restrict the field of clean technologies to energy production only, but takes into account the diversity of technological solutions in the field and the role of cleantech in several

industrial sectors where environmental know-how and technologies are needed. Such industries include, for example energy, electronics industry, engineering, chemical and food industry, and infrastructure. The reason for the emergence of clean technologies to all these industries is its capability to increase the value-added for the customer while decreasing costs. (Sitra 2007, 9–10.) This reflects the change in the role of environmental expertise in companies: the focus in environmental issues has rapidly shifted from legislation-driven risk minimisation and necessity to market-driven stand-out potential and competitiveness factor. In addition, market actors no longer see environmental issues simply as cost factors, but they also see their potential for profitability improvement and connectedness to the overall strategy of the firm. (Linnanen et al. 1997, 15.)

The global megatrends behind the growing demand for clean technologies are the climate change and the increased environmental awareness of public and politicians together with the advancing urbanisation that has increased environmental and health problems in the urban areas. The growing middle class in developing countries is creating an increasing demand for consumer goods while at the same time the wastage and scarcity of natural resources such as water is becoming more and more evident. (Sitra 2007, 14–15.) The expectations of clean technologies are high: the turn of the millennium, Hart and Milstein (1999, 23–24) drew parallels between information technologies and global sustainability, arguing that the need to conform to the restrictions of sustainable development was going to be the next major force altering the technological and economic infrastructure and opening new business opportunities as information technologies and oil technologies before it.

Worldwide, the market for clean technologies is estimated to amount to 600 billion euro, of which the Europe accounts for one third. The market is growing rapidly, about 10 % on average, and especially technologies for renewable energy hold great growth potential. (Sitra 2007, 12.) Functionaries of the European Union estimate that with the current policies green industries will create 1.4 million new employments by 2020 (Laatikainen 2009). In Finland, the Finnish government has emphasised the importance of environmental technologies for the future development of exports of the country (Finnish government platform 2011, 74) as former export industries decline. One of the most promising international markets for Finnish cleantech companies is India with its fast growing population and energy consumption (Loikala et al. 2006).

For the cleantech industry to meet these expectations, an environmental programme called Cleantech Finland was established by Sitra for the time period of 2007–2012 to promote the development and integration of the environmental industry and to encourage the internationalisation of these generally small-sized companies by offering financing opportunities (Sitra 2007, 5, 8.) Sitra (2007, 16–17) estimates that Finnish cleantech companies have internationally competitive technology and knowledge in

several sectors of environmental business including: energy intensive industrial processes, industrial automation and electrical power technology, combustion and gasification technologies, cogeneration of heat and power, collection and handling of wood-based fuels, biofuels and pollution control in transportation, wind power, waste management, environmental monitoring and consulting.

In this thesis, small and medium-sized companies (SMEs) are defined according to Statistics Finland as companies that 1) employ less than 250 employees and that 2a) either have a yearly turnover of maximum EUR 50 million or 2b) a balance sheet total of maximum EUR 43 million. Also, SMEs have to be independent from large companies so that these can only own less than 25 % of the SME in question. A large company is an organisation that does not comply with this definition of an SME. (Statistics Finland 2012) These characteristics of Finnish cleantech companies obviously influence greatly the internationalisation process that they intend to undertake. A lot of research has been conducted on SME internationalisation, and studies have shown that the internationalisation patterns of larger companies do not fully apply to small and medium-sized firms (e.g. Oviatt – McDougall 1994). SMEs are characterised by limited resources and their small size makes them especially vulnerable to the risks of internationalisation (Lu – Beamish 2001, 567).

Finnish cleantech companies face contradictory pressures from their operational environment. On one hand, the domestic market for environmental industry solutions in Finland is too limited for many firms, and the only opportunity to find new markets and expansion possibilities is to internationalise into foreign markets. On the other hand, however, the global markets of this sector are highly competitive and dominated by large multinational enterprises. Compared to them, Finnish actors are small and fragmented, and do not cooperate in international operations. Because of their small size they are not able to present bids that would meet the requirements of large international investors. (Hyötyläinen et al. 2004, 15.)

A more detailed assessment of the major hindrances and challenges for the internationalisation of Finnish SMEs in the energy and environmental field was initiated by Tekes, the Finnish Funding Agency for Technology and Innovation (Aarras ym. 2008, 9–24). The study reveals that the modest international success of Finnish companies is not due to the fragmented structure of the sector only, but there are remarkable shortcomings in the business know-how of the companies as well. The researchers assessed the management of the business activities of Finnish companies in the energy and environmental sector including the management of value chain, inner organisation, business environment analysis and future planning. They stated that most of the actors in the field are strong in technological know-how but they lack the capability to efficiently commercialise their innovations. More know-how is needed primarily in the fields of sales and marketing because the highly innovative products of

the energy and environmental technology often have no existing markets and the demand has to be created by the supplying company itself. In addition, companies lack capabilities in competitive intelligence, international operations management and information management. Finally, connecting with right local partners in the host market was deemed challenging.

1.3 Objective of the study

As described in the discussion above, the Finnish cleantech industry has not yet reached its full potential despite the significant financial support from Finnish government, and it is still unclear how the internationalisation of Finnish cleantech SMEs could be encouraged. The internationalisation of high-tech and knowledge-intensive SMEs has been assessed in several studies, and they are used as reference in this thesis also, but no studies examining the internationalisation of the cleantech sector could be identified. The author estimates a separate investigation of cleantech SMEs justifiable because their similarity with other high-tech companies cannot be unconditionally assumed.

In addition, the author suggests that the characteristics of the Indian cleantech market have not been examined closely enough. The potential of the market has been identified, and it has raised the interest of Finnish cleantech companies, but no studies exist on why so few companies have actually attempted entry to the Indian market. In this thesis, this issue is being addressed and estimations are made on whether the choice of entry mode could provide an operational solution to the problems faced by Finnish cleantech SMEs. Researchers (e.g. Lu – Beamish 2001, 570) have suggested alliances as a solution for overcoming the limitations of SME internationalisation. In author's opinion, this proposition seems also intuitively reasonable. Therefore, this study embarks upon the presumption that strategic alliances could serve as a functional solution in encouraging the internationalisation of Finnish cleantech SMEs to the Indian market.

In distinction to various informal networks and relational agreements studied within the field of international business, the examination is limited to formal, equity-based or contractual strategic alliance agreements solely. These alliances are examined in the wider context of international entry mode strategies and their applicability to the internationalisation process of Finnish cleantech companies is evaluated in comparison to independent, non-collaborative modes of entry. The point of view of the study is that of Finnish cleantech companies, and it focuses on the early stages of alliance formation including the preliminary decision to opt for strategic alliances and the problematics of

finding a suitable partner. Later stages of the alliance formation process, including alliance integration and management, are left to be assessed in future studies.

Because of the high heterogeneity of Finnish cleantech companies, this study is outlined to cover only the small and medium-sized enterprises within the group. This limitation was made because it simplifies the analysis of the study by creating a more homogeneous and comparable group of companies that face similar incentives and hindrances to internationalise, but even more importantly because they are the majority of Finnish cleantech companies and have the most internationalisation potential for the future. Moreover, a decision was made to limit the analysis to manufacturing firms only. Even though most of these firms have service elements related to their products, the physical production and logistics most definitely influence their entry mode decisions.

Thus, the objective of this study is to examine whether *strategic alliances could be an efficient entry strategy for Finnish cleantech SMEs entering the Indian market*. In order to answer to this question, it is further divided to three sub-questions:

- What are the key factors influencing the international entry mode decision of Finnish cleantech SMEs?
- What are the major factors affecting the entry of Finnish cleantech SMEs to the Indian market?
- How do Finnish cleantech SMEs use strategic alliances in their internationalisation process?

This study endeavours to provide answers to these questions by combining knowledge provided by previous research with the insights of Finnish cleantech SME decision-makers gathered through interviews. In addition, experts of cleantech industry and Indian business are used as informants. Qualitative approach to the research topic was chosen because Finnish cleantech SMEs are highly heterogeneous, and understanding their individual internationalisation processes requires deeper information than can be achieved by quantitative methods. However, this approach sets limitations to the number of cases analysed, which decreases the generalisability of the research results. Also, the heterogeneity of Finnish cleantech SMEs itself makes it impossible to draw any generalisable conclusions from the study. In addition, it has to be noted that most of the companies interviewed were in their early stage of internationalisation, and their limited practical experience must have influenced their knowledge and insights of internationalisation.

The study is structured as follows: After this introductory chapter, Chapter 2 reviews the previous research on international entry mode choices of SMEs. The chapter proceeds from general entry mode choice theories to the specific characteristics of emerging markets and the influence they have on entry mode choices. Emerging market context is discussed on a general level because few studies exist on internationalisation

entry strategies into the Indian market alone. Nevertheless, this group of markets is highly heterogeneous, and one should be cautious in drawing any generalising conclusions of them. Therefore, at the end of the chapter, special attention is given to the Indian business environment in order to emphasise the special characteristics of this market that have an influence on the market entry decision and strategy.

The objective of Chapter 2 is, firstly, to evaluate the circumstances in which collaborative modes of entry might come into consideration, and whether this collaboration should be organised by equity-based or non-equity agreements, and secondly, to evaluate the circumstances that prevail on the Indian market. After this, Chapter 3 focuses more specifically on strategic alliances. The chapter discusses the interrelatedness of motives for entering strategic alliances, the type of alliance chosen, and the alliance partner selection. The aim of the chapter is to analyse what are the supplementary decisions, in addition to the primary decision to opt for alliances, that Finnish cleantech SMEs have to take in the initiation process of strategic alliances.

Once Chapters 2 and 3 have offered an overview of the previous research on the issue of international entry mode selection and strategic alliance formation and, Chapter 4 embarks on the empirical contribution of this study. In the chapter, the outline of the conducted interview research is presented and information is given about the interviewees. The results of the study are presented in Chapters 5 and 6; Chapter 5 introduces each case company individually, whereas Chapter 6 assesses their similarities and differences in a cross-case analysis. Finally, in Chapter 7 conclusions are drawn from the course of the study.

2 INTERNATIONAL ENTRY STRATEGIES OF SMES

The intensifying globalisation trend and increasing internationalisation of business have inspired a substantial line of research on the international entry strategies employed by companies. In addition to large multinational enterprises, the internationalisation of small and medium-sized enterprises has also been studied. In this chapter, potential determinants of international entry mode choices of Finnish cleantech companies are assessed by first presenting an overview of the previous research on SME international entry strategies, and second, by evaluating the specific nature of emerging economies as target markets and the influence that it has on entry strategies employed. Finally, an overview of the Indian business environment is presented.

2.1 Determinants of SME entry mode decision

During the last 15 years, international entry mode research has gained increasing momentum among scholars and an extensive, although not exhaustive, list of individual entry modes has been presented to describe the forms of operations that firms use when entering foreign markets. (Brouthers – Hennart 2007, 395–396.) This thesis adopts the entry mode definition by Sharma and Erramilli (2004, 2) according to which entry mode is "a structural arrangement that allows a firm to implement its product market strategy in a host country either by carrying out only the marketing operations (i.e. via export modes), or both production and marketing operations there by itself or in partnership with others (contractual modes, joint ventures, wholly owned operations)." This definition considers two key dimensions of the entry mode choice: the *location* of production and/or marketing functions, and their *ownership*. The classification of entry modes along these two dimensions is presented in Figure 1.

In the figure, the number of value functions effectuated in the host country increases horizontally from left to right, and the degree of entrant's ownership over host country assets vertically from the bottom to the top. For example, host country intermediaries are located at the left bottom corner because their use implies that only marketing functions are effectuated in the host country, and the entrant does not have any ownership over local assets. At the other extreme, in the right upper corner, wholly owned subsidiary implies that all company functions are effectuated in the host country, and that the entrant has full ownership over local assets.

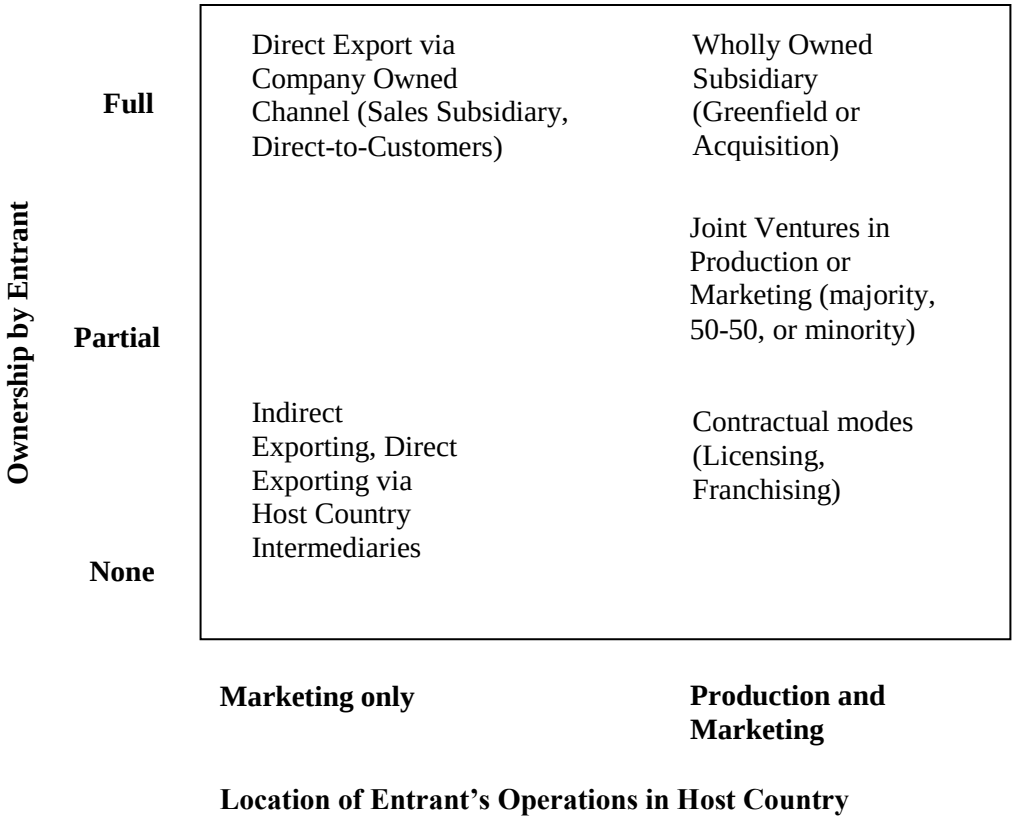

Figure 1 Entry modes by location and ownership characteristics (Sharma – Erramilli 2004, 3)

The definition of Sharma and Erramilli is adopted because it encompasses both dimensions of entry mode choice that lie in the focus of this study: the choice between cooperative and non-cooperative modes of entry, and between equity and non-equity modes. Most of the research conducted on international entry mode selection is based on the dichotomous variable of full and shared ownership, but also equity levels have been examined in several studies (Canabal and White III 2008, 275). This difference of approach has to be kept in mind when evaluating the results of previous research presented below.

Along with the research on individual entry modes, the factors influencing the entry mode choice decision have also spurred a line of studies assessing the issue from different perspectives. Most of this research has studied the internationalisation process of large multinational enterprises (MNEs), and only recently a growing number of researchers have become interested in the entry mode choices of small and medium-sized enterprises (SMEs) (Brouthers – Hennart 2007, 411). One reason for the minor interest in SMEs might be that some scholars have reported that theories considering entry mode choices of large companies can also be applied to SMEs, even though not fully (e.g. Nakos – Brouthers 2002; Brouthers – Nakos 2004). However, considering the economic importance of SMEs and the fact that entry mode type is demonstrated to be

significantly related to their performance (e.g. Lu – Beamish 2001, 578), a separate investigation of SME entry mode behaviour seems justifiable.

Among the most generally applied theories on international entry mode choice decision are transaction cost theory, resource-based view, institutional theory and Dunning's eclectic paradigm. (Brouthers – Hennart 2007, 400.) However, the results derived from empirical studies are inconsistent (Morschett et al. 2010, 61). Below, each of these theories is discussed in turn with special emphasis on the inherent characteristics and internationalisation process of SMEs. Finally, concluding remarks are made about the linkages between the models.

2.1.1 Transaction cost theory

Transaction cost theory (Williamson 1985) is the most acknowledged theoretical perspective in international entry mode research (Brouthers – Hennart 2007, 400; Canabal – White III 2008, 269). According to transaction cost theory, firms can organise their economic tasks through hierarchy, markets or contracts. Each mode is organised differently and each will be most efficient in organising a certain type of transaction. The efficiency of markets is often weakened but market failures, against which companies try to protect themselves with contracts. Contracts decrease the risk of exchange because they specify the terms of cooperation before the transaction takes place and because they are enforced by a third party. (Hennart 1989, 214.)

However, the conclusion of an agreement inevitably causes transaction costs that arise from bounded rationality and opportunism that are prevailing features of economic actors' behaviour. *Bounded rationality* refers to the fact that economic actors are supposed to make rational choices, but that their rationality is limited by the information asymmetries that prevail on the market and cause uncertainties. *Opportunism*, on the other hand, means intentional self-interest seeking that causes distrust between the contracting parties and thus causes transaction cost as preventive measures need to be taken. (Williamson 1985, 45–49.)

Because of these behavioural assumptions, contracts fail to prevent uncertainty especially when there is either an information asymmetry between the parties, or the environment is changing unpredictably. In these situations hierarchies are the most efficient way to execute transactions; no contracts to protect the parties are needed because there is no more incentive for the opponent to extract yields. (Hennart 1989, 214–215.) Hierarchies have, however, transaction costs of their own: together with the growing organisation increase the costs of bureaucracy: managing complexity and preventing sub-optimisation (Williamson 1985, 149).

Hence, the transaction cost analysis implies that there are rational economic reasons for organising different transaction in different ways. The factors that influence the choice are the asset specificity, uncertainty and frequency related to the transaction. *Asset specificity* means the degree to which the investment in the contract is made in durable assets that cannot be redeployed in other contexts should the contract be interrupted. This increases the risk related to the contract. In order to manage the risk and commit both parties in the investment, contracts with high asset specificity are commonly realised through common ownership and vertical integration. (Williamson 1985, 52–54.)

Several studies have tested the applicability of the asset specificity on the international entry mode choices made by firms in general and by SMEs more specifically. Burgel and Murray (2000) examined the international market entry choices of start-up companies in high-technology industries and found that the products that require extensive *customisation* are more likely to be sold internationally without the use of intermediaries, which supports the hypothesis of transaction cost theory. More generally, however, the studies have used firm's *R&D and /or advertising intensity* as the measure of asset specificity and the outcomes have been less clear. The mixed results might be because, despite Williamson's (1985, 53) original focus on vertical integration (between two successive actors in the same value chain), the framework has been used to explain horizontal integration between actors in the same level of value chain as well. It seems that even though asset specificity succeeds in explaining the choice of entry mode in the case of vertical integration, it fails to do so in the case of horizontal integration for which the asymmetry of information between the parties and the need for complementary capabilities seem to be more convincing rationales. (Brouthers – Hennart 2007, 400–401.)

The second factor, *uncertainty*, refers to the fact that different contractual and governance structures differ in their capability to adapt to changes in the environment. The increased level of uncertainty in the operating environment, caused by the bounded rationality and opportunism described above, might have diverse implications for the organisational decisions of firms: on the other hand, it can decrease the willingness of economic actors to engage in asset specific investments because of the increased risk, but might also, on the other hand, be just the incentive to organise operations internally in order to avoid the opportunistic behaviour of the market. (Williamson 1985, 56–58.)

This issue become evident especially in the case of technology. Technology can be embedded in products, documents or people. The exchange of technology is often realised under particularly high uncertainties because the supplier cannot reveal its full content to the buyer prior to the transaction without the fear of losing the knowledge related to technology without compensation. This problem can be solved by *embedding the technology* in tangible products or by protecting the embedded knowledge and

know-how with *patents*. But even if this is done, and both parties are willing to execute the transaction, there might be problems in the transfer because knowledge is particularly prone to transmission hazards. Tacit knowledge can be difficult to explicate and its transfer can require long and costly training of the buyer. Therefore it is often more efficient to execute the transfer in a hierarchy. (Hennart 1989, 218.) This view is supported also by Ojala (2008, 141) who suggests that knowledge-intensive small firms are prone to choose direct entry modes because the complexity of their offering requires intensive cooperation with customers and high-quality after-sales services.

Finally, the concept of *frequency* implies that specified, non-standard organisation for certain transactions can only be justified if the frequency or the value of transactions covers the cost of organising and managing the organisation (Williamson 1985, 60). There are still not clear answers to whether this dimension alone can explain the entry mode choice but in its totality transaction cost theory has proven to be efficient in explaining the decisions made by internationalising companies (Brouthers – Hennart 2007, 400, 404).

Brouthers and Nakos (2004) have enlarged the perspective of transaction cost theory to SMEs: they found in their study concentrating on the international entry mode choices of the SMEs not only strong support for the applicability of the transaction cost theory, but also a positive relation between the conformity of the entry mode to the model and the firm performance: companies choosing the entry mode predicted by the model performed better than those companies that did not. Yet, some reservations are to be made; Oviatt and McDougall (1994, 55), in studying international new ventures, counter the argument that SMEs are distinguished from more established companies by the minimal use of internalisation and greater use of alternative transaction agreements. Because of their scarce resources, they tended to use these structures even when the risk of opportunism was high. The statement of Oviatt and McDougall is significant in the sense that it acknowledges the limitations facing SMEs, an issue seized by the resource-based view.

2.1.2 Resource-based view

Even though the transaction cost theory has clearly targeted some valid issues, it has been criticised as being too concentrated on the minimising costs instead of creating value. Along with the general development of business research, the focus has more recently shifted towards the internal capabilities and resources of a firm as its primary competitive advantage, and resource-based view has gained ground also within the international market entry research. Whereas the transaction cost analysis focused solely on the exploitation of the current firm advantage, the resource-based view adopts a more

dynamic approach to markets and competition and takes into account the development of such advantage. (Madhok 1997, 40.) Therefore, it is easy to see the added value that the resource-based view brings to the research of entry mode choices in today's globalised and complex business environment.

The resource-based view departs from the idea that firms enter foreign markets in order to either exploit an already existing advantage that a firm possesses or further strengthen it, or to develop a new advantage based on its capabilities in the new context (Madhok 1997, 41). Luo (2002, 48) refers to these two separate functions as capability exploitation and capability building. *Capability exploitation* means taking advantage of firm resources that offer it sustained competitive advantage. In order to have such potential, the resources of the firm have to be valuable so that they improve the efficiency and effectiveness of the firm's strategy, rare among competitors, imperfectly imitable because of unique historical conditions or causal ambiguity and complexity, and non-substitutable by any strategically equivalent resource that is easily available. (Barney 1991, 105–106.)

What these strategic resources could be has been assessed in numerous studies. The most studied resource has been experience. Johanson and Vahlne (1977, 27–28) stated in their study of the incremental internationalisation process of firms that companies increase their commitment to foreign markets along with the experience that they gain from the target market and the internationalisation process in general, and proceed from non-equity entry modes to equity entry modes. Other scholars have found parallel results (Brouthers – Hennart 2007, 405). Yet, in the case of SMEs this relation is not clear; Pinho (2007, 727) reported in his study on SMEs a positive correlation between the SME *international experience* and the probability of using equity-based modes of entry, whereas in the study of Nakos and Brouthers (2002, 58) no correlation could be found. Conversely, it seems that the previous experience affects the entry mode choice of SME so that an internationalising company is more prone to choose a *previously used entry mode* that it has already employed in the domestic market (Burgel – Murray 2000, 54). This exemplifies how the past experiences of a firm form its routines on the basis of which it undertakes future actions (Madhok 1997, 40).

Another firm-related factor speculated to influence the SME choice between equity and non-equity entry modes is *firm size*, but this proposition has not been supported by empirical evidence (Nakos – Brouthers 2002, 58; Pinho 2007, 727). One explanation to this might be that, within the group of SMEs, the differences in size are not significant, but all the companies face the same resource constraints (Nakos – Brouthers 2002, 58). Nonetheless, in studying the non-equity market entry mode choices of start-up companies in high-technology industries Burgel and Murray (2000, 49) noted that the bigger the company, the more likely it was to operate internationally through

intermediaries instead of direct export. Thus, within the group of non-equity entry modes, the size has an influence on entry mode decision.

Attention has been given also to the characteristics of the founders or managers of SMEs because their role and influence is pronounced in small organisations. Pinho (2007, 721, 728) hypothesized that factors such as entrepreneur's or manager's age, level of education, orientation to risk and market-specific knowledge would influence the entry mode choice, but no significant support to the hypothesis could be found. However, Ojala and Tyrväinen (2009, 270), when studying the internationalisation behaviour of knowledge-intensive SMEs, postulate that managers' *education*, *international experience* and *age* together with *language proficiency*, *international experience regarding the host market*, and *motives for entering the market* influence their estimations about the psychic distance between the home and the host country. This is important to note because it shows that even though macro-level cultural distance between countries, discussed in more detail below, does not seem to have significant impact on the entry mode choice (Morschett et al. 2010, 67), in the firm-level the perceptions of individual managers might influence the internationalisation process.

The effect of managerial characteristics is clearer when examining the SME choices between different non-equity entry modes; for example, Burgel and Murray (2000, 49) observed that the *international experience of managers* was negatively related to the use of collaborative exporting through intermediaries. According to them, this could be due to the fact that since managers already have networks abroad, they do not need to rely on the expertise of local partners. Nummela, Saarenketo and Puumalainen (2004, 60), also studying exporting activities of small companies, observed that the export success was positively related to the inherent global mindset of the firm which means both attitudinal openness towards cultural differences and proactive behaviour towards internationalisation. Westhead, Wright and Ucbasaran (2001, 351), on the other hand, found that older managers with *denser contact networks* and considerable *management and industry-specific know-how* had a significant role in the decision of new and small businesses to internationalise in the first place.

Even though Pinho (2007, 728) did not found any correlation between the managerial characteristics and entry mode choices of SMEs, the firm's *ability to innovate* was reported to be a significant predictor of the entry mode choice; the higher the innovation ability, the higher the probability of using equity entry modes. An explanation for this can be that a focus on a specific, small niche market reduces the investment risk and resources needed, thus encouraging the use of equity entry modes for higher control (Nakos – Brouthers 2002, 48). This finding is of special interest to high-technology companies, such as cleantech companies that want to safeguard their innovations and tacit knowledge. The finding is also in line with the hypotheses of transaction cost

analysis, but as stated above, empirical results on the subject are not unanimous in all parts.

The technology aspect was studied also by Shrader (2001, 56) who stated that the SME choice of entry mode and the subsequent performance of foreign operations are dependent on the primary *competitive advantage* of the firm. If the competitive strategy of a firm is based on technological or marketing advantages, it should choose a non-collaborative mode of operation or its performance would suffer. Burgel and Murray (2000, 54), however, found opposite results; products incorporating more *innovative and novel technology* were more likely to be distributed through indirect, collaborative exporting.

Two conflicting matters might explain this variation in the case of technology-based products; on the other hand, the reluctance to engage in collaboration might be due to the difficulty of transferring knowledge between actors discussed above in the context of the transaction cost analysis, while on the other hand, collaboration might be just the only viable compromise between the limited resources of the company and the technology transfer needed to market the product (Burgel – Murray 2000, 53). Thus, the organisational capability perspective explicitly takes into consideration the constraints of company resources as well. Whereas the transaction cost analysis focuses on avoiding the market failure, the resource-based view acknowledges the possible hierarchical failure; even though it would be, according to the transaction cost analysis, rational to internalise a transaction, it does not necessarily imply that the company in question has the required resources to manage internalisation. (Madhok 1997, 44.)

Finally, some scholars have suggested that the choice of international entry mode depends on whether the internationalising organisation is a *manufacturing company* or a *service company* (Grönroos 1999, 290; Andersson 2011, 97). The internationalisation challenges faced by service companies differ from those faced by manufacturing companies because of the special characteristics of services as an offering: because services are consumed in interaction with the customer, the production cannot be separated from the consumption but both have to occur at the same time, at the same place. This is why the internationalisation of services often requires more resources. (Andersson 2011, 101.) Manufacturing firms can resort to indirect export through intermediaries and incrementally increase their commitment to the target market (Grönroos 1999, 291) while service firms are forced to establish immediately direct contact with the customer (Carman – Langeard 1980, 18).

Returning back to Luo (2002, 48) mentioned above in the beginning of the chapter, the company resources can, however, be enhanced through capability development. *Capability development* refers to the building of new capabilities through learning from other organisations and strengthening and creating new advantages in new environments. This approach is future-oriented and aimed at assessing what are the

capability constraints of a company, and how such capabilities could be developed within an acceptable timeframe. Especially the *timeframe of capability development* might urge collaboration between companies because even though a firm would be able to develop the necessary resources within its own organisation, the process might consume too much time for the firm to remain competitive in a dynamic business environment. (Madhok 1997, 51.) This issue will be raised anew when discussing the constantly changing and evolving emerging markets.

2.1.3 Institutional theory

Even though the organisational capability perspective takes into consideration the limited resources of organisations more than the transaction cost theory does, they both still posit the view that the primary criteria for entry mode selection are economic efficiency and competitiveness. A divergent view is, however, posited by the institutional perspective which states that firms make their operational choices, entry mode choices among others, primarily to gain legitimacy. By legitimacy is meant the acceptance from the surrounding environment that gives a company the right to do business within it. As the constitution of legitimacy depends on the surrounding institutional environment in a given context, so do the organisational forms suitable for achieving it. (Yiu – Makino 2002, 667–670.)

Scott (1995) suggests that the institutional environment giving rise to pressures to legitimacy consist of three pillars, namely regulative, normative and cognitive pillar. The *regulative* pillar of institutional environment consists of the establishment of rules, inspecting the conformity of actors to them and imposing sanctions in case of contraventions. The processes for doing so can be informal but first and foremost formal, established institutions such as police and court. (Scott 1995, 35.) Yiu and Makino (2002, 675) found in their study a correlation between the *favourability of the regulative environment to foreign investors* and the entry mode choice; the more restrictive the regulatory environment in the host country, the more likely foreign firms were to prefer the use of collaborative joint venture over wholly owned subsidiaries.

According to the researchers there are two main reasons for this: firstly, cooperation with a local partner helps the company to overcome the liability of foreignness. Most often the regulatory constraints are imposed on foreign rather than indigenous firms, and allying with a local partner might ease some requirements. Secondly, the foreign firms can benefit its free-raider position in the partnership: it has the possibility to learn from the partners skills and knowledge on how to deal with authorities, but it can also take advantage of the reputational capital of a local firm. (Yiu – Makino 2002, 671.)

The *normative pillar*, on the other hand, refers to the values and norms of social life that define the desirable objectives and the acceptable means to achieve them (Scott 1995, 37–38). The achievement of social legitimacy, that is; conformity to local normative rules, is necessary for a foreign company in order to operate successfully in the host country, but impeded by two factors: *cultural distance* and *ethnocentricity*. The more distant the culture of the host country is from that of the foreign firm, the more difficult it is for the firm to reach the essence of the community. The ethnocentricity of the host culture further aggravates the situation if the attitude of community towards foreigners is negative from the offset. In such situations the cooperation with a local partner might ameliorate the chances of successful entry. (Yiu – Makino 2002, 671.)

Luo (2002, 48) replaces the concept of regulative and normative institutions with the concept of contextual hazards. According to him, contextual hazards include *environmental complexity*, *industrial structural uncertainty* and *business cultural specificity*, and they influence the degree to which a company is able to exploit its current capabilities and forced to develop new ones. The more complex the environment, so the argument goes, the more focal new capability development is for sustained competitive advantage and the more likely foreign companies are to enter alliances with local partners. This statement is in contrast with the view of transaction cost theory; as discussed above, the theory argued that in circumstances of increased uncertainty, also the transaction costs rise, and firms should be rather inclined to internalise their transactions in order to lower their costs than to enter cooperation.

An opposite view, however, has been posited by Schwens, Eiche and Kabst (2011, 336, 344) in their study combining the resource-based view and institutional theory in the context of SMEs. They examine the moderating effect of formal institutional risk and informal institutional distance on entry mode choice and reveal in their study that SMEs with specific proprietary know-how tend to choose equity-based entry modes in order to safeguard their knowledge. High formal institutional risk and informal institutional distance between the home and the host country further strengthen this tendency. They also posit that this effect is especially important in the case of SMEs because, unlike large MNEs, they cannot capitalise on scale and scope. Knowledge remains the only competitive advantage for SMEs and therefore its protection is vital for their survival. Also other researchers have postulated that the importance of host country institutional environment is especially high in the case of SME internationalisation because of their limited managerial resources (Brouthers – Nakos 2004, 233).

Finally, the *cognitive pillar* comprises the widely shared cognitive structures according to which the actors in a given society interpret their environment and which limit the number of interpretations accessible to them. The same way organisational decision-makers are restrained by their cognitive structures and tend to favour

alternatives that conform to them, that is; are cognitively legitimate. That is why companies are more likely to mimic other firms when entering new institutional environments and choose the same entry modes that have been successfully used by previous entrants. The same way a firm is likely to repeat the same entry mode decisions that it has used itself before. (Yiu – Makino 2002, 671–672.)

A research review prepared by Morschett, Schramm-Klein and Swoboda (2010, 61) supports the view that the factors discussed above, namely cultural distance and uncertainty and legal environment of the host country, are among the most studied determinants of international entry mode choice. In most parts, the findings of the review are also consistent with the studies presented above, even though the correlation between cultural distance and cooperative modes of entry becomes less clear in the light of combined research results (Morschett et al. 2010, 67–69). Interestingly enough, the review suggest that the most influential antecedent of the entry mode choice is not host country environment but *culture of the home country*; companies from countries with high power distance and high uncertainty avoidance are more likely to establish wholly owned subsidiaries because they prefer to centralise authority for higher control (Morschett et al. 64–65, 70).

2.1.4 Dunning's Eclectic Paradigm

The discussion above has demonstrated that several perspectives with apparently divergent reasoning exist within the field of international entry mode research, and that more research is still needed to clarify contested issues. Nevertheless, the review also demonstrated how interrelated the different perspectives actually are, and how defective understanding of the whole one obtains by examining it from one perspective only. Indeed, calls have been issued by scholars for more integrative approach in international entry mode studies (e.g. Meyer – Peng 2005, 613–614; Brouthers – Hennart 2007, 407).

One such approach is Dunning's eclectic or OLI paradigm (Dunning 1988; 1993). The components of the paradigm are ownership-specific advantages (O), location-specific advantages (L) and internalisation benefits (I). The ownership-specific advantages imply that the greater competitive advantage a company has over its rivals on the host market, the more likely it is able to successfully internationalise on this market. The location-specific advantages, on the other hand, refer to the attractive features of an operating environment that foster the realisation of ownership-specific, and thus favour the company presence in this specific location rather than elsewhere. Finally, if the ownership-specific and location-specific advantages are accessible for a company in a given market, the internalisation benefits of transaction are to decide whether the company should operate through open markets or internalised hierarchies.

(Dunning 2000, 164.) The framework was developed before the different theoretical perspectives presented above had been fully formulated, but examining the issue retrospectively, it can be seen to combine the resource-based view (ownership-specific), institutional theory (location-specific) and transaction cost analysis (internalisation) (Brouthers – Hennart 2007, 407). Also Dunning himself has agreed with this view (Dunning 2000, 166).

Transaction cost theory, resource-based view and institutional theory together cover most of the application area of Dunning's eclectic paradigm, but it still adds to the understanding of location-specific factors of entry mode decisions. The eclectic paradigm adopts a market-driven view of the operating environment, and studies employing this framework have introduced demand-driven factors of entry mode decisions in their work. Both Nakos and Brouthers (2002, 58) and Pinho (2007, 728) demonstrated that the greater the perceived *market potential* and growth expectations in the host market, the more likely internationalising SMEs were to engage in equity-based modes of entry. Rather interestingly, however, Morschett et al. (2010, 68) posited in their review that the larger the *market size*, the more likely firms are to engage in cooperative modes of entry. This could be because a larger market implies higher investment that can be obtained through cooperation.

In this chapter, an overview of the research on international entry strategies of SMEs has been provided presenting the four main theories used to analyse and explain the behaviour of small and medium-sized companies when entering foreign markets. However, the studies covered here have focused on analysing strategies realised in developed market context, and their applicability to other market environments remains questionable. More detailed discussion on the topic follows in the next section.

2.2 Entering emerging markets

The four main theories in the field of international entry strategy research presented above, namely transaction cost theory, resource-based view, institutional theory and Dunning's eclectic paradigm, have been proven to apply well in the developed market context where certain presumptions can be made about the structure and stability of the institutional environment companies face. Nevertheless, researchers do not fully agree whether or not these theories can be transferred to the context of emerging markets where these presumptions no longer hold. In this chapter, main findings of the recent research on determinants of entry strategies to emerging markets are reviewed and considerations are presented on how they influence the entry mode choices available to cleantech SMEs.

2.2.1 Entry strategies into emerging markets

As emerging markets are assuming an increasingly important role in the world economy, an upsurge of international strategy studies concerning these market areas has occurred in the 21st century. The studies published so far have mainly based their analysis on the same theories on international strategy choices presented above. It has become evident, however, that in the new environmental context of emerging markets the strengths and weaknesses of these theories need to be re-estimated. Moreover, the heterogeneity of emerging markets complicated the comparability of studies effectuated in different countries. (Wright et al. 2005, 2.)

From the point of view of this study, it has to be also taken into consideration that most of the research on entry strategies into emerging markets has concentrated on large MNEs while little attention has been dedicated to SMEs. Nevertheless, there is evidence that this approach might not be fully justifiable; for example Johnson and Tellis (2008) postulate that smaller firms tend to be more successful than larger firms in emerging markets. This shows that also the strategic opportunities of SMEs on emerging markets are worth examining.

This study employs the definition of emerging market provided by Arnold and Quelch (1998, 8) according to which emerging economies are countries that fulfil three criterion: first, they are characterised by low absolute level of economic development, indicated by the average GDP per capita or relative balance of agrarian and industrial activity. Second, the relative pace of economic development, indicated by GDP growth rate, is high, and third, the country has a system of market governance and in the process of economic liberalisation. A distinction is made, however, between the emerging markets of Asia, Latin America, Africa and Middle East, and the transition economies of Central and Eastern Europe (cf. Hoskinsson et al. 2000, 249). Yet, even this definition of emerging market comprises a wide variety of economies with highly differing economical and socio-cultural features. Therefore, in order limit the heterogeneity of examined economies, this study will focus its considerations on the emerging Asian market such as India and China.

Emerging markets are generally characterised by weak economical conditions including low income level and limited social services. From the point of view of businesses, operations are often restricted by insufficient infrastructure. The population growth in these countries is substantially higher than in developed countries, predicting market growth in the future, but at the same time the income disparities are high and population is dispersed in large geographical areas. The political environment of emerging economies is also different from developed countries: the link between government and business is often closer and considered appropriate by the society. The downside of this is that corruption of civil servants and government officials is on

average higher than in developed countries. Corruption not only complicates the operating of foreign firms in the country but also hinders the economic development of the host country. (Punnett 2006, 395–402.)

In addition, differences exist between the socio-cultural contexts of developed and emerging economies: in conditions of scarce resources, the importance of personal relationships and networks is high, and entering these networks is extremely difficult for foreign companies that arrive outside the system. Foreign firms might also face problems in human resource management because the performance and control orientation of workforce in emerging markets differs greatly from that of developed countries: in circumstances of turbulence and instability, employees have low sense of control and do not attach great value to job performance. Yet, the respect to authority is high and communication with work staff might be difficult due to indirect communication manners. (Aycan 2006, 407–409.)

Hoskinsson, Eden, Lau and Wright (2000, 252) suggest that transaction cost theory, resource-based view and institutional theory all apply also in the context of emerging markets, but that their importance for internationalisation strategies vary in different stages of the development. They hypothesise that in the early stages of market emerge, the institutional theory is best to explain the factors influencing entry strategies because governmental and societal ties are still stronger than in developed economies for the reasons explained above. Transaction cost theory and resource-based view only become relevant for the international entry mode choices when market matures and more stable institutions are established. More recently, Meyer, Estrin, Bhaumik and Peng (2009, 71) have studied the moderating role of the institutional environment of emerging markets on entry strategies and come to the conclusions that the stronger the *market-supporting institutions* in an emerging market, the more likely foreign firms are to use non-collaborative modes of entry, that is, greenfields or acquisitions. In the case of weak institutions, collaborative joint-ventures are more likely to occur.

The reasons for this might be formal, explicit regulation by the government, for example restrictions on how high equity shares are allowed for foreigners, but also by the increased costs of doing business caused by high information asymmetries. In a market context with weak institutions, information about partners is not easily found and transaction costs are high. Especially acquisition as an entry mode becomes difficult if financial markets are underdeveloped. In such circumstances, joint ventures might be the only means to access resources held by local firms. (Meyer et al 2009, 63–64).

Also, a local partner can help in building better relationships with governmental authorities that are in powerful position in emerging markets (Luo 2001, 450). This might be a key factor for example in obtaining operation licenses that are often limited in number in emerging markets (Arnold – Quelch 1998, 10). Nevertheless, more open market economy does not automatically mean that the preconditions for success for

foreign firms would be better in a given market: Johnson and Tellis (2008, 10) have found quite opposite results in their study that stated that increased *market openness* in emerging market context actually decreases the possibility of successful market entry by foreign firms. This is because more open markets mean easier access to everyone, which in turn intensifies competition.

One of the most influential factors of the institutional environment determining the choice of entry mode to emerging markets seems to be the *state of property rights* in the host country. In his research, Luo (2001, 465) argued that when foreign firms perceive property rights protection in the host country faint, as is often the case in emerging markets, they are more likely to employ a wholly-owned, non-collaborative entry mode. If one considers the argument of Schwens, Eiche and Kabst (2011, 336) presented above in the context of the institutional theory, the state of property rights seems to be even more dominant determinant of entry mode for SMEs with knowledge-intensive products if they are to enter emerging markets. In their study the researchers argued, that for these firms knowledge remains the only competitive advantage for SMEs and therefore its protection is vital for their survival. Faint property rights should further intensify the need for knowledge protection.

Nevertheless, the resource-based view on the emerging market entry mode is not as simple as the example above would assume. Other researchers have posited the view that especially in the context of emerging markets protecting already existing resources is not enough because of the rapid evolution of the market. This view was presented for example by Luo (2002, 58) who emphasised the need for capability development in complex markets. For the capability development, on the other hand, cooperation with local partners is often required. Parallel results were published by Meyer et al. (2009, 71–72) who suggested that the stronger the need to rely on local resources, the more likely foreign firms were to use acquisitions or joint ventures. When considering all types of resources needed, the correlation was not significant but when considering the need for intangible resources, however, strong support for the hypothesis was found. This is in line with the finding of Luo (2001, 465) that the host country experience of a foreign entrant decreases the likelihood of joint ventures because the need for partner's market knowledge is lower.

This discussion clearly shows that companies face various and contradictory pressures related to their resources when entering the constantly evolving environment of emerging markets. Decisions based clearly on internal resources and resource needs can only be made once the institutional environment has stabilised. Maybe for the same reason the transaction cost theory loses it explicative power in the environment of emerging markets: Hoskisson et al. (2000, 254) have stated that in the emerging economies' context of increased market uncertainties, when transaction cost theory

predicts companies to use hierarchical high-control operation modes, hybrid structures of governance are actually more likely to occur.

Hence, on the basis of this chapter it can be concluded that the factors influencing the SME entry mode choice to emerging markets are, to a large degree, the same as those in the context of developed markets, but that more attention has to be given to the institutional factors of these developing markets. It is difficult, however, to draw conclusions on the direction of effect of these factors because the international entry mode research is fragmented in several theoretical approaches that result in contradictory empirical findings. In addition, the entry mode choice is always a combination of several antecedents, and their joint effect has to be evaluated individually in each case.

Therefore, this study will simply gather potential determinants of SME international entry mode choice as a synthesis of transaction cost theory, resource-based view, institutional theory and eclectic paradigm and examine their role in the decision-making situation of internationalising Finnish cleantech SMEs without attempting any predictions or hypotheses on their direction of effect. These determinants gathered from different theoretical approaches are exhibited in Figure 2 that presents the analytical framework of this thesis. In order to render the framework more operational, the determinants are classified in two groups: factors related to Finnish cleantech SMEs and factors related to the Indian business environment and cleantech market.

Factors related to Finnish cleantech SMEs are firm characteristics, managerial characteristics, technology characteristics and culture of the home country. Firm characteristics are further divided in two, because firm size and international experience are related to SME choice between equity and non-equity modes of entry, whereas all the other factors are related to choice between collaborative and non-collaborative modes of entry. Factors related to the Indian business environment and cleantech market, on the other hand, are divided to regulatory environment and cultural environment that correspond to a large degree to the regulative and normative institutions of Scott (1995). In addition, a group called market environment is added to reflect the factors of location-specific factors presented by Dunning (2000). All the Indian market factors are related to the choice between collaborative and non-collaborative modes of entry.

In Chapters 5 and 6, results will be presented on which of these factors have the most influence on the entry strategy of Finnish cleantech SMEs on the basis of the conducted interviews. Before proceeding to other topics, however, more information is needed about the characteristics of the Indian market environment. This is provided below in the final section of this chapter which assesses the regulatory, cultural and market environment of the Indian cleantech market.

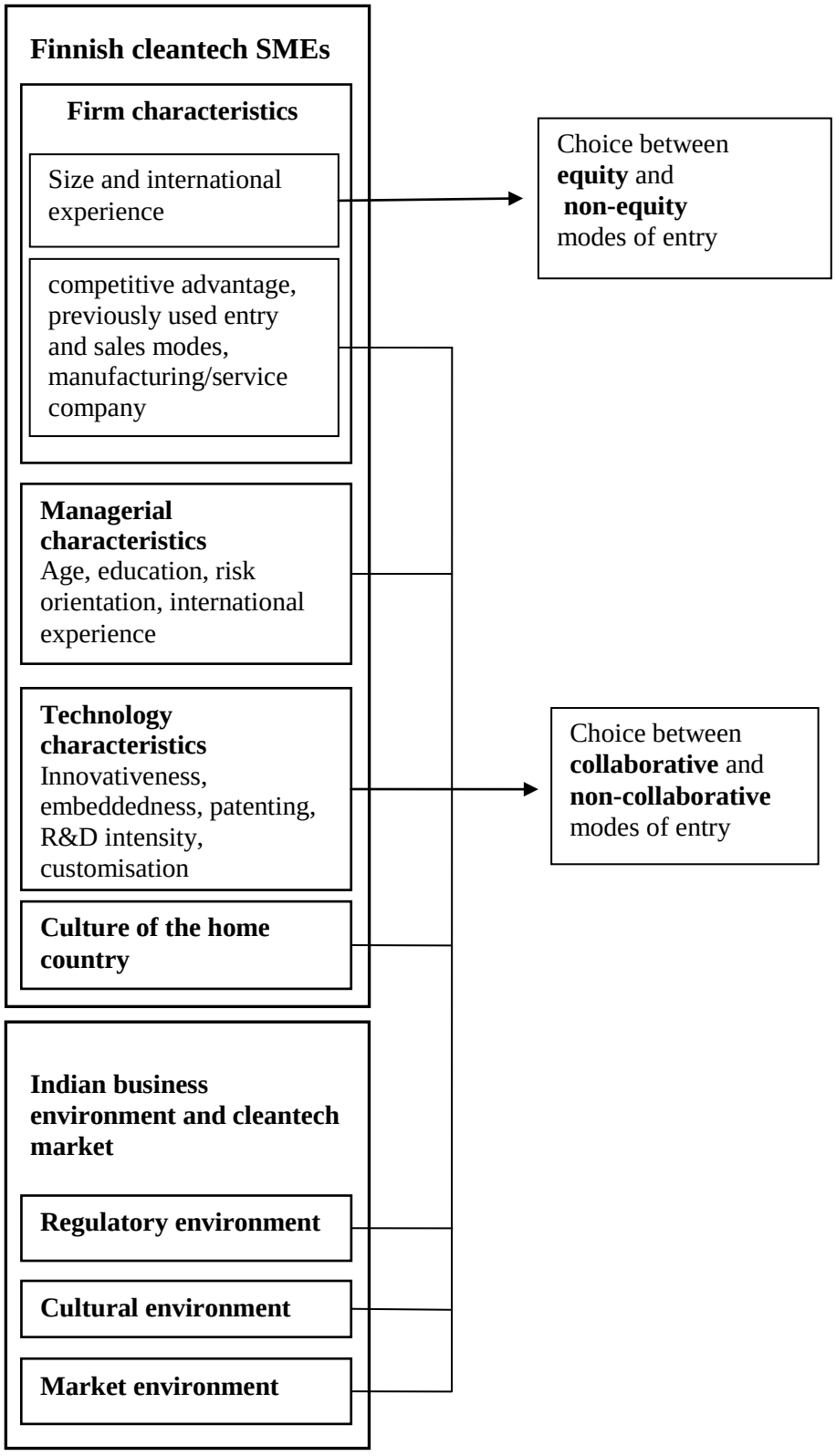

Figure 2 Determinants of SME choice of international entry mode

2.2.2 Indian business environment and cleantech market

In the discussion above, the determinants of SME choice of international entry mode were assessed, and factors related to the target market were observed to have an important influence on the choices made. In this chapter, the regulatory, cultural and market environment of the Indian cleantech market are presented and conclusive remarks are made about their possible effect on international entry mode choice of Finnish cleantech SMEs.

2.2.2.1 Regulatory environment

It was stated in the introductory Chapter 1 that in Finland clean technologies benefit from strong political support to their development and internationalisation. What makes India especially attractive market to Finnish cleantech SMEs is that there as well the environmental issues are high on the political agenda. Environmental issues were neglected long after the country gained independence in 1947 because priority was given to economic development. As a result, India is today considered to be one of the most polluted countries in the world. (Finpro 2010, 9, 30.)

The global climate change is of special significance to India because it has a rural population of 700 million people who are dependent on climate sensitive sectors such as agriculture, forests and fisheries (MoEF 2009, 74). The rapid urbanisation that India has undergone in recent years has also brought new challenges to sustainability because the insufficient infrastructure in urban areas cannot provide necessary sanitation and health services to the growing population (MoEF 2009, 140).

At the same time, the growing transport demand increases vehicle density and fuel consumption. (MoEF 2011, 53–54.) The need for eco-technological solutions has become evident (MoEF 2009, 69). Therefore, especially after the accession of India to the World Trade Organisation in 1998, the country has increasingly developed its environmental legislation as a part of its sustainability policies (MoEF 2009, 27–30). On the international level, India has signed all the environmental multilateral agreements with only a few exceptions (MoEF 2009, 65). The positive stance of the Indian government towards environmental issues and the evident need for clean technologies should lower the entry barriers of foreign cleantech companies to the still quite bureaucratic market of India.

In many aspects the challenges of the Indian regulatory environment are common to all emerging markets: the degree of government interference in business is higher than in many developed countries and results in bureaucracy and corruption (Kumar – Kumar Sethi 2005, 119). Especially corruption poses severe problems for doing

business for foreign companies as it is widespread and commonly accepted (Kumar – Kumar Sethi 2005, 78). In Corruption Perceptions Index 2011, India obtained the score 3.1 on a scale from 0 to 10 where 10 indicates a society clear from corruption and 0 highly corrupted society. In a ranking of 182 countries worldwide, India was in place 95. (CPI 2011.) The high level of bureaucracy also slows down approval processes and causes uncertainties (Kumar – Kumar Sethi 2005, 119).

According to the Global Competitiveness Report 2011–2012 by World Economic Forum (GCR 2011, 204–205), inefficient government bureaucracy was seen to be the third most problematic factor for doing business in India right after inadequate supply of infrastructure and excessive corruption. For example, when 142 countries were ranked by the number of procedures to start a business, India was in place 119 with 12 procedures required. Moreover, country is divided in 26 states and six union territories, and the degree of introduced reforms varies across regions, leading to regulatory complexity (Kumar – Kumar Sethi 2005, 39). The labour market efficiency is also weak, even though the population is better educated than in other countries at the same level of development (GCR 2011, 205).

In other aspects, however, progress has occurred; the business legislation is rather favourable for foreign companies as investment, trade and exchange rate regime have been gradually liberalised since early 1990s (Dahlman – Utz 2005, 27). This liberalisation has been largely due to the inevitable need to raise finance for modernisation from private investors. The Indian infrastructure sector, for example, will need massive investment in the coming years for the supply to match with the rapid increase in need for efficient air, land and marine transport and power network. This project offers significant possibilities to both domestic and foreign investors as the government is envisaging that at least 75 % per cent of future investments in infrastructure will come from private sources, and has directed its incentives accordingly. (Rastogi 2008, 1.)

After many complaints, progress has also been made in the area of intellectual property rights, especially in the field of computer software (Bullis 1998, 219). The continuous strengthening of intellectual property and patent protection is crucial for India also in the future if it wants to continue its development as a technology-based economy (Dahlman – Utz 2005, 39). The direction of reforms realised so far has been right, but a lot remains to be done: the integration of India to the global economy is still limited, and the level of foreign direct investment remains low. For example China has attracted significantly more FDI than India. (Dahlman – Utz 2005, 26, 30–31.) Hence, it can be concluded that the regulatory environment of India is still weaker than in most developed countries.

Yet, the country has one major advantage over many other emerging markets; India is a democracy. The infrastructure supports private enterprises, and its legal system is

quite advanced, even though flaws still occur. Whereas China has based its economic growth on foreign investments, the growth of the Indian economy has been based on the development of domestic entrepreneurship. (Huang – Khanna 2003, 75.) Small scale industries have been an important part of the Indian economy since the independence, and at present they contribute significantly to the gross output, exports and employment (Loikala et al. 2006, 12).

2.2.2.2 Cultural environment

The same way as the democratic political system of India facilitates the adaptation of western companies to its business environment, they can also benefit from the cultural similarities between Indians and westerners. Even though geographically distant, India shares cultural features with Europe and America because of the historical ties between countries. The aggressive, emotional and analytical features of the Indian behaviour have caused some scholars to state that Indians are actually closer to Europeans and Americans than to Asians. (Kumar – Kumar Sethi 2005, 38–39.) As a consequence of the British colonialism in the country, the official language of India is English, which facilitates international communication. Also, a large number of Indians have obtained their education in the United States or in the United Kingdom, thus becoming acquainted with the western culture. (Kumar – Kumar Sethi 2005, 42.)

Having said this, it has to be stated that remarkable differences also prevail between the Indian and the western culture. According to Gesteland and Gesteland (2010, 19, 31, 41, 65), the differences in business culture causing the most difficulties between westerners and Indians are clashes between polychromic and monochromic time perceptions, between relationship-focused and deal-focused cultures, between hierarchical and egalitarian business behaviour and between high-context indirect language and low-context direct language.

Hinduism, the main religion in the country, also has specific implications to the Indian culture. Hinduism tolerates the paradox between spirituality and secularity, and embraces therefore also the simultaneous role of rational and emotional aspects in the thinking process. The behaviour of individuals in the belief system is highly context sensitive, and can have both individualistic and collectivistic features at the same time. (Kumar – Kumar Sethi 2005, 59.) The Hindu belief system together with the Indian culture combining both western and Asian features creates a specific cultural environment in which companies from the developed countries can hardly apply their experiences from other emerging markets. In addition, the Indian culture itself is also marked by significant pluralism: the country has five major ethnic groups, six main religions and 22 official languages with 844 dialects spoken in different parts of the

country (MoEF 2009, 5). This further increases the complexity of the market from the point of view of Finnish actors.

The British colonialism in India created communalities between the countries but had also adverse influences on the Indian mind-set: the attitudes in the country towards the outside world and foreign investments stayed cautious for a long time, and caused the national policy to emphasise self-reliance and autonomy as a development strategy. In consequence, locals often have prejudices against foreign businesses. (Kumar – Kumar Sethi 2005, 30.) One example of this is the emphasis given to domestic entrepreneurship discussed above in the previous section. The recent period of economic growth has also changed the Indian identity and they are increasingly expecting to be treated as equals by their western partners. Unfortunately, the westerners have been slow to react to this change in identity, which may cause contradictions in interaction. (Wülbers 2011, 119.) Thus, it is assumed that the Indian business culture implies a certain degree of nationalism that should be taken into account by Finnish companies when entering the market.

In the previous chapter, it was mentioned that not only the culture of the host country, but even more the culture of the home country is likely to influence the entry mode choice of internationalising companies. Especially the high power distance and high uncertainty avoidance were estimated to increase firms' preference to establish wholly owned subsidiaries versus joint ventures. Measured on the widely acknowledged cultural dimensions scale of Hofstede, the Finnish culture ranks low in power distance (score 33, place 66 over 74 countries studied), but rather high in uncertainty avoidance (score 59, place 48–49) (Hofstede – Hofstede 2005, 43–44, 168–169). This means that no direct presumptions about the influence of Finnish cleantech SMEs' home country culture on international entry mode selection can be made because the two dimensions of culture are in contradiction.

Instead, comparing Finnish and Indian cultures might reveal potential sources of cultural challenges for cooperation. According to Hofstede website (2012), the most important differences between Finnish and Indian culture are that India ranks considerably higher in power distance and masculinity (score 77 versus 33 and 56 versus 26). This would imply that, from Finnish companies point of view, the Indian culture seems bureaucratic and hierarchic, and Indians more career-oriented that their Finnish colleagues. Differences exist also in other dimension, namely individualism, uncertainty avoidance and long-term orientation. Therefore, it can be concluded that Finnish and Indian cultures are rather distant from each other and that special attention should be paid to their consolidation.

2.2.2.3 Market environment for clean technologies

As it was stated in the context of the regulatory environment, the need for environmental technology solutions has been felt in India for some time. Along with the new and more ambitious environmental regulation, the Indian industry is becoming increasingly concerned about discharging its environmental obligations, but insufficient know-how and technology gaps in the environment sectors prevent efficient actions. The problems are even more severe for smaller companies who often use obsolete and thus more polluting technologies and lack capital and skilled manpower. (Loikala et al. 2006, 34.) As small entrepreneurial companies constitute a significant part of the Indian economy, there is certainly a need for small scale, cost-efficient solutions.

In its State of Environment report, the Indian Ministry of Environment and Forests names climate change, food security, water security, energy security and managing urbanisation as the key environmental issues in the country where measures need to be taken (MoEF 2009, 73–153). Sitra, the Finnish Innovation Fund, has also examined these environmental issues of India and suggest that they all offer opportunities for Finnish cleantech companies. Finnish companies possess competitive solutions especially in the fields of environmental monitoring and measuring, solid waste management and renewable energy. In addition, the Finnish cleantech could help the Indian industry to fight the climate change by supplying solutions for energy efficiency and clean processes. (Loikala et al. 2006, 161–164.)

India has a rapidly growing IT and software industry and in general services have attracted an increasing part of country's foreign direct investment in the 21st century. The majority of Indian export growth, however, comes from heavy industries such as petroleum, steel and transport equipment. (World Bank 2012, 3, 22.) In steel industry, India is among the largest producers in the world, and the country has also significant automobile and electronics industry (Finpro 2010, 25–26). These are all potential industries for Finnish cleantech companies offering clean process solutions.

Other Indian sectors with great potential to clean technologies are solid waste and water treatment. The amount of municipal solid waste in India is constantly growing due to population growth and increase in life standard but waste treatment techniques are still labour intensive and often dependent on manual work. Especially electronic waste treatment constitutes a severe problem: the treatment, recycling and disposal of electronic waste is not regulated by any law and thousands of people are risking their health working the waste manually. However, the situation for clean water supply and sewage treatment is even more critical: only 20 per cent of the Indian population have access to clean household water and hundreds of cities lack sewerage. The treatment of sewage is progressing but technologies in the field are still obsolete. (Finpro 2010, 31–35.)

Yet the need for developed and more efficient technologies is probably most acute in the Indian electricity sector. Despite maximum policy attention, the Indian government has not been able to meet its objectives for power supply increases, and shortage of energy is becoming one of the main constraints to India's economic growth (Rastogi 2008, 6–7). For the Indian economy to maintain an annual growth rate of eight per cent, the country would need to produce 500 megawatts of electricity every week for the next 25 years. This will not be possible by using only coal and gas that are the primary sources of energy currently. (Finpro 2010, 29.) This illustrates the scale of India's energy problem and the need to find new sources of energy that prevails in the country. The use of hydropower can be increased but the Indian government also has an ambitious objective of increasing the supply of other renewable energies to 20 per cent of the total electricity consumption in 2020 (Finpro 2010, 29).

In addition to generating more power, improvements are needed in network coverage and efficiency: a large part of population still has no access to electricity and transmission losses in power network amount up to 35 per cent. (Rastogi 2008, 6–7.) The situation creates unique market opportunities for small-scale power production plants or devices and energy efficiency solutions. On the other hand, however, the underdeveloped power network is also a hindrance to independent power producers: even if demand for alternative sources of energy exists, obtaining contracts for delivery with local authorities and managing power feed into the grid has proven to be difficult (Finpro 2010, 30).

Despite the recent economic slowdown, the annual growth of Indian economy is still about seven per cent (World Bank 2012, 1). The evident growth potential of the Indian market encourages long-term commitment and equity investments to the market. In addition, the general political situation in the country is stable (Finpro 2010, 6) which means that there is no significant political risk related to the investment. Nevertheless, there are potential risks as well. The liberalisation of the Indian market regulation has ameliorated the possibilities of foreign firms to enter the market, but also decreased their likelihood of success because lowering the barriers to entry also increases competition as more firms from different countries enter the same industry. The support of the Indian business environment to private enterprises also exposes foreign entrants to greater native competition. (Johnson – Tellis 2008, 10.)

Risks also arise from the diversity of India and the varying needs across the market. (Johnson – Tellis 2008, 10.) It has been stated that in order to succeed on the Indian market, the products and services have to be localised to the local needs because the diversity of India does not conform to global standards (Kumar – Kumar Sethi 2005, 84.) The need for local responsiveness increases foreign entrants' reliance on local market knowledge. If no such knowledge is to be found from inside the organisation, partner selection becomes a crucial success factor of the market entry.

To conclude, it can be posited that the country-specific factors of India lead to contradictory conclusions on which international entry mode should be selected by Finnish cleantech SMEs to enter the market. On one hand, the level of bureaucracy and corruption in the country calls for cooperation with local partners (cf. Yiu – Makino 2002; Brouthers et al. 2000) while, on the other hand, the still quite insufficient property rights system encourages independent entry modes (cf. Luo 2001). This is especially the case for Finnish SMEs that operate outside the best protected computer software field. The growth potential of the market would justify equity investments (cf. Nakos – Brouthers 2002), but the low entry barriers and the resulting competitive risk would call for non-equity investments or risk sharing through partnering. Finally, the prejudices that Indians may have against foreign firms, environmental complexity and the need for local responsiveness require cooperation with Indian partners (cf. Yiu – Makino 2002; Luo 2002), while the cultural distance between Finland and India might cause problems in interaction.

What is the priority given to these contradictory determinants of international entry mode choice by Finnish cleantech companies is assessed in Chapter 5 where the results of qualitative interview research are presented. The tentative hypothesis of the author is, however, that face to the contradictory pressures that Finnish cleantech SMEs meet in their operating environment, strategic alliances would be a viable international entry strategy. Therefore, in the following chapter, this multifaceted group of different cooperative agreements is taken under scrutiny in order to estimate the opportunities they could bring for Finnish cleantech SMEs considering entering the Indian market.

3 STRATEGIC ALLIANCES AS AN INTERNATIONAL ENTRY STRATEGY

Whereas the Chapter 2 focused on identifying circumstances in which internationalising companies might consider strategic alliances a viable international entry mode strategy in the first place, this chapter examines the focal points to consider for Finnish cleantech companies once this preliminary decision has been made. The chapter probes deeper in the issue of strategic alliances by defining the concept and presenting a typology of different types of strategic alliances. After this, the chapter proceeds on evaluating the main motives of SMEs for entering strategic alliances and the influence that these motives have on the alliance type selection. Finally, remarks are made about partner selection and the special issues related to this critical decision in the market context of emerging economies and India.

3.1 Definition of strategic alliances

The rapidly changing business environment that SMEs face today has resulted in increasing number of strategic alliances (Van Gils – Zwart 2009, 5). Nevertheless, the terminology on the subject is far from being unified and several authors have long been writing about the phenomenon under different names such as inter-firm alliances, inter-firm cooperation, business alliances or strategic partnerships. In this study, the definition of Yoshino and Rangan on strategic alliances is adopted. According to Yoshino and Rangan (1998, 5), strategic alliances have three key characteristics:

- They consist of two or more independent companies that cooperate to achieve common agreed goals;
- these companies share control and benefits of the alliance;
- and the cooperation is based on continuous contribution in one or more strategic areas.

This definition is selected because it includes several aspects of strategic alliances deemed important for the alliance formation of Finnish cleantech SMEs: firstly, the agreement between cooperating companies is voluntary, and the objectives of the alliance are agreed on. Secondly, the control over alliance can be based either on equity position, as when a distinct corporate entity is established for the management of the alliance operations (e.g. equity joint venture), or on contractual agreements, as when the alliance is operated in a distinct interorganisational entity (e.g. joint development centre or development team). Thirdly, an interorganisational alliance can only be considered strategic if it ameliorates the competitive advantage of the participating companies on the market place. (Varadarajan – Cunningham 1995, 284.) This implies also the long-

term orientation of strategic alliances (Root 1988, 69; Hitt et al. 2000, 449) because strategic, reciprocal contribution of resources needs time to realise itself. The strategic alliances so defined can include both vertical and horizontal agreements. Vertical alliances are agreements between firms that execute operations at adjacent stages of the value chain such as supplier-manufacturer alliances, whereas horizontal alliances are agreements between firms whose primary operations are at the same stage of value chain, for example competing manufacturers of same category of products (Varadarajan – Cunningham 1995, 284).

However, the definition slightly modified; Yoshino and Rangan (1995, 6) exclude licensing and franchising from the group of strategic alliances, whereas other scholars (e.g. Tsang 1998, 209) mention them as the most typical forms of strategic alliances. In this thesis, licensing and franchising are included in the definition of strategic alliances because, in practice, they are employed as entry forms by cleantech SMEs. It is to be noted also that, according to the definition used in this study, strategic alliance include only formal, contract-based agreements of cooperation, and a clear distinction is to be made between strategic alliances and various types of informal or relational cooperation that take place in business networks.

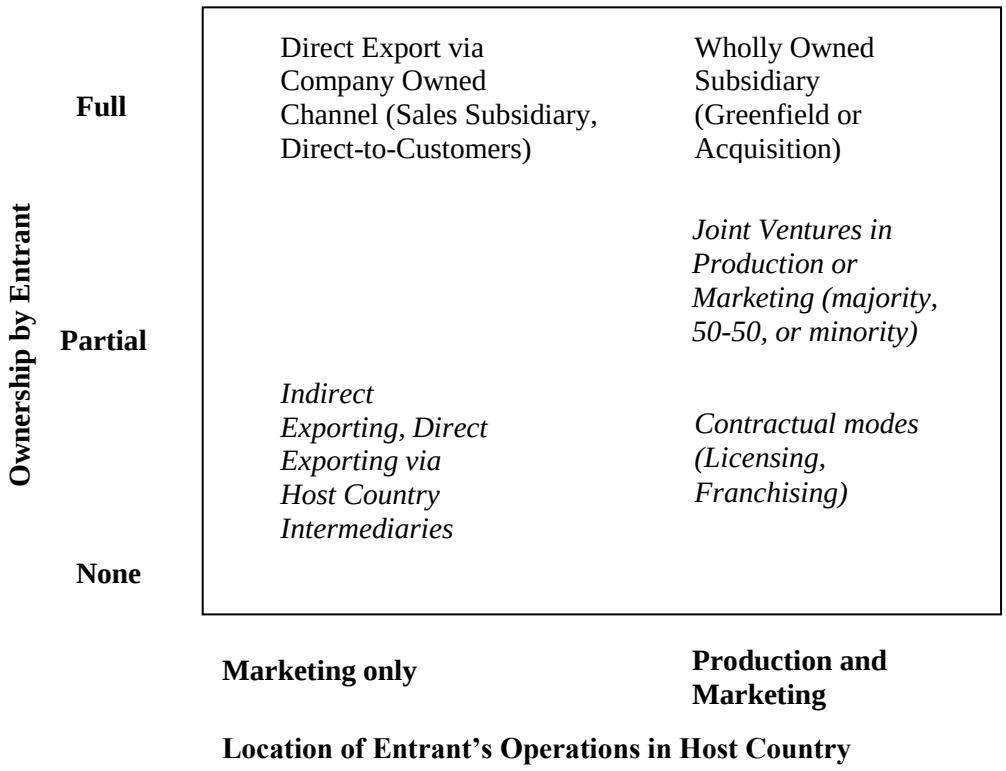

Figure 3 Definition of strategic alliances (modified from Sharma – Erramilli 2004, 3; cf. Figure 1)

If compared to the definition of entry mode presented in section 2.1, this definition of strategic alliances results in them including indirect exporting, direct exporting via host country intermediaries, joint ventures in production or marketing and contractual modes such as licensing and franchising. These modes of operation have been indicated in italics in Figure 3.

3.2 Types of strategic alliances

Once a company envisaging to enter a foreign market has decided that a strategic alliance would best serve its purposes, it still needs to choose between different types of strategic alliances. This decision depends on the motives of the company for entering the alliance (Van Gils – Zwart 2009, 10; Hagedoorn 1993, 374) and on the alliance partner is question (Colombo 2003, 1210). On the other hand, however, the potential contribution of alliances is at least partly related to the type of alliance employed (Welch 1992, 22), and the criteria companies impose on their partner selection depend on their motives (Nielsen 2003, 306). Thus, these three factors, alliance type, motives for entering alliances and alliance partner selection, are interrelated. In order to establish a comprehensive picture of the decision-making situation in which companies find themselves when considering entering strategic alliances, all of them have to be taken into consideration simultaneously. In this chapter, the focus is first given to the different types of strategic alliance forms available to companies, and discussion about the interconnectedness of decision-making factors follows in following sections.

3.2.1 Governance form

Most of the research on strategic alliance types has concentrated on the organisational form of alliances and analysed the choice between equity forms and contractual arrangements. This discussion is closely related to the research on international entry strategies and mainly based on the transaction cost theory presented in section 2.1.1. (Colombo 2003, 1209.) Nevertheless, it brings interesting insights for this study about the different characteristics of these governance types and the factors that might influence the choice between them.

It is commonly supposed that strategic alliances that involve technological activities preferably resort to equity modes because in order to develop new capabilities companies have to create structures that enable learning and decrease opportunistic behaviour (Colombo 2003, 1210). This relation is modified, however, by the absorptive capability of companies. Absorptive capacity refers to the level of prior knowledge in a

firm that enables it to evaluate external knowledge, recognise its value and utilise it to innovative, commercial purposes. Absorptive capacity is developed through companies own R&D operations, manufacturing or training because they create the aptitude for learning. (Cohen – Levithal 1990, 128–129.) Colombo (2003, 1221–1222), in his study on strategic alliances involving a technological component, uses the overlap of partners' technological capabilities as an indicator of the absorptive capability and postulates that the more convergence there is in the partners' technological capabilities, the more likely they are to use contractual forms of alliances as opposed to equity forms. This is because learning is made easier by the shared knowledge base and partner's absorptive capacity substitutes for creating an equity structure to facilitate learning. (Colombo 2003, 1213–1214.)

Li and Ferreira (2008, 311), on the other hand, have studied the relation between the alliance governance form and trust between partners. They posit the view that the presence of trust between partners obviates the need for hierarchical, high-control organisational structures because each partner can expect the other party to comply with the contract. This is especially the case in emerging markets where the institutional framework protecting properties and enforcing agreements is weak. This discussion will be continued in the context of partner selection. It can be concluded, nonetheless, that interesting insights have been presented for the purpose of this study: contractual strategic alliances clearly have, with certain preconditions, potential for SMEs that cannot afford establishing equity-based strategic alliances because of their limited resources and inability to bear risks.

3.2.2 Functional, industry and geographical scope of alliances

Different governance forms of strategic alliances only examine *how* the cooperation between strategic partners is organised. A complementary view on the topic is offered by Varadarajan and Cunningham (1995, 288–290) who focus on *in which area of business* and *with whom* firms cooperate. The *functional scope* of strategic alliances is a continuum with increasing number of functional areas realised in cooperation. At one extreme, the cooperation can compass all the functional areas of business, while at the other only a single functional area or activity is realised conjointly. The choice on where to place the cooperation on the continuum depends on the objectives of the alliance. Strategic alliances can be established to manage for example joint product development, joint manufacturing or joint marketing. Through such alliances small actors are able to spread the costs related to operations or achieve scale economies. (Varadarajan – Cunningham 1995, 290.)

On the other hand, companies have to decide on the *industry scope* of strategic alliances, that is whether they want to engage in an intraindustry strategic alliance with a partner from the same industry they are operating in, or in an interindustry strategic alliance with a partner from another field. The distinguishing feature of intraindustry strategic alliances is that the partners tend to be competitors, which creates tensions between them. This kind of cooperation might nevertheless be desirable for example if it allows partners to preserve their competitive position against new entrants or small firms to compete against a large, common competitor. Interindustry strategic alliances, instead, are alliances between partners from different industries that can be either related or unrelated. They can result in a product offering that none of the partners would have been able to produce alone and create thus a competitive advantage for both. (Varadarajan – Cunningham 1995, 288–289.)

A common form of related interindustry strategic alliances is supplier integration, in which the supplier and the buyer coordinate their activities in order to create a better offering for the end customer. The importance of supplier selection and alliances is even greater in emerging markets because the role of suppliers in the value chain, and the range of activities they execute, is larger than in developed markets because of the limited market knowledge of the entrants. The suppliers in developed markets only perform defined functions in which they are specialised, but in developing markets it is more common for them to perform additional functions as well. These could include for example market segmentation. (Arnold – Quelch 1998, 17.) Finally, the *geographical scope* of strategic alliances can be described intranational or international based on either the operating countries of the alliance or on the nationality of the partners, or both (Varadarajan – Cunningham 1995, 289).

Welch (1992) has studied the different types of strategic alliances from the point of view of small companies. His framework takes into consideration the governance form and the functional, industry and geographical scope of alliances but also brings new dimensions to the issue. Probably the most important ones are the size of alliance partners and the initiating source. In his article Welch (1992, 22–23) suggests that the four main groups of alliances available to small firms are 1) alliance of small, domestic firms, 2) alliance of small firms in different countries, 3) alliance of small firm and large firm with international network, and 4) joint venture in foreign country. The schemes of these main groups are presented in Figure 4.

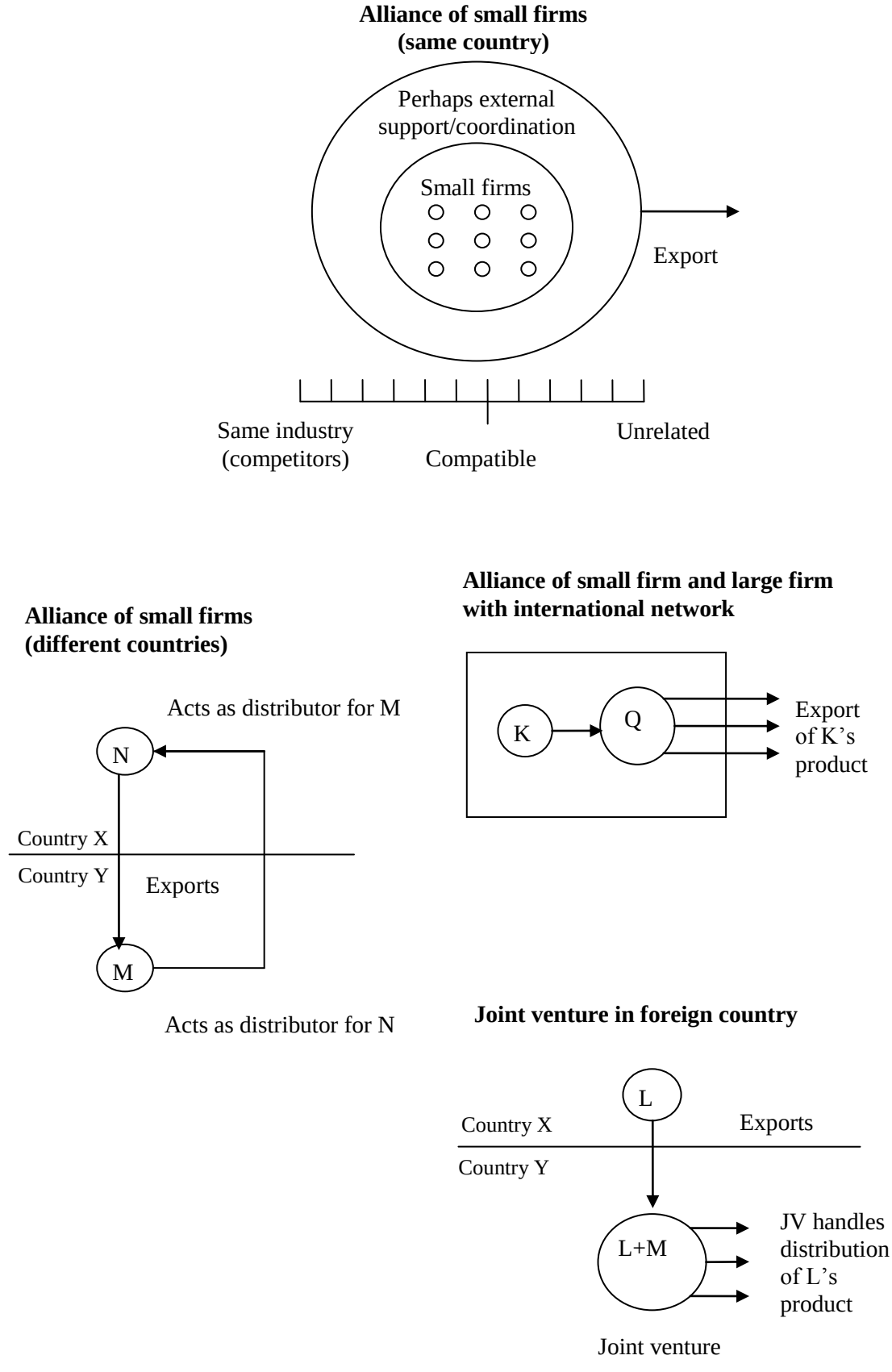

Figure 4 Types of small-firm alliances (Welch 1992, 23)

An *alliance of small, domestic firms* is a grouping of small firms that originate from the same national market, possibly supported by an outside party or parties. Alliances can be established between different industries, if the products produced are compatible in a way that together they can form a more complete offering to an international customer, or between companies with similar products. The alliance could be initiated by a public organ, for example a trade organisation, for the purpose of entering foreign markets where market opportunities have been identified. (Welch 1992, 22–24.) Cleantech Finland can be seen to represent this type of small-firm alliances with a governmental organisation as the initiating source of cooperation. In theory, such alliance could be initiated by one of the participating companies as well, but the management of the alliance would be more difficult because the intentions of the initiator would not be as clear to all the participants (Welch 1992, 23).

An *alliance of small firms in different countries* in a reciprocal relationship between two (or more) companies in which both of the participants assist the other to penetrate its home market. This type of arrangement is especially viable option if the products exchanged between markets are compatible to some degree. Nevertheless, the search for compatibility also complicates the partner selection process and might curve total benefits of the alliance. *A joint venture in foreign country* is rather similar to alliance of small firms in different countries but in this case the relationship between companies is not reciprocal: the alliance, which might take the form of a joint venture or some other organisational form, is established to market the product of the exporting firm. (Welch 1992, 24–25.)

Finally, an *alliance of small firm and large firm with international network* could be established for the purpose of the small firm internationalisation. In this case, the larger party adheres to market the small firm's product through its international marketing infrastructure. The incentive for the large firm might be that the product or service produced by the smaller party is unique and helps to extend or complement the offering of the larger party so that the needs of the end-customer are better met. (Welch 1992, 25.)

This discussion has shown that choosing a strategic alliance type does not mean simply deciding on the governance form of the alliance but has other aspects to be taken into consideration as well. In order to efficiently organise its partner selection, a company reaching for a strategic alliance first has to decide what type of partner it is looking for and in which areas of business it wants to cooperate. These decisions are, of course, dependent on its motives for entering alliance.

3.3 Motives for entering strategic alliances

Which of the alliance types described above will best serve an SME striving to enlarge its business in international markets depends on the objectives that the firm has for the alliance. In their review on the topic, Van Gils and Zwart (2009, 7) stated that the motives for alliance formation have become an important research topic and has been assessed by a number of empirical research. Significant attention has been given to organisational, firm level motives, and environmental, industry level motives for alliance formation, but the authors emphasise the need for a joint analysis that combines these two approaches. They also suggest that the characteristics of the potential partner have not received the attention they deserve in the field of alliance motives research. In this paper, both internal firm-related motives and external, environmental motives are assessed below in separate sections. Finally, the motives related to partner selection are discussed in more detail in separate chapter.

3.3.1 Internal motives

The organisational motives for strategic alliance formation are closely related to the resource-based theory discussed previously in section 2.1.2. Companies differ in their resources and capabilities, and because of this *resource asymmetry* they need to gain access to resources they are dependent on, but which are in the possession of other firms (Oliver 1990, 243–244). By combining their asymmetric resources, partnering companies enable *creation of rents*. The greater the resource asymmetry among companies in an industry, the higher is the possibility to form alliances creating rents. (Tsang 1998, 210). By entering strategic alliances firms can *extend resources* even when internal development or acquisitions are beyond their capabilities. Strategic alliances can also *enhance resource use efficiency* for example if two partners are able lower costs by taking advantage of experience effects or economies of scale or scope (Varadarajan – Cunningham 1995, 286; Oliver 1990, 245).

Strategic alliances not only make resource use more efficient, but they also allow partnering companies to *expand resource usage*. This is essential especially in the field of technology (but also in other fields) because the increasing speed of technological development shortens product life-cycles. Therefore, it is critical to reap the most benefit in relatively short time. To do so to maximum, firms would need to diversify to new industries, but this might not be possible with its existing skills and resources. Forming a strategic alliance can help to overcome this problem and *spread the risk* of expansion. (Tsang 1998, 211–212.) Indeed, several authors have stated that *reduction in*

innovation time span is an important motive for strategic alliances especially in the high-tech field (Narula 2004, 157; Hagedoorn 1993, 378).

Through strategic alliances, companies can *gain access to complementary resources*, also knowledge. This is especially true in strategic technology partnering, in which joint innovative activity or exchange of technology is at least part of the agreement (Hagedoorn 1993, 372), but it can also be a means to acquire other types of new skills as well (Varadarajan – Cunningham 1995, 286). Narula (2004) has discussed the issue in more detail in the context of R&D collaboration and with a special focus on SMEs. In his study, he states that in fields where products are combinations of multiple technologies, as is the case in many high-tech industries, few companies can afford to have all their R&D operations within their own facilities, let alone SMEs that are constrained by their resources. By executing R&D activities through strategic alliances or outsourcing, the capital needed is smaller and the risk substantially reduces because even in the case of a failure the damage remains limited. (Narula 2004, 156.)

Strategic alliances and outsourcing have, nevertheless, costs of their own. Even when externalising R&D, some level of internal capacity needs to be maintained in order to secure absorptive capacity for the externally acquired information. Also, especially strategic alliances require considerable managerial resources to manage cooperation and learning. This alone limits the possibility of SMEs to use externalised R&D functions, but they have other reasons to hesitate as well: strategic alliances always include the risk of losing technological assets, and this risk is especially concerning for SMEs. That is why SMEs, in general, are more wary of alliances and tend to prefer outsourcing whenever possible. In sum, it is the strategic importance of these technologies that determines to what degree their R&D can be externalised. (Narula 2004, 156–157.) Hence, *learning* and *imitation of resources* are important motives for strategic alliance formation but they often result in alliance instability because the partner might have the incentive to exit the alliance as soon as it has acquired the desired skill (Tsang 1998, 215).

In addition to internal organisational capabilities, complementary resources obtained through strategic alliances can be individual products that *broaden the offering* of a company of *fill gaps in the product line* (Varadarajan – Cunningham 1995, 285). This is one major reason why large corporations seek to partner with small firms: by establishing strategic alliances with SMEs, large companies are able to exploit their flexibility and innovativeness (Narula 2004, 154). Buying a ready innovation from a small partner increases the speed of entry into market. From the point of view of the SME, the evident need of *raising capital*, especially in the case of SMEs, is an important motive for strategic alliance formation. In industries like biotechnology where developing new products is vital but requires large investments, the necessary capital is often obtained through alliances with large companies (Hagedoorn 1993, 380).

3.3.2 Environmental motives

The organisational motives for strategic alliances are not, however, independent from the context of alliance formation. As a matter of fact, strategic alliances can be viewed as a strategic adaptive response to changes in the environment (Park et al. 2002, 527). The establishment of an alliance might be a *necessity* imposed by environmental pressures for example when it is done in order to meet legal and regulatory requirements (Oliver 1990, 243). Because of their involuntary nature, these alliances are of specific character, but there are many environmental incentives for firms to enter alliances voluntarily as well. Many of these are related to trying to manage the competitive situation and structure on the market. The incentive for establishing strategic alliances might be, for example, *entering new international markets*, *overcome barriers to entry*, or *reduce the threat of future competition* by raising entry barriers of shaping industry structure for example by creating new technological standards (Varadarajan – Cunningham 1995, 285–286). The environmental motives for entering strategic alliances might also be related to the question of gaining *legitimacy* in the eyes of customers or other market actors. A company might enter an alliance in order to improve its reputation, image, prestige of congruence with the norms of the surrounding society (Oliver 1990, 246).

The objective of these actions is, according to Oliver (1990, 245–246), to establish *stability* in relations to other organisations as an adaptive response to environmental uncertainty. For example, if a company entering a new international market forms alliance with a local actor, it can overcome some barrier of entry but also decrease the political risks related to the entry. In the opposite case, when a company wants to protect its market position in the domestic market, it can seek to prevent foreign firms from entering the market by allying with other domestic actors so that foreign companies cannot find partners to cooperate with. (Varadarajan – Cunningham 1995, 285–286.) Naturally, the relative importance given to different factors of alliance formation and alliance type selection depends on the field of industry and the market conditions in it. Minimum efficient scale, importance of speed of entry into market, cost structure and threat of competition all affect the likelihood and type of potential strategic alliances. (Varadarajan – Cunningham 1995, 290–291.)

Van Gils and Zwart (2009, 27–28) concluded in their study on alliance formation motives in SMEs that different motivations are at the basis of different functional scope alliances; strategic alliances in production and technology development are more motivated primarily by high production costs, low investment costs and stricter environmental regulations, whereas strategic alliances in marketing or distribution are motivated by gaining market shares in the target market. Therefore, production or technology alliances place more importance on internal motives, whereas marketing and

distribution alliances are more concerned with external motives. Moreover, Hagedoorn (1993, 378–380) has suggested in his study that there are differences even between motives of technology alliances depending on the sectors of industry. According to him, the above-mentioned technology complementarity and reduction of the innovation time-span are clearly the most important motives for strategic alliances in most technology fields except mature industries in which market access and restructuring play more important role as alliance motives.

Oliver (1990, 246) has stated that although one individual motive might be a sufficient cause for alliance formation, are decisions to initiate relationships most often based on multiple motives. Also Park, Chen and Gallagher (2002, 256) have emphasised the need to examine the organisational and environmental motives for strategic alliance formation simultaneously. They distinguish between exploitation alliances and exploration alliances on basis of the environmental issues that the alliance seeks to tackle, and on the basis of the quality of resources contributed to the agreement. *Exploitation alliances*, according to authors, are need-based agreements in which firms look for revenues to sustain their survival in the changing environment by improving currently employed capital and by maximising benefits from complementary assets. *Exploration alliances*, on the other hand, are innovation and diversification-driven agreements that seek to achieve long-term growth by reducing asymmetries between parties. Resource-poor firms most often form exploitation alliances whereas resource-rich firms are better positioned to employ both types of alliances according to their needs. (Park et al. 2002, 530–532.)

Park et al. (2002, 542) also note that the market environment has an effect on the type of formed alliances. They posit the view that in stable environments the alliance activity in total is lower, and most of the agreements signed are exploitation alliances. In general, resource-poor firms are more active in forming alliances. However, in volatile environment, for example during rapid market growth or decline, resource-rich firms take a more active role in the market and seek to form exploration alliances to target new market opportunities and widen their product portfolios. Why resource-poor firms are not in the condition to form exploration alliances to leverage their resources is because the low quality of their resources reduces their attractiveness as partners (Park et al. 2002, 530). Forming a strategic alliance necessitates that the cooperation is able to offer something strategic to both parties, and that both parties can benefit from the agreement. Oliver (1990, 244) refers to the same characteristics of strategic alliances by *reciprocity*.

Finally, depending on the strategic alliance formation motives that a firm has, and the alliance type it has chosen, the initiating company still has to find a suitable alliance partner. The criteria of this selection is the subject of the following chapter.

3.4 Strategic alliance partner selection

A stream of research has examined the criteria for strategic alliance partner selection. Much scholarly work has focused on the factors that influence the partner selection, but it is only recently that researcher have questioned the impact of alliance context on the relative importance of these factors (Shah – Swaminathan 2008, 487). This section discusses the criteria for alliance partner selection and examines the impact of the emerging market environment on these criteria.

Geringer (1991, 56–58) was one of the first to contribute to the criteria of strategic alliance partner selection by dividing the decision-making factors into task-related and partner-related factors; task-related factors are requirements that prevail in all organisations, whereas partner-related factors only emerge in multi-partner organisations. The study, concentrating to task-related factors only, states that managers make partner selection decision based on their perceptions on the critical success factors of the venture, the current competitive position of their firm regarding those factors, and the perceived difficulty of developing a viable competitive position in critical success factors internally. The examination is biased because it considers the competences of the initiating firm one-sidedly.

More recently, attention has been given also to partner-related factors. According to a review made by Shah and Swaminathan (2008, 472), the most studied criteria for strategic alliance partner selection have been trust, commitment, complementarity, and financial payoff. *Complementarity,* or strategic fit, means that forming an alliance with a specific partner provides a firm with an access to resources that it lacks internally, or enables it to gain quick access to new markets (Bierly III – Gallagher 2007, 134). Hence, the *motives for alliance formation* will affect the partner selection as firms value the capabilities of potential partners based on their own initial motives (Nielsen 2003, 306). Nevertheless, it can be argued that resource complementarity is a prerequisite for all strategic alliances, and cannot therefore alone explain the partner selection (Shah – Swaminathan 2008, 475).

Commitment refers to the willingness of the partners to commit specific resources to attain the objectives of the alliance. It is closely related to *trust* because they both reduce the uncertainty and perceived risk of opportunity. (Shah – Swaminathan 2008, 476.) The issue was discussed in more detail from the point of view of the transaction cost theory in section 2.1.1. Because trust takes time to evolve, strategic alliances are often formed between *prior partners* such as customers or suppliers who have a history of repeated transactions behind them (Li – Ferreira 2008, 309). Finally, the *financial payoff* refers to the evident fact that if allying with one partner is more likely to yield benefit than other options available, the attractiveness of this partner is increased (Shah – Swaminathan 2008, 476).

Even though there seems to be consistencies in strategic alliance partner selection, Bierly III and Gallagher (2007, 135–136) have argued that decisions are rarely made under conditions of full information and sufficient time for thorough estimation. Therefore, the *time* available for strategic alliance partner selection also has important implications for the process. Rational choices are only viable when the initiating firm has full information in its disposal and external time pressure is low. When uncertainty is high, the role of trust in the partner selection process increases. In addition, when the decision is made under high time pressure, speed of decision might become a more important determinant of partner selection than any of the criteria mentioned above.

On the other hand, Shah and Swaminathan (2008, 472–474) have suggested that the relative importance of these selection criteria depends on the context in which the alliance project takes place. Based on the framework by Ouchi (1979, 843) they state that the importance given to different criteria is defined by the process manageability and the outcome interpretability of the alliance project. *Process manageability* refers to the degree of interaction needed to manage and coordinate the alliance operations with a potential partner. The higher the cost of required management, the lower the manageability. *Outcome interpretability*, in turn, refers to the degree of uncertainty about the specific outcomes of an alliance project.

When both process manageability and outcome interpretability are low, the initiating company is likely to value trust as the most critical partner selection criterion. When manageability is low, but outcome interpretability is high, the most critical criterion is partner commitment. In the opposite situation, if manageability is high but outcome interpretability low, complementarity is valued the most. In the ideal situation, in which both factors are high, emphasis can be given to the financial payoff of the alliance project. (Shah – Swaminathan 2008, 474.)

Consistent with this line of research, the influence of emerging market environment on the partner selection criteria has lately attracted scholarly attention. Hitt, Dacin, Levitas, Arregle and Borza (2000, 461–462) studied the influence of the home country to the importance given to different partner selection criteria and stated that firms from emerging and developed market differ in their priorities. Firms from emerging markets placed more importance on partner's *financial assets, technical capabilities, intangible assets* and *willingness to share expertise* more than did firms from developed markets. Instead, firms from developed markets emphasised more strongly partner's *unique competences, market knowledge* and *market access*. The results indicate that emerging market firms search for partner from whom they can learn managerial and technical capabilities, whereas developed market firms seek market knowledge and access and possibilities to leverage their capabilities with the unique competences of the partner.

Li and Ferreira (2008, 313–314) have also studied the strategic alliance formation in emerging markets. According to them, trust between partners increases in importance in

these environments where rapid institutional changes heighten market and business risk. Foreign companies entering the market are likely to form alliances with prior partners especially when collaboration requires a higher degree of technological commitment, and when the institutional distance between home and host country is high. Nevertheless, an equity-based governance structure of alliance decreases the likelihood of choosing a prior partner because higher control substitutes for trust. Also Nielsen (2003, 319–320) suggests that the criteria for partner selection vary according to the partner nationality. When searching for partners in Asia, access to local cultural knowledge, including regulatory and market knowledge, is of most importance, but also access to labour is mentioned as an important criterion for partner selection.

It has become evident, on the basis of the discussion above, that strategic alliance type, type, motives for entering strategic alliances and strategic alliance partner selection are highly interrelated, and cannot be considered separately. The interrelatedness of these factors is illustrated in

Figure 5.

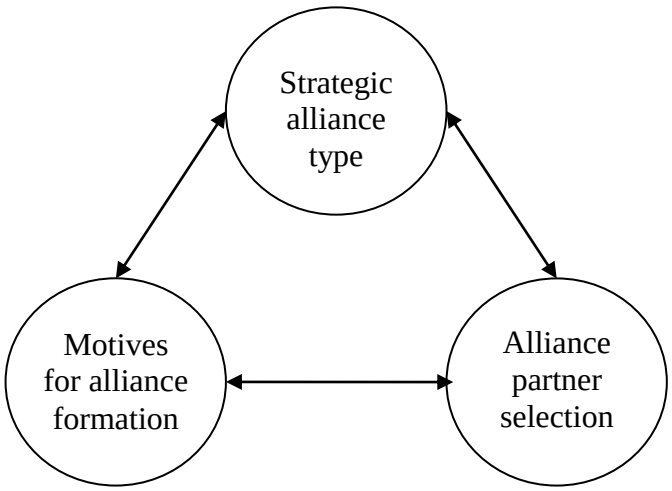

Figure 5 Determinants of strategic alliance formation

In Chapter 2, the determinants of SME choice of international entry mode were assessed and considerations were made on which factors SMEs should consider when choosing between equity and non-equity, and between collaborative and non-collaborative modes of entry. In the present Chapter 3, instead, the examination was focused on strategic alliances in more detail. The theoretical framework used in this thesis to analyse the viability of strategic alliances as an entry mode for Finnish cleantech SMEs is based on the synthesis of these two approaches: determinants of SME choice of international entry mode (presented in Figure 2) and determinants of strategic alliance formation (Figure 5). The two schemes are combined in Figure 6 which illustrates the overall theoretical framework employed in this thesis.

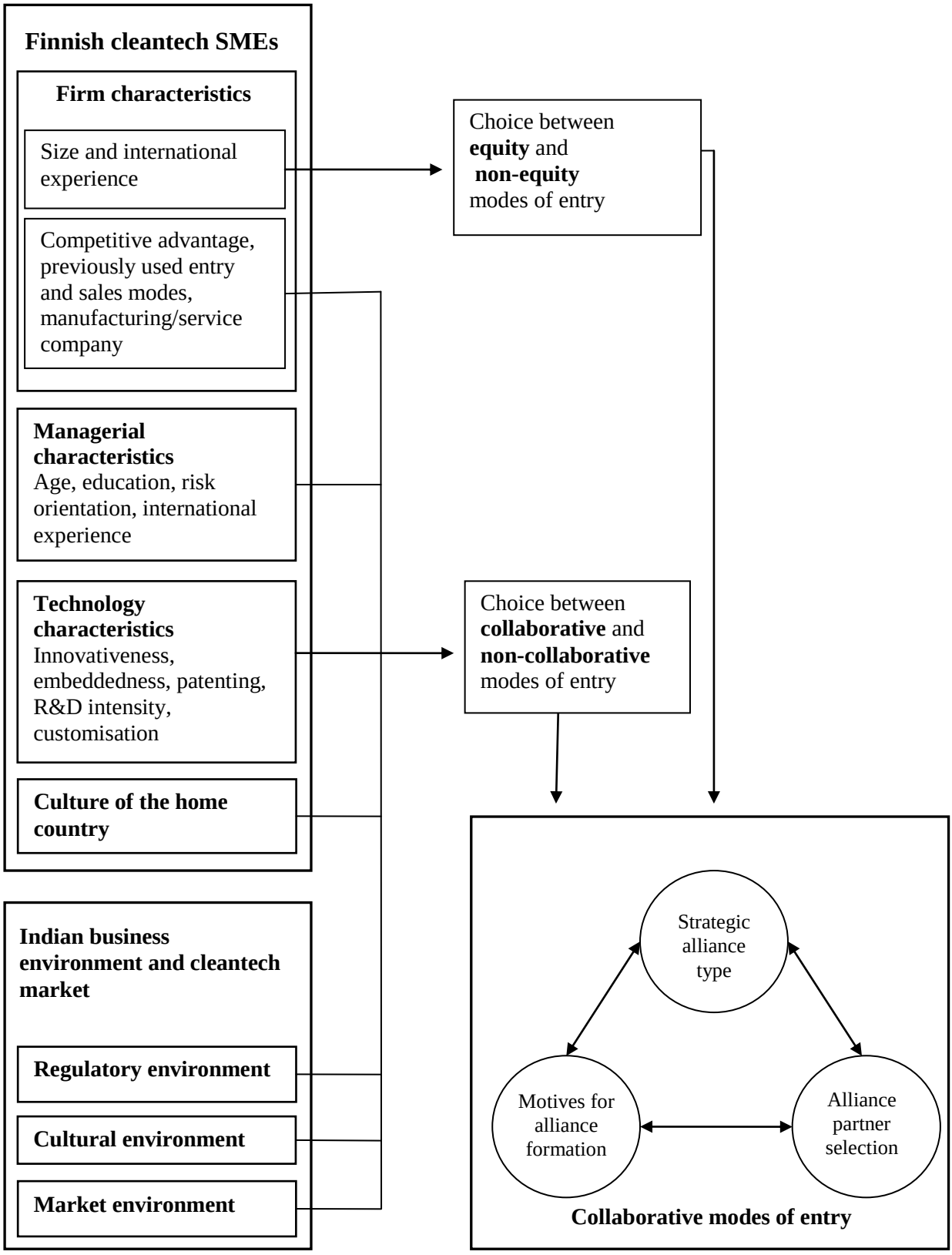

Figure 6 Theoretical framework (cf. Figure 2)

The framework of analysis in Figure 6 is constructed to answer the three sub-questions of the research objective stated in section 1.3. Firstly, the upper left corner of the figure illustrating Finnish cleantech SMEs corresponds to the first sub-question, namely *what are the key factors influencing the international entry mode decision of Finnish cleantech SMEs*. Secondly, the lower left corner of the figure referring to the Indian business environment and cleantech market corresponds to the second sub-question, *what are the major factors affecting the entry of Finnish cleantech SMEs to the Indian market*. Finally, the lower right corner of the figure illustrating collaborative modes of entry corresponds to the third sub-question, *how Finnish cleantech SMEs use strategic alliances in their internationalisation process*. Answers to these questions are provided in Chapter 5 and 6 by analysing interviews of Finnish cleantech SMEs and expert informants of the cleantech cluster and the Indian business environment on the basis of themes identified in Figure 6. Before that, however, the research design of the study is presented in the following Chapter 4.

4 RESEARCH DESIGN

After constructing the theoretical framework of the study in Chapters 2 and 3, the focus is now shifted to the research design of the empirical study conducted among Finnish cleantech SMEs regarding their internationalisation process and use of collaborative modes of entry. In this chapter, the research approach of the study is introduced and case selection is discussed. Finally, the trustworthiness and limitations of the study are evaluated.

4.1 Research approach

Traditionally, methodologies used in scientific research have been divided to quantitative and qualitative research. These approaches differ not only in their approach to measurement but also in their ontological and epistemological orientations. Quantitative research is positivist in the sense that the object of research is quantified and measured in numbers in a structured manner, and the objective of the research is to generate results that are generalisable in all contexts. Social reality is perceived as external and objective, and the main emphasis of research is in testing theories with empirical data. Qualitative research, on the other hand, departs from the assumption that social realities are constructed by individuals, and aims at understanding the meanings produced by the participants in their own context. Thus, the point of view of the research is that of the participants even though it is acknowledged that the results are dependent on the interpretations of the researcher. The analysis is based on text rather than numbers, and the empirical data is a source for emerging theory rather than a tool for theory testing. (Bryman – Bell 2007, 28, 425–426.)

It has been argued that quantitative and qualitative research strategies should not be perceived as mutually exclusive but rather complementing approaches to research (Alasuutari 1995, 23). Also in the field of international business a growing number of studies use mixed methods combining both quantitative and qualitative methods (Hurmerinta-Peltomäki – Nummela 2004, 162). In practice, however, the division still prevails in academic publication (Bryman – Bell 2007, 28). The position of qualitative organisational research remains subordinate, even though initially one of the reasons for its emergence were the evident limitations of quantitative and positivist research. The methods of natural sciences applied by quantitative research yielded in results that seemed simplistic, ahistorical, decontextualised and nonreflexive. Qualitative research methods were introduced in response to the dissatisfaction that this aroused. (Prasad – Prasad 2002, 4–5.)

It is clear, however, that the research frame and the phrasing of research question in this study call for qualitative research strategy. The objective of this research is to examine whether *strategic alliances could be an efficient entry strategy for Finnish cleantech SMEs entering the Indian market*. It has become clear by now that *the key factors influencing the international entry mode decision of Finnish cleantech SMEs* are various, and many of them are qualitative in the sense that they cannot be quantified in numbers. For example, the size of a firm can easily be quantified in numbers, but it is rather difficult to quantify managers' perception of foreign cultures. Also *the major factors affecting the entry of Finnish cleantech SMEs to the Indian market* depend on the individual situation of each firm, and the individual interpretation of internal and external factors made by the decision-maker. The last sub-question posited in section 1.3, namely *how do Finnish cleantech SMEs use strategic alliances in their internationalisation process*, is inevitably qualitative in nature because it aims at describing the processes used by different firms and understanding the meaning of this behaviour.

The need for qualitative investigation of SME managers' decision-making has been noted by Ojala and Tyrväinen (2009, 270) who in their study on the impact of psychic distance to the internationalisation behaviour noted that quantitative research was not able to capture the impact of psychic distance but that deeper in-depth case interviews with Finnish SME managers were required for the impact to be uncovered. That is why authors suggest complex interactions and cause-effect relationships, such as psychic distance, to be studied through qualitative methods (Ojala – Tyrväinen 2009, 272–273). For the same reason, the author estimates that in order to encourage the internationalisation of Finnish cleantech SMEs, deeper understanding of the perceived challenges and applied procedures is needed.

For obtaining such understanding, multiple-case study realised through theme interviews was deemed to be the most viable research method. According to Yin (2003, 1) *"case studies are the preferred strategy when "how" or "why" questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context"*. Case study is especially useful as a research strategy when the phenomenon under scrutiny cannot be detached from its natural context, and when the causal links are too complex to be studied through experimental strategies (Yin 2003, 15). This definition corresponds well with the research frame of this study because the objective is to obtain holistic understanding of the entry-mode decision making of Finnish cleantech SMEs and to estimate whether strategic alliances would be a viable choice in their context.

Multiple-case study is a commonly used research strategy within the field of international business. Yet, most of the multiple-case study research in international business suffers from methodological vagueness and inexactness. This is also one of the

reasons for the subordinate position of qualitative research in academic publishing. (Pauwels – Matthyssens 2004, 125.) Pauwels and Matthyssens (2004, 128) have proposed a five-stage methodological framework to increase the specificity and credibility of multiple-case study research, and this framework is employed as a guideline of this thesis as well. The authors suggest that the validity of multiple-case study can be increased through theoretical sampling, triangulation, pattern-matching logic, analytical generalisation and validation by juxtaposition and iteration.

Pauwels and Matthyssens (2004, 129) maintain that the only argument for using multiple-case study research is to create variance within the research data based on a specific theoretical framework. This means that sampling should have a theoretical basis rather than investigating a series of similar cases. In this thesis, *theoretical sampling* was realised by selecting case studies on the basis of the company related determinants of SME international entry mode selection identified in Chapter 2. The case selection is discussed in more detail in the following section. *Triangulation*, on the other hand, means using multiple methods for data collection, or collecting different kind of data on the same object of research. The role of triangulation is especially important in case study. (Ghauri 2004, 115.) Accomplished at any stage of the research, it provides a more multifaceted understanding of the topic and decreases the likelihood of random variation (Pauwels – Matthyssens 2004, 129–130). In this study, triangulation is accomplished by referring, in the theoretical part of the research, to studies investigating both developed and emerging market contexts, and by interviewing, in the empirical part of the research, several respondents about the same themes.

Pattern-matching logic refers to the explanatory logic of multiple-case studies. In case studies, explanations are based on matching the observed phenomenon with a predicted pattern. In multiple-case studies, it is also possible to compare the patterns emerging from individual cases. Employing this explanatory logic enables also *analytical generalisation* which means that the results of case analysis either comply with the existing theoretical knowledge about the topic, or indicates incompatibility with it and thus calls for additional research. (Pauwels – Matthyssens 2004, 130–131.) In this study, the pattern-matching logic is followed: behavioural patterns emerging from individual cases are compared in order to identify common patterns across cases. In addition, patterns identified within empirical research data are matched to the theoretical framework constructed on the basis of existing international business research in Chapter 2 and 3.

Finally, Pauwels and Matthyssens (2004, 131) mention *validation by juxtaposition and iteration* as a combinatory element of the above-mentioned dimension of multiple-case study validity. Juxtaposition and iteration are "*a nonlinear, path-dependent process of combining efforts with the ultimate objective of matching theory and reality*" (Dubois – Gadde 2002, 556). A case study researcher juxtaposes theory and reality by moving

back and forth between different research activities and between literature and empirical findings, thus deepening his or hers understanding of both of them (Dubois – Gadde 2002, 555). In this thesis, the iteration was strongly present throughout the process. For example, the outline of interviews was modified several times as new unexpected findings emerged from the interview. In such cases, the author was obliged to return to the existing literature to seek for theoretical support for the observations. Also the research questions were modified several times because of the coverage of previous research and themes arising from the interviews. The juxtaposition of theory and reality was especially related to the formulation of interview outline, because the themes to be discussed were constructed on the basis of theoretical framework of the study.

A growing tension exists in international business research between scientific explanation and context. Despite the popularity of case studies as a research method in international business, most of the studies have used it as a solely inductive theory-building tool for exploratory research, neglecting its potential for explanatory theorising. (Welch et al. 2010, 741–742.) This study strives to contribute to the alternative uses of case studies by using the research strategy as a tool for testing existing theories on the research topic, namely determinants of SMEs choice of international entry mode and use of strategic alliances. In their review on case study research, Welch, Piekkari, Plakoyiannaki and Paavilainen-Mäntymäki (2010, 746–747) refer to this practice as "natural experiment", meaning that case study is used as a research method for testing and refining existing theory in a natural setting.

This choice was made because of the abundant amount of existing research on the topic at hand. For example, international entry modes are the third most researched area of international business (Werner 2002, 280), and strategic alliances have also been assessed by numerous studies. This research has yielded a long list of potential determinants of internationalisation behaviour, many of which are mutually contradictory. Also, a large part of the research conducted in the field has resulted in mixed results (Morschett et al. 2010, 61). This indicates that the factors intertwined in the phenomenon are clearly not the same in all contexts, and that more context-specific analysis is needed in order to identify the most critical factors under given conditions. In line with this reasoning, this study intends to test the existing theory in the context of Finnish cleantech SMEs and theorise on factors that have the most explanatory power within this sector.

A case study is not, however, a method of its own, but rather a choice of object to be studied (Ghauri 2004, 109). The empirical data collection for the purpose of this study was, instead, realised through semi-structured interviews with Finnish cleantech SME decision-makers and expert informants. According to Daniels and Cannice (2004, 186–187), interview as a data collection method is appropriate in international business research when, firstly, no or very little research exist about the topic in question, or

when there is too much information to be studied for a questionnaire to capture. Secondly, interviewing is a viable option when the population of possible respondents is small. Thirdly, interviews allow for deeper interaction between the interviewer and the interviewee than written questionnaires do. As it was indicated by the discussion above, the lack of existing research on the topic was certainly not a reason to choose interviews as a data collection method. However, the same discussion proved that an overall picture of the joint-effects of different factors in a given context cannot be obtained without more detailed analysis of the research cases.

The semi-structured form of interviews was chosen because it allows the respondent the freedom to bring into discussion the issues that he or she estimates most relevant in the context of the case study. Indeed, interview is a very flexible research method that allows for modifications in research outline during the interview as new issues emerge. Also, physical presence helps in understanding meanings. (Hirsjärvi – Hurme 2008, 34–35.)

Before the interviews, the author prepared a set of themes to be introduced to the respondent on the basis of previous research presented in Chapters 2 and 3, namely 1) firm, managerial and technology characteristics, 2) international operations, 3) use of collaborative entry modes and 4) the Indian business environment (see Appendix 1). This division corresponds to a large degree to the threefold analysis framework of Figure 6, but international operations were decided to be assessed as an individual theme instead of being part of the Indian business environment theme because most of the interviewees did not have experience on operating in the market. The final content of interviews was, however, determined by the respondent, and the role of interviewer was mainly to lead the discussion to the following theme once the previous had been covered.

4.2 Case selection

After the selection of research method, potential participants were contacted in order to select the cases to be studied. As a starting point for the case selection, the author used the member list of Cleantech Finland available on the website of the organisation.

Cleantech Finland is an environmental programme established by Sitra, the Finnish Innovation Fund, for the time period of 2007–2012. The objective of the programme is to promote the development and integration of the environmental industry and to encourage the internationalisation of cleantech companies. A national action plan was developed in cooperation with private, public and academic actors to organise the activity of the initiative. In addition to Sitra, the main actors in the initiative are

Ministry of trade and industry, Finpro, the Finnish export promotion organisation, and Lahti Science and Business park. (Sitra 2007, 5, 8.)

At the moment, Cleantech Finland has 88 members. It is a highly heterogeneous group of companies of different size from a variety of fields of operations. On the basis of their solution areas they are divided in five groups: energy, clean processes and materials, water, air protection and smart cities. Most of the companies are specialised in clean processes and materials development, with a smaller number of companies concentrating on energy production or water and air treatment. According to a review of company brochures presented on the Cleantech Finland website, the majority of Cleantech Finland members are small and medium-sized companies, and a significant part of them has only been established in the 21st century. Members include both service and manufacturing companies, but they all base their competitive advantage on pioneer technological knowledge and know-how. (Cleantech Finland website b.)

The member list of Cleantech Finland was chosen as a starting point for case selection because the network has been established to encourage the internationalisation of Finnish cleantech companies, and hence the members of the group can be expected to be interested in expanding their international operations. The members of Cleantech Finland were listed, and information was gathered about their yearly turnover and number of employees in order to identify companies that comply with the definition of SME presented in section 1.2. Information about the company size and yearly turnover was gathered from the public internet services of Kauppalehti (www.kauppalehti.fi/yrityshaku) and Fonecta (www.finder.fi). No information, however, could be obtained about the balance sheet total of these companies and therefore the definition of SME had to be constricted for the purpose of the study; in the final selection, only companies that 1) employ less than 250 employees and 2) have a yearly turnover of maximum EUR 50 million were included.

On the basis of this screening, 47 Finnish cleantech SMEs were identified. In reality, the number of SMEs among Cleantech Finland members is probably higher, because for 8 companies no necessary information about the number of employees and/or the yearly turnover could be obtained from the sources mentioned above, and they had to be omitted from the sample.

The 47 Finnish cleantech SMEs identified constituted the target group of this interview research. After having been identified, a preliminary selection was done among companies based on the geographical area of their operations and type of technology marketed. In the selection, company websites were used as a source of information. Firstly, priority was given to cleantech SMEs that already have operations in India, or who have stated their interest in entering the market in their website. This was because firms that are already active in the Indian market obviously have more practical experience on the business environment of the country. It turned out rapidly,

however, that the number of Finnish cleantech SMEs operating in India is very small and insufficient for the purpose of this study. Therefore, the selection was continued by examining the type of technology that the SMEs on the list provided. Priority was given to firms that deliver technology in the fields of renewable energy, waste management and energy efficiency, because they are among the key environmental issues identified by the Indian Ministry of Environment and Forests in their State of Environment report (MoEF 2009, 73–153).

On the basis of these criteria, the author chose 10 most interesting companies that were sent an invitation via email to participate the study. In the email, the topic and outline of the research were briefly introduced and the potential participants were provided with the coordinates of the author. The companies were also asked to name a person who according to their estimation would be best suited to answer such matters. One week after the email had been sent, the companies were also contacted by phone in order to arrange time for an interview. Of the 10 companies, 7 gave their consent to participate in the study and were interviewed between March and May 2012. In addition, three expert informants of the Indian market area and/or cleantech industry were contacted for an interview. The experts to be contacted were selected on the basis of their position in well-known national public organisations involved in export promotion, and the author did not have any prior contact to them. Two of them accepted the invitation and contributed to the study with their knowledge about the topic. Also, one of the cleantech SME representatives proved to possess extensive experience on the Indian business environment, and the insights of this person contributed largely in this aspect of the study.

The characteristics of the participants of the study are presented below in Table 1. The upper part of the table represents the year of establishment, the number of employees and the field of activities of each interviewed company, whereas the lower part of the table indicates the field of experience and the length of experience of the two expert informants. In addition, the length of each interview is indicated in the last column of the table. Most often the person interviewed was either the CEO or the sales manager of the company in question.

Table 1 Characteristics of the participants of the study

	Established	**Employees**	**Field of activities**	**Length of interview**
Company A	2006	4	renewable energy	56 min
Company B	2007	5	waste treatment	50 min
Company C	1998	9	air protection	55 min
Company D	1998	20	biotechnology	43 min
Company E	2008	4	biogas and water treatment	38 min
Company F	2008	8	clean industrial processes and biofuels	37 min
Company G	2002	15	renewable energy	45 min

	Field of experience	**Experience on the topic**	**Length of interview**
Expert 1	cleantech	ca. 10 years	41 min
Expert 2	Indian business environment	7 years	43 min

The interviews were conducted either face-to-face or on the phone depending on the geographical location and preferences of the respondents, and their durations varied between 37 and 56 minutes. One of the company representatives requested to see the interview outline beforehand, and it was sent via email about two weeks before the interview took place. This fact evidently decreased the spontaneity of responses but was realised for the respondent's convenience. Except for one expert informant, all the respondents gave their consent to record the interview.

4.3 Data analysis

Once the interviews were completed, each of them was transcribed in text format within the next couple of days. This offered a good opportunity for the author to go through the interviews in detail for the second time, and initiated analysis of the data early in the research process. In the case of lacking recording, the analysis was based on the notes made during the interview and complemented afterwards according to author's memory.

The use of semi-structured interview (see Appendix 1) proved to be a viable research strategy because once the interviews were completed, the main themes of the data were already known, and this structure could be used as a starting point for the analysis. This analysis method is known as thematisation in which the research data is organised to

themes that provide relevant information about the research topic. For thematisation to be successful, it needs to be consistent with the theoretical framework of the study. (Eskola and Suoranta 1999, 175.) In this study, the analysis was started by organising the data according to the three sub-questions of the research objective: answers to theme 1 (firm, managerial and technology characteristics) provided information about the key factors influencing the international entry mode decision of Finnish cleantech SMEs, theme 4 (the Indian business environment and cleantech market) about the major factors affecting the entry of these companies to the Indian market, and theme 3 (use of collaborative entry modes) about the use of strategic alliances among cleantech SMEs.

Answers to theme 2 (international operations) were employed as a supportive material to answer the sub-question regarding the factors affecting the entry to the Indian market because by telling about their international operations and general market selection criteria the companies also indirectly answered why they did or did not operate in India. In addition, answers to theme 2 provided information about the factors influencing the entry mode decisions of Finnish cleantech SMEs because they included information for example about the prior international experience that the companies had had.

Once the interview responses had been organised under these three main sections, the analysis was continued by examining each section as an entity instead of focusing on analysing each individual interview separately. The reason for doing so was to reveal similarities between answers given by different respondents and thus create a more generalisable picture of the internationalisation of Finnish cleantech SMEs. The three text entities were meticulously examined in three different rounds and instances illustrating different factors identified in the previous chapters of this study were highlighted and compared to each others. At the same time, attention was also paid to any additional themes emerging from the interviews. In order to increase the trustworthiness of the study, the most illustrative instances were also included in the final work and translated to English by the author. The results of this analysis are presented at length in Chapters 5 and 6.

4.4 Evaluation of the study

In this research, the trustworthiness of the study is evaluated on the basis of the framework presented by Mäkelä (1990, 47–53). According to him, qualitative research cannot be evaluated on the same measures as quantitative research, but that new criteria need to be developed to measure its trustworthiness. Suggestions for such criteria are significance of the research data, sufficiency of the data, scope of the analysis and evaluability and repeatability of the analysis (Mäkelä 1990, 47–48).

The *significance of the research data* can be justified by defining its social and cultural position (Mäkelä 1990, 48–49). Taken into consideration the high acknowledgement given to clean technologies by the Finnish and Indian governments, the social position of the research data of this study is deemed high; the Finnish government has great expectations for the cleantech sector to be the next leading export sector, and the Indian government needs new solutions to resolve its environmental problems. The author deems also the cultural position of clean technologies to be noteworthy at least in Finland where green values and environmental consciousness are increasingly gaining ground. These factors suggest that the research data collected for the purpose of this study is worth examining. Also, the research data was gathered directly from primary sources, which speaks for the authenticity and truthfulness of the data. It has to be noted, however, that the interview is not necessarily a natural situation for at least all the participants, and this may have had an influence on the way they expressed themselves.

In the case of qualitative research, no clear quantitative measures exist for the *sufficiency of the research data and the scope of the analysis*. The sufficiency of the data can only be evaluated by confirming that there is enough variation within the data gathered. The scope of the analysis, on the other hand, means that all the data gathered is systematically examined during the analysis, and that the researcher does not base his or her conclusions on random samples of the data gathered. (Mäkelä 1990, 52–53.) In this study, the sufficiency of the data was ensured by choosing in the sample companies presenting different technologies in the cleantech sector. In addition, the geographical variation between companies was high. The scope of the analysis was increased by meticulously examining the research data thoroughly and providing contradictory instances equally attention in the reporting of the analysis.

Eskola and Suoranta (1999, 62) have a somewhat different approach to the significance and sufficiency of the research data. In their view, the significance of the research data is related to its adequacy to the research question rather than to the external societal status of the data. They emphasise the relationship between research data and theoretical knowledge: research data is significant if it is adequate for gaining knowledge about the topic of research and building theoretical understanding about it. Also the sufficiency of the research data is evaluated according to the same criteria: the research data is sufficient when it is enough to provide theoretical understanding of the studied phenomenon. It this sense, the significance of the research data in this study can be questioned, because none of the interviewed companies had actual experience on operating in the Indian market. Therefore, it is debatable how much they can increase the theoretical knowledge of internationalisation strategies to this market. However, this does not directly imply that the data is insufficient because no data on cleantech SMEs operating in India was available at the time of the study.

Finally, the *evaluability of the analysis* means that the reader is able to follow the reasoning of the study, and that prerequisites are created for the reader to either approve or disapprove the interpretations of the author. *Repeatability of the analysis* means that the classification and interpretation rules employed are reported in detail so that replicating the same study by applying them would yield the same results. (Mäkelä 1990, 53.) In this study, an effort was made to render viable the thought pattern behind the interpretations made by carefully reporting different stages of the analysis and by providing direct quotations from the collected research data to support the conclusions made.

Before conducting this study, the author did not have any noteworthy connections to the cleantech cluster or the companies involved. This can be regarded as an asset from the point of view of the analysis because the lack of personal interest and preconception of the subject of research provided the author with a more objective stance to the respondents and the obtained data. However, on the other hand, the lack of prior relationship might have complicated mutual understanding and the creation of trust during the interviews. Also, it has to be noted that the conclusions made in this study are results of reasoning of a single researcher. This decreases the repeatability of the analysis and demands for critical evaluation of the study both from the side of the author and the reader.

Another point to be taken into consideration is the number and length of interviews conducted. Nine respondents from the field of cleantech is a rather limited sample and contains a risk of distortion. Also the length of interviews was, in most cases, less than one hour which leaves place for questions regarding the scope of topics covered and the quality of relationship created between the interviewer and the respondent. The reason for not conducting more interviews was that the gathered data became quite quickly saturated, and new interviews provided little new to the findings. This demonstrated that despite their heterogeneous characteristics, Finnish cleantech SMEs are driven mainly by the same determinants of internationalisation and entry mode choice. This point is assessed in more detail in the following Chapter 6 that presents the cross-case analysis of the interviewed companies. Before that, however, Chapter 5 will provide a more detailed description of the case companies.

5 DESCRIPTIONS OF CASE COMPANIES

In this chapter, the selected case companies and expert informants are described in more detail. The information was provided by the company representatives and expert informant themselves during case interviews. Because none of the interviewed companies had established business operations in India yet, it was decided to divide them in companies that currently had active plans to enter the Indian cleantech market, and to companies that were interested in the market, but did not consider entering in at least in the short term. The chapter describes each of the companies in reference to the determinants of entry mode choice identified in Chapter 2. In addition, case companies' use of strategic alliances, motives for entering alliances, and alliance partner selection are assessed.

5.1 Companies with short-term plans to expand to the Indian market

Even though none of the interviewed companies had established operations in India, the four companies presented in this chapter had already taken action to enter the market in the near future.

5.1.1 Company A

Company A is a small enterprise with four employees and a yearly turnover of about a million euro. The company specialises in small-scale generators of renewable energy which it produced in China and markets worldwide through a reseller network.

The CEO and co-owner of Company A was interviewed at the company premises in March 2012. The CEO had a long managerial experience both domestically and internationally, and had also lived extensive periods of time abroad. Also others board members of the company were highly experienced in international sale, marketing and sourcing.

Company A was established in 2006 when the inventors of the core technology entered cooperation with an angel investor. The offering of the company consists of solely physical products without any supplementary services, but the firm is highly dependent on its technology as its competitive advantage. Markets for the product are competitive, and price is a central selling point in many of the main market areas, but Company A strives to gain competitive advantage through higher energy efficiency and resistance of its product. That is why R&D has an important role in the operations and

expenditures of the company. In addition, the product in question is also marketing-intensive, which creates challenge for the resources of a small company.

Despite its young age, Company A has gained extensive international experience. The enterprise has engaged in international operations since its inception, and today it operates globally in 35 countries through a reseller network. Company's main market is in Asia and Southern Africa while domestic sales constitute only a fraction of the yearly turnover. As a producer of renewable energy, the market selection of Company A depends to a large degree on the natural conditions of the target market. On the other hand, the demand for this kind of products is highest in countries and areas where the availability of electricity is weak.

For its international sales, Company A has chosen to use resellers in local markets, and the manufacturing is managed through sourcing from China. In addition, the company regularly employs Chinese employees through a local partner to execute audits in the manufacturer's premises in order to ensure compliance to quality and working conditions requirements. This arrangement is made possible by the codability of company's technology; the high embeddedness of technology in physical products enables Company A to outsource its production and logistics because technology can be transferred in explicit format. Also, no customer-specific customisation is needed.

The core technology has also been patented, but the interviewed CEO did not place great value to it. According to him, patents are only a protection of last resort in legal procedures. Instead, the company has decided to fight piracy through rapid product development and short renewable cycles so that in case of piracy it can rapidly launch a new improved model to the market:

> *"But if you're agile enough – – so if someone now wants to copy this design so we have half a dozen new ones that we can launch on the market, so let the old one rot and continue with a new one."*

The reseller network was chosen as an entry mode mainly due to the limited resources of the company. Creating a global brand in the market would require remarkable investments that the company simply cannot afford. The CEO states:

> *"... we have taken now a role, because of this small size and limited resources, that we are not gonna push a brand, but we're looking for importers and resellers so it's like indirect marketing but we don't have any marketing campaign or other."*

In addition, the logistical infrastructure in company's main market areas is very weak, and building an own distribution network would be highly demanding. This is why local partners have an important role in the value chain of Company A, even though intermediaries in the supply chain inevitably decrease profit margins.

In order to find local resellers and production partners, Company A has used primarily its own network of contacts including the contacts of its employees and

members of board. This has been possible because of the prior international experience of these shareholders. In case of less familiar markets the company has turned to chambers of commerce and to embassies for contacts and help. When selecting a potential reseller partner, prior experience on selling renewable energy products is preferred, but the utmost priority is reseller's access and channels to the target market. The financial background of candidates is checked but it is of minor importance because the product in question does not require high initial capital investment. In the case of production partners, on the other hand, compliance to quality and working standards is a necessity for alliance formation.

Company A has close cooperation also with domestic partners, even though this is not directly connected with the internationalisation of the firm. Cooperation is done in the areas of product development and prototype manufacturing.

At present, Company A has penetrated all the potential markets where the demand for its product is obvious, and the trade barriers are low. The next phase of international expansion is to enter markets which either require high financial investments, such as US due to its size and competitiveness, or include high entry barriers, such as India and Brazil. Company A has long been very interested in the Indian market due to the immense population and acute demand for its product in the market. The major impediment for the entry has been, however, the high import tariffs imposed by the Indian government that increase the price of the product by up to 40 %:

> *"And India and Brazil then they are these markets that come last because their trade restrictions are worst, their protectionist import tariffs and requirements are straight from the 70s. So that in both the import tariffs are 40 per cent or more for our products."*

This is why the company envisages penetrating the Indian market by entering manufacturing cooperation with a local partner as it has done in China. The scanning for a potential partner has already been started and products should reach Indian market in the first half of 2013.

The interviewed company representative had been working in India for a long time and was experienced in the market. Overall, he's opinion on working with Indians was very positive. He described especially young Indian businessmen to be smart and aggressive persons with a strong drive for doing business, and emphasised their hard-working character. He admitted that differences exist between the trade practices of India and Finland, but stated that juridical agreements are respected in India better than in many other countries. Therefore he strongly emphasised the importance of using local lawyer's office and said it to be the best protection against difficulties.

The interviewee confirmed the high bureaucracy of the Indian business environment but had a rather practical approach to it:

> *"I always say that it was the English who invented bureaucracy but that it was the Indians who developed it to the perfection after gaining autonomy – – You just have to accept that there you need eight copies of a paper and the eight copies have to be signed before the thing gets any further."*

According to him, the bureaucracy needs to be accepted because it cannot be avoided. Yet he highlighted the need to find a local partner who is familiar with the local procedures and knows how to manage relationships with authorities.

5.1.2 Company B

Company B is a small company of five employees offering recycle technology for waste treatment. The representative of the company was the CEO who was interviewed at the company premises in April 2012.

The company was established in 2007 by four partners that had been working in related industries and had understood the need for the recycling and the lack of suitable solutions for it. Prior industry knowledge was gained mainly in the domestic market, and international experience of founding members was rather limited. At present, Company B has delivered installations in Finland but not yet in international markets. The company has, however, had advanced negotiations with several international buyers. A remarkable share of enquiries comes from India, and therefore Company B was included in the group of companies with short-term plans to enter the Indian market.

The product of Company B is a waste treatment plant marketed for large companies or domestic municipal organisations. The company sees great potential in many markets worldwide because no significant competition exists outside Central Europe where the main competitors of the company are located. The competitive advantage of Company B is based on the core technology developed inside the firm. The technology in question enables the construction of recycle plants that are smaller in size but able to extract and collect higher percentage of the original raw material.

> *"It's exactly that we are able to deliver compact size. It doesn't have to be a big plant and still it works efficiently."*

Because company B competes on quality, it invests in product development and R&D. On the contrary, the product is not advertising-intensive. The company had participated in many international fairs and invested in its internet visibility, but in most cases the enquiries were sent by customers without any active marketing by the company itself. In some countries Company B has also made representative agreements with local companies. Negotiations about plant building are rather long and detailed

because each installation requires customer-specific customisation depending on the material to be processed.

Even if agreements are signed with foreign customers, Company B is planning to continue constructing recycling plants in Finland and delivering products to the end customers through direct export. This is possible because the value of individual transaction is rather high and thus number of customers required to make business profitable is low. In addition, the compact size and innovative construction methods of plants facilitate their shipping. The interviewed CEO also stated that it would be difficult to control construction abroad.

Constructing the product in-house is also related to the protection of intellectual property rights. Some parts of Company B's technology have been patented, but the interviewed CEO had a rather sceptical view on the ability of patenting to provide protection against piracy:

> *"Because it doesn't matter if it's patented or not. If they don't care about it. Quite the contrary, if it's patented it's more easily found on the internet. – – roughly speaking, the copier sees manufacturing instructions from there. A patent is dangerous, that's why we haven't patented everything."*

The company has solved the issue by excluding from patents certain technical aspects necessary for the proper functioning of the product. According to the CEO, it is best to retain the core technology somewhat mysterious. Also, the company wants to retain its own production capacity so that even if, in the future, the construction of plants is outsourced, it is still able to produce the core components of the technology.

The Indian cleantech market has been a subject of interest for Company B mainly because it receives regular enquiries from the country. This clearly indicates that demand for the product exists in the market. A couple of times the company has also engaged in negotiations with Indian customers, but the process has proven complicated: after some information change and negotiations the Indian companies have suddenly withdrawn without any understandable reason or stopped responding to contacting efforts. The worst experience was with an Indian firm with whom Company B had already signed a contract. The customer seemed enthusiast and urged Company B to start constructing the plant as soon as possible. The payment, however, was never received and the customer did not respond to any references. Finally, the contract was never accomplished. The negotiations themselves had been very business-like and unproblematic. These experiences have understandably weakened trust to Indian actors:

> *"... it feels that you can't trust them fully, that they say one thing but do something else."*

Despite bad experiences, the CEO of Company B would still be willing to cooperate with Indian counterparts but would take precaution in the arrangements.

5.1.3 Company C

Company C is a company with nine employees and a yearly turnover of about two million euro. The company specialises in air protection and pollution reduction. The offered product is an installation that eliminates harmful chemical compounds in factory process gases. The representative of the company was the CEO who was interviewed on the telephone in May 2012.

Company C was established in late 1990s as a result of an EU directive that committed industrial actors to reduce their emissions to air and thus created a market for Company C's product. The founders were experienced businessmen with extensive industry knowledge in the domestic market but with limited international experience. At present, Company C operates in the EU region and in some Asian countries. The market selection of the company differs from that of most sectors because it is entirely dependent on the local environmental regulations; customer companies are only willing to invest in air protection when they are legally required to:

> *"It is seamy sector in the sense that no one is going to buy this equipment before authorities require it."*

According to the CEO of Company C this has not, nevertheless, had any major negative influence on the customer relationships. Some of the customers may have expressed their disagreement with the legislation, but have understood Company C's role as a solution provider. The dependence on local legislation influences also the solicitation of customers because Company C can use environmental license registers for identifying new potential customers, and marketing can be directed primarily to sectors that face the most regulative pressure. Substitutes for Company C's product do exist, but the firm is able to compete with more compact size and increased efficiency due to combined processes. The design of the product components makes scaling of installations easy, and thus no remarkable customer-specific customisation is needed. The technology has been protected by a utility patent. Along with the physical product, Company C has offered also maintenance services, but their role in the business has remained limited.

In international markets, Company C sells its products through agents and resellers. Contracts with agents include only the finding of a customer, after which the agent is paid a commission on the value of the realised transaction. The resellers, on the other hand, buy the product from Company C and resell it to their own customers. When selecting an agent or a reseller, the main criteria for selection are industry knowledge and existing contacts to the actors in the field. This is because the product is highly specialised and cannot be sold effectively without deep understanding of its processes:

> *"If they sell all sorts of products to other industries than ours, then it's quite probable that they are not going to sell for us because it's so*

> *specific industry and requires deep learning and understanding of the product and markets and customers' needs... So even if they are enthusiastic in the beginning, they rapidly realise that they can sell other products more easily."*

As resellers, the Company C has both companies that focus solely on reselling other firms' products, but also companies that compete with Company C with their own product. Interestingly enough, the CEO of Company C also stated that these competing resellers are their most effective sales channel. This is probably because companies operating in the same sector understand the technology and know the main customers in the field. For the competing resellers, on the other hand, selling Company C's product fills in a gap in their offering and enables the serving of a wider customer base.

Even if Company C uses its competitors as a part of its international marketing network, the CEO did not see copying of the technology as a significant threat. The most important reason for this is that the technology of Company C is not easily copied; even though some parts of the technology have been explicitly coded in a utility patent, an important part of the proper functioning of the product is still based on the employee expertise. This is one of the reasons why Company C has built all of its installations abroad itself instead of using local contractors. Also, the CEO questioned the lower production costs when using local workforce in Asia: according to prior experience, the low work efficiency in some Asian countries quickly overrides the savings in labour expenses.

The situation might still change in the future: interested partners from different countries have approached Company C with the request of buying a license for their products, and negotiations have been conducted with selected firms. No agreements have been signed yet, but Company C strongly considers licensing as a potential future arrangement. Even in that case, however, the company would still manufacture the core technology components itself. This way it could not only guarantee the quality of its product, but also protect the technology.

Local production through licensing could be an option especially in markets where high tariffs are imposed on imports. One such market is India. Company C has actually been interested in the Indian market for some time because of its large population and potential, and has taken active measures to promote environmental regulations in the country: some years ago, workshops were conducted by the Company C in India for local companies with authorities responsible for the legislation in the field. Unfortunately, the CEO estimates that they were trying to enter the market a bit too early: the anticipated legislation did not take effect as quickly as anticipated, and as a consequence no deals were signed. At present, Company C has a representative in India and has a rather expectant stance to the developments on the market.

The interviewed CEO had spent some time in India and recognised the cultural differences and challenges of the market. However, he did not expect doing business in India to be any more difficult than in other countries:

> *"Well in India there's quite a lot of pulling, people are playing according to their own interests a lot. – – [But] I don't see that the market would have any atypical features in that sense. The challenges are probably the same as elsewhere."*

He also acknowledged the diversity of India and stated that once entering the country becomes timely, several representatives will be needed to cover the market.

5.1.4 Company D

Company D is a biotechnology company established in mid-1990s, employing today more than 20 persons. The company has headquarters and production facilities in Finland and a wholly-owned subsidiary in China. The representative of the company was the environmental director who was interviewed on the telephone in May 2012.

Company D was started as a family business by founders having a lifelong experience in the domestic chemistry field. The company specialises in biotechnologies with multiple purposes of use. The technology developed by the company is, however, completely novel to the world market. At the moment, no commercial installations exist globally, and Company D itself is still at the pre-commercial stage of its development. The technology has been created through years of intensive research and development during which strong legal protection has been applied for the technology worldwide, and patents constitute an important part of Company D's assets. A lot is being expected from the technology because once launched on the market, it would return better yields and efficiency than former industry solutions. The innovation of Company D would also be socially more sustainable than its substitutes because it able to use biomasses that are unfit for human consumption.

The international market area of primary interest for Company D is the South-East Asia including India because these countries have large supplies of biomasses suitable for the processes, but also large populations and an urgent need for new types of energy solutions. First installations are projected to be constructed in the medium-term and the business model for international sales is being developed. For its international sales, Company D has chosen to employ licensing so that the technology of installations is licensed to the partner, and Company D assists the construction process by providing consulting and project management services. Potential partners either possess a large supply of biomasses and are looking for a use for it, or are operating in the end product market and are looking for new alternative ways of producing their product. In addition,

a sound financial standing is required from a partner engaging in the investment of remarkable value. Selling requires long and intense negotiations because the technology and product is new to the world market and each installation needs to be customised to the needs of individual customer.

At present, Company D has a subsidiary in China, and the interviewed director estimated subsidiaries as a potential option to be used in other markets as well. This could be the case for example in India where the interviewed director estimated local presence to be necessary. The geographical diversity of India was also mentioned to influence the possible entry strategy. The Chinese subsidiary is fully owned by Company D but the interviewed director could not refer to any specific reason for preferring full ownership over shared. Instead, the interviewee seemed to be surprised by the question:

> *"At least in my opinion it's considered positive that it's wholly owned. So yes, it's a conscious choice."*

Originally, the Chinese subsidiary had been established because an industry cluster of customers was located in the region, and new solutions were needed to decrease the local environmental pollution. Also, one of the employees of Company D had a long experience on doing business in China which made practical arrangements easier. However, when establishing new subsidiaries to other countries where first commercial facilities are to be build, Company D has considered entering a joint venture with a partner because it would spread the investment and risk of the new high-cost technology.

In general, the representative of Company D had a positive view about doing business in India and cooperating with Indians. The meetings and negotiations Company D had had with Indians had been well prepared and matters advanced rather easily. Especially, rapid progress had been achieved after Company D succeeded in inviting a high-level Indian representative to visit the company premises in Finland and acquaint himself with the company technology. Also, the business potential of India was estimated significant because of the large population and exceptionally wide biomass supplies together with increasing energy needs.

5.2 Companies with long-term plans to expand to the Indian market

The four companies presented above in the previous chapter did not yet operate in the Indian cleantech market, but were already rather far in their negotiations with Indian partners and projected the entry to the market to take place in the near future. The three

companies presented here in this chapter also consider India as a potential future market but estimate the entry to take longer time to realise.

5.2.1 Company E

Company E is a small cleantech company established in 2008 with four employees and a yearly turnover of about million euros. The company operates in two sectors, namely biogas production and water treatment. The representative of the company was the product manager who was interviewed on the telephone in April 2012.

Company E was started by a group of partners, but most of them withdraw from the business quick after the establishment. However, the company was able to find an investor company with whom synergies were created. Later the investor became the main owner of Company E. The managers of the company had entrepreneurial background but no prior international experience.

Company E is a licensee of technology in biogas and water treatment sectors. The technology sold by the company has been developed by the licensor, and the key components of the technology have been licensed. The licensor provides Company E also with product and development support. Therefore, the role of research and development in company's business is low and instead it is concentrated in sales, marketing and construction of plants.

Especially in the biogas sector the technology sold by Company E has only a few competitors in the Europe even though substitutive technologies do exist. The technology is not able to compete on price with other competing technologies in the field, but it has the competitive advantage of long-life durability and easier usage and maintenance. Maintenance services for the plants are also offered by Company E but as yet they have not been sold.

Company E operates in the Nordics and in the Baltic countries. In addition, tentative negotiations have been conducted in cooperation with many nationalities. The licensee position of Company E partly influence target market selection, because the licensor may have divided market areas between different licensees and thus granted license only to a specific region. Also, the product manager estimated nearby markets to be easier to enter for a Finnish company:

> *"At least the Baltic. Isn't it a bit like another home country for Finland? It's a close market and then of course we have the license so markets have already been partially divided."*

Usually, operations abroad are realised so that all preparatory measures including preliminary settlings and offer submission are executed by Company E independently, but the construction stage of the project is partly subcontracted to local companies.

Company E delivers always the licensed core technology, but the outer parts of the plant can be bought from the market. This operational model has been chosen mostly because of the limited resources and uncertainties of a small company:

> *"Because of the resources actually. As you know, with a small company it is a bit like, a foreign project takes awfully lot of resources. We would need to hire people, and then if after a year or a couple of months we have nothing, they would need to be laid off."*

Should the resources be sufficient, Company E would prefer having its own sales organisations in all its operating markets with local employees in the organisation. The reason for this is rather practical:

> *"Already because I believe that you should always speak with the customer in his or her own language. – – we have a project coordinator who speaks English well and then, well I speak German so we get along well in those countries."*

India is a market of great interest for Company E, and the topic has emerged in the discussions with the licensors as well because the size of the market creates great potential, and no competitors have entered the market yet. The product director of Company E had a very positive attitude towards Indians and he did not see great difficulties in cooperating with them, quite the opposite:

> *"Well why not, definitely, it would be interesting I'm sure. I think it would be easy as they are extrovert, open personalities, at least the ones I know, so I think it would be an easy task."*

The interviewee was aware of the intellectual property right challenges that might occur in the Indian market, but the issue is less critical for a licensee company because it is the licensor who owns the technology and manages property rights. In any case, the product manager stated that Company E would much rather enter India than China because experiences heard from China were very negative.

5.2.2 Company F

Company F is a cleantech company specialised in cleaner industrial processes. The company was established in 2008 and today it employs about 8 persons. The representative of the company was the sales manager who was interviewed at the company premises in March 2012.

Originally Company F operated as a service provider that offered subcontracted product development for other companies. Some of the products, however, proved to be very promising and Company F started their commercialisation under their own brand. At the time of the interview, the company had launched its first product on the market.

Company F operates in two sectors, namely wood and paper industry and biofuels, and the product of the company is developed to make chemical processes in these industries cleaner and more efficient. The technology of the product has been developed entirely by Company F itself and has been protected by several patents. The technology is also the main competitive advantage of Company F because even though some substitutive technologies exist on the market, the technology of Company F is superior in efficiency:

> *"... so the technology platform that we have developed it is... should I say sovereign, in a way it's not dependent on it whether we succeed or not, it's so much better than others have."*

The degree of customisation depends on the application in question, but a service component is always attached to the physical product because the implementation of technology requires deep understanding of technical detail.

Company F is a Finnish company, but the majority of its managers and owners are foreigners. Some of the managers have also gained international entrepreneurial experience through their previous ventures. Also Company F has been internationally oriented since its establishment:

> *"I believe actually that it [the internationalisation] has been part of the business since the very beginning. – – I don't think that if you're a cleantech company that you could just start in Finland and let's see how it goes, but you really have to think bigger."*

The sales manager estimated that this is first of all because of the small size of the domestic market, but also because the credibility in the field is often achieved only though internationalisation.

At the moment, Company F operates in Scandinavia, England and part of Central Europe. In addition, the company has a subsidiary in Russia. In the future, more distant markets are to be entered through agents. The choice of target market has been rather easy for Company F because many of the world's biggest customers are situated in the neighbouring countries. Also, the customer market is concentrated, which means that the number of customers to be contacted is quite limited and individual transactions are high in value. This makes it possible for Company F to use direct sales.

For the international manufacturing of its product Company F uses licensing. This was seen as a natural choice because the company itself is concentrated in its core competence in research and development and the technology is explicitly codable in patents. Manufacturing would also require remarkable capital investment. In the future, Company F envisages using the same internationalisation strategies. The only exception to this is company's subsidiary in Russia. In Russia the establishment of a subsidiary was estimated necessary, because the business environment of the country makes it difficult to operate without local presence. The Russian nationality was also presented in Company F's board, which made enlargement to Russia a natural choice. The

subsidiary is fully owned by Company F even though the sales manager could not name any specific reason for the full ownership.

The interviewed sales manager had worked previously in an enterprise with activities in India, but the experience on working with Indians was rather negative. The respondent acknowledged the growing potential of the country but indicated that entering the Indian market is not a timely issue for Company F. According to the interviewed manager, the challenges of doing business in India are mainly due to the high level of bureaucracy in the country:

> *"In a way it's the rigidity of operating there that first everything seems to work, everything is promised, but then when you should start, then after all it does not work at all. It fails maybe mostly because of the bureaucracy and the like so I think that's the biggest issue there."*

Another major challenge indicated by the sales manager is the level of intellectual property rights in India which was estimated highly insufficient:

> *"Yes I've got the impression that right away I would not give information, any information at all to India or China. The situation is that it is immediately copied and used and anyway, small companies like this can't afford to sue in court, plus I don't see how there could be any use of the battle."*

The interviewee also posited the view that even though the demand for cleantech in India is increasing rapidly, it might not strengthen the competitive position of all Finnish companies; Finnish firms often compete with higher quality, but in India the quality requirements for technologies remain still quite low in many sectors.

5.2.3 Company G

Company G is a Finnish cleantech start-up with a novel technology product in renewable energy generation. The company was established in the beginning of the 21st century, and employs at present about 15 employees. The representative of the company was the CEO who was interviewed on the telephone in April 2012.

Company G is specialised in the production of renewable energy. The production technology is, however, completely new to the world market. At the moment, no significant commercial installations exist globally, and Company G itself is still at the pre-commercial stage of its development. Therefore research and development activities have constituted an important part of firm's activities, and Company G has gathered a global patent portfolio to protect its technology. Originally, the technology was developed when the innovator of the concept join forces with experienced engineers in the board of Company G. In addition, one of the founding members was a business

angel that provided the initial capital for the technology development. Later on, industrial investors have joined the company. Finding financing has been an indispensable prerequisite for Company G's business because developing entirely new type of technology and creating markets for it requires time and resources.

When compared to the existing technologies in the market, the main competitive advantage of Company G's product is the reliability of its technology. The product does not require significant customer-specific customisation, but the CEO estimates the service content of the product to play an important role in the offering of Company G:

> *"... even thirty per cent of the profit, even though only maybe ten per cent of the turnover, is generated by after sales and services – – so yes, we see that it is a relevant part of this product."*

Even though Company G has not yet commercial installations in the world market, the company has already gained international experience through operating demonstration plants abroad. International orientation is obvious to Company G also because the domestic market for their product is inexistent. As it has been stated in the context of other interviewed companies also, it is characteristics to all types of renewable energy that their production is dependent on the natural conditions of a location. Therefore, the market selection of Company G is dependent on the location of natural resources required for its energy production processes. Yet even more important for the market selection, especially in the early stages of new world market creation, are the local subsidies paid for the new technology. Even if a global financial system to support the technology would be developed, it will take decades before novel renewable energy is able to compete with conventional resources without market subsidies. Therefore, Company G's product will be first launched in Europe and Northern-America because these countries already have established structures to enable the adoption of new types of technology.

The delivery of Company G's products is planned to be realised through global system integrators who already have an existing country organisation in place. The production of the core technology could still be maintained by Company G itself, but the integrator would operate as an interface between Company G and the end customer who would normally be a large energy corporation. This mode of operation is preferred because as an SME Company G will not have the resources to support its own country organisation, and also the end customer prefers cooperating with a larger partner. The use of system integrators is made possible by the codability of Company G's technology which makes it easy to license the production. In addition, the production is simplified by the fact that in its product development, Company G has strived to take advantage of already existing industrial solutions and components:

> *"So that we're not building a prototype from prototypes but it contains already existing industry components, in the solutions we have strived to*

capitalise as much as possible on the existing technology but of course when they are put in totally new use, it forms an entity of its own."

Before proceeding to this plan, however, Company G will continue marketing its product mainly to grand energy companies that have the means to finance high risk projects through their own balance sheet. At the moment, Company G works in close cooperation with a domestic major energy company who also own part of it. In addition to the financial resources of its partner, Company G also appreciates its experience on renewable energies and the interest to find new lucrative businesses inside the energy sector.

Company G regards India as an interesting market in the sense that the potential size of the market is great. In addition, the Indian government has set ambitious objectives for the increase in renewable energy use in the country. Yet at the moment the subsidies system in India does not give real incentive in using renewable energy. In addition, the interviewed CEO of Company G stated that the natural conditions for producing energy with their technology in India are satisfactory at the most, and that the structures of the energy market are not yet well established. For example, the weak infrastructure and lack of roads and networks created great challenges for energy production. However, the situation could rapidly change in favour of India if a potential partner would enter the market.

5.3 Expert informants

As it became rapidly evident that no Finnish cleantech SMEs with established operations in India could be found for the purpose of this study, and that the companies are a highly heterogeneous group with few common attributes, two expert informants were invited to complement the research data gathered from case companies: one expert on Indian business environment who could fill in details about the challenges faced by Finnish SMEs in the country, and one expert on cleantech companies who could recognise the similarities between cleantech companies and name the major determinants of their internationalisation as a group.

The interviewed cleantech expert has met many cleantech companies through work in a coordinate organisation during the last 10 years. According to the expert, most of the cleantech companies are young start-up SMEs that are increasingly heading to international markets. The most common international market areas are still the close markets of Northern Europe, Baltic States, Central Europe and Russia, but an increasing number of companies is also interested in more distant markets. The main reason for Finnish cleantech SMEs to prefer entry to close market is the lack of resources that would enable entry to more distant areas. Also, Finnish companies possess better

knowledge about the cultural features and legislation of their neighbouring countries and consider it therefore easier to operate in these markets.

Most commonly, international sales are managed through exports, and the first task for an internationalising SME in the foreign market is finding a local distribution network. Insufficient networks are, however, one of the major hindrances to the internationalisation of Finnish cleantech SMEs. The cleantech expert estimates that Finnish companies most commonly contact cooperative organisations in order to network with other actors in the field, to hear their experiences on interesting markets, and to obtain recommendations for partners to be contacted.

According to the experience of cleantech professional, the most important criteria for Finnish cleantech companies when choosing a partner are trustworthiness and industry knowledge. The companies also put great emphasis on the recommendations they have obtained from their colleagues. The interviewed expert had also been involved in organising small-scale cooperation between Finnish cleantech actors such as visiting international fairs jointly, but any more far-reaching cooperative projects were not identified even though several organisations promoting such activity have been established.

The interviewed expert on Indian business environment, in turn, had lived in India many years and had been working there with several Finnish companies. According to professional's experience, Finnish companies entering the Indian market are mainly medium-sized companies. Small companies are rather reluctant to enter the market because of the long geographical and cultural distance between the two countries even though some exceptions exist especially in the ICT sector. Also, India is not normally among the first international markets for Finnish companies, but entrants have systematically gained experience in closer markets before entering India:

> *"Well in the case of India no, it's not the place to do your first reference, you have to have done something in closer areas because after all India is so challenging market."*

The most common reason for Finnish companies to enter India is the size and growth potential of the market. Some companies have managed to sell to their Indian customers directly from Finland, but the Indian expert emphasises the importance of local presence in order to gain legitimacy and trust in the eyes of the Indian customers:

> *"... the Indian market requires that the company is present, that an office is established and a local manager is employed so that one is able to say to Indians that we're present on the market and you can trust us, it's not just that we sell a product but we also have after sales."*

Also, becoming accepted as a foreign company by the Indians takes time, and this is what requires resources the most. In order to overcome the liability of foreignness, the

Finnish companies most commonly start their operations in India by finding a local partner:

> *"After all the Indian market is so complicated that no Finnish company can manage there alone, you have to have local knowledge. – – some have even had these joint ventures, but more commonly we're looking for them Indian expertise through subcontracting or by hiring an employee in the company."*

Instead, what the interviewed expert has not seen happening, and finds this regrettable, is Finnish companies forming alliances between themselves and entering distant and resource-demanding markets in cooperation.

When selecting a local partner in India, Finnish firms mostly appreciate candidate's previous experience on cooperating with foreign companies because this activity is still regulated in India and imposes certain requirement on the local counterpart. Industry knowledge is also deemed important. However, what Finnish companies seem to forget is the partner relationship management after the initial selection and contract have been made. Indians expect their partners to keep in touch regularly, or the relationships decreases in importance.

> *"... it doesn't work the same way as one operates in Finland but it has its own regularities and particularly communication and training, that's really important, that one takes grip on the partner – – if one doesn't keep in contact for a long time then there in India there are always other priorities and they don't make an effort for it anymore."*

According to the Indian expert, the biggest challenges in the Indian business environment are caused by the bureaucracy of the administration. Especially Indian taxation is among the most complicated in the world. Instead, the state of intellectual property rights should not cause great trouble because Indians respect property right, at least better than the Chinese do.

This chapter has assessed case by case the characteristics of the case companies and expert informants interviewed for the purpose of this study. The companies come from different fields of clean technologies and they have different motives for choosing international markets and entry modes depending on their product characteristics. However, what seems to be common for all the companies with short-term plans to expand to India is that this market offers them some special incentive such as access to raw material, specific natural conditions or exceptional demand for their product. Instead, the companies with long-term plans to enter India can still find equivalent incentives in closer market. This would suggest that the size of India alone is not enough for immediately attracting Finnish cleantech SMEs to the market, but they have to have some special interest in the venture. In the next chapter, other general pattern of behaviour will be analysed in a cross-analysis on the individual case companies.

6 CROSS-CASE ANALYSIS

In this chapter, a cross-case analysis on the interviewed companies is executed. The objective of the analysis is to find common attributes between the internationalisation processes of individual companies and suggest tentative generalisation on their behaviour in the context of cleantech sector. In order to best answer the research objective of this study, the assessment is structured according to the established sub-questions (see section 1.3). Therefore, this chapter first discusses the key factors influencing the international entry mode decision of Finnish cleantech SMEs, and proceeds then to assessing the major hindrances of entry of Finnish cleantech SMEs to the Indian market and the ways in which Finnish cleantech SMEs use strategic alliances in their internationalisation process.

6.1 Key factors influencing the international entry mode decision of Finnish cleantech SMEs

In order to evaluate the factors influencing the international entry mode decision of the respondent companies, this sections assesses the firm characteristics, managerial characteristics and technology characteristics of Finnish cleantech SMEs. This assessment corresponds to the theoretical framework of this study, presented in Figure 6 where characteristics of Finnish cleantech SMEs are presented in the upper left corner.

6.1.1 Firm characteristics

As it became evident from Table 1, all the Finnish cleantech SMEs are very small in *size*: only two of the interviewed companies employed more than ten persons. One obvious reason for the small size of companies is their young age: the average age the interviewed companies was eight years, and only two of them were over ten years old. The same observation was confirmed also by the cleantech expert who stated that most commonly the companies in the cleantech sector are small start-ups. In addition, many of the companies were still in the early stages of their business development: three of the companies were still in the pre-commercial stage of their life cycle, meaning that demonstration plants of the technology existed but no commercial installations had yet been established. In addition, one of the companies had launched its first product on the market but was still anticipating for other products to follow.

Small company size and the lack of financial resources resulting from it are clearly the most important determinant of cleantech SMEs' entry mode choice, and the theme

recurs throughout the answers in many instances. Limited resources can affect both manufacturing and sales: many of the interviewed companies specialise in large-size plants that are costly to construct and require high initial investment. Therefore, the construction process cannot be managed by an SME alone. On the other hand, SMEs might be forced to find partners in marketing due to prohibitively high costs that forbid them from establishing their own brand.

Also other resources can set limits to the operational modes selected. Most of the companies interviewed operated in the business-to-business sector where the size of individual orders is high and the SME can only handle a limited number of orders a year. This clearly affect the way sales and marketing are managed within the company. As the sales manager of Company F stated:

> *"... it means already that when it proceeds with anyone of these, so we've got plenty of work for the next two years."*

Despite their small size and young age, only two of the companies did not yet have international operations of some kind, and even these companies had had several negotiations with foreign partners. The high level of international experience among even small and young companies seems to be peculiar to cleantech cluster as many interviewees mentioned that internationalisation had been an obvious part of the business ever since the establishment. The most important reason for this was the small size of the domestic cleantech market that forced companies to look for opportunities abroad. Some cleantech SMEs were forced to internationalise by the product itself because no suitable operating environments could be found in Finland. This was the case especially in the field of renewable energy.

When enquired for their primary *competitive advantage*, all the respondents referred to the technology content of their product. Most commonly, the technology in question rendered their product more efficient, compact and reliable than competing products on the market. For example equipment manufacturers stated that their plant was two to three times smaller than that of competitors. In some cases, the technology of the interviewed company did not even face any direct competition on the market yet. It is noteworthy how confident all the respondents were about the superiority of their technology; even if competing products did exist, the respondents were mostly worried about them conquering the market with lower prices or stronger brand. The technology of competitors itself was not regarded as a great threat.

In the beginning of this study, the scope of Finnish cleantech companies to be analysed was limited to manufacturing firms with a physical product in their offering. Simple service providers were excluded in order to increase heterogeneity and comparability across case companies. Examining the data gathered, this proved to be a right choice because the role of services in the offerings of Finnish cleantech SMEs remains very low even for manufacturing firms. Comparing these companies to service

providers would have caused a clear bias. Thus, Finnish cleantech SMEs are first and foremost *manufacturing companies* as opposed to *service companies*. In most cases, the offering of the company also included complementary services to the physical product but their demand had remained low. For example maintenance services and consulting were offered by several equipment manufacturers but were rarely bought by the customer. This could be an important business area to be developed in the future as services can, when implemented successfully in the offering, contribute remarkably to the profit generation of companies in the field.

The efficient offering of services would however require more resource intensive entry modes to international markets because services cannot be produced and consumed separately. Examining in more detail the *previously used sales modes* employed by Finnish cleantech SMEs rapidly reveals why the role of complementary services in the profit generation remains small: the employed entry modes varied across companies but only two of them had resorted to equity-modes of entry whereas the others used operational modes characterised by low equity investments and limited presence in the local market. This was also the experience of cleantech expert who confirmed that exports are clearly the most commonly used international entry mode employed by Finnish cleantech companies. At present, the international sales modes employed or planned to be employed in the future by interviewed companies are:

- indirect export through resellers, manufacturing through sourcing
- indirect export through agents and direct export to end customers
- indirect export through agents and resellers
- foreign subsidiary and licensing (possible joint venture in the future)
- direct export
- foreign subsidiary and licensing
- licensing (planning stage)

Except for one company, they all operate in the business to business sector where the value of individual transactions is high. The high value of individual transaction in the field made it possible for the SMEs to manage also direct exports operations because the number of customers to be contacted remained low. Because of this the necessary resources for each customer relation creation could be found even in small-sized companies. Resorting to non-equity modes of entry is understandable taken into consideration the level of available resources, but at the same time locking in these operational modes prevents Finnish cleantech SMEs from offering their customers efficiently more value-added services.

6.1.2 Managerial characteristics

The risk-aversive international entry modes could also be regarded as an expression of the *risk orientation* of the decision-makers of Finnish cleantech SMEs, even though none of the respondents refers explicitly to risk-aversion as a reason for entry mode selection. More generally speaking, the managers of Finnish cleantech SMEs vary largely in their characteristics: founders and board members of companies included both young and elderly persons with different educational backgrounds and prior international experience. The company founders were generally also managers of the interviewed SMEs.

In most cases, the founders of cleantech SME had prior entrepreneurial experience in the domestic market and possessed deep industry knowledge about the field they operated in. In many cases, the original founders of companies were not from the environmental technology sector itself, but had been working in related industries where they had seen the rising demand for environmental solutions and the opportunity to capitalise on their technical knowledge. Most often they also had a technical *educational background*. The *age* of managers was generally between 40–50 years except for a couple of young entrepreneurs who had entered the business through technological innovation. In two companies one of the founders was so called business angel that the company had found to finance the commercialisation of their innovation.

The *language proficiency* of managers was also of importance for the market selection of Finnish cleantech SMEs. At least in two cases the languages spoken by the managers of the company had clearly directed the choice of target market, and also in other companies its relevance was recognised. In reference to the Indian market, the wide-spread knowledge of English in the country was often mentioned as a communication simplifying factor.

However, only in the case of two companies the decision-makers had notable *international experience* behind them. These two companies were also the only interviewed companies in which the respondent had had some experience on the Indian market through previous working positions. This is obviously one point where the internationalisation of Finnish cleantech SMEs could be encouraged: bringing more international experience in companies could decrease uncertainties and foster the growth of foreign operations, and gaining more experience on the Indian market more specifically could decrease the perceived psychic distance of the country.

6.1.3 Technology characteristics

Technology characteristics of Finnish cleantech SMEs are obviously important for the internationalisation process of these companies because they all base their product on a specific technological solution. According to the company representatives, the *innovativeness* of Finnish cleantech SMEs' technology is high. All the interviewees considered that the technology of their companies represented the latest development in their field, and the term *innovation* was explicitly used in many occasions. Except for one exception, all the interviewed companies had developed their technology within their own organisation. Therefore it is understandable that the *R&D and product development intensity* was high in all of them.

In the case of two interviewed companies, the technology at hand was actually so novel that no markets for such product existed yet. This obviously affects the internationalisation process of these companies because customer consciousness and sales networks have to be created from scratch instead of relying to already existing structures. This increases the operational costs of internationalisation and sets higher requirements for the financial stance of companies. Therefore, it is understandable that these two companies were also the two largest among the case firms.

What seems to be characteristic to the technology of Finnish cleantech SMEs is that the innovations are very practical in nature, and have often been developed by combining already existing technologies in a new way. This is well in line with the fact that managers of Finnish cleantech SMEs often come from related industries from where they bring technologies with them to be used in a new application context. For example, companies C and D had created their competitive technological advantage by bringing together in one product processes that had earlier existed only independently. Company B, instead, had invested in the functionality and user friendliness of its technology. This is achieved by designing the plant so that it can be transported in one piece. Thus all the necessary setups and installations can be finished prior to delivery and the product is ready to use when the end customer receives it.

Another characteristic of Finnish cleantech SMEs' technology that emerges from the interviews is its codability. This means that the *embeddedness of technology* in products is rather high; it is not tied solely in company processes or personnel but is can be transmitted at least in major parts in explicit format. One indication of this is that most of the respondent used or could consider using licensing as an international entry mode for their companies. Also, all the companies that had developed their technology themselves had applied for a single or multiple patents or protection of utility models. This also suggests that the transfer of knowledge would be possible even when operating through collaborative entry modes with partners. Nevertheless, the importance of skilled personnel was also emphasised in several interviews.

In terms of product *customisation*, the answers of interviewees were ambiguous. As in most cases the core product itself had been patented, it was quite clear that no major customer-specific customisation to it could be done. However, only two of the company representatives explicitly stated that their offering does not include customisation. In general it seems that the core solution of the Finnish cleantech SMEs' products is the same in all the implementations but that minor customer-specific adjustments are done especially when the value of single transaction is high. Such adjustments were most often because of the variation of input processed in plants or equipment.

6.2 Major factors affecting the entry of Finnish cleantech SMEs to the Indian market

After the firm, managerial and technology characteristics of Finnish cleantech SME have been assessed in the previous section, this section will examine the perceptions of respondents of the regulatory, cultural and market environment of India. This assessment corresponds to the theoretical framework of this study, presented in Figure 6 where characteristics of the Indian business environment and cleantech market are presented in the lower left corner. In the analysis, answers regarding the Indian market were supported by information given about the general international operations and market selection criteria.

6.2.1 Regulatory environment

The regulatory environment is an important determinant of Finnish cleantech SMEs' market selection and entry mode choice in general and also in the case of the Indian market. The role of regulatory environment seems to be especially pronounced in the environmental industry because legislation and political actions have had a great influence in the development of the sector. Some of the products in the cleantech sector are able to use cost reduction or value-added as their selling points but for some providers the only beneficiary of their product is environment and from the point of view of the customer the product appears solely as a cost. The sales of such products is entirely dependent of the current *legislation and environmental regulations* in place in a given market because even though there is a lot of talk about the reputational benefits of environmental responsibility, the interviewed companies have not yet seen the phenomenon realise in practice. For some of the interviewed companies this was also the most important reason why they did not operate in India. They argued that as long as there is no appropriate legislation in place, the market simply does not exist.

For other SMEs, the regulatory environment of potential target market is also an important determinant of international operation modes but for other reasons. The issues most commonly raised by the interviewees were import restrictions, bureaucracy and immaterial property rights. *Import restrictions* and especially high import tariffs were a reason for Finnish cleantech SMEs to consider local manufacturing. For some companies they were also the reason why the entry to the Indian market had been postponed. However, outside tariff avoidance, Finnish cleantech SMEs did not see major advantages in producing locally in India. Lower labour costs were widely acknowledged, but the difference in costs was not considered to be enough to compensate for the increased risk and control costs. The quality of Finnish manufacturing was also estimated to be more consistent.

One of the companies had already externalised their production to Asia, and a couple of companies envisaged to use licensing as their business model, but the remaining four companies explicitly stated that even in the case of externalising manufacturing abroad they would still retain the manufacturing of core technology and key components to themselves. This would be done in order to ensure the quality of the key technology, but also to protect it from property rights abuse. The CEO of Company C described negotiations with their reseller:

> *"... often for example India and that part of the world the import tariffs are high. That you need to have a certain proportion of local manufacturing to avoid the import tariffs so there you can cut some costs. – – we have negotiated with a reseller that they would start to manufacture certain parts – – we'd always deliver this core product – – but they could then do these mechanics and electricity installations and other locally."*

The high level of *bureaucracy* in India was also acknowledged by Finnish cleantech companies. Especially the two company representatives who had experience on operating in India highlighted the coping with bureaucracy as a significant feature of doing business in India. Also Expert 2 referred to bureaucracy and especially taxation as the biggest challenge for Finnish SMEs in India. As a solution, all the respondents with experience emphasised the absolute necessity of using local lawyer's office and investing enough time to the negotiations with Indian partners. According to their experience, negotiating with Indians is not particularly tricky, and it is rather easy to obtain written format agreements. In addition, Indians were told to be generally meticulous in the execution of agreements, even though opposite experiences also existed.

The high occurrence of *intellectual property rights* issues in the interviews is partly misleading because in several interviews it was the interviewer who initiated the theme of immaterial property rights in the discussion. The reason for doing so was that the

author wanted to ensure that the seemingly important aspect of regulatory environment of India was covered. Interestingly enough, from the point of view of the Finnish cleantech SMEs, the immaterial property rights were not of major importance after all. This was in clear opposition with the presumptions of the author. Indeed, four of the interviewed company representatives stated that immaterial property rights did not play any significant role in their internationalisation. This was mainly because their prior experience had proven that patenting was not able to protect their products from property rights abuse. As a solution, some of the companies had limited the amount of information shared through communication and patents, while others relied on rapid product development instead. Finally, two companies did not even mention the topic. Rather surprisingly, even the expert on Indian business environment did not see major shortcomings in the state intellectual property rights in India. The expert referred to the recently reformed patent act and estimated that the intellectual property rights are rather well respected in India, and that the situation is in any case better than in China.

6.2.2 Cultural environment

As the examples presented above have already indicated, comparing India to China was very common throughout all the interviews and in many contexts. Also when asked for perceptions on the cultural environment of India, comparisons to China often emerged. Yet for some reasons the image of Indians was in many cases a lot more positive that the image of Chinese. Some of the interviewed company representatives explicitly stated that they would rather establish business in India than in China. For example, the manager of Company E described his views on Indians as:

> *"At least I have good impression about Indians, so that as humans I do respect them. It must be quite interesting market and I would rather go to India than to China after all."*

Generally speaking, when discussing the Indians as individuals and the Indian culture outside business, the attitudes of company representatives were very positive and Indians were described as hospitable, social and friendly. However, when discussing the business culture of India, divergent opinions emerged, and the attitudes of Finnish cleantech SME representatives proved to be mixed. Especially the honesty of Indians in business life was questioned. The experienced difficulties might be, at least to a certain extent, results of *cultural differences* between Finnish and Indian actors because as the CEO of Company A described it, especially the young Indians businessmen are smart and aggressive persons with a strong drive for doing business. This might collide with the Finnish mentality and business customs. Also the Indian expert pointed out that often the difficulties in Finnish-Indian cooperation are due to differences in business

behaviour. For example, Indians anticipate continuous communication and closer relationship between business partners, whereas Finnish actors tend to contact their partner only when necessary. Also, one has to remember that trust must be created on the side of the Indian partners and customers as well. The expert stated that becoming accepted in the local business network in India is always a process of several years because Indians prefer buying from known domestic actors. Therefore, the use of local partners is important for gaining legitimacy in the market.

All in all, the opinions of Finnish cleantech SME representatives might be in many parts influenced by insufficient information and prejudices as only a few of the interviewees had actual experience on Indian culture or working with Indians. It seems that for most of the Finnish cleantech SMEs the Indian culture is rather unknown and the attitudes are generally based on experiences heard from colleagues. However, basic information regarding for example the diversity of regions, religions, languages and culture was well known and the respondents were quite rapidly able to identify the factors in the market that could bring opportunities or cause challenges for their business.

6.2.3 Market environment for clean technologies

Despite the challenges related to doing business in India, all the respondent companies regarded the country as a very interesting future market for their products. Undoubtedly the most important reason is the *size and growth of the market*, and the potential that it brings. Also the *competitive situation* was deemed favourable as companies saw that no remarkable competitors for their products exist on the market yet. For some companies, especially in the renewable energy sector, the attractiveness of the Indian market was directly related to the natural conditions of the country which determine the location and potential scope of energy production.

Even though all the interviewed companies mentioned entering India as part of their future internationalisation plan, only half of them had concrete short-term plans for this objective, while others were awaiting the market to develop. Major reasons for the postponed potential of India were either the lack of applicable legislation discussed already in the context of regulatory environment in section 6.2.1, or lack of infrastructures supporting the entry of novel technology into the market. Also, many companies acknowledged that the price of their products was too high for the lower income market. In addition to market maturity, the lack of basic *infrastructure* was seen as a hindrance. Especially the lack of roads and railways was seen as a factor complicating the delivery of products to the end customer. Still, probably the most important reason for postponing the entry to the Indian market is the limited resources

of SMEs, identified as the most important determinant of their internationalisation in general in the beginning of this chapter. The interviewed SME representatives were well aware of the great geographical size of India and acknowledged that an extensive distribution or representative or distributor network would be needed in order to enter the market.

Another noteworthy remark was made by the sales manager of Company F who stated that no competitors with a similar product exist in India, but that the company still has no clear competitive advantage because the quality requirements on the market are still so low. This might be a critical point for many Finnish cleantech SMEs considering entry to the Indian market; many of them base their competitive advantage on superior quality, but if the quality requirements are lowered, they might face competition from the lower range substitutive products.

The low *labour costs* of India were, on one hand, an incentive for Finnish cleantech companies to consider entering the market, but on the other hand a fact that would weaken their position in the market against local competitors. For example the CEO of Company B could not identify actual competing products for their offering in India but stated that the competition comes from the side of manual work that is used in India instead of applicable machinery. According to the CEO, even the most efficient machinery cannot compete with the extremely low cost human labour on the market:

> *"Probably the biggest competitor for us – – is that it's done in China and India and there with a work force that doesn't cost a thing. – – for example if the usage costs thousand euros a day the whole machine, you get hundred employees for it that do manually the same work as one of our machines. But they don't cost anything, if they get two euros a day it cost only two hundred euros."*

In reference to the customer relation of Finnish SMEs with Indian customers, there is a contradiction to be seen between the practices of Finnish companies and the expectations of the customers. As it was mentioned already above, local presence is needed in India in order to gain legacy and trust in the eyes of the customers. Also, according to the Indian expert, the Indian customers expect that in addition to the product itself, the company is able to offer also after sales and other services. However, as it has become clear, most of the Finnish cleantech SMEs entering the market have chosen low-investment and low-engagement forms of entry to the Indian market. This raises questions on how the companies will be able to build close relationships with their customers. Choosing exports as an international entry mode contains certainly lower capital risks and is thus better suited for SMEs with limited resources. Another question is, however, whether exporting includes the risk of not being able to create proper customer relationships, which in turn reflects in companies' success through lower revenues.

In conclusion, it can be said that all the interviewed Finnish cleantech SMEs have noticed the potential of the Indian market and are following the development in the area. Yet, the perceptions about the complexity of operating in India differ. For example the sales manager of Company F considered doing business in India to be particularly challenging:

> *"Extremely difficult. – – you have to remember that it's a growing economy so you can't just leave it but on the other hand there are easier places to do the job as well."*

The CEO of Company C, on the opposite, did not see any particular challenges in the market:

> *"The challenges are probably the same as elsewhere."*

Interestingly enough, the actual experience on the Indian market does not seem to correlate with the opinions formed. For example both of the interviewees quoted above had experience on working with Indians and still had almost opposite views. Also among other respondents opinions about doing business seem to vary regardless of the actual experience they had.

6.3 Use of strategic alliances in the internationalisation process by Finnish cleantech SMEs

Section 6.1 discussed the determinants of Finnish cleantech SMEs choice of international entry modes, whereas section 6.2 assessed the country-specific factors of the Indian business environment. Finally, this section discusses the reactions of Finnish cleantech SMEs to the conditions described above and the operational modes they have selected in order to overcome their limitations and conduct profitable international business. Rather expectedly, the solution of many SMEs has been a formation of strategic alliances to combine resources of actors. This section assesses the issue firstly by examining the types of strategic alliances employed by Finnish cleantech SMEs, secondly by reviewing the company motives for alliance formation, and thirdly, by describing the factors that have the most importance for cleantech SMEs in alliance partner selection. This assessment corresponds to the theoretical framework of this study, presented in Figure 6 where collaborative modes of entry are presented in the lower right corner.

6.3.1 Strategic alliance type

Before analysing Finnish cleantech SMEs' use of strategic alliances as a part of their internationalisation strategy, one has to identify strategic alliances among the business relationships created by the case companies. This is started by examining the international entry modes of interviewed SMEs. The international entry modes used by interviewed Finnish cleantech SMEs (discussed also in section 6.1.1) were:

- indirect export through resellers, manufacturing through sourcing
- indirect export through agents and direct export to end customers
- indirect export through agents and resellers
- foreign subsidiary and licensing (possible joint venture in the future)
- direct export
- foreign subsidiary and licensing
- licensing (planning stage)

Examined more closely, the list indicates that only one of the interviewed companies did not use intermediaries as an immediate part of its international sales and distribution operations but relied solely to direct export to end customers. Among other respondent companies, indirect export through agents or resellers and licensing are the most commonly employed international entry modes. However, using local agents as a means to find customers in new markets can hardly result in a cooperative relation that would fulfil the definition of a strategic alliance. This is, firstly, because agent agreements are commonly short-term contracts signed for the fulfilment of an individual transaction or a number of transactions, whereas strategic alliances are by definition long-term agreements. Moreover, an agent contract will hardly include any shared goals because the only incentive of the agreement for the agent is the achievement of the commission. Therefore, agent agreements are excluded from the analysis of strategic alliances in this study. Reseller contracts, instead, may well fulfil the requirements of a strategic alliance if they are continued for a long time period because access to distribution network and customer base is a focal point of internationalisation strategy for many firms.

This leaves the following analysis of strategic alliances with six potential examples of Finnish cleantech SMEs using *international strategic alliances* as a part of their internationalisation strategy: Companies A and C using reseller networks, and Companies D, F and G using licensing agreements, and this with the proviso that Companies D and G have not yet fully started their commercial operations. In addition, the sourcing agreement of Company A is included in the list. Less can be said about the *domestic strategic alliances* of Finnish cleantech SMEs: when enquired for their cooperation with domestic actors, the interviewed companies commonly referred to cooperative projects in product development or advertising but were brief and did not seem to consider the fact very important for the internationalisation theme of the

interview. Therefore, the author is obliged to draw the conclusion that case companies do not take advantage of any domestic strategic alliance for the purpose of internationalisation. This conclusion is supported also by expert on Indian business environment who could not recall any domestic strategic alliances aimed at encouraging the internationalisation of its members.

One remarkable exception to this common pattern is Company E which itself is a licensee of a larger domestic company in one sector, and a licensee of an international company in another. Thus, Company E has entered a long term strategic agreements with both an international and a domestic partner. The distribution of work within the alliance is that Company E sells the licensor's technology and pays royalties for the revenue, and receives mostly research and development aid from the side of the licensor. Thus, Company E's licensing contracts add to the list of strategic alliances to be analysed.

In all the arrangements above, contractual agreements were used as the *governance type* of alliance. Interestingly enough, there were two companies among the interviewed SMEs that had invested in a foreign subsidiary, but had decided to do this significant investment by themselves rather than in joint venture with a partner. This is in stark contrast with the emphasised role of limited financial resources in companies' responses. However, when enquired about the matter, neither of the representatives of the companies in question could tell why full ownership was chosen.

The *functional scope* of international alliances of Finnish cleantech SMEs is limited to sales and distribution functions (resellers) and in some cases manufacturing (licensing). As it was stated above, established cooperation in research and development may exist to some extent between domestic SMEs, but internationally this type of knowledge is not shared. One possible reason for this could be that the *industry scope* of most of the international strategic alliances of Finnish cleantech SMEs are intraindustrial. This means that the alliance partners operate in the same field of business which increases the risk of them being competitors and may decrease mutual trust. However, the example of Company C shows that this situation is by no means to be avoided, quite the opposite: in its foreign sales the company noticed that the resellers that were also company's competitors were selling the most because of their better understanding of technologies in the field.

6.3.2 Motives for alliance formation

As the analysis of international entry modes above has indicated, cooperative entry modes have an important role in the internationalisation of Finnish SMEs and many of them resort to alliances in their foreign operations. Nonetheless, examining the motives

for alliance formation reveals that most of these alliances have been created as a result of practical necessity rather than deliberate long-term consideration.

When enquired for their motives for entering cooperative agreements, most of the interviewed companies referred to *cost savings*. Entering alliances was seen as the only viable solution for internationalisation because internal resourced did not allow for independent modes of entry. This highlights once again the determining role of small size and limited resources in the internationalisation behaviour of Finnish cleantech SMEs and leads to the impression that companies enter cooperative agreements because they have to, not because they want to. Furthermore, even though case companies' experiences on cooperative modes of entry were mainly positive, all of them stated that they would prefer independent entry modes if necessary resources existed. The reasons for this were higher level of control over the operations and better financial returns. As the CEO of Company A articulates it:

> *"Profitability grows. – – Now we're paying the reseller for the services that we would need to do ourselves if we were the reseller. So we could cut out one intermediary, we would get better control over the market and the retail price. But that's not possible yet."*

In addition to cost savings, three respondents mentioned *overcoming barriers to entry* as a motive for alliance formation. This was the case especially when discussing entry to India or other emerging markets. Companies stated that producing locally in these markets was considered because it would help them to avoid high tariffs imposed on imported goods. Cooperating with a local partner was also seen to *decrease the political risk* involved in operating in emerging markets because local companies are familiar with general business practices and know how to cope with local authorities and bureaucracy.

Finally, four of the companies stated that alliances served as a means to gain *legitimacy* in the eyes of the customer. In most cases the increased legitimacy was due to the fact that customers prefer buying from domestic rather than foreign supplier, but there might be other reasons as well. For example, for Company G the legitimacy gained through alliances was mostly related to size differences of players in the field:

> *"And then if we think of the size of [Company G] as a player, and if we would deliver something to a large energy company, then there's a certain size difference and they prefer in a way operating with a larger house in between, so technology can be fully ours and we can license it and else and even manufacture but then the integrator operates as an interface towards the energy company."*

To conclude, it seems that Finnish cleantech SMEs motives for alliance formation are rather reactions to environmental challenges than proactive endeavours to improve their competitive position. The interviewed case companies have entered alliances

because they do not have the necessary resources to operate alone or because entry to a specific market is not possible without a local partner, but in the long-term they wish to proceed to more independent operational modes.

6.3.3 Alliance partner selection

The practical orientation and reactive nature of Finnish cleantech SMEs' alliance formation becomes even clearer when their criteria for alliance partner selection are assessed. In general, the interviewed case companies did not seem to have high initial requirements for their potential partners, and were ready to enter cooperation with several candidates. Instead, the risks of cooperation were managed by keeping the commitment to the alliance low.

This was the case especially with resellers. Both Companies A and C that used resellers as part of their international distribution channel had found it rather easy to find partners for their business. In some cases, the candidate had actually contacted the supplier with the hope of becoming a reseller. For Company A, the primary criterion for reseller selection was access to customer market because the company delivers to markets that are dispersed and difficult to reach. For Company C, the highest priority was resellers experience on similar products and industry knowledge. According to the CEO of the company, products in the cleantech field represent complex technologies that are hard to sell without deeper understanding of the solution.

Instead, when selecting a licensor or other manufacturer, the criteria for partner selection were somewhat different. Companies D, F and G had chosen to use licensors for the manufacturing of their product, and Company A had outsourced its production. In general, the production process of cleantech products requires high initial capital investment, and therefore the financial standing and stability of the partner candidate was evaluated carefully. Also, in order to ensure the quality of production, industry knowledge and experience on producing similar product was an important criterion for partner selection.

In addition to these general criteria common to all companies relying on alliances in manufacturing, the interviewed case companies also had some special criteria for partner selection depending on the features of their products: Company A, buying its products from a Chinese manufacturer, was very careful to ensure that the chosen partner fulfils all international standards for working conditions and safety so that an ethical supply chain could be guaranteed. The production process of Company D, instead, is dependent on the availability of large amounts of suitable biomasses. Because of this, the company gives priority to partner candidates that have biomass supplies in their possession. Finally, in the case of Company G, the requirements for

partner's financial position were especially high because the product represents highly novel technology and risky investment.

Finally, returning to the theoretical framework of this study, it can now be estimated which of the identified factors have the most significance for Finnish cleantech SMEs when deciding on international entry mode, entry to Indian market and strategic alliances. These factors have been indicated by italics in Figure 7 that summarises the results of this cross-case analysis.

Of the Finnish cleantech SME firm characteristics, firm size was clearly the most significant factor influencing the choice of international entry mode. Due to limited resources, Finnish cleantech SMEs were inclined to choose non-equity modes of entry. It was also the main reason for them to enter cooperation with local partners. This behaviour was also supported by previously used entry and sales modes. Customer segment is added as a new factor to the framework because the number of potential customers greatly influenced the selection of entry modes that could be managed by an SME.

Considering the young age of the interviewed Finnish cleantech SMEs, they had all gained already considerable international experience. However, the factor having the most influence on international entry mode choice seemed to be the international experience of company managers rather than the experience of the company itself. Among the technology characteristics of cleantech SMEs, most significant factors were the innovativeness and embeddedness of technology because they affected the need of protecting technology and the entry modes available for use. In this category, riskiness of technology is added because the suppliers of highly novel and high-risk technologies faced even greater challenges of investment and cooperation.

In the Indian business environment and cleantech market, the size and growth of the market were clearly the greatest incentives for Finnish cleantech SMEs. However, none of the companies planning to enter India in the short term justified their entry with the market size alone but had also other related incentives such as favourable natural conditions or availability of raw material. Also the regulatory environment, especially environmental regulation and import tariffs, was a highly influential factor for Finnish cleantech SMEs considering entry to the Indian market. Cultural environment proved to have less significance even though differing business practices were acknowledged.

Almost all of the interviewed cleantech SMEs had resorted to strategic alliances as an international entry mode but these alliances were mainly driven by necessity and cost savings. As a result, the formed alliance was most commonly a low-commitment, international contractual agreement for the sales and distribution of Finnish cleantech SME's product. Less attention was paid to the alliance partner selection because risks of collaboration were managed through low commitment.

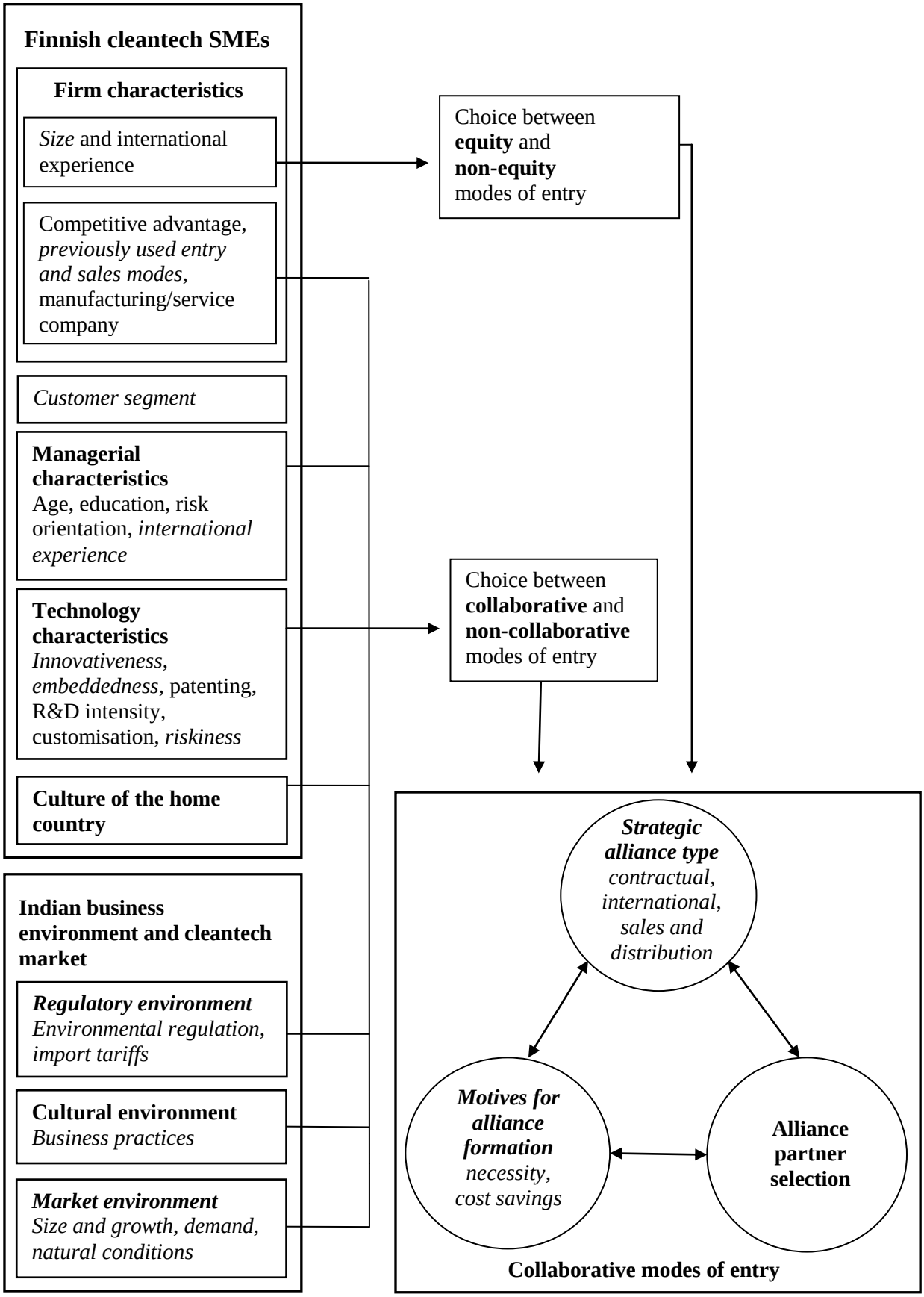

Figure 7 Summary of cross-case analysis (cf. Figure 6)

In this chapter, a cross-case analysis on the interviewed companies has been executed in order to find similarities and common patterns of internationalisation behaviour between different Finnish cleantech SMEs. The chapter has supplemented Chapter 5 which took the point of view of an individual company, and together these two chapters have presented the results of this study. Finally, in the next chapter discussion will follow about the meaning of these findings and conclusions are made on their basis regarding the initial objectives of this study.

7 SUMMARY AND CONCLUSIONS

In this master's thesis, the internationalisation of Finnish cleantech SMEs has been assessed. The topic was chosen because the level of expertise in the field is high in Finland, and the industry has received wide public attention and governmental subsidies. However, the international success of Finnish cleantech companies, which for major parts are SMEs, remains rather moderate. Therefore, this study was set out to evaluate whether *strategic alliances could be an efficient entry strategy for Finnish cleantech SMEs entering the Indian market*. India was chosen as a target market because there is an immense demand in the market for cleantech products, and because very few Finnish cleantech companies have entered the market despite its great potential. Now, in this final chapter of this thesis, conclusive remarks are made about the findings of the research. Finally, discussion on the issue follows together with suggestions for the future of the Finnish cleantech sector.

The first objective of this thesis was to study *what are the key factors influencing the international entry mode decision of Finnish cleantech SMEs.* As the prior research on the topic is extensive but contradictory in many instances, no clear presumptions could be made about the determinants of entry mode choice. Interviews with Finnish cleantech SME representatives, however, shed some light on the issue. All the respondents highlighted the significance of small firm size as a determinant of international entry mode choice. For them, limited financial resources caused by the small size were a reason for choosing a cooperative mode of entry instead of operating independently. This runs against the suggestion of Burgel and Murray (2000, 49) who suggest that the probability of using intermediaries as a part of foreign operations increases as high-tech start-ups grow in size. Thus, they assume that the smaller the high-tech firm, the more likely it is to resort to direct exports. This was clearly not the case for the interviewed Finnish cleantech SMEs; all of them were small in size, but only one of them used direct exports as the only international sales mode. In line with the studies of Nakos and Brouthers (2002, 58) and Pinho (2007, 727), the firm size also could not explain the choice between equity and non-equity forms of entry, because both types of entry modes were present in the operations of case companies.

All in all, Finnish cleantech SMEs seemed to have resolved the challenge of limited resources in different ways. In finding a solution, customer market structure and riskiness of technology had an important role to play. Finnish cleantech companies operate mostly in technology fields where customer market is concentrated and the number of potential customers is rather low. In this kind of markets, it is possible even for an SME to manage direct relationships to its customers especially if the technology does not contain high risks for investment. The situation becomes more complex, however, when technology is highly novel and requires risky capital investments. In this

case, it is not possible for an SME to sell independently even to a limited customer base because partners are needed to ensure risk bearing capability. At the extreme of the continuum are SMEs that possess such novel technology that no markets exist for it yet. For them, cooperative modes of entry were clearly the only viable option. This conclusion supports the view of Burgel and Murray (2000, 54) according to whom products with more innovative and novel technology were more likely to be distributed through collaborative distribution channels.

The technology characteristics of Finnish cleantech SMEs also allow for cooperative modes of entry. Generally, the transferability of Finnish cleantech SMEs technology is high as it can be explicitly coded in patents and embedded in products. The degree of customisation of most of the products is also rather low. The role of complementary services in the offering of Finnish cleantech SMEs is actually very modest and mostly includes one-time installation and consulting services. This makes it easy to start international sales rapidly through exports and alternative non-equity modes of entry, but in the longer run relying solely on physical offering might be harmful to the profitability of Finnish cleantech SMEs as a stream of additional revenues is missed. According to SMEs, they do have complementary services in their offering, but that demand for them remains low in the field. This might be the case, but one might also ask whether demand remains low because of the lack of local presence and the availability of service it brings.

On the other hand, technology as the primary competitive advantage of Finnish cleantech SMEs speaks for independent modes of entry. Originally, most of the companies had been established around a technology developed by the founders of the firm who are keen to retain the ownership of their innovation. This would speak for more independent modes of entry that allow for more control over the supply chain (cf. Schrader 2001, 56). Interestingly enough, it also seemed that independent entry modes were intuitively considered more preferable by the company representatives.

More generally, the company founders, who were commonly also managers of their firms, had an important role to play in the internationalisation and entry mode decisions of Finnish cleantech SMEs. Most of them had technical educational background and had been involved in the development of the company technology. This explains the product orientation of cleantech companies that has granted them technology superiority over their rival, but might also be a restrain for the future success if technological sophistication overrides customer perspective and service. Also, the prior international experience of the managers was rather limited, a most of them had gained experience only recently through the operations of their current companies. On the other hand, the interviewed Finnish cleantech SMEs had already significant international activities despite their young age. This was, however, due to the small size and unsuitable conditions of the domestic market rather than to active endeavour of the founders.

The background of company founders might have had an influence on the entry mode selection either because inexperienced managers were biased to choose less risky alternatives, they lacked the necessary contacts in the target market, or simply were not aware of all the alternatives available. Unawareness of the available options might also be one reason why most of the case companies tended to employ the same, previously used operational mode when entering new markets. Only one of the interviewed companies had differentiated strategies to separate group of target markets that took into consideration the characteristics of each market area.

All above-mentioned factors clearly influence Finnish cleantech SMEs entry mode decision, but customer segment and riskiness of technology might be the very factors that separate this group of organisations from other high-tech companies. Many studies have assessed the internationalisation behaviour of high-tech SMEs in the ICT sector, but the generalisability of results to clean technologies remains weak: firstly, most of the ICT SMEs operate in customer markets, where sales volumes are high but the value of individual transactions low. The products sold in the cleantech sector, instead, are mostly expensive installation, typically plants or equipment, and customers mostly other businesses. Together with increased value of individual transaction increase related financial risks. Despite the high risk of product development, clean technologies can hardly be compared to pharmaceutical industry either, because only a few cleantech firms capitalise on the same cost structure of production as pharmaceutical producers do.

Moreover, unlike ICT and pharmaceutical industry, clean technologies are still an emerging industry without established market structures and demand. Sandberg (2004, 187–188) refers to this kind of highly innovative technologies with enhanced benefits but no existing customer segment as disruptive innovations. According to her, the launching and marketing of disruptive innovations requires special proactiveness and effort because the customer need has to be created by the marketing company. Also, what is common to disruptive innovations, and which is often the case in Finnish cleantech companies, is that even the product itself might not exist physically prior to the transaction, and the customer has to imagine its benefits without concrete samples. This explains the importance of demonstration plants for many cleantech SMEs in their pursuit for first large-scale deals.

Secondly, after assessing the entry mode selection determinants of Finnish cleantech SMEs, this thesis envisaged to evaluate *what are the major factors affecting the entry of Finnish cleantech SMEs to the Indian market*. It was concluded from the responses of the case companies that most of them consider India as an interesting market and would be interested in entering the country if certain barriers to market could be removed. In general, Finnish cleantech SME representatives had a surprisingly positive perception of Indians and cooperating with them even though practical experience on the topic was

rather limited among interviewed case companies. This could imply that the perceived psychic distance between Finland and India was not as high as cultural comparisons would suggest. The more aggressive business style and other cultural differences between Finland and India were acknowledged by cleantech SMEs, but most of them would be willing to enter cooperation with an Indian company. This was mainly because Finnish cleantech SMEs were well aware of the size and growth potential of the market. The market environment of India was also deemed favourable because no significant competition existed. Nevertheless, the size of the Indian market alone does not seem to be sufficient for attracting Finnish cleantech SMEs at least in the short term because all the interviewed companies having plans to enlarge to India in the near future had also other specific incentives for the entry.

An interesting feature of the discussions concerning India was that comparisons to China spontaneously emerged in several occasions. It seems even that in the minds of Finnish cleantech SME managers the whole Asian market is sometimes reduced to these two mega markets, and choices of entry are made between them. In this comparison, even though (or because) Finnish companies are more experienced in operating in China, they seem to have more positive image of India and Indians. Most of the interviewed company representatives estimated Indians more honest and easier to cooperate with than Chinese. Property rights violations and competition were also estimated to be less challenging in India than in China. Yet this positive image has not yet realised in companies entering the Indian market.

Thus, the potential of the Indian cleantech market has clearly reached Finnish SMEs, but unfortunately there are obstacles to the market that override the incentives. High import tariffs and bureaucracy are cold facts that cleantech companies cannot affect. The same way, the taking effect of a favourable legislation cannot be urged. The circumvention of these obstacles is also difficult for Finnish cleantech SMEs because producing internationally was still not a potential option for most of the interviewed companies due to resource constraints and low production volumes. That is why, hitherto, the regulatory environment of potential markets have determined *which* markets Finnish cleantech SMEs decided to enter rather than *how* they decided to organise their entry. This supports the views of Hoskinsson, Eden, Lau and Wright (2000, 252) according to whom the institutional environment is a decisive determinant of market entry in the early stages of market emergence, and general business arguments only become relevant once a stable environment has been established.

Interestingly enough, the state of property rights did not seem to be very important determinant of entry mode choice for Finnish cleantech SMEs unlike Luo (2001, 465) supposed. According to Schwens, Eiche and Kabst (2011, 336), this factor should have been ever more important for SMEs with knowledge-intensive product, a description that suits well Finnish cleantech firms. Yet, as it was discussed above, the interviewed

case companies did not pay great attention to the state of property rights in potential markets but sought to protect their technology through other means. Most of them gave impression that fear of property right violation would not be a reason not to cooperate with local companies. On the contrary, in the case of India, all the respondents acknowledged the necessity of using a local partner. These statements are challenged, however, by the observed behaviour of the two case companies that had made equity investments in China and Russia: both of the subsidiaries were fully owned. The fact that subsidiaries were in these countries supports the view of both Nakos and Brouthers (2002, 58) and Pinho (2007, 728) who suggest that the higher the perceived market potential, the more likely companies are to engage in equity modes of entry.

On the basis of these findings, it seems that of the theoretical frameworks presented in Chapter 2 (transaction cost theory, resource-based theory, institutional theory and Dunning's eclectic paradigm) resource-based theory succeeded best in explaining the internationalisation behaviour and entry mode choices of Finnish cleantech SMEs. This is because resources, or the lack of resources more precisely, was clearly the most dominant determinant of SMEs' decision-making. Generally speaking, Finnish cleantech SMEs would choose international entry modes that did not include high financial investment and did not require high commitment or managerial knowledge of the target market. Thus, financial resources were not the only limiting factor but the lack of managerial experience also set boundaries to viable alternatives. Institutional environment of the target market had an influence on the internationalisation behaviour of Finnish cleantech SMEs as well, but it seemed to determinate the market selection rather than the selection of entry mode; if an interesting market could not be entered through entry modes determined by company resources, SMEs would not enter it at all.

Dunning's eclectic paradigm completes the institutional environment with demand-driven and competitive factors. Finnish cleantech SMEs were well informed about the demand for their product in different market areas and evaluated the attractiveness of these markets accordingly. Also, they estimated the competitive situation of potential markets and compared their technology and other resources to those of competitors. However, as it was mentioned, even a high potential of a target market could not overrule resource limitations as a determinant of international entry mode choice. The transaction cost theory, instead, does not seem to apply to Finnish cleantech SMEs too well because it ignores the role of company resources in the decision-making to a large degree. Yet the two fully owned subsidiaries demonstrate that the concepts of bounded rationality and opportunism affect SMEs' choices especially in foreign and unstable environment.

Thirdly, this study had the objective of assessing *how Finnish cleantech SMEs use strategic alliances in their internationalisation process*. Offering alliances as a solution for the challenges of internationalisation, especially when entering the turbulent

environment of emerging markets, seems intuitively reasonable and is also supported by several researchers. Yet, in the reality, Finnish cleatech SMEs' use of strategic alliance in the internationalisation process is quite limited and biased. Using intermediaries in the international distribution chain was common among interviewed case companies but remained practically the only form of cooperation that firms resorted to. Also, even in the international distribution chain companies only used reseller agreements and licensing that represent the lowest possible alliance engagement. This indicates that Finnish cleantech SMEs hold a very narrow idea of strategic alliances or might not have considered their full potential.

Probably the most conspicuous feature in the cooperative relationships of Finnish cleantech SMEs is the lack of strategic alliances between Finnish actors. Cooperation clearly exists between different domestic companies but it is loosely organized and can hardly be considered strategic. For instance, the only company to have established any clear agreement on the objectives and guidelines of cooperation with another Finnish firm was Company E who was a licensee of a larger domestic company. Company G also cooperated with a larger company, but the relationship does not comply with the definition of strategic alliance as the partner was also one of the main owners of Company G. Instead, strategic alliances between two or more Finnish SMEs did not exist all together. This might be one of the reasons why Cleantech Finland was originally established, but the objective has clearly not been fully accomplished as most of the interviewed companies referred to the network only as a marketing organisation.

Also, the responses of company representatives implicitly indicate that Finnish cleantech SMEs' motives for entering strategic alliances are rather one-sided and limited to external motives only. The majority of firms had entered or could consider entering strategic alliances in order to gain access to new international markets or to overcome barriers of entry (cf. Varadarajan – Cunningham 1995, 285–286). In line with the suggestion of Oliver (1990, 245–246), strategic alliances were also used by case companies to establish stability and legitimacy in relation to other organisations. When discussing entering the Indian market, for example, firms referred to this motive by stating that a local partner would be needed in order to cope with local business practices and bureaucracy. They also acknowledged that cooperating with an Indian company could improve customer recognition.

All these motives, however, are reactions to requirements set by the surrounding environment rather than proactive actions to improve the competitive position. Thus, the collaborative relations of Finnish cleantech SMEs are mainly what Park, Chen and Gallagher (2202, 256) call exploitation alliances; need-based agreements in which firms seek supplementary revenues in changing environment by improving their asset employment. This is also in line with the findings of Van Gils and Zwart (2009, 27–28) who posited the view that different motivations are at the basis of different functional

scope alliances; strategic alliances in production and technology development are motivated primarily by internal motives such as high production costs, whereas alliances in marketing or distribution, which the majority of Finnish cleantech SMEs' strategic alliances represent, are more concerned with external motives such as gaining market share in the target market.

Finnish cleantech SMEs' motives for entering strategic alliances with foreign companies are also reflected in their partner selection criteria: for the majority of case companies, access to the customer market was the most important or even the only criterion for choosing a partner. This is in line with the findings of Hitt, Levitas, Arregle and Borza (2000, 461–462) who stated that firms from developed markets emphasise mostly market knowledge and market access together with unique competencies when choosing their partner. Also, this supports the view of Nielsen (2003, 319–320) who estimated that partner's market knowledge is even more important when entering the turbulent Asian market. In addition, attention was paid to the financial position of potential partners. Besides of these task-related criteria (cf. Geringer 1991, 56–58), partner-related criteria, such as trust between partners, was not central for Finnish cleantech SMEs partner selection. This is probably because SMEs themselves were not very committed to their alliances.

Using strategic alliances to access new markets and to increase the sales of existing products is of course an understandable motive for Finnish cleantech companies who are in their early stage of commercialisation and in most cases only launching their first products to the market. Once the initial market penetration is accomplished, however, Finnish cleantech SME managers could seek to enlarge their alliance portfolio to include also exploration alliances aimed at enhancing innovation and learning. Instead of focusing their resource considerations on resources they do *not* have, SMEs could concentrate more on the resources they *do* possess and how these competencies should be developed in the future. As a result, managers might enlarge their concept of strategic alliances from simply dividing the responsibility over the supply chain to actually cooperating in several functions. This could also bring new aspects to partner selection when instead of estimating only how partners could help in selling current products, SMEs would consider how partners could help in developing offerings that sell in the future as well.

Finally, it is to be concluded whether *strategic alliances could be an efficient entry strategy for Finnish cleantech SMEs entering the Indian market*. On the basis of the research conducted for this master's thesis, the author is declined to answer this question positively. This is, firstly, because the identified key factors influencing the international entry mode decision of Finnish cleantech SMEs support cooperative modes of entry, and the product itself does not set any limitations to their usage. Secondly, Finnish cleantech SMEs are interested in entering the Indian market, and the

main challenges that prevent them from doing so could be overcome, to a large degree, through strategic alliances. Thirdly, Finnish cleantech SMEs have already started to recognise the value of allying, even though experience on strategic alliances is still limited, poorly organised and covers only a few forms of cooperation.

To conclude, what seems to be needed to encourage the internationalisation of Finnish cleantech SMEs is increasing managers' knowledge about available international entry mode alternatives and expanding their perception on strategic alliances and cooperation more generally. This could be done by bringing more managerial and international experience in cleantech SMEs. Financial support to cleantech sector from governmental organs and private investors is of course important for SMEs to increase their risk bearing capability, but companies also need to know how to allocate these funds to best leverage their business. Training and consulting could be ways to give cognitive assets and more systematic approach on strategic alliances to cleantech managers who often do not have commercial education. From this point of view, Cleantech Finland is clearly an initiative to the right direction.

However, the change in strategic alliance practises also requires a change in the mind set of Finnish cleantech SMEs' decision-makers. Finnish cleantech actors should consider, for example, why internationalisation-oriented strategic alliances do not exist among Finnish cleantech SMEs even though they all face the same challenge of small size and limited resources. Also, the heterogeneity of companies in the field sets favourable preconditions for cooperation because, in most cases, firm offerings are mutually complementing rather than substituting. Moreover, alliance potential could be screened between SMEs with a unique product and larger exporters with already existing international distribution network. Another point to consider is the content of strategic alliance agreements. Relying on partners to simply distribute or market the product might be a viable option in the short run but does not give the partner any incentive to contribute to the future development. Instead, organised management of strategic alliance portfolio could provide a flexible way to benefit from different types of alliances to different purposes and to guarantee the success of Finnish cleantech SMEs at present and in the future.

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APPENDICES

Appendix 1 Interview outline for cleantech companies

THEME INTERVIEW ABOUT THE INTERNATIONALISATION STRATEGIES OF FINNISH CLEANTECH COMPANIES

COMPANY

Could you tell about your company? What is your central field of operations?

1. **Size and age**
   When was the company established?
   What is the scale of your operations?
   How many employees do you have?
2. **Functions**
   What are the different functions included in the operations of your company? (R&D, manufacturing, marketing)
   How have you organised sales and marketing? (In the domestic market/abroad)
   How have you organised research and development? How large part of your business does it constitute?
3. **Decision-makers**
   What was the role of company decision-makers in the establishment of the company?
   What kind of prior managerial experience did decision-makers have? (In the home country/abroad)

PRODUCT

What is your primary product or service?

4. **Competitive advantage**
   What do you think is your most focal competitive advantage? What differentiates you product from competing products?
5. **Technology content**
   Where has the technology of your product been developed? Do competing companies possess similar technology?
   How remarkable is the role of research and development in your business?
   Has the technology been patented or do you consider patenting it?
   Is your technology a technical innovation or is it based on the knowhow of your personnel? How easy or challenging do you consider teaching technology to new employees to be?

6. **Product/service offering**

   What is the role of services in your product offering?

7. **Customisation**

   To what extent do you customise your product to the needs of individual customer?

8. **Characteristics of customer relationship**

   (long-term orientation, repetitive transactions)

   Is the sale of your product a one-time transaction or does it require continuous communication and visits to the customer?

9. **Marketing**

   To who is the product marketed? (Consumers/businesses)

   What kind of marketing investments does the product require?

INTERNATIONAL MARKETS

10. **International experience**

    What kind of international activity does your company have?

11. **Plans for internationalisation**

    Do you plan to expand the international business of your company in the future?

    If your company does not have any international activity yet, do you have plans for starting it?

    Do you have market areas of special interest?

12. **Choice of target market**

    Why did you choose these specific markets or why are you interested in these specific markets?

    From whom did the initiative for starting international activity come?

    Did you know or did someone in your company know other companies or actors operating in the market in advance?

13. **Internationalisation strategies**

    How have you organised your activity/plan to organise your activity in international markets?

    Why have you selected this specific mode of operations?

    If you are planning to expand your international business, do you plan to do it through same operational modes?

    Would you choose another operational mode if your company had the necessary resources for it? Why?

14. **Cooperation and alliances**

    Do you have experience on using alliances, partnerships or other modes of cooperation in internationalisation?

    How was the cooperation organised? Which areas of operations did each of the parties see to?

What were your primary motives for forming an alliance?

How was the experience? Would you consider using alliances also in the future?

(If you do not have experience on alliances, could you consider them as an internationalisation strategy? What kind of alliance and why?)

15. **Choice of partner**

What were your criteria for partner selection?

What are the central capabilities you would want a partner to bring in to your cooperation?

INDIA

16. **Business in India**

What is your idea of business in India? (According to own/others' experience)

17. **Cleantech market**

How do you see the Indian cleantech market? (Demand, competition, attractiveness)

Do you think modifications would be needed to your product in order to suit the Indian market?

Do you think there are matters that could complicate the sale of your product to the Indian market?

18. **Culture**

What is your idea of Indian culture? How close or distant do you estimate it to you and your company?

What would you think of working in cooperation with Indians? Why?

Can you think of any matters that in your opinion could ease or complicate cooperation with Indians?