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**CONSULTING FINNISH SUCCESSES:
IMPLEMENTING INNOVATION IN INTERNATIONAL MARKETS**

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ABSTRACT

The study focuses on how a Finnish consulting company can aim to consult the commercialisation of new, innovative products in international markets better, faster and with less risk. The scope of the study is limited in the innovation of a product or a service, which is aimed at commercial distribution. The research includes secondary literature and primary qualitative data from interviews.

The report is authorized by Finpro, a Finnish public consulting company. Finpro produces consultation services for the internalization of Finnish companies minimizing the risks involved in the process.

Innovation is the combination of a new idea, the technical conception, and its commercial exploitation. Innovation activities create economic growth as more efficient production methods, products and services are developed constantly. The study presents the systematic process of innovation and new product development: innovation models describe the formation and development of the idea into a final product.

Commercializing the innovative product may not be easy as the new product may not have customers that welcome the novelty, or the markets do not understand the value of the product. Change management issues and the riskiness of the new business venture can be dealt with professional help. Management consulting offers help and services on such problems. In management consulting, the consulting cases vary as well as the professional roles the consultants take in their work. The study introduces briefly factors affecting the consulting business, as well as the typical cases, and the phases of a consulting assignment.

In the third section, the case studies of Finpro clients focus on the implementations of innovative products in international markets. The cases introduce the reality of the innovation formation and development, and the consulting project with Finpro. The results and suggestions are reported company by company, and on a general level in the results and discussion chapter. The study aims to find concrete challenges of implementing an innovative product in international markets, and offer solutions how consulting can solve these with the client to ensure a commercially successful implementation; Suggestions for Management are introduced in paragraph 7.1.

The report is based on the qualitative case study method, and therefore its conclusions cannot be generalized beyond this study. Further research in the field of innovation implementation is needed to clarify the problems the companies and internationalisation consulting firms face daily.

Keywords: innovation consulting commercialization international markets

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1 Introduction to the Study

Innovation is the buzzword of the 21st century. The magical power of innovation is not only present in corporate life but it is everywhere. Innovative products, processes, attitudes, lifestyles and consumer choices surround us all (Holvas, 2006, p.D6) and one begins to wonder: what is the value innovation brings, and what is its purpose especially in business life?

This study originates from a discussion on how a Finnish consulting company can aim to commercialize new products in international markets better, faster and with less risk. The topic is not new but academic studies have not touched upon it yet: innovation, management consulting, and international market entry have been studied so far in isolation. Innovation implementation in the markets has not had its field day in research yet, maybe due to its practical and varied nature. This study aims to present the commercial implementation of a new product in international markets from the practical viewpoint of a consulting company: what are the challenges, what factors affect the success rate, and what factors result to failures in the implementation?

This study is authorized by Finpro, a Finnish public consulting company. Finpro produces consultation services for the internalization of Finnish companies minimizing the risks involved in the process. Finpro operates both in Finland through regional offices and abroad with a network of trade centres in over 50 countries. The study is done in cooperation with Finpro consultants and their clients.

Research methods includes secondary literature review and primary, qualitative interviews with the clients and the consultants. The scope of the study is limited in the innovation of a product or a service, which is aimed at commercial distribution. Process innovations, internal innovativeness of companies and innovation creation are not included in the study.

This report is organized by the topic. First, chapter 2 presents the literature review on innovation studies, new product development, risks and innovation models and classification. In Chapter 3, the focus is on management consulting and its academic theories. Next, in chapter 4 the benefits and challenges of both the fields are introduced from a practical point of view. Finpro as an organization is introduced in chapter 5, and the case studies for the research are presented in chapter 6. As conclusion, the results and the discussion on the study form chapter 7.

2 Innovation

Definition **‘Innovation:** • **noun** **1** the action or process of innovating. **2** a new method, idea, product, etc.’ (Compact Oxford English Dictionary, 2006)

Background Innovation has been studied and discussed from the 19th century onwards. Sociologist Karl Marx linked waves of economic growth to innovations. Economist Joseph Schumpeter stated the importance of new products as stimuli to economic growth in the 1930s, and his studies were developed by Paul Romer into the modern theory of economic growth, or the neo-Schumpeterian economic growth theory. This theory states ‘sustained economic growth arises from competition among firms. Firms try to increase their profits by devoting resources to creating new products and developing new ways of making existing products.’ (Trott, 2002, p.8)

Innovation differs from invention: Trott describes their relationship as a formula (2002, p.12)

‘Innovation = theoretical conception + technical invention + commercial exploitation’

Inventions then form the core of the innovation, but innovation activity also includes the theoretical conception and the commercialization. Commercialization in this context means the innovation entering the markets –failure or success in the commercialization stage is just a result, not a defining factor of the innovation (Trott, 2002, p.13).

Typology of Innovation

Trott presents the different types of innovation as follows (2002, p.14):

- **Product innovation:**
for example, development of a new or improved product
- **Process innovation:**
for example, development of a new manufacturing process
- **Organizational innovation:**
for example, a new venture division; a new internal communication system
- **Management innovation:**
for example, total quality management systems; introduction of SAP R3
- **Production innovation:**

for example, just-in-time manufacturing system; new production planning software

- Commercial/marketing innovation:

for example, new financing arrangements; new sales approach

- Service innovation:

for example, telephone financial services

It is clear that innovation can take many forms and shapes. This study limits its scope on product and service innovations as the companies in the case studies are focusing on product and service production.

2.1 New Product Development and Innovation

Innovation is a new idea that is produced into a new product or a process. Clausing and Fey (2004, p.14) present a model for the innovation process that is applicable to all innovation processes. (See Figure 1) The model includes six sequential steps: Clausing and Fey state ‘when each of these six steps is done well, innovation will be effective.’ (2004, p.14)

1. Technology strategy –what to focus on.
2. Concept generation –apply the historical patterns of invention for success.
3. Concept selection –pick the best before investing.
4. Robustness development –early achievement of reliability and integrability.
5. Technology readiness –don’t transfer any technology before its time.
6. Technology transfer –effective delivery to portfolio architecture and the product pipeline.

(After Clausing and Fey, 2004, p.14)

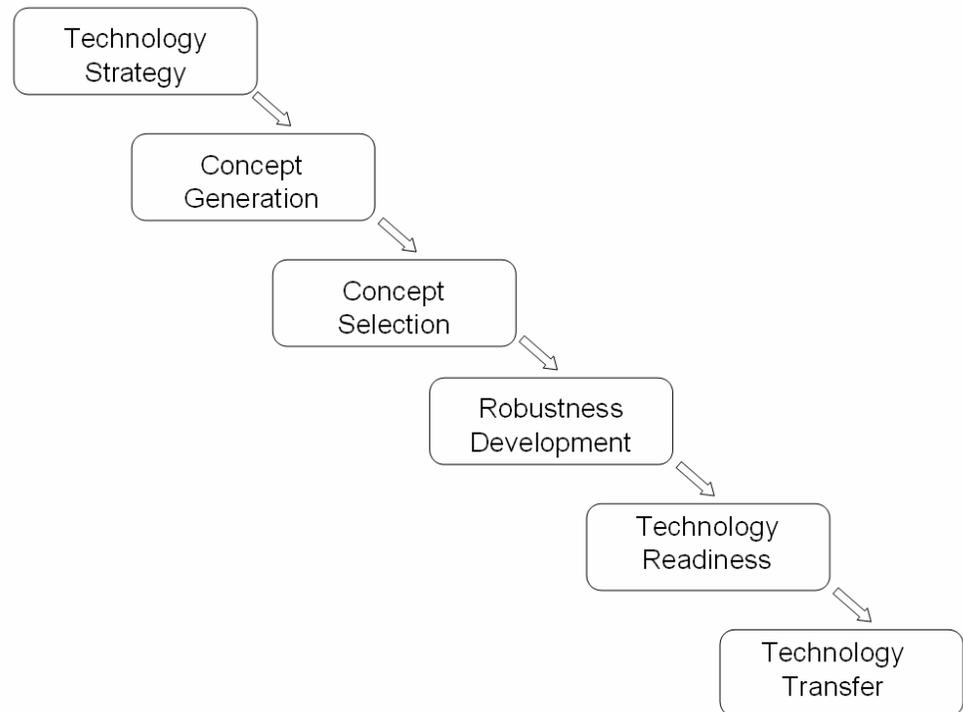
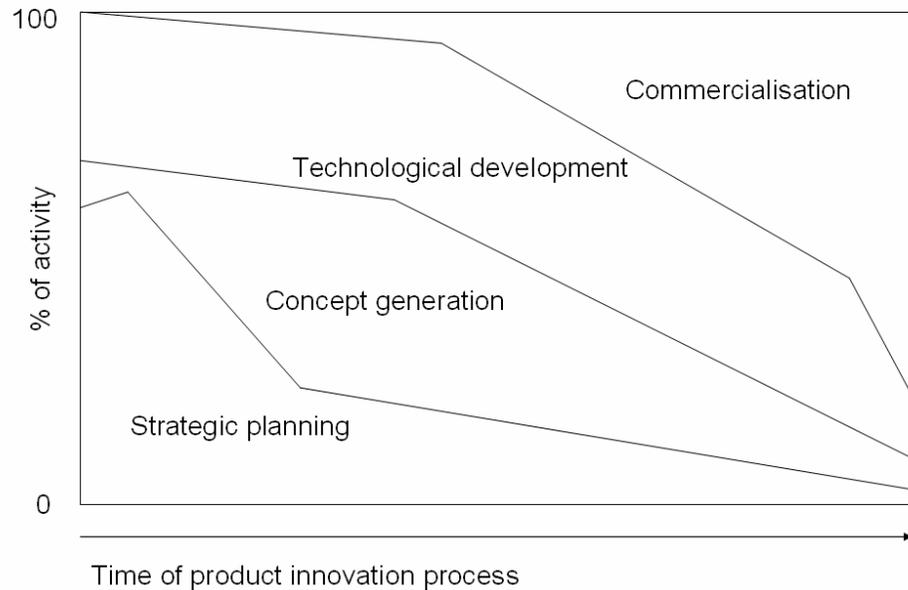


Figure 1: Six Steps for Effective Innovation

Activity-stage Model of New Product Development

The activity-stage model presents the activities happening simultaneously (See Figure 2).



after Trott, 2002, p.217

Figure 2: An Activity-stage Model

The activity-stage model is both a realistic description of the process as well as a model for an effective implementation. The stages take place simultaneously: the majority of activities at a certain time relate to a certain stage, but all the stages are still present at all times (Trott, 2002, p.216). A good example is the commercialization implementation: the focus on it increases after the middle of the project, but it should be focused on in the earlier stages, too.

2.2 Innovation and Risks

Clausing and Fey present that 'innovation [...] is risky and expensive because it is primarily a trial-and-error process, and therefore often results in costly mistakes that provide a time advantage to competitors.' (2004, p.33) Innovation is a gamble: 'most inventions are commercial failures, and the private and social returns are reaped from the few extremely successful and important innovations.' (Georghiou, Smith, Toivanen,& Ylä-Anttila, 2003, p.35) What are then the main risk factors of the innovation process?

The Companies and Innovators

A new product development is a great challenge: how to make it work, how to create a successful product? A new product development project requires the resources and support inside the organization, and the innovation idea is not enough. The company itself might influence the process:

'Many large companies are not short of new product ideas – the problem lies in deciding in which ones to invest... Small companies in general, and small single-product companies in particular, are in a different situation. Very often new product ideas are scarce; hence, such companies frequently support ideas based upon their intuition and personal knowledge of the product. '

(Trott, 2002, p.245)

Small companies can run with their innovativeness and focus on the new products; big companies have to remain successful and focus on keeping their existing market base with the main product lines. Company's product lines may then dictate the level of innovativeness, but the size of the company tells a lot about the profitability of the products.

Resource Usage The available internal resources for the innovation development should be considered: the goal to commercialize the product as soon as possible may lead to wasting resources for the price of the market entry before competitors. A good example is the technology readiness of an innovation: Clausing and Fey state 'solid technology readiness will almost always shorten the total time to market, because it will eliminate much of the traditional build/test/fix during the commercialization push toward production. ... technology readiness will greatly reduce the required resources and will speed the new innovation into the market.' (2004, p.190)

Support Mechanisms

The innovation process depends on the company itself and other external resources, for instance the economic environment in which the company operates. The support mechanisms the market environment could provide as intangible, free goods are technology monitoring, research capabilities, educational provision, financial services, market research and business planning (Georghiou et al., 2003, p.30). A market environment is not required to offer these support mechanisms, and studies show that large and small economies differ in their offerings. In larger private economies the extent of the market creates the demand and the supply for the services, whereas in small economies the demand is low and unpredictable: the supply might not exist in private markets (Georghiou et al., 2003, p.31). A solution is focusing on the functionality and the scope of the national innovation system: how well the nation supports and develops innovative processes and products through public cooperative partners.

Funding

When the company needs external finance, it has to choose whether to use private or public financing. MTI study shows that innovative firms use all services available in the Finnish national innovation system and make use of public funding (Georghiou et al., 2003, p.93). Public funding is given to companies that are research and development oriented and have previously received public funding (Georghiou et al., 2003, p.103) which means that companies with an on-going new product development or a history in the usage of public services are likely to receive guaranteed public funding in Finland. The companies chosen to receive public funding must still meet the criteria of profitability: how is the public body to estimate the product's commercial success? Studies report that public policy measures might be limiting some companies: choosing '...to avoid high risk/high return projects (and hence potential political criticism) could be eliminating precisely those projects that drive the private and social benefits.' (Georghiou et al., 2003, p.35).

The criticism on the available public funding is its common usage: studies indicate that companies do not shift from public services into private services though the new product development is over the 'death valley', the most likely failure point in the development process (Georghiou et al, 2003, p.105). The available public funding is more affordable than private funding, but the company should aim to make a profitable product and become self-sufficient financially in the end –public funding is therefore a crutch for start-up phases and new product development, not a long-term solution. Freeing sponsoring public funding into real, new product development processes also increases the amount of innovations and new entrepreneurs - and consequently reduces the risk of start-up companies not receiving adequate funding from public services.

Lack of Entrepreneurship

Entrepreneurship in Finland is in the bottom league in global comparison: share of entrepreneurs in total employment is just 5 per cent (Global Entrepreneurship Monitor, 2007, p.13), 260 000 people. Finland ranks amongst the OECD countries as 17th out of 23 countries in entrepreneurial activities (Georghiou et al., 2003, p. 54). What would be the case of an innovation formed and developed in an established company that would differ from the main product lines? Whether the innovation would be further on developed in a corporate spin-off, continued in the same company as a 'pet' R&D project off the product line, or altogether discontinued in the firm depends on the management and the innovation team. Studies show that employees in established companies are an important supply of entrepreneurs (Georghiou et al., 2003, p.52) –these corporate spin-offs create possibilities for both innovation projects and entrepreneurs. Developing the corporate intellectual property rights, the availability of financing services and management attitudes towards corporate spin-offs would reduce the risks of entrepreneurship (Georghiou et al., 2003, p.52), increase the amount of start-up companies with an innovative product, and possibly increase the amount of future entrepreneurs.

External Barriers Companies with innovative products also have external barriers that are likely to affect the success of the innovative product. Clausing and Fey give examples: supply chain and enterprise infrastructure do not accommodate to an innovative product, sales and marketing departments need to develop new ways to market and distribute the product, or sales personnel have to focus with extra effort to sell the innovative product. (2004, p.23)

Change Resistance

A new product in the market is likely to face resistance: changing habits, routines and 'the way things are working' is not normal to human beings and change requires effort and learning new things from the consumers. Change resistance is a barrier all the innovation producers have to deal with in some amount. New products, or launch innovations (see paragraph 2.4.1.2), that are meant to replace existing products altogether from the markets have to deal with the 'installed base effect' (Trott, 2002, p.240): they have to displace the current installed technology base. The installed base slows down the new product adoption rate, or possibly hinders the adoption altogether. (Trott, 2002, p.240) If the change necessitates a switching cost, the sacrifices –for instance, in time or money- may hinder the customers' new production adoption rate remarkably. Companies have to find their markets and to manage the change resistance in them to succeed with an innovation.

2.3 Innovation Models

Innovation models have developed over the past 40 years (Trott, 2002, p.17). This paper presents three main models: the linear models, the simultaneous coupling model, and the interactive model. The national innovation system is then presented as a general model of innovation in economic environments.

2.3.1 Linear Models

Linear models of innovation describe the source of the innovation in a sequential linear fashion. These models include the technology-driven model, or the technology push, and the market-pull model. (Trott, 2002, p. 17-18) In general, the linear models depict the innovation process as a sequence of separable stages or activities. (Trott, 2002, p.17)

2.3.1.1 Technology Push

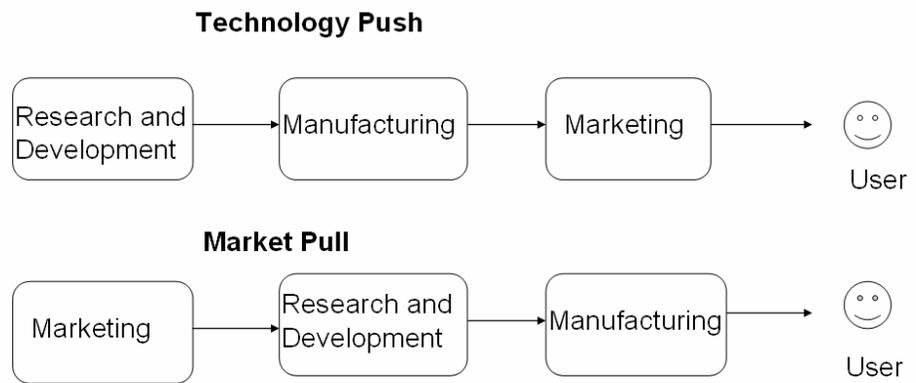
The technology-driven model, the technology push, creates the innovation from the creation of new technology and applications. Trott describes the process:

‘...scientists make unexpected discoveries, technologists apply them to develop product ideas and engineers and designers turn them into prototypes for testing. It is left to manufacturing to devise ways of producing the products efficiently. Finally, marketing and sales will promote the product to the potential customer.’ (2002, p.17)

The markets and the customers therefore are passive recipients for the results of the technology push. (Trott, 2002, p.17) (See Figure 3)

2.3.1.2 Market-pull model

The market-pull model starts from the needs of the customers and the markets: it 'emphasises the role of marketing as an initiator of new ideas resulting from close interactions with the customers.' (Trott, 2002, p.18) The customer needs and demands have an active role in the model, and the role of producers and manufacturers is to respond passively to these requirements to increase profits. (See Figure 3)

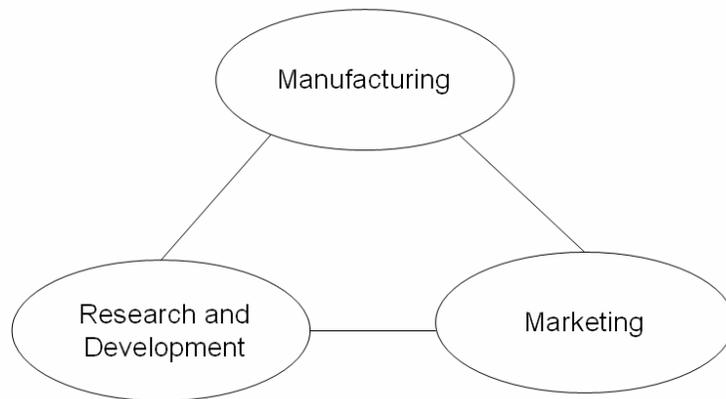


After Trott, 2002, p.18

Figure 3: Linear Models of Innovation

2.3.2 Simultaneous Coupling Model

The simultaneous coupling model is based on the interaction of the marketing activities, research and development activities, and manufacturing activities. (Trott, 2002, p.17) Simultaneous coupling of the knowledge in all areas is the foundation for the innovation; therefore the innovation can come from anyone of the activities. (Trott, 2002, p.18) (See Figure 4) Activities are then separated but they can happen simultaneously, not in sequences.

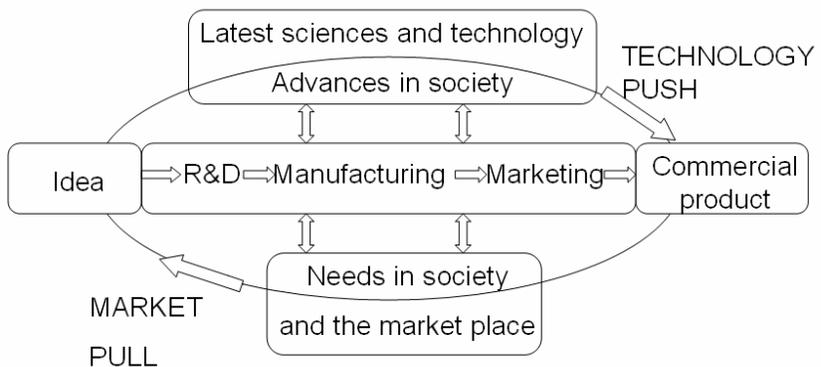


After Trott, 2002, p.18

Figure 4: The Simultaneous Coupling Model

2.3.3 Interactive Model

The interactive model emphasizes the interactive role of the organization capabilities, the market place, and the research and development activities. Information flows are the core capability of the model: the information flow is not linear and interactive feedback can be attained from all activities. The model is defined as ‘a logically sequential, though not necessarily continuous, process that can be divided into a series of functionally distinct but interacting and interdependent stages’ (Rothwell and Zegveld, 1985, in Trott, 2002, p.19) The internal factors in the model include the organization capabilities: company’s research and development activities, manufacturing, and marketing. The external factors include the market place, and the external research and development activities. The innovation process becomes ‘a complex set of communication paths over which knowledge is transferred.’ (Trott, 2002, p.19) (See Figure 5) For instance, ‘bounded vision’ can affect the firm’s capability for innovation: in long term, the company’s internal resources can become limited, or external influences - the markets or external R&D- are needed in the new product development. The interactive model accurately describes the interaction between the internal and external factors. (Georghiou et al., 2003, p.28)



After Trott, 2002, p.19

(Source: Adapted From Rothwell and Zegveld (1985))

Figure 5: Interactive Model of Innovation

2.3.4 The National Innovation System

The national innovation system is defined as a long-term collaborative, collective process that involves firms, research institutions, supporting services and public agencies of a nation to improve and increase innovation and innovative processes. (Georghiou et al., 2003, p.28) Modern innovation research presents the national innovation system as an interactive model of innovation (See paragraph 2.3.3.): it describes the relationships of the cooperative partners in a nation as interactive and communicative. The economic environment affects the national innovation system; researchers list the basic elements of any system as follows:

- Structures of economic institutions such as corporate governance systems, tax systems, management practices, accounting regulations, labour market regulations.
- Infrastructures, meaning collective physical infrastructures such as transport or power systems.
- Industrial and technological specialization, which are usually quite specific to particular countries and rest on historical trajectories of development. These usually take the form of ‘clusters’ of related activities, which are in turn associated with industrial specialization and educational provision.
- Education and research systems, which can be thought of as a ‘knowledge infrastructure’.
- Policy frameworks, such as systems for R&D support, but also macro frameworks.
- Resource bases, which play major roles in establishing industrial specializations.

(Georghiou et al., 2003, p.29)

2.4 Innovation Classification

Innovation in its simplicity is ‘creating new products and developing new ways of making existing products’ (Trott, 2002, p.8). Generally innovation is defined by its influence: it is either a major, radical innovation (Trott, 2002, p.13; Utterback, 1994, p.145) or a minor (Trott, 2002, p. 13), incremental innovation (Utterback, 1994, p.76). Creating new products is a major innovation; existing products improved is an incremental innovation.

2.4.1 Sustaining and Disruptive Innovations

Christensen (1999, p.8-9) defines innovations into two categories: minor innovations, which sustain existing technologies, and major innovations, which disrupt existing technologies.

Sustaining Innovations

Christensen defines ‘sustaining innovations’ as innovative products that ‘give customers more and better in the attributes they already value.’ (1999, p.8) Technological developments of the post-industrial revolution are best described as sustaining innovations: existing products have been improved and developed. A good example is the car (Clausing and Fey, 2004, p.234, p.5): old-fashioned cars from the 20th century and the modern 21st century cars provide the same service -private transportation. The technology, design, production and distribution are radically different, as they have developed over the years.

As sustaining innovations serve and protect the current customer segments, ‘Most companies have well-conceived processes for identifying and tracking the progress of potentially sustaining technologies’ (Christensen, 1999, p. 19) The value the innovation adds to customer satisfaction and therefore increases sales means companies constantly develop and research the possibilities to innovate existing product lines. Christensen divides sustaining innovations into two categories: radically new technologies and incremental engineering refinements (1999, p. 8-9). Radically new technologies introduce a new, innovative way to provide a function of the product –for example, improvements in the technology of car brakes; incremental engineering refinements introduce new, auxiliary functions to the product –car stereos are an auxiliary function in a car, but they add customer value (Clausing and Fey, 2004, p.235).

Generally, then, the sustaining innovations enjoy the finance structure to support research and development of the products. Christensen points out that established companies have installed cost structures to serve sustaining technologies (1999, p. 15) as their profits and market shares can be forecasted based on the consumption behavior and accurate market research of the market segments.

Disruptive Innovations

Disruptive innovations are innovative products that disrupt existing products and aim to replace them in the markets –therefore they enable the emergence of new markets. Christensen describes disruptive innovations: ‘disruptive products and services typically are cheaper, simpler and more convenient to use than their predecessors.’ (1999, p.9) An example of this is the Xerox photocopier: it replaced outdated, costly methods of copying with a more efficient, faster dry copying technique; introduced photocopiers in almost every office, and launched a business worth millions (Clausing and Fey, 2004, p.3-5, p.234).

The importance of disruptive technologies is seen in business life but companies fail to catch it. For example, ‘disruptive technologies appearing and being used initially in new or unimportant low-end markets, and then improving at such a rapid pace that they attack and penetrate mainstream applications from the underside –that has caused many of the most-admired companies of the past to lose their positions of prominence.’ (Christensen, 1999, p.9) He also points out many leading companies have entered the markets with disruptive technologies, replacing old technologies and taking over the market leadership: good examples are for instance Intel in the ICT technology, Honda in the car industry, Sony in the electronics field, and McDonald’s in the food industry (Christensen, 1999, p.10).

Disruptive technologies have to have two important characteristics according to Christensen. Firstly, they do not present the accepted package of performance attributes: the existing customers will shun away from these products (1999, p.13) and the new emerging market with its customer segments have to be created. Christensen suggests that as market research does not apply to this type of innovation, the market information has to be created: this is done with fast, repetitive and inexpensive experiments with the product and the possible markets (Christensen, 1999, p.21). Secondly, the performance attributes of the existing customers have to develop over time to value the new technology, so that the product can have an established market for the product (Christensen, 1999, p.13). The order of performance attributes for customers are:

- ✓ the functionality of the product
- ✓ the reliability of the product
- ✓ the convenience of purchasing and using the product

(Christensen, 1999, p. 96-98). The product development should then be able to follow the performance attribute of the product the customers at the given time are basing their purchasing behavior. Christensen states that 'As a rule, mainstream customers are unwilling to use a disruptive product in applications they know and understand.' (1999, p.14) Disruptive technology is also financially uncertain (Christensen, 1999, p. 15): uncertain revenues and undefined markets all lead to the problem whether the product is even going to break-even, let alone create revenue or economic growth.

2.4.2 Theory of Intersecting Trajectories of Performance Improvement

Christensen (1999, p. 6) presents the intersecting trajectories of performance improvement as the model for introducing new products into markets. He states that 'the need to innovate consists of two distinct performance trajectories' and these also 'define the rate at which the performance of a product or service is improving over time.' The two trajectories are the technology trajectory and the trajectory of customer needs.

Technology Trajectory

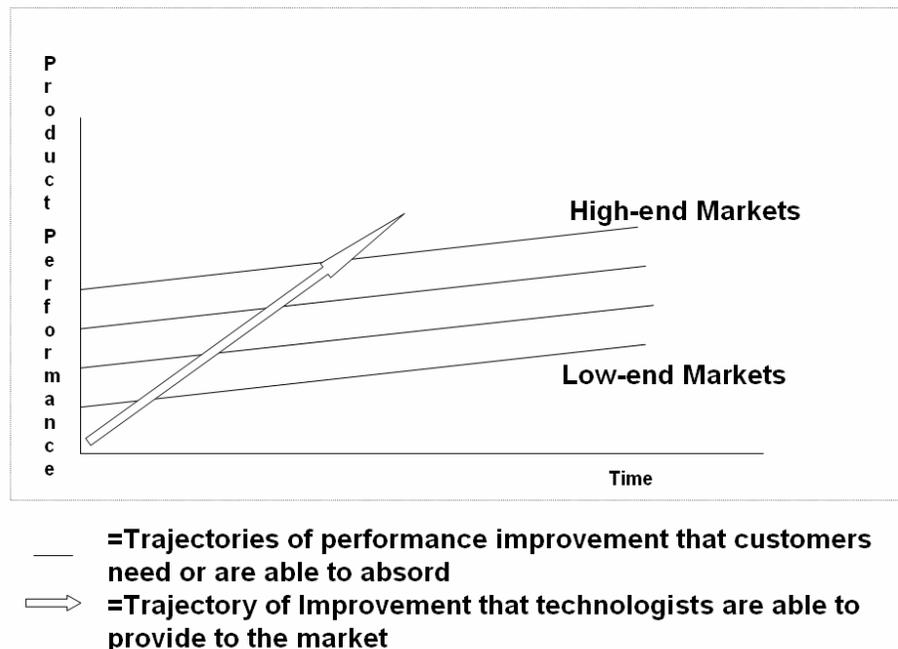
The technology trajectory 'maps the improvement that innovators in an industry are able to provide to their markets, a sequence of new and improved products.' (Christensen, 1999, p.6) A critical technology trajectory is the core capacity of the technology provided: the core capability of the product is improved extensively to increase the trajectory.

Trajectory of Customer Needs

The trajectory of customer needs 'maps the performance improvement that customers in a given tier of a market can absorb over time.' The trajectory typically slopes upward over time with customers' increased sophistication and expectations of the product. (Christensen, 1999, p.6)

Intersecting Trajectories

Christensen presents in his theory of intersecting trajectories that the slope of the technology transfer is steeper than the slope of the trajectory of customer need. Ultimately, then, the two trajectories intersect at some point in a graph and otherwise do not meet with each other: for instance, offered technical solution over-performs in comparison with the customer needs above the crossing point, or the product does not yet meet the given customer demand below the crossing point. (See Figure 6)



After Christensen, 1999, p.7

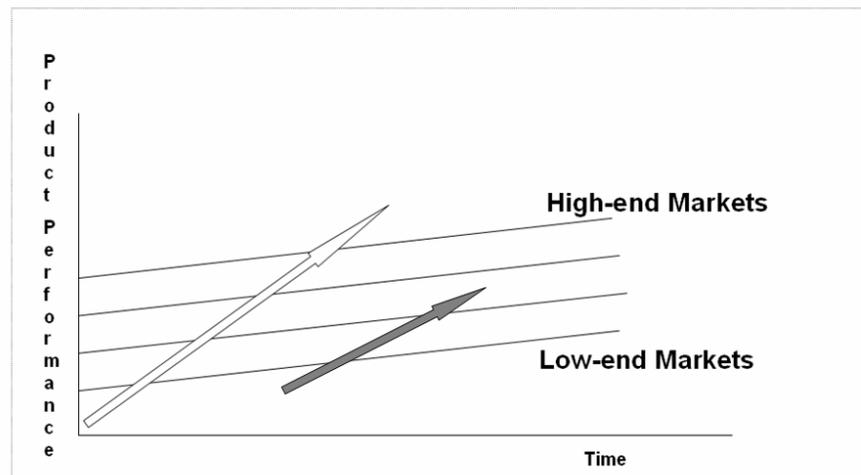
Figure 6: Intersecting Trajectories of Technical Improvement and Customer Need

The two trajectories are driven by different factors: the steep technology trajectory is driven by the management's efforts to reach higher-profit high-end markets, and the moderate customer need trajectories by the customers' capabilities and willingness to learn to use the product features, and the utilization of the features in everyday life (Christensen, 1999, p.7).

Upmarket versus Downmarket

Christensen points out the effect of competition: it 'typically drives prices and margins lower in any given tier of a market over time, [therefore]

companies that don't focus their new product development efforts at market tiers above them, typically find that their profitability deteriorates.' Managers therefore aim 'to shift the weighted average of their product sales into progressively higher tiers of the market.' (Christensen, 1999, p.7) Developing products for the higher tiers of customer need trajectories is to go upmarket; this is usually done with the sustaining technologies to fulfill the customer needs better and to increase revenue. Emerging markets with unstudied possibilities, revenues and risks cannot be forecasted accurately. For that reason, aiming the products into these markets is to go downmarket: the products are usually disruptive ones, as they are not accepted into the mainstream markets. (Christensen, 1999, p.15) Emerging markets can capture customer segments that have been neglected by the mainstream ones, though. (See Figure 7) For instance, despite the features of a new product lack some functionalities the market leader has, the new product can gain acceptance with new, disruptive features that meet the customer need – Sony's Walkman personal stereo did not have the sound quality of a home stereo system but instead it provided private, mobile music. (Christensen, 1999, p.177) Going downmarket meant for Sony at the time creating a market for personal stereos and gaining a market leadership in it.



— =Trajectories of performance improvement that customers need or are able to absorb

→ =Trajectory of Improvement that technologists are able to provide to the market

→ =Disruptive Technology

After Christensen, 1999, p.7

Figure 7: Intersecting Trajectories of Technological Improvement and Customer Need

3 Management Consulting

3.1 Definitions

Consultant	A consultant is ‘a person in a position to have some influence over an individual, a group, or an organization, but has no direct power to make changes or implement over the action.’ (Block, 2000, p.2) The consultants are regarded as objective outsiders, too, although internal consultants are becoming more general in organizations.
Consulting	Consulting aims to create a change in an action through advice and help, without the direct power a manager has. Block describes the change through two categories: first category is to ‘create a change in the line organization of a structural, policy, or procedural nature [...] The second kind of change is the end result that one person or many people in the line of organization have learned something new.’ (Block, 2000, p.4) Consulting makes it possible for companies to gain specialized knowledge according to their needs cost-effectively: management consulting is usually an outsourced, short-term ¹ project work. (Rope, 2006, p.29)
Client	<p>A client is ‘the person or persons that the consultant wants to influence, without exercising direct control.’ (Block, 2000, p.3) Schein further on lists and defines the categories of clients (1987, p.117-118)</p> <ul style="list-style-type: none"> • ‘<i>Contact clients</i> approach the consultant or manager initially.’ • ‘<i>Intermediate clients</i> get involved in early meetings or planning next steps.’ • ‘<i>Primary clients</i> own a problem for which they want help.’ ‘A primary client is a person or group that has a particular problem on which we have agreed to focus and whose budget will ultimately cover my fees. Contact and intermediate clients may or may not become primary clients.’ (Schein, 1987, p.125) • ‘<i>Ultimate clients</i> may or may not be directly involved with the consultant or manager but their welfare and interest must be considered in planning further interventions.’ They are ‘the stakeholders whose interests should ultimately be protected... the helping process should not help a primary client if it will obviously harm some other group that the consultant or manager should be concerned about.’ (Schein, 1987, p.125)

¹ Short term defined as the time period leading up to a year, 12 months.

3.2 Scope and Cases

Scope of the consulting service depends on the client. Usual cases include for example:

- start-up phases
- defining/re-defining business strategies
- mergers, fusions or a new generation taking over the family business
- resource supplements –e.g. outsourcing management
- business knowledge acquiring
- internationalization and networking
- new idea trials
- economic difficulties
- introduction and implementation of new methods or systems
- e-business implementations
- organizational development
- human resource recruitment
- risk management
- management and staff trainings

(After PKT-Säätiö, 2002, p.7-10)

3.3 The Models of Consultation

The purpose of any consulting activity is to be of help, and it can come in various forms. The model of consultation affects the scope, the goals and the tools of consultation. Edgar Schein has defined three different models of consultation: the purchase of information or expertise, the doctor-patient model, and the process consultation model. The models do not exclude each other but each can and should play a part in a consulting process: that is, the consultant should be able to switch roles from a 'doctor' to a process consultant when need be (Schein, 1987, p.19). The fourth model describes the consultation process through offerings.

3.3.1 Purchase of Information or Expertise

Schein describes the model of purchase of information or expertise:

'...the client has made up his mind on what the problem is, what kind of help is needed, and to whom to go for this help. The buyer, an individual manager, or some group in an organization determines that more knowledge is needed on some matter or that some activity needs to be carried out, concludes either that he does not have the capability to gather the information or perform internally or that it is economically or politically more expedient to have it done by outsiders, and hence goes to a consultant for the service.' (Schein, 1987, p.22)

In this model, the client acknowledges the problem –lack of information, need of specialized expertise- and transfers the responsibility of solving it to the consultant: the expert handles the situation; therefore, s/he 'owns' the problem. (Schein, 1987, p.23) The customer's role then is to accept the supplied solution. Schein criticizes the model due to the dominant role of the customer. The model is '...appropriate only when clients have diagnosed their needs correctly, have correctly identified consultant capabilities [chosen the right consultant], have done a good job of communicating their needs to the consultant, and have thought through the consequences of the help they have sought.' (Schein, 1987, p.24) When the customer truly needs information or expertise of the consultant and the above criteria is fulfilled, the model is an effective, working consulting model. Consulting examples include market surveys, strategy evaluations, competitor analysis, and market intelligence reports.

3.3.2 The Doctor - Patient Model

The doctor - patient model is based on similarities with the operations of a doctor: a patient recognizes something is wrong and consults the doctor for the diagnose and a cure for the problem. The same principle operates in consulting, too: the client contacts the consultant to analyze and solve an issue in the organization with a process of change. In this model, the consultant forms the diagnosis, after which s/he takes the responsibility of the problem from the client, that is, the consultant ‘owns’ the problem and aims to solve it. Schein states that ‘the doctor-patient model is appropriate only when the client is experiencing clear symptoms, knows where the sick area is, is willing to intervene in the organization’s systems by bringing in a consultant, and is willing to become dependent on the consultant for both diagnosis and implementation.’ (1987, p.29) This model does not then create long-term benefiting learning processes in the client’s organization; the consultant is a fixer that is called in again when there is a problem. For short-term help the model is perfectly suitable, for example in diagnoses of internal audits, performance evaluations, and job redesigning.

3.3.3 The Process Consultation Model

‘PROCESS CONSULTATION IS A SET OF ACTIVITIES ON THE PART OF THE CONSULTANT THAT HELP THE CLIENT TO PERCEIVE, UNDERSTAND, AND ACT UPON THE PROCESS EVENTS THAT OCCUR IN THE CLIENT’S ENVIRONMENT.’

(Schein, 1987, p.34 –capitalization by Schein)

The process consultation model is based on the assumption that the consultant observes the situation the client is dealing with, intervenes in the process, and directs the client to diagnose and to find solutions to the situation him/herself. The consultant’s tools to raise the issues vary: intervention can come in the form of a simple inquiry, diagnostic questions, action alternative interventions, or confrontive interventions (Schein, 1987, p. 146). The process consultation model changes the roles of ‘owning’ the problem, that is who is responsible for fixing it. Schein emphasizes that ‘the consultant can help the client to deal with the problems, but the consultant never takes the problem onto his shoulders.’ (1987, p.29) In essence, ‘...the client owns the problem and continues to own it throughout the consultation process.’ (Schein, 1987, p.29) The role of the client is important: s/he is responsible for detecting the problem with the intervention aid of the consultant, and as Schein states ‘only the client ultimately knows what is possible and what will work in his culture and situation.’ (1987, p.30) In the process consultation model the client should acquire a learning experience: the client should learn to

diagnose a problem and start creating a solution to it him/herself –during the project with the help of the consultant, after the project independently. The consultant then is not an information bank or a fixer, but a consultant –a person that advises and helps his clients. The newly created problem solving skills are a long-term asset for the client and the company when used effectively.

3.3.4 The Offering Consultation Model

The offering consultation model is based on Schein's consulting models of expertise, diagnose and process consultation. The offering consultation model by definition is a long-term, interactive relation between the client and the consultant, and it can consist of consultations from all or several consultation models (af Ursin, 2007, p.69). In the offering consultation model, the client and the customer have dual roles: a 'for now', active relationship for the consulting project at the time and a latent role of passivity when there are no active projects. The offering consultation model is then a continuity of activity and passivity, but still a relationship: when the client and the consultant get in touch, the act of contracting a new consulting project –from either the client or the consultant- can be seen as introducing an offering of consultation. The model is based on the interactive nature of this relationship, and the consulting projects contracted then each form an individual consulting project in the continuity: consulting in the expert role, diagnostic role or in the process consultant role, or a combination of several. (af Ursin, 2007, p.69)

3.4 The Five Phases of Consulting

A consulting assignment can be divided into sequences: the following five phases briefly describe what happens in the stages and what the consultant and the client should take notice of in the process.

Entry and Contracting

This stage is the initial contracting stage between the client and the consultant. It includes

- First meeting
- Recognizing the existence of a problem
- Choosing the right consultant
- Realizing the customer's and the consultant's expectations
- Getting started with the project

(After Block, 2000, p.6)

Discovery and Dialogue

The discovery and dialogue phase describes literally the actions the consultant and the client go through: both have to discover the problem and have a dialogue how to deal with it in with the aid of the consulting project. The consultant's role is to find out answers to questions like

- Who is involved in defining the problem
- What methods to use
- What kind of data is needed and used
- How long the project will take

(After Block, 2000, p.6)

Feedback and the Decision to Act

This stage includes ‘setting ultimate goals for the project and selecting the best action steps or changes.’ (Block, 2000, p.7) Issues to deal with include

- Choosing the form of data collection
- Choosing the form of reporting to the client in cooperation with the client
- Deciding the client involvement in the data analysis
- Managing the resistance to the report findings and resulting changes

(After Block, 2000, p.7)

Engagement and Implementation

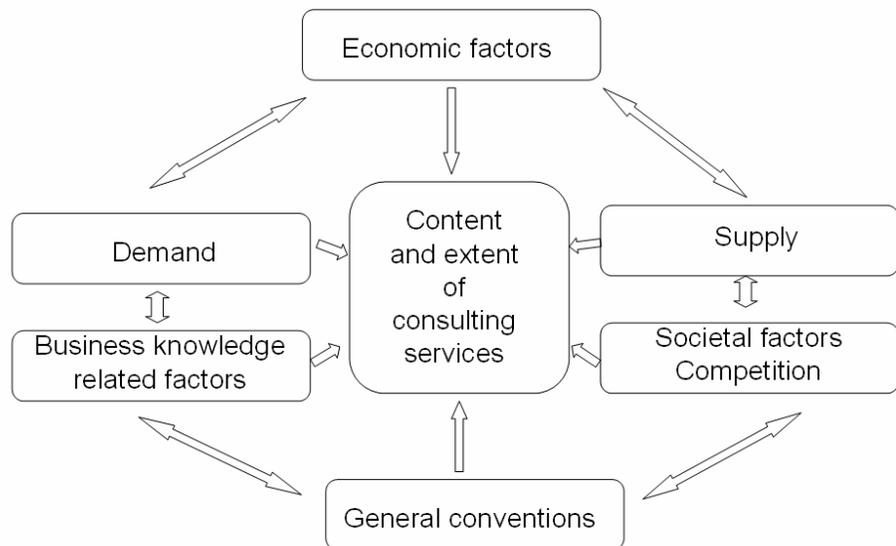
Engagement and implementation stage is the execution of the consultant’s plan. Implementing the plan itself does not fulfill the change process: engagement means the client and the staff involved in the change process are engaged to the process and the results. The consultant might or might not be a part of the execution; ultimately, they have no role to exercise direct power in the case, but the consultant might be responsible for training and research in the process, according to plan. (After Block, 2000, p.7)

Extension, Recycle, or Termination

After the implementation, the process is evaluated. Block describes the final phase as ending the project in extending, recycling or terminating the consulting work, depending on the success rate. (Block, 2000, p.7)

3.5 Interactive Factors in Consulting Services

Consulting as a business field developed into maturity in the 1990's although some kinds of consulting activities have always been a part of business transactions. (Rope, 2006, p. 27) Rope (2006, p.28) describes the development of consulting business as interaction between several factors: these include economic factors, societal factors and competition, demand and supply factors, business knowledge related factors, and general conventions of management. (See Figure 8)



(After Rope, 2006, p.28)

Figure 8: Factors Affecting the Content and Extent of Consulting Services

Content and extent of consulting services depend on many factors: the decisions are based on the intricate, interactive web between the consultant, client and the surrounding economic environment. The factors are briefly introduced in the following paragraphs.

Economic factors Rope states the increase in welfare and economic resources has lead to increases in the opportunity and likelihood of purchasing outsourced consulting services. (Rope, 2006, p.29) Economic factors also increase the markets and therefore existing competition: the consulting business –as any business- can suffer due to market pressures. It is likely that consulting companies strive to develop the business-related knowledge for survival and gaining improved market shares. (Rope, 2006, p.29)

Societal Factors and Competition

Rope describes the effect of societal factors and competition as increasing the pressure and possibilities to use consulting services. Acquiring outsourced services is becoming more common as it increases specialized knowledge and skills outside the core competencies of the company. Gaining an advantage through development increases competitiveness. (Rope, 2006, p.29)

Demand ‘Demand creates supply’ is the basis of economics and trade. When consulting services are in demand, the markets and consultants react by creating and increasing the supply of available services. Specialized services for a profitable customer segment increase the competitiveness of the consulting company, and this in turn creates development and growth potential for supplying better services. (Rope, 2006, p. 29-30)

Supply Rope presents that in consulting supply can create demand, too. He states that consultants with a specialized service do not necessarily have a stable market and therefore there is no demand without actively supplying –that is, selling and creating the demand- the service. This factor marked the introduction phase of consulting services: consulting services were supplied and marketed actively to early adopters to create future demand from repeat customers and late adopters. (Rope, 2006, p.30)

Business Knowledge Related Factors

Business knowledge itself has increased in every field of business, and managing this knowledge and more complex business operations increases the need to purchase outsourced, knowledge-intensive consulting services. Having state-of-the art methods can create a cost-effective company which can gain new market shares from the competitors –until the competitors acquire the same or better business knowledge. (Rope, 2006, p.30-31)

General Convention

General conventions represent the learning and adoption pattern of the consulting services in business. Rope states that the consulting services' take off and development depended on the clients who learned to outsource their short-term development projects to consultants instead of wasting scarce company resources. Consulting services were adopted quickly as a part of the business to create value-added products and management methods. Thus this learning and adoption by the clients lead to consulting and consultants becoming a general convention in everyday business life. (Rope, 2006, p.31)

The Interactive Factors Summarized

Rope's theory clearly describes the supply-demand pattern for consulting: a client may require consulting services due to any of the factors and, vice versa, a consulting company can offer the services due to any of the factors. The factors affect the scope and the cases consultants offer to clients and accept client requests. Improving the content and extend of consulting services start with focusing on these factors. The key issues for improving the development of consulting business –and the benefits of the clients- are for instance:

- making sure the economic factors and general conventions of business support the usage of consulting
- the demand and supply of services is steady
- the society, competition and the need for better business knowledge pushes the consulting practices to develop better and accurate

4 Consulting Innovation Implementation

Consulting can create benefits for a company in many ways. For instance, it can aim to increase the effectiveness of the innovation process and the new product development, introduce and implement an international market entry, and manage the risks in the internationalization process. The ultimate goal, to aid the client in any of the project stages, depends on the success rate as consulting for innovation implementation is not without its risks. Next, the possibilities and challenges of an innovation implementation consultation are introduced briefly.

4.1 Possibilities

Market Research and Weak Signals

New product development is of great importance: the idea to innovate can come from the customers, experienced staff, external R&D, or new technological possibilities, to name a few sources. New product developers should evaluate the market needs as soon as possible: innovation is commercially exploiting new technological inventions and theoretical concepts. How to estimate the size of the market or to evaluate revenue for a product that has a set of features the customers are not used to? The management rules have been shaken: sometimes it may be correct to ignore your customers and skip market research. 'The traditional new product development process of market research, segmentation, competitive analysis and forecasting [...] leads to commonality and bland new products' claims Trott (2002, p. 245). Market research with customers that are not able to understand the value of the innovation will not create realistic, trustworthy results. Consulting business, on the other hand, focuses on the now and the future to come: as specialists in their field, they spot the weak signals and can introduce the possibilities to their clients, too. Business consulting brings in the objective viewpoint of a specialist. Getting a premier glimpse of the developing market needs and aiming the product development for those audiences creates shorter time-to-market entries, time benefits over one's competitors, and a product commercialization implementation that is likely to be successful. The faster the consultants are in the new product development, the more commercial the product is to be.

Implementing Consulting

Consulting aims to help clients to help themselves: the role of the consultant varies in the assignments. Creating an international commercialization implementation for a new product demands specialists, for example consultants in this particular field. Sometimes the demand-supply pattern of services in a small market is not balanced. In Finland, the Ministry of Trade and Industry supports the growth of Finnish enterprises and offers subsidized services for example in internationalization stages. Finpro is the organization funded partly by the MTI that has its consulting services available for Finnish entrepreneurs developing products and services for international markets. The resources of this consulting organization are focused on specialist help on target countries and market segments, diagnoses on the clients' business and its possibilities, and consulting the processes of how to internationalize successfully. The services can be based on a partnership: the key accounts are repeat clients that have experienced the consulting relationship beneficial. The consulting services are not implementation services, and Finpro staff cannot be operate as outsourced employees for the client. The consultant is just a guide, in the end, but using that guide can reduce many mistakes on the journey to successful implementation of the business plan. The consulting solutions are produced for each individual client according to the consulting contract, and consideration is used when selecting market areas and business segments in the chosen target countries. When the client implements the consultation solution a learning process happens, from which s/he can benefit in the future when new problems arise – ultimately, the client can become a skilled internal consultant in his/her company.

Cooperation

A good consultant can introduce larger networks of consultants and other specialists when needed. The national innovation system in Finland is meant to support the growth and development of a company from an idea into a commercial product in international markets all the way through. Cooperation strengthens the business, and the client can be certain that help is available at all stages if the resources to go at it alone are limited.

4.2 Challenges

Model of Consultation

The consultation model varies according to the customer needs: Schein's model presents consultants as specialists, 'doctors', or process consultants. Af Ursin's model introduces the consultant as a long-term partner that can take any or all of the mentioned roles. The consultants' expectations may differ radically with the clients' expectations if the roles are not clearly defined and introduced to all relevant parties. For instance, the client may feel that consulting can introduce new resources as the consultant will overtake creating and implementing the consulting assignment. This is possible, of course –training and research cases can include the consultant temporarily into the work community. The consultant is still not empowered as a full-time employee nor should s/he be –the power to make decisions and implement those remains at all times with the client. The consultant should introduce and clarify the possible consultation models clearly from the beginning to avoid confrontation and frustration in the process, even if this takes time and seems unnecessary for the client. The best way to reduce and avoid mismatching expectations between the client and the consultant and to reduce the likeliness of a failure in the assignment is to make everything clear in the contracting stages. The old proverb 'there's no use crying over spilt milk' refers to wasted resources and is accurate. If the client needed a diagnose and a cure on how to improve sales, and the consultant felt the business could have used a process consultation on the business plan, they were not obviously both on the same page in what the consultation should achieve.

Resource Availability

One factor in business life that is always necessary is resources: time, money, human resources, production materials, services, and so on. The consultant is not responsible for making sure the client has the necessary resources to commercialize a product. It is the client's responsibility to make sure the necessary resources are available when needed to plan the implementation accurately and realistically, and later on implement the plan successfully. The success rate can depend on the available resources: delays can be due to limited resources, e.g. in marketing, and these lengthen the time to market, and consequently, the revenues take place later, too. Realistic expectations of available resources are needed for a realistic implementation plan, and a professional consultant can and should evaluate the client's plan and give advice on the necessary resources for a commercially successful implementation.

Cultural Barriers –Consulting and the Client

Both the consulting company and the client have own business cultures and values, and occasionally these might differ too much. Clausing and Fey present that this kind of culture barrier is the reason why commercialization of an innovation fails: the cultures value different things and compromise the result, the successful innovation implementation. (See Table 1)

PROCESS	INNOVATION	COMMERCIALIZATION
EMPHASIS	Emphasis on new arrangements of physics	Emphasis on tried-and-true solutions
DECISIONS	Relatively few, but critical decisions	Tremendous number of small decisions
EXPERTISE	Advanced degrees	First degree (or less)
SCALE OF FOCUS	Narrowly focused	Broad expertise
ISSUES	Emphasis on innovation	Tremendous time pressure

Table 1: Cultural Barriers (after Clausing and Fey, 2004)

For a professional consulting company, the cultural barriers are considered and the commercialization process planned according to the needs of the client. If the role of consulting is to consult the innovation process already from the stages of basic or applied research, the consulting firm must do this in cooperation with the client: the consultant respects and even adopts the client's business culture and the tools of the innovation process.

Solving Clients' Problems –Again and again?

MTI study reported the linkage between public finance and public services – the results showed that companies using public finance also used other public services, for example in internationalization and in marketing. The conclusions claim that after the initial support in the public services the companies do not move into private services but crowd the public services offerings (Georghiou et al., 2003, p.105). This is a challenge to consulting: the consultants do have their repeat clients, but are they possibly neglecting new clients and slowing down the development of future innovations? In the big picture, consulting should aim to create results in quality and volume of innovative businesses, and to support the national innovativeness. The study showed also that certain clients prefer using public services to private services: the technology-oriented sectors (Georghiou et al., 2003, p.106). A public consulting company should not limit its service offerings to a certain sector of clients solely; instead, it should aim to diversify its clientele to increase demand. The new source of income might be in any business sector as business fluctuates and new markets emerge. The consultants should prepare with skills and experience to consult new clients as well as possible.

5 Finpro Group

5.1 Background

The origin of Finpro Group are in the Finnish Export Association, founded in 1919. Competing, specialized export organizations were already operating in the market -for instance, export organizations of sawmill products and paper products. The association primarily operated in promoting exports of agricultural products, food products, industrial products and later on furniture, gift products, sports equipment, and dairy machines. Its focus was to create an international network of export representatives, and the first main market for the operations was in Eastern Europe. (Finpro, 2006b)

1930-1960

In 1938 the name was changed into the Finnish Foreign Trade Association (abbreviated FFTA). The new operations in the '50s and the '60s included organizing member participation in fairs and exhibitions to increase marketing and exports of the products. The industries represented by the FFTA were from various sectors. The service development moved from organizing member participation in exhibitions into organizing a few annual major events in selected market areas. The role of FFTA was to plan, organize and execute the events to increase Finnish exports. It consistently developed in increasing new business areas, number of business contacts, and improving target country knowledge. (Finpro, 2006b)

1970-1980

In 1970 the FFTA, a private sector operator, and the Finnish government started cooperation and centralized the export promotion activities with a shared funding - 50 per cent of the funding from the corporate and organizational members of the FFTA, and 50 per cent from the government budget. The new board had a close operating connection with what is now the Confederation of Finnish Industry and Employers. The FFTA's operations did not take part in export personnel training, export guarantees and export credit, or trade policy issues. (Finpro, 2006b)

In the '70s and the '80s the main products of the FFTA were the industrial campaigns and the Export Partner Groups - these groups were formed of Finnish business enterprises cooperating with the FFTA in organizing export activities. Regional offices were created to develop operations around the country, too. The FFTA was an export facilitator, and it soon developed into an internationalization expert with its export consulting services. (Finpro, 2006b)

- 1990-2000
- In 1992 the trade commissioners from the Ministry of Foreign Affairs were transferred to the FFTA. The expertise of the trade commissioners defined the new strategy: the services were created to support and develop the assignments of the business clients. Long-term export promotions and developing business clusters in the target countries was included in its operations. In 1995, the Ministry of Trade and Industry (abbreviated MTI) started outsourcing export promotion activities from the FFTA, and in 1997 the FFTA's regional offices were transferred into the new Employment and Economic Development Centers. (Finpro, 2006b)
- In 1996 the MTI evaluated the FFTA's activities for restructuring purposes. The FFTA transformed itself in 1999 into Finpro with a new operational concept: it had a reorganized administration, redefined functions and a modern, competitive strategy. (Finpro, 2006b)
- The Present
- In 2002, the international marketing and marketing communication services were subsidized into Entre Marketing Ltd. Entre Marketing provides all the services for international trade fairs and exhibitions, and it produces all the communication programs to promote customers' international marketing activities. (Finpro, 2006b) Finpro Group consists of Finpro Association and Entre Marketing Ltd. (Finpro, 2006a, p.17)

5.2 Mission

‘Finpro promotes Finnish Business Solutions Worldwide’.

Finpro produces consultation services for the internalization of Finnish companies minimizing the risks involved in the process. It works in cooperation with other publicly funded Finnish service organizations: The National Technology Agency, Finnish Funding Agency for Technology and Innovation (abbreviated TEKES), Finnvera, the Employment and Economic Development Centres, and the Finnish National Fund for Research and Development (abbreviated Sitra). (Finpro, 2006b) Finland trade centres operate in over 50 countries and the headquarter is situated in Helsinki, Finland. (Finpro, 2006a, p.2) Regional offices in Finland are located in Oulu and Tampere. (Finpro, 2007a) Trade centres operate in a network to produce the services in regional cooperation and industry sector cooperation. The operation areas are the areas with growing business potential. (Finpro, 2006b)

5.3 Financial Facts

In 2005 Finpro had approximately 3100 clients, of which 450 were repeat clients. Approximately 60 per cent of the assignments were consultancy based. The personnel total was approximately 400, which includes 70 trainees. (Finpro, 2006a, p.5) Finpro Group's funding of operations in 2005 totaled to €30.1 million, of which 70 per cent, €20.5 million, was funded by the Finnish government. The remaining 30 per cent of funding includes the sales margins, membership fees, and financial income. (Finpro, 2006a, p.17)

Future of Finpro Finpro is developing its product offerings at a fast pace: for example, it has started recently a program integrating the fields of research and business with its cooperative partners (Finpro, 2007b, p.15). Also 'weak signals' are of interest to the product offering; spotting the weak signals of the unpredictable future make it possible to gain a competitive edge in the markets. The trade centres can acquire this kind of knowledge with their professional staffs. MTI states that the ability 'not only to react to external changes, but also be proactive, is crucial for the performance of the innovation system.' (Georghiou et al., 2003, p.57)

MTI has suggested that some Finpro services could benefit the public better in the future: the distribution of business knowledge from the World Trade Centre network could be open and free to both public and private sectors (Georghiou et al., 2003, p.107). The MTI study shows that business knowledge as the product is a public good; it is non-exclusive -everybody in the market has access to it and it cannot be limited in availability- and therefore it can be traded only once in the markets profitably. The highest social returns are achieved by 'offering firms and consultants market information at marginal cost.' (Georghiou et al., 2003, p.19) Many services of Finpro are free and open to the public already: the call center, country files with basic information, the online register of exporters, some project advisory services, and the business leads service (Georghiou et al., 2003, p.157).

5.4 Cooperation in the Finnish National Innovation System

The national innovation system is defined as a long-term collaborative, collective process that involves firms, research institutions, supporting services and public agencies of a nation to improve and increase innovation and innovative processes. (Georghiou et al., 2003, p.28) Modern innovation research presents the national innovation system as a model: the interactive model of innovation (See paragraph 2.3.3.) describes the relationships of the cooperative partners as interactive and communicative. Studies show that collaborating firms are innovative, productive firms. For instance, approximately 75 per cent of innovative European firms are collaborative (Georghiou et al., 2003, p.36). Innovation intensity and the level of innovation input -in commercialized new products- are in coherence with collaboration activities, too (Georghiou et al., 2003, p.57).

In Finland, the Ministry of Trade and Industry (MTI) govern the national innovation system. The goal of this implementation infrastructure for public policies is to promote innovation (Georghiou et al., 2003, p.11). The infrastructure consists of six key organizations: the National Technology Agency of Finland (TEKES), Finnvera, Finnish Industry Investment Ltd (FII), Employment and Economic Development Centres (TE-Centres), Finpro, and the Foundation for Finnish Inventions (FFI). (Georghiou et al., 2003, p.12)

Other informal partners take part in managing the innovativeness of Finland (Georghiou et al., 2003, p.82) but the official organizations have had their scope and role in the innovation system defined by the MTI. Finpro's role in the system is described as follows:

Finpro has a long history in promoting exports and internalization but has recently also taken an active role in promoting innovation by utilizing its international network of Trade Centres to identify new trends and signals on future market evolution. (Georghiou et al., 2003, p. 75) Finpro has been moving towards the research stage of the innovation chain by establishing closer collaboration with Tekes (Finnish Funding Agency for Technology and Innovation). This new view on innovation ... calls for coordination of activities and collaboration between organizations. (Georghiou et al., 2003, p. 76)

Effective cooperation in the national innovation system is crucial: MTI emphasizes ‘...innovative firms need all kinds of services provided by the innovation policy agencies’ (Georghiou et al., 2003, p.82). Services needed depend on the stage of the firm’s growth cycle and the new product development, and the process might not happen sequentially but all the cooperative partners might be required to be present at the same time in the innovation process (Georghiou et al., 2003, p.82). (See Figure 9)

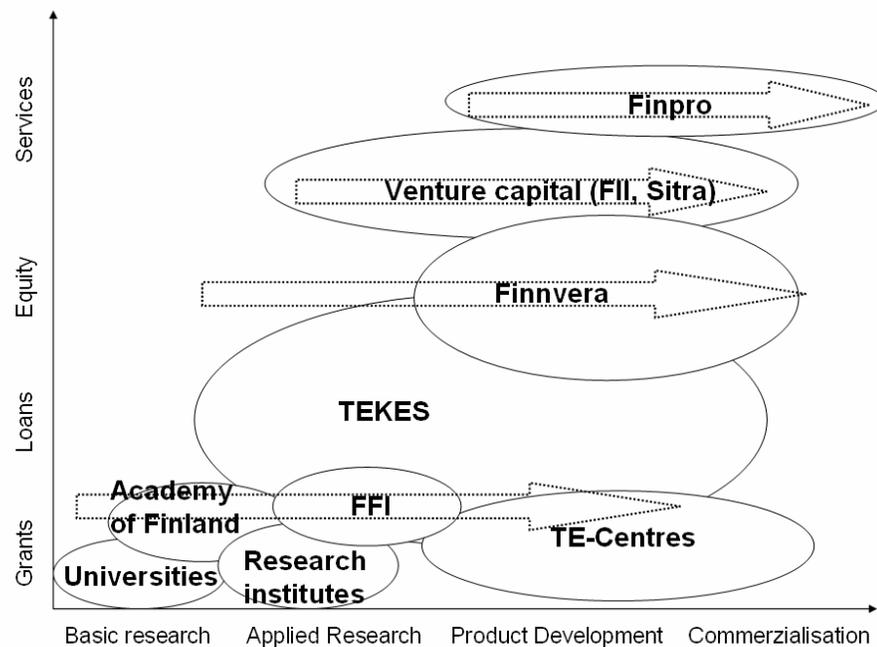


Figure 9: Innovation Supporting Organisations (after Georghiou et al., 2003)

6 Case Studies

Method

This study was formed on secondary, academic and professional literature and primary, qualitative data. The selected qualitative method was the case study method: it is used as a business research method as it integrates theoretical concepts and practical situations together. It aims to describe, analyze and solve issues and problems in a real-life case. (Koy, 1997.) The case study method is limited in its scope as the findings relate to the cases, and the results cannot be generalized to apply to other cases. Qualitative, interview based study is still the best way for the researcher to begin to adopt the challenges at hand when the topic is little known. The aim is to understand, depict and form evaluation of the case at hand.

The primary study included half-structured theme interviews. The interview sheet was constructed on the theories of innovation and management consulting studies in the literature reviews (See appendice 1 for the theme-related questions, appendice 2 for the interview sheet).

The case study selection was done in cooperation with Finpro staff members. The chosen companies were chosen based on the following criteria:

- the company had used/was using Finpro's consulting services
- the company had an innovative product/service
- the commercial implementation was recent (within a year) and completed

The author contacted the Finpro consultants, who had managed the cases, and the primary clients to agree the interview dates and times. 7 out of 8 interviewees were contacted successfully, and the interviews took place. The interview data was then transcribed as case study reports, which the consultant and the client proof-read and could suggest improvements.

Results and discussion on a general level are formed in chapter 7.

6.1 Capricode

The Chief Executive Officer, Mr. Jonny Kaarlenkaski, and Finpro consultant, Mr. Markku Vantunen were interviewed for this case study.

The company was founded in 2002 and it is located in northern Finland. The staff total is approximately 30. Capricode is a privately owned company, and its funding is from private sector with grants from the public sector. (Kaarlenkaski, 2007a) The company produces products and services for the telecommunication sector, and it has three product lines (Capricode, 2007a) –this case deals with the SynchShield product. SynchShield is device management product: the innovation is the solution to protect the mobile business devices by reducing safety risks, minimizing knowledge spillovers, and protecting business data. The product makes it possible to create back-up data from a smart phone, and for example to lock the device in case it is lost or stolen. (Vantunen, 2007c)

Some part of the product idea was conceived and developed by an innovation team in a previous company of the CEO (Kaarlenkaski, 2007b); the current company was founded as a spin-off to further develop and distribute the innovative product lines. The technology of the product was based on an existing product, and market research by Gartner (Capricode, 2007b) showed that there was a huge potential market for business phone products.

The company has as business mode business-to-business, and it aims to limit its role and business functions to being the supplier of the product: the partnering network is to take care of the distribution, sales, marketing, and after-care services (Vantunen, 2007d). The business segments it is after in the telecommunication sector includes operators, product suppliers, and companies (Capricode, 2007b) that would distribute the product to their customers. The current selected market penetration is in the niche market of ‘smart phones’ -mobile phones that have a Windows or a Symbian operating system (Vantunen, 2007d).

Consulting

The consulting assignment was initiated in 2006: the company has had previous cooperation with Finpro in 2004 in smaller scale. Finpro’s staff in a regional office contacted the client to offer possible consulting projects. (Vantunen, 2007d) The client felt consulting could help introduce new tools to increase sales and improve business negotiation skills: the company needed ‘the sales representative’s portfolio’ to improve business functions. The expectations were to gain resources in operating in foreign

telecommunications markets, to improve international sales operations, and to familiarize themselves with the internationalization process to lower the barriers to enter the foreign markets. (Kaarlenkaski, 2007a.) The consulting project included for instance: focusing the business, developing the future business plan, creating and analyzing market reports, evaluating the business plan and acquiring private funding, creating the product's international commercialization plan, creating tools for developing a partnering network, field trials of the product, and evaluating market demands abroad (Vantunen, 2007d). The scope of the case is 130 consulting days and the project involves two consultants in Finland, and trade centers abroad in the target countries. The project is to last 2 years, and it will be completed in August of 2008. (Vantunen, 2007d)

The consulting process has been smooth, effective and guiding: the company and the staff are used to using consulting services, and the consultant operated well within the company culture. The company feels that consulting can introduce the tools it needs in the future. Change management issues have emerged only in the focus of the market segments. The client has benefited from consulting: the business plan has sharpened, it has gained more funding, the company has become known in the chosen markets, and it has acquired independent learning experiences that are long-term benefiting. The client is pleased with the consulting company. (Kaarlenkaski, 2007a.)

For future success, the consulting should deal with the business operations: at the moment, due to focus on the R&D, the company has concentrated on providing the technology and the product, and the sales operations are lacking resources. The implementation of commercializing the product depends on acquiring knowledge on accurate market needs and existing potential. Technology aspects of the product need to be considered carefully, too, for the international telecommunication markets: the chosen operating systems should support the global and local operating systems in the chosen market areas. The technology for the product can be done effectively and cheaply; as a result, both the smart phone product suppliers and Capricode provide the client-side technology solution in a smart phone –double effort for one job should be reduced in the future. (Vantunen, 2007d.)

National Innovation System and External Consulting

The company has used other consulting companies -for instance, on competitor analyses and international market segment evaluations. This and other operations have been funded by TEKES. TEKES has also prepared consulting assignments on the internationalization of the company, and the employment agency has provided funding for this Finpro consulting as an

employee-training project. Both Sitra and Finnvera have provided minor funding for the company's operations. The CEO has previous experiences of the national innovation system services. (Kaarlenkaski, 2007a.) The client and Finpro have had a contact in the past, but at that time the company felt it did not need further consulting services from Finpro (Vantunen, 2007d).

Suggestions

The consulting project is still incomplete. Finpro services can be tailored to meet the customer needs during the project, and at the moment both the client and the consultant agree that there is no concrete suggestions for Finpro's service improvement –the consulting services are comprehensive and enable necessary interventions. Improvements in the role of Finpro in the national support system could be introduced in the funding collaboration: Finpro is a partner in an international venture capital forum. Participating in these kinds of networks could help introduce Finnish companies into international venture capital projects. (Kaarlenkaski, 2007a.)

The success of consulting and implementation depend on the client's implementation of the consultation: the company needs to increase its focus on sales management and cooperation with future business partners. The company should also increase its credibility and references to enter the global telecommunication sector as a notable operator, for instance with the help of its partnering network. (Vantunen, 2007d.) It is expected the company breaks even with the product, and commercially successful implementation is a possibility –for example, when the product is licensed as an industry standard. This could create the wide-volume, emerging markets the company is after. The company aims to develop the product incrementally, and to create a product family for the product, too. (Kaarlenkaski, 2007a.) Theoretically, the product feature development for such a disruptive product should happen in stages of customers' convenience: what matters most to clients is firstly the functionality of the product, secondly the reliability of the product, and thirdly the convenience of acquiring and using the product (Christensen, 1999, 96-98).

6.2 Icareus

Finpro consultant, Mr. Neil Reape was interviewed for this case study. The Chief Executive Officer, Mr. Toni Leiponen, was not reached for this study. The report presents the case but it is not used in the results section or discussion sections due to its limited scope.

The company is founded in 2001, and it is headquartered in southern Finland. The staff total is 15-20. The company is privately owned. Icareus produces software and consulting services in the field of digital television. (Icareus, 2007a) The products and services the company produces aim to enhance the client's business functions in the digital telecommunications environment (Icareus, 2007b): the product lines include content management solutions for interactive television, SMS-television solutions, interactive mobile television platforms, and tools for creating subtitles (Icareus, 2007a).

Icareus has an innovative dual approach on their products: they provide finished content solutions for interactive television, and also the tools for the content development. The company is specialized in the field, so they provide unique solutions with solid work experience in a developing technology. (Reape, 2007a)

The new product development was due to unsatisfied market demand: the available software solutions for television were lacking interactive features altogether. The innovation source was internal. The company's market segment is business-to-business. The market segment includes the telecommunication companies and other businesses in interactive television provision. The market scope for the products is the mass-market of interactive telecommunication –i.e. televisions, mobile phones, and events. (Reape, 2007a)

Consulting

The consulting assignment was initiated in 2006; it was concluded in the beginning of 2007. The consulting project was focused on the internationalization processes and channel development of the business. The consulting includes evaluating market opportunities in the chosen target countries, creating and evaluating the value chain, mapping possibilities for partnering and field trials of the product. The consulting days total 13, and three consultants have worked on the case. (Reape, 2007a)

The customer diagnosed internally the need to increase the international sales efforts as the current business model was not income generating; the expectation was to generate new sales and develop the internationalization

process with the consulting. The consulting has lead to evaluate the business model: as it is, it is not generating the sales the product is capable reaching, and resources for the marketing efforts are needed, too. The client gave average feedback on the success of the assignment; the customer expectations were not therefore completely met. The client did acquire knowledge about the international markets and negotiation tools in the end. Change management issues were the result of differing expectations of the consultation process –the client and the consulting company’s roles might not have been clearly defined from the start. (Reape, 2007a)

National Innovation System and External Consulting

The client was aware of the national innovation support system and the participating organizations. (Reape, 2007a)

Suggestions

The implemented consultation did not quite meet the customer needs. The scope of consultation seems to have been limited to the current issues, and further, more in-depth consultation project could help solve other factors indirectly affecting the business operations. Otherwise the product and the company are ready to enter the international business field: the success depends on the independent sales efforts of the company, and focusing on their strategy for income generation. The commercial success of the product is possible within the next few years in the current market areas –if the necessary steps are taken to adapt the business model to the targeted markets outside Finland. (Reape, 2007b) As a sustaining innovative product, the markets for the product exist and the challenge is in penetrating them to ensure the commercial success.

6.3 Kitworks

The Chief Executive Officer, Mr. Heikki Rusanen, and Finpro consultant, Mr. Markku Vantunen were interviewed for this case study.

The company is located in northern Finland. The company is founded in 2004. All business functions except strategic management and product architecture are outsourced –therefore permanent staff includes two employees, and approximately 100 staff members in the networks have worked with this project. Business operations are financed with shareholder equity investments, private equity investors, and public funding from TEKES and other organizations in the national innovation system. (Vantunen, 2007c; Rusanen, 2007a.) The company has one product line, the infotool; there are also other products in the product family, e.g. applications and add-on products for the infotool. (Rusanen, 2007a; Rusanen 2007b)

The innovative product is an information tool: the user can collect, store, analyze and manage data interactively with the device. Via the product, the employee can do the information work where the action takes place concretely –for example, at the shop floor or at the customer’s location. The infotool has a user-friendly, wide-screen display and the software is used manually with a touch-sensitive screen. The product features a combination of wireless online interactive information-based management with a Windows CE operating system, and it can be used for example in retail and nursing –the product gives best results if identification codes are used in the business area. The product offers a platform to implement strategic management at the grass-root level: effectively communicated, open and up-to-date information makes business processes more efficient and more effective. (Kitworks, 2007; Rusanen, 2007b)

The product innovation was developed after an unsatisfied demand: the current CEO, with his previous business background, had been frustrated with the data management systems of retail that involved collecting data on the shop floor and handling the data management, analyses, and ordering in the back office. The innovation was to update this sequential process into a simultaneous process with one tool that could do all the necessary functions; the product itself and the application were designed based on the needs of real end-users. The new idea had its technology developed in cooperation with TEKES. (Rusanen, 2007a; Rusanen 2007b)

The company has three main segments: retail, logistics, and health care (Vantunen, 2007c). Other market segments also include restaurant and

catering services, production facilities, and field force production, e.g. maintenance and installing. The business mode is business-to-business, and the infotool at the moment is a niche product for businesses that deal with identification codes –in the future the consumer needs can broaden the customer segments accordingly. The funding for the product development and commercialization stages is from TEKES and a local private equity investor. The main market area now is Finland, and in the future it will expand its sales operations to Sweden and rest of European countries. As a young company, it is gaining necessary references for its operations abroad. (Vantunen, 2007c; Rusanen, 2007a)

Consulting

Finpro and the company started the consulting project in 2006 with a background of shorter consulting co-operations. The consulting started with the client contracting a cooperative partner in the national innovation system, from which the cooperation was increased to include services of Finpro. (Vantunen, 2007c.) The client was looking for a cooperative partner for long-term in the commercialization process, and felt it was easy to include the consulting company's services from the national innovation support system operators. The company wanted to reduce risks, create results, and increase and focus on the effective implementation of business processes. The customer was aware of the need for consulting: their operation model is to acquire resources when needed from appropriate sources, and outsourcing the internationalization processes was natural. (Rusanen, 2007a.)

The current consulting assignment deals with the business plan development, creating a partnering strategy, and implementing the internationalization plan for Sweden. The consulting consisted of the following stages: focusing the business, deciding the market segments, acquiring funding from a private equity investor, and researching the Swedish markets. The consulting days total at the moment 21, and the consulting assignment continues until end of 2007. The case has been handled by one consultant, and as a cooperative partner a chamber of commerce abroad. (Vantunen, 2007c)

The company was open to the consulting solutions –although the initial expectations and the realistic implementation time did not quite match. There have been no change management issues, and the business cultures have suited well each other. Only criticism is that some processes in the implementation were quite heavy besides the daily operations, and seemed to take their time. (Rusanen, 2007a.) The client has limited resources: the business requires funding and more human resources, and therefore the consultation implementation has proceeded slowly. The client is able and willing to implement the solution, and they have had a long-term benefiting learning process. Successful market entry and the commercialization of the

product therefore depend on gaining more funding and staff to implement the internationalization processes. (Vantunen, 2007c.) The client is satisfied with the consulting services and feels that the consultation has increased their awareness on the operations, and that there has been steady development (Rusanen, 2007a).

National Innovation System and External Consultants

The company has used other consulting companies for instance in advertising and creating the company image. The company is in a regional development program of the national innovation system, and has public funding. (Vantunen, 2007c.) TEKES has been the major partner from the product development phase onwards, and other organization in the national innovation support system have been mainly producing financing services – e.g. Finnvera, TE-Centre- and to some extent support services from the local TE-Centre. The client was aware of start-up companies receiving funding and TEKES's support for developing the technology but the cooperation with the whole network of organizations has required a 'bit of legwork', or actively looking for the necessary support services at a given stage. (Rusanen, 2007a.)

Suggestions

The client and the consultant are implementing the regional development program and seeking more funding for future business operations. The goal is to implement this process successfully, and possibly expand the markets to several European countries. The success depends on gaining more resources, as previously mentioned: the national innovation system supports start-up companies but only so far –private equity is needed crucially. (Vantunen, 2007c.) Venture capital markets are small for start-up companies, and consulting could introduce more services in the venture capital acquirement process. The product is to be developed according to the customer and end-user needs: the technology enables incremental improvements but the ease of use and improved employee efficiency are the driving motivators for innovation, as they have been so far. The product has a need in the markets, but as a new, unknown product the commercially successful implementation is estimated to take place within years, not months. (Rusanen, 2007a.)

6.4 Symbicon

The sales manager, Mr. Jouko Lehtinen, and Finpro consultant, Mr. Markku Vantunen were interviewed for this case study.

The company was founded in 2005 as a corporate spin-off. It is located in north of Finland plus a sales office in southern Finland. Staff total is over 30 staff members. The product lines of the company are the LCD display in different sizes, services and after-care for the display, and financing tools for the partners. Approximately 40 per cent of the operations are in-house - for instance, the assembly of the products- and the rest 60 per cent are outsourced to business partners. The company finances the business operations with shareholder equity investments, private equity investments, and public funding from TEKES. (Lehtinen, 2007.)

Symbicon Ltd creates LCD [liquid crystal display] TFT [thin film display] outdoor advertising and digital display information systems and solutions for worldwide distribution. (Iconone, 2007a) The product is a LCD panel, wireless technology included, and it can display dynamic, customizable content for marketing and presentation purposes. (Iconone, 2007b)

The innovation for the product came from the CEO of the case study company from his previous business background. The product introduces new technology replacing older, less efficient and more costly displays for marketing and information purposes both indoors and outdoors: the size of the product and its properties for outdoor marketing are unique in the markets, and its assembly is cost-efficient. The product evolved due to a demand in unsatisfied markets, and market research proved that the market potential was huge for the product.

The product has five main segments: out of home media, retail locations like shopping malls, public transport, sport and entertainment venues, and events, e.g. fairs and outdoor concerts. Other possible segments are the government authorities for information purposes, and industrial and military usage. The business mode of the company is then business-to-business, and the company limits its role as the producer of the display –all other business operations are to be delegated to the partners in the distribution network. The company is after a large distribution network, and the product to be sold in volume. The market area is widespread: the partnering network covers 78 countries from the continents of North America, Middle East, Europe, and Asia. (Lehtinen, 2007.) The company attained financing from the private equity investor easily in the beginning of the product commercialization

stage due to an interesting, likely to be successful product, and well-planned business operations plans. (Vantunen, 2007b)

Consulting

The product development was started in 2004 with TEKES, and the commercialization process with Finpro in 2005. The consulting process in this case started with the client contacting the consulting company: the company wanted to enter the international markets (Vantunen, 2007a) for a wider volume of sales, and was familiar with Finpro's services from previous experiences. The client needed fast results, wanted to create a reliable network of partners, and enter successful business negotiations in the future. The client acknowledged the need for these kinds of consulting services already in the beginning, and therefore was very cooperative in the process. (Lehtinen, 2007.) Finpro's role is to consult on the internationalization process. The consulting assignments consisted of the following projects: creating market entries to several countries, partner search –including searching, screening, creating criteria for right kind of partners, choosing the partners- and entering negotiations, channel development, limitation of risks in the internationalization process, and focusing the business. The consulting days total now 150 and 60 days more have been ordered. Two consultants located in Finland manage the assignment, and approximately 20 trade centers have cooperated in the consulting. (Vantunen, 2007b)

The consulting process was very cooperative and open from the beginning: the consultant's solution was easily accepted, and the consultation was fitted for the client's timetables and goals. (Lehtinen, 2007) Implementation could have started more effectively with more staff resources: now this has been dealt with and the implementation is according to plan. The client has benefited from consulting and there has been a long-term benefiting learning process: for example, consulting has introduced certain tools for partner selection and negotiations for independent usage by the client. Problems during the consultation have been minor: these are for example the lack of human resources previously mentioned. (Vantunen, 2007b) Overall, the consulting company and the client are both satisfied with the results: the goal of attaining a wide partnering network has been reached, and implementing the consulting plan is likely to achieve the goals in financial revenue and sales volume. The client refers to Finpro as a partner, and the consulting relation continues until 2007. The company aims to increase and extend the distribution network, increase employment levels in Finland, and increase annual revenues in the next few years. (Vantunen, 2007b; Lehtinen, 2007)

National Innovation System and External Consulting

The company used services from external consultants; for example lawyers to draft the trade contracts. The company was familiar with the national innovation system from previous business background, and they have been using the services of the national innovation system throughout the product commercialization process. The system supported the development of this company well: its cooperative partners were 4 main organizations –TEKES, Finnvera, Finpro and TE-Centre- that worked in good cooperation: for instance, held annual meetings thrice a year to maintain the process. (Vantunen, 2007b.) The client feels the national innovation support system has helped the product development and commercialization of the product remarkably in expertise (Lehtinen, 2007).

Suggestions

In future, the consulting services could be extended to deal with the negotiation training: the company enters the negotiations but the deal is not guaranteed without knowledge and skills in international negotiation and presenting the business case. The small, entrepreneurial Finnish company does not seem credible enough without confidence in the product and the client having excellent business skills: future service provision could deal with these issues. Services could be developed to improve the collaboration with business partner network, too. (Vantunen, 2007b.) The client is pleased with the consulting process altogether: the services have been appropriate, the customer needs have been well understood and services accommodated to fit these needs (Lehtinen, 2007). The service attitude and the effectiveness of the services of Finpro should be maintained at the same level for all customers.

The company has a good focus on the markets, and it is expected the client's products break through in the markets in 2007 –the disruptiveness of the product is appreciated as its value-creation is remarkable for operators in the field. The innovation process in the future focuses on improving the product incrementally and creating a product family –new product ideas exist that will be developed in the future. (Lehtinen, 2007.) The product line is likely to have a commercially successful commercial implementation.

7 Case Study Findings

7.1 Results

The results of the study are presented in a chronological order: how has the business started, how has it evolved, and what has happened for the businesses. The paragraphs introduce general findings on the three cases on the business formation and the business model, new product development, innovation activities, the consulting process and expected results, and the results. Paragraph 7.2 goes into more detail on suggestions for management and discussion of these results.

Business Formation

All three companies in this study are recent start-up companies; the oldest company was founded in 2001, and the most recent one in 2005. The average maturity of the companies in business years is then only four. The formation of the business idea in all three companies is a corporate spin-off from a previous company: all companies have focused on one or few new product development project(s), and therefore they can be termed as companies with a single product line. Few of the cases do produce more than one product or a service, but they have focused on a special field of business, and the selection of products is limited. The companies at this stage are still small or medium-sized, and only few estimate growth in the near future. The business ideas emerged due to previous business background in the field, and a hunch of a possible market. The formation clearly follows the interactive model of innovation: the internal knowledge of the founders has been combined with the external technological possibilities and unsatisfied customer needs. The linear models do not match these cases: none of the products have been developed purely by the motivation from technological developments or market needs.

Business Model

All the companies deal in business-to-business model, and aim to act as a supplier of services or a producer of the products: the distribution and sales channels are planned to be dealt with by the collaborators in their network. The companies are limiting their roles and expanding their possibilities: when the sales, after-care services and distribution channels are operated locally, the expenses can be cut –compared to operating all the business functions themselves in foreign target countries- and the response time to market needs shortened.

Innovation Formation and Development

The companies in this study have developed their innovative idea with internal resources, and with the aid of the national innovation system. Whether the innovation development has happened in sequences as in the models presented in paragraph 2.1 it is not known. All the companies were aware of the national innovation system to some extent –some knew the organizations and services well, and some knew only few of the operators. All cases have had cooperation with one or more organizations in the national innovation system, and the companies have used the services simultaneously from several organizations as depicted in the activity-stage model (See Figure 2). One main organization is TEKES: it provided funding, support and consulting services for all the three companies. Detailed information on the activities with the national innovation support system organizations was not collected in this study as previous studies cover that field well (See for example Georghiou et al., 2003). It is clear that the Finnish national innovation system is supporting the growth-stage companies, and that the service scope is wide enough.

Sustaining and Disruptive Innovations

In the new product development 'new' can be defined in many ways: it is subjective as a word. In this results conclusion the usage of a 'new product' is avoided on purpose, and the terms 'sustaining' and 'disrupting' are used based on the model of Christensen (1999, p. 8-9). According to Christensen, the development of a product depends on whether it is sustaining existing products or disrupting existing products (for further information, please see paragraph 2.4).

The case selection provided both sustaining and disrupting innovations. Symbicon creates a disruptive product that has a radically new technology for displays that aims to replace the old poster-based out of home marketing. Capricode also creates a product that has no competition, and it is a disruptive product –it is an incremental engineering refinement for the smart phone and PC information markets. Icareus creates sustaining services for the telecommunications markets: the purpose is to increase and improve the use of interactivity in the telecommunication markets. Kitworks is a sustaining product supplier: similar kinds of tools exist, and with the current technology, all the necessary features have been able to be combined into one tool. Both sustaining and disruptive products seem to be able to enter the markets successfully; the innovation model did not seem to cohere with the success or the ease of it. The innovation, the company and the business operations determine the effectiveness of the implementation.

Incremental Innovations Dominate

Future innovation activity for the case study companies is incremental improvements on the existing products and product lines; only one of the cases reported new innovative ideas being developed. The reason might be that current sales and marketing activities limit the innovativeness in the company, and that resources to develop ideas further on would be scarce as it is. Incremental innovation activity support the definition of sustaining innovation classification by Christensen: improved products serve and protect to maintain the current customer segments the companies have worked hard to achieve (1999, p.8). Familiar markets and segments can be estimated and forecasted into annual income plan, too, which gives the companies constant resources to continue business operations successfully.

The drive to innovate in these cases was for a majority the technological possibilities: this might be due to the ICT/technological nature of the companies. It was felt that new technology could create value-added benefits and beat the competition: time-to-market and the newness of the product solution were emphasized as important features in increasing sales and achieving market shares. The competitive nature of the technology product markets supports incremental innovations, and improving the product according to the current technological trajectory (See paragraph 2.4.2 for detailed information). Only one of the cases stated that improvements in the product will be based on the feedback and suggestions from the end-users.

Selected Trajectories and Markets

The companies had not limited their market scope to high-end markets as Christensen's theory of intersecting trajectories predicted: the companies had limited their focus primarily to specified markets –usually both upmarket and downmarket, depending on the case- but for the volume of sales, possible secondary markets existed as well. In a way, the companies had a technological improvement trajectory for the primary market segments, and a secondary, disruptive technology trajectory for the unspecified potential markets. The sales and marketing activities were aimed at the primary market segments but potential customers in the secondary markets were as welcome as any other for the companies. The consulting projects had prioritized the market segments for most of the companies based on profitability and the ease of market entry: the purpose of consulting is to help the client to enter the international markets as efficiently as possible, and doing this one market area at a time is easier than trying to reach all of them at once.

Financing of Business Operations

All the companies are privately owned. All companies had received public funding or grants from the national innovation system operators for example on employee-training, new product development or growth-stage financing. All the companies have attained private equity investments, too: the private equity investors vary from local development funds to sizeable corporations. The investment sums vary by case but nearly all cases reported a lack of funding resources in the international marketing and commercialization stages. Only one company felt their financing was on stable ground to provide the business operations in the future, as they had guaranteed financing early on in the product development stage from a private equity investment company. The funding services from the national innovation system received remarks on the scarcity and bureaucratic nature of applying the funding, but overall the services were appreciated as a form of support for growth-stage companies.

Consulting Process

Generally, the clients evaluated the consulting process effective and cooperation useful for their business operations: only one case stated the consulting was of average level. The consulting processes are described as having been guiding, flexible, effective, and suitable for the individual needs of the companies -plus the consultants received great compliments on their interest on the cases, their expertise and meeting the clients' needs. Clients from the viewpoint of consultants have been open, enthusiastic, and interested to implement the solutions, and no major change resistance issues came up during the consultation processes.

Both the clients and the consultants state that the consultations have increased the resources of the companies in market knowledge, business skills and problem solving. The challenge that was reported by the clients was the time scale of the consulting operations: it was estimated that the consulting process took of slowly and took its time whereas the clients would have appreciated a faster pace in the proceedings to meet their targets, e.g. in sales. It seems the cultural barriers of business cultures were the opposite of Clausing's and Fey's model (see page 33): the businesses in the stage of commercialization are keen to commercialize the product, not focus on the innovativeness.

Consultation Models

The consultation model that appeared in all of the cases was of the specialist. In these cases the needed specialization was in international market entry, international markets and international business networks. All the companies had formed independently an estimate of business operations, or the diagnose –some companies in more detail, and some less- of what was missing in the company’s operations, and therefore the consultants’ role was to evaluate those diagnoses and continue contracting negotiations. Therefore it can be concluded that the consultants operated usually in the roles of a specialist and a process consultant. The companies stated that Finpro was a partner, which supports the offering consultation model’s long-term relationship formation in these cases. In addition, all the clients had had previous cooperation with Finpro in other companies or other consultation projects. The relationship with the client and the company/the consultant does seem to remain latent as new contracts are formed later on in new business ventures. Another explanation to this cohesion of past and present usage of Finpro’s consulting services is the dominant position of Finpro in the internationalization consulting services in Finland.

Expectations on Consulting Process

The one challenge that came up in the study was the expectations on the consulting process –both by clients and consultants. The expectations on both sides were differing in the beginning of contracting the consulting project, and in most of the cases these differences of opinions cleared during the consultation through discussion and specifying the consultation assignment. In general, all the companies stated the need to increase sales revenue as a main issue, and secondly to enter the international markets successfully. The consultants’ expectations were to increase knowledge on international markets, and to focus the clients’ business operations through which also the sales operations would improve. The companies’ and the consulting firm’s focuses differ and there is an explanation: cause and effect. The companies’ goal is the effect, the concrete results, whereas Finpro has to evaluate the indirect causes and their direct effects to form a realistic picture of the client and his/her business operations. The companies at this commercialization stage are very eager to enter the markets and start receiving income -but it can be recommended that the business plan of the growth-stage companies is checked and updated, too, to keep the business strategically focused and operative in long-term.

Consultation Results

The consultation results are elusive at the moment as the consultation projects continue in all of the cases. Progress in commercialization of the products in the continuing cases is apparent, and the interviewees expect varying but generally positive results on the consultation implementations. The expected break-through time in international markets varies case by case –the median average is 2½ years.

The suggestions on how the companies and Finpro could improve the success rate of international innovation implementations are presented in the next paragraph, 7.2 Suggestions for Management.

7.2 Suggestions for Management

For a successful commercial implementation of an innovative product in the international markets, the following key issues are suggested.

1. Make sure the product and the company is ready for the process that can take time, money, sales and marketing resources, business skills, international negotiations skills, and patience beyond initial expectations.

The international markets in a chosen target market may be very similar or very different to the home markets; internationalization consultants can help overcome these barriers but it is always the client and his/her company that does the planning for and the implementation in the field. Innovative products can face change resistance, in any given market, and the company and the internationalization consultant must be ready to face this challenge besides everything else.

2. Make sure the funding and resources –e.g. human resources- for the implementation and marketing are sufficient and available for the total estimated length of the international commercialization.

Having a great product and having the market demand does not mean the product penetrates the market; it might happen overnight but be prepared to market and sell the product. In international markets, the sales activities must meet the local conventions –the specialized consultants in chosen target countries understand and can clarify their importance to the clients. The understanding of business conventions, local habits, time concepts, and negotiation tactics convey the cooperative skills of the company to the opposite party.

3. Partnering and networking activities require continuous attention in the international markets.

The Finnish markets are small; it can be presumed that people in the business know of each other. In the global markets, this is not the case. The companies should be prepared to cooperate and network efficiently, and to take care of these networks after the sales negotiations and possible business deals. Networking is linkage, and through networks companies can gain credibility, future contacts and future business. Word-of-mouth is a strong influence: a good recommendation can go far, and a bad comment even further away. Continuous, mutual cooperation with possible and existing partners in international markets benefits the company and the business.

7.3 Discussion on the Study

Limitations of the Study

The study's scope is limited to the cases presented and the results cannot be widely generalized –this is common with the case study method. It aims to study the cases in-depth and form new ideas and hypotheses to be studied and tested in future studies, and it can be concluded that these new ideas emerged as future challenge. For instance, are the companies beginning internationalization stages given advice on the necessary resources, what organization in the national innovation system could offer these services, and so on. More in-depth study with more participants could give a more general view on the state of Finnish companies entering the international markets.

The research plan was fulfilled in the quantity of the case study companies, but the given criteria had to bend: the companies had not implemented their internationalization plan to the stage where the commercial success could have been evaluated statistically. The companies were a very homogenous group: they had the same business mode, b-2-b, and were operating in the technology markets. The cases then present innovative technology products implemented in b-2-b markets only. Luckily, the companies were at the stage where they were considering their internationalization through creating distribution networks and sales partnering; the theme interviews with the management of the company clearly introduced their ideas, plans and expected results of the outcome of the commercialization stage. Consulting activities were evaluated and considered critically but openly; as the consultation activities continued, the information and views on it were fresh.

Further studies on this topic could deepen the surface this study has scratched –more quantitative and qualitative research, more companies with different business models and in different markets, and commercially implemented products included in the study. Innovation implementation studies are scarce, so more research activity and results are welcomed to be included in the management studies of innovation.

Cooperative National Innovation System

The cooperation in the national innovation system, the organizations being proactive, and focused on the client were stated as the key functions of the Finnish innovation support system. It is clear that some organizations are cooperative, and do consider the client needs –some do not seem to fulfill those functions. The client feedback on some organizations was great, but in general the operations and support of the organizations is felt bureaucratic, slow and little of help in real business operations. The services needed and offered should be considered as an entity with all the organizations: the client's case may require services simultaneously from several organizations and with the case considered and planned accordingly, these needs would not come as a surprise in any stage. The process would be a smooth, effective project for both the organizations and the client. The activity-stage model (See Figure 2) depicts well how the operations could be planned. With the MTI's role definitions of the organizations, commercialization stage has few, independent operators that work separately from the other organizations (See Figure 9). For example, 'case managers' could manage the client's case in the national innovation system from the beginning of basic research to the end stages of international commercializations –what organization could offer these specialists is another question.

Funding

Financing business operations was felt a big obstacle in the commercialization stage –money and resources are always necessary in business, naturally. The national innovation system supports to some extent the funding of the companies. For instance, the chain of supporting a company in its new product development functions well throughout the product development stages but at the commercialization stage the public funding services are inadequate (Kaarlenkaski, 2007a).

Public funding organizations cannot meet the companies' requirements of venture capital needed for the marketing and sales efforts, and the commercialization process does not progress into a commercially successful implementation. The problem is not uncommon: also the Finnish private venture capital markets are small and the capital is scarce. The funding services in the private and public markets need to develop with the 'high risk, high profits' attitude to create Finnish innovations into commercial successes.

The studies present that public funding is also a kind of a safety net: companies that have used public financing services do not move into private markets, and this deprives the funding of potential new businesses. The reality could be that the available public funding is the safety net to keep the businesses running. Acquiring the finances from private markets can be

difficult and time-consuming which increases the risk of bankruptcy if there are no backup resources.

The suggested solution is increasing knowledge on acquiring private venture capital –from abroad. Seed financing contacts could be introduced by the consultants in the market area/target countries, which would help the companies to network in the markets and increase the financial resources. Capital management training could also be better offered in the consultation services –for instance, Finpro in internationalization services and other organizations in Finland for companies aiming to enter the home markets.

Entrepreneurship and ‘Good’ Companies

The study shows that in these cases, there has been entrepreneurship and risk taking in the formation of the businesses –all the current businesses were spin-offs based on the innovation idea. The entrepreneurs have had their business careers so a question emerges –where do the young, fresh to the business entrepreneurs are? Is the risk to start a new company in cohesion with young age and inexperience? If this is the case, the risk factors of entrepreneurship should be evaluated again: with experience, knowledge of the business markets and segments, and business skills starting a company would not necessarily be as risky as it is presumed, even with an innovative product (for further information, see page 9).

The innovativeness of the product could to ‘make or brake’ its success, and determine the future of its producing company. What should be considered, too, with as much attention, is the functionality of the company, the accuracy of the business plan, and reality of the business operations. Is the company operating effectively, how does the staff feel about their work and the company, is the management doing what it should; are the mission, vision, goal and operation tools in accordance? A company can commercialize a product in international markets, but it is likely that a good company will do it faster, efficiently and more productively. The business core values should be the focus of the management to line the company to do business.

Bibliography

Anonymous (2006). *Compact Oxford English Dictionary*, AskOxford. Retrieved December 9, 2006, from http://www.askoxford.com/concise_oed/innovation?view=uk

Block, P. (2000). *Flawless Consulting: A Guide to Getting Your Expertise Used* (2nd ed). San Fransisco: Jossey-Bass/Pfeiffer.

Capricode (2007a). *Company*. Retrieved February 19, 2007, from <http://www.capricode.com/index.php?130>

Capricode (2007b). *Mobile device management product*. Retrieved February 19, 2007, from <http://www.capricode.com/index.php?191>

Christensen, C.M. (1999). *Innovation and the General Manager*. United States of America: Irwin/McGraw-Hill.

Clausing, D., Fey, V. (2004). *Effective Innovation*. New York: The American Society of Mechanical Engineers.

Finpro (2006a). *Annual Report 2005*. Retrieved December 9, 2006, from <http://www.finpro.fi/NR/rdonlyres/098C4382-70DE-436C-B517-66676B69D72D/0/FinProAnnualReport05.pdf>

Finpro (2006b). *From export association to Finpro*. Retrieved December 9, 2006, from <http://www.finpro.fi/en-US/About+Finpro/Who+we+are/History/>

Finpro (2007a). *Yhteystiedot: Finpro Suomessa*. Retrieved January 8, 2007, from <http://www.finpro.fi/fi-FI/Contacts/Finpro+Finland/>

Finpro (2007b). *Finpro –Kansainvälistymisen aikakauslehti*. December 2006. Retrieved 11 February 2007, from <http://www.finpro.fi/NR/rdonlyres/8BD65664-FE50-4AD8-B7B8-5EDFBFF2E65B/5700/FINPRO406LR3.pdf>

Georghiou, L., Smith, K., Toivanen, O., Ylä-Anttila, P. (2003). *Evaluation of the Finnish Innovation Support System*. Ministry of Trade and Industry, Finland. Publication 5/2003.

Global Entrepreneurship Monitor (2007). *Document Details*. Retrieved March 7, 2007, from <http://www.gemconsortium.org/document.asp?id=532>

Holvas, J. (2006, October 1). Innovaatioiden aika. *Helsingin Sanomat*, p. D6.

Icareus (2007a). *MHP and OCAP Software Tools, Solutions and Applications*. Retrieved March 9, 2007, from http://www.icareus.com/index.php?dir_id=25

Icareus (2007b). *MHP and OCAP Software Tools, Solutions and Applications*. Retrieved March 9, 2007, from http://www.icareus.com/index.php?dir_id=4

Iconone (2007a). *Making an impression*. Retrieved February 19, 2007, from <http://www.iconone.fi/contact.htm>

Iconone (2007b). *World's Largest LCD Advertising Panel is 82"*. Retrieved February 19, 2007, from <http://www.iconone.fi/index.html>

Kitworks (2007). *Focus on Information*. Retrieved February 19, 2007, from <http://www.kitworks.fi/index3.asp>

Koy, S.S. *The Case Study as a Research Method. Uses and Users of Information – LIS391D.1 – Spring 1997*. Retrieved on 21 September, 2006, from University of Texas, USA website: <http://www.school.utexas.edu/~ssoy/usesusers/1391d1b.htm>

PKT-Säätiö. (2002). *Yritys ja konsultti: Liikkeenjohdon konsultointi pk-yrityksen voimavarana (1/2002)*. Helsinki: PKT-Säätiö.

Rope, T. (2006). *Menesty konsulttina: Konsultoinnista kukoistavaa liiketoimintaa*. Helsinki: Talentum.

Schein, E. H. (1987). *Process Consultation Volume II: Lessons for Managers and Consultants*. United States of America: Addison-Wesley Publishing Company.

Trott, P. (2002). *Innovation Management and New Product Development* (2nd ed.). Prentice Hall, Pearson Education.

af Ursin, K. (2007). *Moraali, hyveet ja eettiset normit liikkeenjohdon konsultoinnissa*. Manuscript for Academic Dissertation. University of Tampere, Finland: Faculty of Economics and Administration, Department of Management Studies.

Utterback, J.M. (1994). *Mastering the Dynamics of Innovation*. Boston, Massachusetts: Harvard Business School Press.

Interview Records

Kaarlenkaski, J. (2007a). *Capricode interview*. Interviewed on March 9, 2007, 10am-11.30am. By telephone; Sääksjärvi, Finland.

Kaarlenkaski, J. (2007b). *Email message on interview data*. Sent on March 13, 2007.

Lehtinen, J. (2007). *Symbicon interview*. Interviewed on March 21, 2007, 11.30am-12.30pm. By telephone; Sääksjärvi, Finland.

Reape, N. (2007a). *Icareus interview*. Interviewed on March 9, 2007, 3pm-4.30pm. By telephone; Sääksjärvi, Finland.

Reape, N. (2007b). *Email message on interview data*. Sent on March 16, 2007.

Rusanen, H. (2007a). *Kitworks interview*. Interviewed on March 20, 2007, 2pm-3pm. By telephone; Sääksjärvi, Finland.

Rusanen, H. (2007b). *Email message on interview data*. Sent on March 28, 2007.

Vantunen, M. (2007a). *Case Symbicon Oy*. Email message. Sent on January 31, 2007.

Vantunen, M. (2007b). *Symbicon interview*. Interviewed on February 20, 2007, 1pm-2.15pm. In person; Helsinki, Finland.

Vantunen, M. (2007c). *Kitworks interview*. Interviewed on February 20, 2007, 2.15pm-3.30pm. In person; Helsinki, Finland.

Vantunen, M. (2007d). *Capricode interview*. Interviewed on February 23, 2007, 8am-9.30am. In person; Helsinki, Finland.

Appendices

Appendice 1: Theme Interview Questions

-keyword related
(see Appendice 2 for the interview sheet)

Keywords	Innovation, Christensen's model
<p>Does innovation increase and create sustained economic growth? How often do investments and revenue match, or revenue exceed investments? In what time?</p> <p>Can innovation be broken down to stages/factors that happen linearly/sequentially?</p> <p>Where did the impulse for the innovation come from? Existing product improved/New product launched/Improved technology(technology trajectory)/Unsatisfied market demands – unacknowledged and acknowledged (trajectory of customer needs)/external or internal stimulus?</p> <p>The ratio of sustaining innovations vs. disruptive innovations?</p> <p>Disruptive innovations: launching them as customer friendly as possible (price, place, promotion, product) or grabbing a niche market (small but a segmented market)?</p> <p>Is Christiansen's model correct: do the two trajectories have different steepness all the time? What if the customers are not aware of the model and are willing to purchase products that are below/above their assumed customer needs? E.g.3G mobile phones with unused, advanced technical properties, or a standardized computer that does not have the programmes the user appreciates: Microsoft office package, Photoshop, mp3s, etc.</p> <p>Are companies aware of the Christensen model? Who uses it and to what extent? Are innovative firms aware of their trajectories?</p> <p>What market segments are the innovative companies after? Up or down?</p>	

Keywords:	Consulting, Consultant
<p>Do consultants have direct power over customers? How much do they influence directly or indirectly?</p> <p>Who started the consulting process: the client contracting Finpro or Finpro contracting the client? If the company, why did they seek management consulting? Was it according to Rope's model and the factors? What was the expected benefit of consulting? Did it happen? If not, why? If Finpro, how? Through advertising, training seminars, other? Was it according to Rope's model? Expected benefits? Did it happen and if not, why?</p> <p>What was the scope and case of the consulting? How wide a project, how many consultants?</p> <p>Who started the consulting process: the client contracting Finpro or Finpro contracting the client? If the company, why did they seek management consulting? Was it according to Rope's model and the factors? What was the expected benefit of consulting? Did it happen? If not, why? If Finpro, how? Through advertising, training seminars, other? Was it according to</p>	

Rope's model? Expected benefits? Did it happen and if not, why?
 The three(fourth from Klaus) **consulting models**: which model/models used and in what stages?
 Did they match the need of the customer? How did the customer/consultant perceive the different roles?
 How easy was it for the customer to **acknowledge a problem**, was it possible to diagnose it internally? What happened with the **consultant's** solution –easy to accept and implement or totally unnecessary? Who owned the problem and solution, was there an issue of change management? Was there a learning process, long-term benefiting? Was the client being listened to in regards the company culture=what would work in their company?
 Descriptions of the **consulting** phases and end results from the viewpoint of the consultant and the client

Keywords:**Finpro, consulting referring to Finpro**

Who started the **consulting process**: the client contracting Finpro or **Finpro** contracting the client? If **Finpro**, how? Through advertising, training seminars, other? Was it according to Rope's model? Expected benefits? Did it happen and if not, why?
 What was the scope and case of the **consulting**? How wide a project, how many consultants?
 Internal/external consultants, **other consulting companies** involved? The role of **cooperative partners** (TEKES, Sitra, TE-Centers, etc.) –did they consult the innovation implementation or in other management issues?
 The scope and structure of **Finpro** cooperative partners in the national innovation system(=innovaatitukijärjestelmä)? How does the cooperation take place, who is involved, what responsibilities/core capabilities different organizations have? How is this perceived by the clients? Where and how does the **national innovation system** kick in? What is left outside its operations?

Keywords:**Client**

Are companies aware of **the Christensen model**? Who uses it and to what extent? Are **innovative** firms aware of their trajectories?
 What market segments are the **innovative** companies after? Up or down?
 Does **innovation** increase and create sustained economic growth? How often do investments and revenue match, or revenue exceed investments? In what time?
 Can **innovation** be broken down to stages/factors that happen linearly/sequentially?
 Where did the impulse for the **innovation** come from? Existing product improved/New product launched/Improved technology(technology trajectory)/Unsatisfied market demands – unacknowledged and acknowledged (trajectory of customer needs)/external or internal stimulus?
 The ratio of sustaining **innovations** vs. disruptive innovations?
 Disruptive **innovations**: launching them as customer friendly as possible (price, place, promotion, product) or grabbing a niche market (small but a segmented market)?
 Who started the **consulting process**: the client contracting Finpro or **Finpro** contracting the client? If the company, why did they seek management consulting? Was it according to Rope's

model and the factors? What was the expected benefit of consulting? Did it happen? If not, why? If **Finpro**, how? Through advertising, training seminars, other?

The three(fourth from Klaus) **consulting models**: which model/models used and in what stages? What was the scope and case of the **consulting**? How wide a project, how many consultants?

Internal/external consultants, **other consulting companies** involved? The role of **cooperative partners** (TEKES, Sitra, TE-Centers, etc.) –did they consult the innovation implementation or in other management issues?

Did they match the need of the customer? How did the customer/consultant perceive the different roles?

How easy was it for the customer to **acknowledge a problem**, was it possible to diagnose it internally? What happened with the **consultant's** solution –easy to accept and implement or totally unnecessary? Who owned the problem and solution, was there an issue of change management? Was there a learning process, long-term benefiting? Was the client being listened to in regards the company culture=what would work in their company?

Descriptions of the **consulting** phases and end results from the viewpoint of the consultant and the client

How is the national innovation system perceived by the clients? Where and how does the **national innovation system** kick in? What is left outside its operations?

Appendice 2: Theme Interview Sheet

THEME INTERVIEW SHEET
CONSULTING FINNISH INNOVATIONS –CASE: FINPRO
TAINA RÄSÄNEN, TAMPERE UNIVERSITY OF APPLIED SCIENCES

Company Information

CEO: _____

Staff total: _____

Location(s): _____

Product Line(s): _____

Market Areas: _____

Finpro Consultant: _____

Company Contact: _____

Product Information

1. Where did the impulse for the innovation come from?

- Existing product improved – e.g. improved technology
- New product launched
- Unsatisfied market demands

2. Was the stimulus to innovate external (e.g. stakeholders, customers) or internal (staff, R&D)?

3. What market segments is the company after?

4. How did the company aim to launch the innovation?

- as customer friendly as possible (price, place, promotion, product)
- grabbing a niche market (small but a segmented market)

Finances: Public/Private/Both?

Did it happen, and why? If not, why?

How easy was it for the customer to acknowledge a problem?

Was it possible to diagnose it internally?

- Finpro contracting the client

How? Through advertising, training seminars, business advisors?

What was the expected benefit of consulting?

Did it happen, and why? If not, why?

How easy was it for the customer to acknowledge a problem?

Was it possible for the client to diagnose it internally?

7. What was the scope and case of the consulting?

8. How extensive was the project? For example, how many consultants and in which countries? Length? Costs?

11. Was other consulting than Finpro used?

- internal consultants (specialists)

- external consultants

- other consulting companies involved

- the national innovation system cooperation e.g. TEKES, Sitra, TE-Centres
When and how did the cooperation begin?

Describe briefly their role: (e.g. innovation/management/funding/..)

Was the customer/consultant aware of the national innovation system?

How is the national innovation system perceived by the interviewee?
