INTERNATIONALIZATION OF SOFTWARE COMPANIES

Case: Le Sphinx

Päivi Lankinen
Anna Tanhuala

Bachelor's thesis
April 2008

School of Business Administration

JYVÄSKYLÄN
AMMATTIKORKEAKOULU

JYVÄSKYLÄ UNIVERSITY OF APPLIED SCIENCES

Author(s)		Type of Publication
LANKINEN, Päivi		Bachelor's Thesis
		Pages 58 / **Language** English
TANHUALA, Anna		Confidential ☐ Until_____

Title
INTERNATIONALIZATION OF SOFTWARE COMPANIES
Case: Le Sphinx, France

Degree Programme
Business Administration

Tutor(s)
KANANEN, Jorma

Assigned by
Le Sphinx

Abstract

The thesis is a market research for Le Sphinx, a French software company. The aim was to find a suitable mode of internationalization and to suggest possible marketing tools. There were two research problems. Firstly, how to increase the company's recognition on the European market and, secondly, to define the company's market potentials in Finland.

The thesis used both qualitative and quantitative research methods. The qualitative data were collected by using a semi-structured interview of an experienced professional in software business. The quantitative data were collected through a questionnaire among the participants of a Le Sphinx training seminar. Additional material was collected from relevant literature and the Internet.

The results showed that Le Sphinx should develop its products, for example, by designing more versatile tests. The availability for students also requires development. Eastern Europe was found out to be the fastest growing area in Europe in software business, whereas Finland was not seen as a profitable marketing area, because of the small number of customers. When discussing distribution and marketing alternatives it became evident that each country should get a representative, who knows the area well. Marketing should be adapted to suit every country's needs. Becoming a market leader requires core competencies, which is one of the issues Le Sphinx should pay attention to.

The distribution and marketing proposals suggested in the thesis can quite easily be implemented. The survey also revealed some competitive advantages, which the company could use more fully, as well as some weaknesses, which should be fixed. Potential customers in Finland are listed in the study, whereas software industry in Europe is dealt with in more general terms. Therefore it would be advisable for the company to do more detailed market research before entering new markets.

Keywords
market research, Europe, software business

Miscellaneous

Tekijä(t) LANKINEN, Päivi TANHUALA, Anna	Julkaisun laji Opinnäytetyö	
	Sivumäärä 58	Julkaisun kieli englanti
	Luottamuksellisuus ☐ Salainen _____saakka	

Työn nimi
OHJELMISTOYRITYSTEN KANSAINVÄLISTYMINEN
Case: Le Sphinx, Ranska

Koulutusohjelma
Liiketalouden koulutusohjelma

Työn ohjaaja(t)
KANANEN, Jorma

Toimeksiantaja(t)
Le Sphinx

Tiivistelmä
Opinnäytetyö on markkinatutkimus ranskalaiselle ohjelmistoyritykselle, Le Sphinx:lle.
Tavoitteena oli löytää vaihtoehtoja kansainvälistymiseen erilaisten markkinointikeinojen avulla.
Tutkimusongelmat opinnäytetyössä olivat tunnettuuden parantaminen Euroopan markkinoilla ja
Suomen markkinapotentiaalin selvittäminen.

Opinnäytetyössä käytettiin kvalitatiivista ja kvantitatiivista tutkimusotetta. Kvalitatiivinen aineisto
saatiin käyttämällä teemahaastattelua, jossa haastateltiin ohjelmistoliiketoiminnan ammattilaista.
Kvantitatiivinen aineisto saatiin tekemällä kysely Sphinx-koulutustilaisuuteen osallistuneille,
minkä lisäksi materiaalia kerättiin kirjallisuuslähteistä ja internetistä.

Tuloksista ilmeni, että Le Sphinx:n pitäisi kehittää tuotteitaan mm. mahdollistamaan
monipuolisemmat testit. Myös saatavuus opiskelijoille vaatii kehittämistä. Itä-Eurooppa todettiin
ohjelmistoteollisuuden nopeimmin kasvavaksi alueeksi Euroopassa, kun taas Suomea ei koettu
kannattavaksi markkina-alueeksi vähäisen asiakasmäärän vuoksi. Jakelu- ja
markkinointivaihtoehtoja pohdittaessa ilmeni, että joka maahan pitäisi hankkia edustaja, joka
tuntee kyseisen alueen. Markkinointia pitäisi soveltaa markkina-alueittain. Markkinajohtajaksi
pääsy edellyttäisi selkeää ydinosaamista, johon Le Sphinx:n kannattaa panostaa.

Opinnäytetyössä esiin tulleita jakelu- ja markkinointiehdotuksia on mahdollista hyödyntää
käytännössä. Tutkimuksesta selviävät kilpailukeinot, joihin yrityksen kannattaa panostaa, kun taas
esiin tulleisiin yrityksen heikkouksiin pitäisi puuttua. Potentiaaliset asiakkaat Suomessa käyvät
ilmi opinnäytetyöstä ja ohjelmistoteollisuus Euroopassa käsitellään yleisesti. Jokaisesta maasta
tulisi näin ollen tehdä tarkemmat markkinatutkimukset ennen markkinoille menemistä.

Avainsanat (asiasanat)
markkinatutkimus, Eurooppa, ohjelmistoliiketoiminta

Muut tiedot

CONTENTS

FIGURES

TABLES

1 INTRODUCTION

This thesis is a market research for Le Sphinx, a French software company, which produces statistical analysis software. The three main products of the company are Declic, Sphinx Survey and Sphinx Online Manager. Le Sphinx is well known in France and its goal is to make the company better known also elsewhere in Europe.

This thesis was assigned by Le Sphinx because the company needed information based on market research. The researchers of this survey have concentrated on international business in their studies, so this kind of assignment made it possible to use the learned skills in practice. The company's present need of an internationalization plan makes this thesis topical and important. Le Sphinx has already started but so far the analyses have not been extensive so the internationalization process has not been efficient enough.

The company, its products and customers are introduced at the beginning of this survey. After that the strengths, weaknesses, opportunities and threats of the company are studied by using a SWOT analysis. Next comes the section describing Europe as a market area for a software company dealing with software industry, competitors and different kinds of areas in Europe. The section titled Case Finland includes a description of the market situation and market potentials. The Sphinx training seminar is also reviewed in this section. After the market area research there is a chapter, which deals with entering to the European market. It includes basic information on globalization, software products and services as well as about marketing tools and internationalization process of a software company. At the end of the thesis development proposals for the products, Europe and Finland as a market area and the distribution and marketing of Le Sphinx are discussed. Finally the used research methods are assessed.

Research problems

The research problem consists of two main issues. The first is to study how to make the company well-known in Europe. The other issue is Case Finland, which consists of more detailed research. What kind of demand is there in Finland and how could the company become better known there? Profitability of internationalization is re-

searched from the viewpoint of demand. Marketing tools and distribution of these kinds of products are also surveyed. The goal is to find different kind of options and proposals for the internationalization of the company. Profitability of different areas in Europe are studied by dividing Europe into areas. The research includes a competitor analysis and also a study of software industry in Europe.

Methods used

Methods of the thesis are largely qualitative, but also quantitative. The sources of information are mainly literature and the Internet. The study includes an interview of an expert in the field, in which qualitative approach is used. The interview deals with the market situation of a software company in Finland. The material was collected through thematical interview. It consists of three themes, which are Finland as a market area, the product and its features, and Finland compared to Europe as a whole. The questionnaire of the thematical interview can be seen from Appendix 5.

The aim of qualitative data collection is to help the researcher to create an understanding of the phenomenon examined. Sufficient material brings out a basic theoretical structure of the examined target. (Eskola, Suoranta. 2000. 61–63.)

The interviewee is Mr. Heikki Marttila. He is an expert with 20 years' experience in the software business. Marttila has been an enterpriser over 30 years and he has a Master's degree in Technology and automation engineering. Marttila has been in the software business from the year 1981 until the year 2002 when he sold the software business he owned then. (Marttila 2008.)

The qualitative section of the study consists of a survey conducted among teachers of the university of applied sciences during a Sphinx training seminar. The survey was performed by using a questionnaire and its aim was to get feedback on Le Sphinx products. Another aim was to collect end-users' opinions of features required from statistical software. The questionnaire can be seen in Appendix 4.

2 LE SPHINX

The company

Le Sphinx was founded 25 years ago in Annecy and Grenoble. The company is focused on surveys and data analysis software. (Le Sphinx 2008.) The company has 30 employees and the turnover of the company was about 2.5 million euros in 2006. Le Sphinx has over 30,000 customers all over the world and it has partners in 10 different countries: Belgium, Brazil, Canada, East and West Africa, Germany, Ireland, Italy, Morocco, Poland and Switzerland. The company has not partners in the Nordic countries or Asia yet. (Le Sphinx 2007c.)

Customers

Le Sphinx has three types of customers: consultancy companies and research centres, internal departments of management, small and medium-sized enterprises (1) and big concerns (2), and educational institutions (3). Examples of different kinds of customers are hospitals, airline companies and many universities. (Le Sphinx 2007c.)

In France the company has customers in many fields, because the product can be used in many ways and it is well-known in France. Because the product can be tailored to meet the customer's needs, it is, in fact, suitable for all kinds of companies. Potential customers in the new market areas in Europe are mainly schools, banks, hospitals, consulting companies and insurance companies. (Batissat 2007.)

It is important to find the most profitable customers; with sales potential large enough to cover the internationalization costs. The target group should, however, not be too big so that Le Sphinx can meet the needs of the group, because at least at the beginning it is important to guarantee customer satisfaction. (Hoch, Roeding, Purkert, Lindne, Müller 2000, 130.)

2.1 Products

Le Sphinx has three main products: Declic, Sphinx Survey and SphinxOnline Manager. These software programmes can be tailored to meet the customers' needs. With

these programs customers can conduct surveys and analyze them, collect data and analyse it. (Le Sphinx 2007c.) The data, that Le Sphinx software yields can be transmitted to a word processing programme (Le Sphinx 2007a).These three products are available in English, French, German, Spanish and Portuguese (Le Sphinx 2008).

Declic

Customers can use Declic if they want to prepare a questionnaire, send it by e-mail, collect the answers and get the results. With Declic customers can, for example, create a small-scale customer satisfaction survey and process, collect and analyse the data. Customers need not install any software because the software works via the Internet. It means that customer goes to the Le Sphinx website where he/she can create a questionnaire and then send it by e-mail to his/her customers, for example. Customers need not be taught to use this software. The use of Declic costs 400 euros per 3 months and 990 euros per year. (Le Sphinx 2007b; Le Sphinx 2008.)

Sphinx Survey

With Sphinx Survey customers can use all the data collecting and analyzing methods. The software can be used, for example, by managers of the surveys, professors and teachers, marketing departments, quality control department and personnel department. The survey can be organized from the questionnaire to a report. Customers can also analyze open questions with this software and form graphic tables. Customers do not need to have statistical or technical skills to form the survey but if they want a more extensive analysis, Le Sphinx can organise training days. The software can be loaded to the customer's computer or installed from a CD-rom. One license of Sphinx Survey costs 1,800 euros and the next ones 430 euros. (Le Sphinx 2007f.) For educational institutes, for example, 24 licenses cost 2,350 euros. (Kananen, Sphinx training seminar 2008.)

SphinxOnline Manager

This software was created for bigger companies which want to have this system on their own server and guarantee full confidentiality (Uusimäki 2007). With SphinxOnline Manager the customer has all the web resources for hosting, circulating and managing the web questionnaires. The customer can manage several or voluminous surveys online and share the data with collaborators on other sites. This software also makes it possible to the customer to install the survey in a personalized environ-

ment and to give access for collaborators to survey tools. The price for this software starts from 3,500 euros. (Le Sphinx 2008.)

Extra modules

Le Sphinx also offers many different extra modules for Sphinx Survey. Sphinx CATI is one of these and it is designed for phone surveys. Sphinx Lexica is also an extra module for Sphinx Survey and with the help of it the customer can carry out extensive qualitative text analyses. Sphinx Survey's extra module Sphinx Scanner automates the data input. (Le Sphinx 2007a; Le Sphinx 2007d; Le Sphinx 2007e.) The figure on the following page gives more specific information about the software and the extra modules.

Services

Le Sphinx offers different services for their customers to support their usage of Le Sphinx software. Customers can use a hotline service, if they need support with using the software. Customers are in contact with the support team by telephone or by e-mail. Coaching is also possible and that means that a Le Sphinx consultant follows the customer's project and guides him/her through the procedures. Le Sphinx has four different formulas for training. They are company training, tailored training, teletraining and an advanced training workshop. The last mentioned is delivered only in French. Customers can also have guidance from the consultants when studying to use the software. The prices of services that Le Sphinx offers vary, so customers can use the services according to their budgets. (Le Sphinx 2008.)

		Declic	Sphinx Survey	Sphinxonline Manager
Questionnaire	Write the questionnaire	x		x
	Automatic design	x		x
	Customize design	Windows version		x
	Insert multimedia objects (pictures, videos, sounds, flash)			x
	Multilanguages surveys			x
Data Collection	Manual data entry	x	x	x
	Diffuse by e-mail, follow-up and reminders	ASP version	Web option	x
	Automatic document capture (scanner)	ASP version	Web option	x
	Online surveys		x	x
	Import external data (xls, txt, csv, mdb)		Scanner option	
	Phone surveys and management of platform operators		CATI option	
Analysis	Automatic data processing	x	x	x
	Uni and bivariate analyses	x	x	x
	Multivariate analysis (AFC, Multiple regression, variance analysis, etc)		x	x
	Content analysis		x	x
	Text analysis and textmining		Lexica option	x
	Datamining and scoring		x	x
	Produce result charts and generate reports		x	x
	Data management (weighting, data merge, …)	Windows version	x	x
Administration and sharing	Panel management			Web panel option
	Authentification management			x
	Online reporting			Web reporting option
	Multiple survey management and evaluation			Eval Net option
	Workgroup management			x
	User management			x

FIGURE 1. Products of Le Sphinx. The figure is lent from Le Sphinx 2007d; presentation

2.3 SWOT analysis

A SWOT analysis includes internal strengths and weaknesses, and external opportunities and threats of the company. The most important target of a SWOT analysis is that the strengths would match the environment's opportunities. This creates a competitive advantage for the company and it is a key of their success. It is also necessary to recognise weaknesses so that they could be fixed or the company could operate with a strategy, in which weaknesses do not matter. The threats of the environment are serious matters and if something is done about them early enough, they could possibly be removed. (Nurmi 2000, 57.)

	Internal	External
Positive	Strengths	Opportunities
Negative	Weaknesses	Threats

FIGURE 2. Swot analysis.

Strengths

The strengths of Le Sphinx are mainly a very competitive price, user-friendly programmes and an inclusive product. The prices of the products are inexpensive compared with products of the same type used in Europe. The software of Le Sphinx is easy to use and it is directed both to experts and beginners. The products cover the entire process, which means that they have everything in one package. That makes it possible to create diverse research with one program. The ability to conduct also qualitative surveys gives a good competitive advantage for Le Sphinx compared to competitors. According to the International Manager of Le Sphinx, Claire Batissat, there is no exactly similar product on the market. (Batissat 2007.)

During the Sphinx training seminar it was shown that the prices of Le Sphinx statistical software are substantially lower than for example SPSS, which is used in most schools in Finland. Because the licence is paid only once, not annually, customers benefit financially. The fee of access rights is paid only once. (Kananen, Sphinx training seminar 2008.)

A couple of positive aspects regarding the product came up. The possibility to handle an extensive amount of text data was regarded as a strength of the product. The visual outlook of the software is user-friendly, which is a very positive thing, at least when using the software in teaching. (Kananen, Sphinx training seminar 2008.)

Weaknesses

A weakness is that software is not able to procedure as deep analyses as SPSS for example. The feedback has shown that there have been some problems in using the products because of the manual which does not include everything. Quite cheap prices have also created credibility problems for the company. (Batissat 2007.)

From the students' viewpoint, availability was regarded as a weakness in the training seminar. Because licenses are installed to particular computers, it limits the use of the software. In case of SPSS, for example, it is possible to use the software in all computers in the organisation, which has bought the licences. The only limitation is the particular number of user rights, but the use is possible wherever the student wants to at school. (Kananen, Sphinx training seminar 2008.)

Opportunities

The opportunities of Le Sphinx seem to be quite good because of the continuous expansion of the company and the growth of demand. The company has competitive products and prices, and therefore it is in demand. Finding a profitable and right distribution channel and increasing credibility are issues on which the company has to focus on in future. (Batissat 2007.)

Threats

The threats of the company are competitors and mainly the best known statistical analysis software, SPSS, especially in Europe. It has a monopoly status, and therefore hardly replaced by other software. Finding the right customers and partners is one of the most important challenges, and wrong decisions in these matters could turn into threats. Problems with credibility can also become a threat, unless customers' attitudes will be changed, for example, by improving the image through marketing. (Batissat 2007.)

3 EUROPE AS A MARKET AREA FOR SOFTWARE COMPANIES

3.1 Software industry in Europe

The software market is divided into two sectors: applications software and systems/database management software. Applications software consists of enterprise, technical and entertainment software meant for businesses and home users. Systems/database management software is directed mainly for companies which need to organize information, for example, customer registers. (Datamonitor 2006, 6.)

In Datamonitor's survey Europe is regarded to consist of the following countries: Belgium, Denmark, France, Germany, Italy, the Netherlands, Norway, Spain, Sweden, the United Kingdom, the Czech Republic, Hungary, Poland and Russia. Asia-Pacific consists of Australia, China, India, Japan, Singapore, South Korea and Taiwan. (Datamonitor 2006, 6.)

Key figures

The value of the European software market was $73.3 billion in 2006, showing an increase of 5.4% from the year 2005. The forecasted value for the year 2011 is $91.9 billion. The annual growth in 2006-2011 is predicted to be 4.6%. The sales of applications software is 47.5% and the share of systems software is 52.5% of the value of the European market. The most profitable software market area in Europe is France, which has 23.7% market share of the European market value. (Datamonitor 2006, 3, 6.)

Software market segmentation in Europe

Italy
6.3% %

Rest of the
Europe
39.4%

Germany
18.4%

France
23.7%

United Kingdom
22.2%

- Italy
- Germany
- United Kingdom
- France
- Rest of the Europe
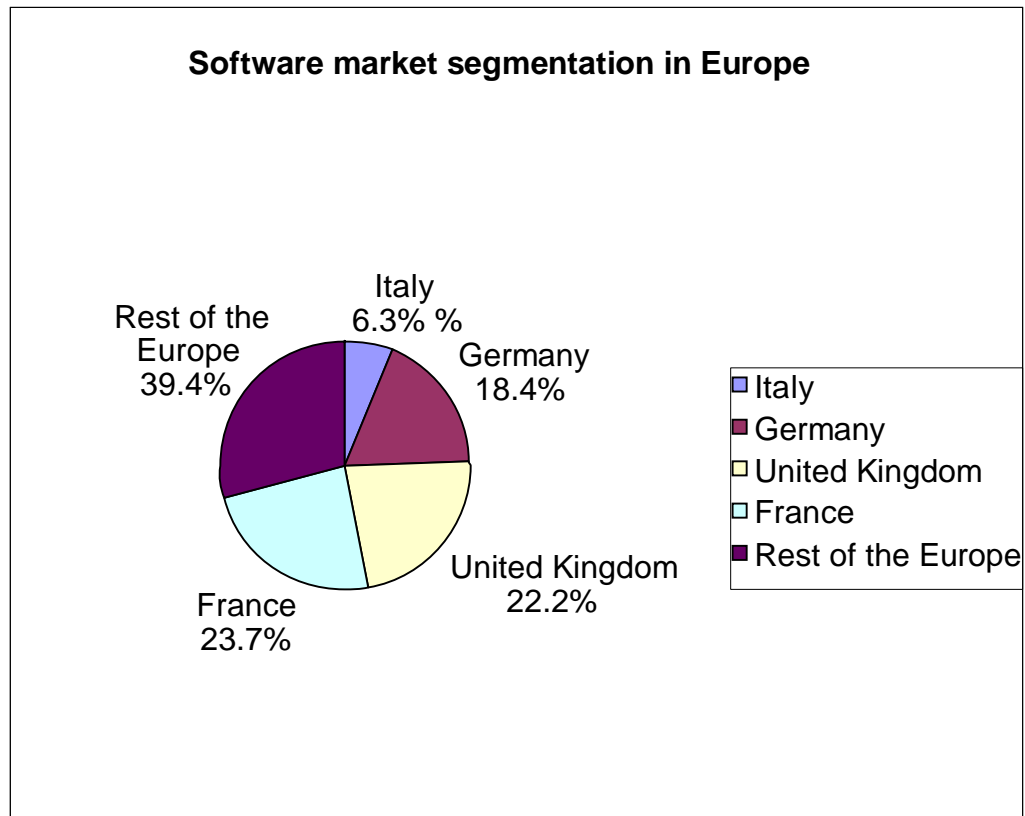
FIGURE 3. European software market segmentation 2006. The figure is based on Datamonitor's 2006 research.

Europe vs. Asia-Pacific and the USA

The software market in Europe has grown in the last five years. The average annual growth rate was 4.9% in 2002-2006. Comparable figures in the USA were 3.4% and in the Asia-Pacific 11.5%. Europe's predicted growth rate will be 4.6%, in the Asia-Pacific 8.3% and in the USA 6%. (Datamonitor 2006, 7.)

Leading companies

The three biggest software companies in the European market are American companies: Microsoft Corporation, Oracle Corporation and International Business Machines Corporation (IBM). These companies operate globally and they offer many different solutions and software both for companies and private persons. (Datamonitor 2006, 12.)

3.2 Competitors

SPSS

SPSS is the best known competitor because of its status as a worldwide leader of predictive analytics software and solutions. The company has customers almost in every industry all around the world. (SPSS Inc.)

SPSS operates in over 80 countries and the turnover of the company is annually over 200 million dollars. Globally there are over 250,000 organizations which use the services of SPSS. The company offers tools for collecting, analyzing and modifying information to support decision-making. (SPSS Finland Oy.)

The company has a lot of different products and the prices vary depending on the product and what is included in it (SPSS Inc.). For example, the basic model in Finland, SPSS for Windows Base for one user with maintenance costs 1,769 euros with value-added tax (Moonsoft Oy).

Other competitors

There are a lot of statistical programs, which work with Excel. Microsoft Excel is a spreadsheet program and these statistical features are extra modules for Excel. For example, Addinsoft offers software like this, XLSTAT. (Addinsoft.) Another program of this kind is Analyse-it, which is offered by Analyse-it Software Ltd. (Analyse-it Software, Ltd.)

There is also text analysis software for qualitative surveys. For example, QDA Miner and WordStat are competitors used for these kinds of surveys (Kovach Computing Services.). Other competing software is, for example, S-PLUS, SAS and Minitab (Scientific COMPUTING 2006). More information about the applications of the three software and some others can be found in Appendix 2.

There are also a lot of free statistical software in the market and they are also competitors for the Le Sphinx products. More information about the applications can be found in Appendix 1.

SURVO MM

SURVO MM software is a Finnish competitor for the Le Sphinx products. It was released in 2001 and it works with Windows. It costs 1050 euros to commercial companies, 720 euros to universities of applied sciences and from 1040 euros up to 2000 euros to universities, depending on the number of students there are at the university. (SURVO MM 2008.)

SURVO MM is a data processing system where data can be entered to and analysed by using different kinds of commands. The company introduced new commands every year since 2001. It is also possible to transmit the results that SURVO gives to a word processor, for example, transmit tables or figures done with SURVO to Microsoft Word. (SURVO MM 2008.)

Here are some applications included in SURVO currently:

- text processing and spreadsheet calculations
- presentation and statistical graphics
- making of printed publications and web pages
- automation of repeating reports
- large data base management
- statistical computing and analysis
- numerical computing, matrix interpreter
- programming of expert applications
- creating teaching programs. (SURVO MM 2008.)

3.3 Europe divided

The European Union has 27 member countries: the Netherlands, Belgium, Bulgaria, Spain, Ireland, Italy, Austria, Greece, Cyprus, Latvia, Lithuania, Luxembourg, Malta, Portugal, Poland, France, Romania, Sweden, Germany, Slovakia, Slovenia, Finland, Denmark, the Czech Republic, Hungary, Estonia and the United Kingdom. Other

European countries are Iceland, Norway, Belarus, Ukraine, Moldova, Serbia, Bosnia-Herzegovina, Croatia, Montenegro, Albania, Macedonia, Switzerland, Turkey and Russia. (Europa 2008.) After Kosovo declared independence, Europe has one more country.

The four biggest software market areas in Europe are France (23.7%), the United Kingdom (22.2%), Germany (18.4%) and Italy (6.3%) (Datamonitor 2006, 10). These are the markets software companies should go after first. Other bigger groups of countries and markets are the Benelux (Belgium, Netherlands and Luxembourg), Iberia (Spain and Portugal) and the Nordic countries (Denmark, Norway, Sweden and Finland). Switzerland can be divided into three regions by language groups. They can therefore be associated with Germany, France and Italy. Austria can also be added to the German-speaking territory. (Philips 1998, 57.)

Eastern Europe

Software business is doing well not only in Western Europe but also in Eastern and Central Europe. Software industry is also growing in Poland, Russia, Hungary and the Czech Republic. In 2006 these markets grew by 7.9-18.3%. (Software: Europe 2006.)

Eastern Europe's national economies are growing fast and they are expected to grow rapidly also in the future, because these countries have quite low labour costs, educated and skilled workforce and the environment is favourable to companies. That is why these countries have also attracted international companies to invest in these countries. This also helps companies in Eastern Europe to increase their production and expand overseas. The standard of living is growing gradually which results in growth in private consumption and domestic demand. (Sampo Pankki Oyj 2007b.) Because most countries in Eastern Europe belong to the EU, the area is more stable financially and politically than some other developing countries. Economic growth is stronger in Eastern Europe than in Western Europe now. (Sampo Pankki Oyj 2007a.)

Eastern European countries can be regarded as an entity. The education level is high there and mathematical know-how is even better than in Finland. They also use English as a business language, as the German language has lost its position as a business language to a great extent. The only weakness is the purchasing power of the consum-

ers, which is lower than in Finland, for example. It means that the company's prices have to be at the same level with purchasing power. (Marttila 2008.)

Nordic countries

Most of the software producers divide the Nordic countries into language areas. These areas could then be Norway and Sweden, Finland and Estonia. Denmark is usually regarded as one market area. Past experiences have made it clear that it is not profitable to sell software via Stockholm to Finland. For the same reason a French company should operate directly with a Finnish agent or by itself. The company probably should hire one person in Finland to take care of selling at the expense of the company. Sales should be started with a low profile so that the product stays in the market and gets more users. The beginning is slower but the result is better and more constant. The fact that the company is operating locally creates trust. The quality of the services provided is more important than, for example, the size of the organization behind the product. (Marttila 2008.)

It is not possible to use the same marketing tools throughout the Nordic countries. In every country marketing should be based on consumers' habits, buying routines and local needs. For example, when a company is launching a new product in Sweden, a lot of discussions and presentations are in order which is not the case in the Finnish market. (Marttila 2008.)

As a whole, Europe can be treated as one area excluding France and Germany. France has been considered not so international because French people want to use their own language. It might be a problem that the software manuals are not so easily understandable. Elsewhere in Europe English is used as a business language in meetings so that the documentation gets done for international use at the same time. (Marttila 2008.)

4 CASE FINLAND

4.1 Market situation in Finland

The value of software market in Finland was about 3.8 billion euros in 2005 (Saari, Vainio 2005). Value added tax of software programs is 22% in Finland (Laatutieto 2008). Quite low corporate tax (26%) compared to other European countries makes Finland an attractive market area for the foreign companies and gives a great possibility for companies to operate there. In Finland there is a good level of skills and know-how. Finns' attitude towards high technology is positive. (Saari, Vainio 2005.)

In Finland, it is possible to contact the end customer directly, which is not always so simple elsewhere. The reason for this is trust, technically oriented people and willingness to try new products. (Saari, Vainio 2005.)

Finns use the Internet daily in many different ways, like bank transactions or purchasing tickets, for example. In international comparison, the number of Internet users is high in Finland. About 80 percent of Finns can use the Internet and half of these people use it daily. (Tieke 2005, 4.)

In the 21st century Finland has been on top of the World Economic Forum's competitiveness studies. Finland has been named one of the most developed IT economies. It has also succeeded in the OECD's PISA studies. PISA surveys young people's learning skills and educational attainments. High level education and the development of the information and communication infrastructure play an important role in Finland. (Tieke 2005, 6.)

The economy of Finland can be said to be highly open, specialized and networked. Networking is common between universities, industries and in the business sector. Finland offers companies an innovative environment. (Tieke 2005, 7, 11.) Finland is said to be a great country to test new products and services because of people's positive attitude to new products and small risks due to the non-existent level of corruption

(Saari, Vainio 2005). The biggest competitor of Le Sphinx, SPSS, has about 1,000 customer organisations in Finland. These customers operate almost in every industry. (SPSS Finland Oy.)

All the software products that require tailoring do not succeed in Finland, because usually only insurance companies and banks can afford tailoring. Because the Finnish market is so small, distribution of this kind of special software isn't profitable. This is why volume distributors do not want to sell products like this. The product does not give anyone extra earnings. The distributor should just take this software to his/her selling program and do the necessary investments. It would probably not be profitable for the importer or agent or some other organisation to spend money on the distribution of the product. One alternative could be that some student groups would take care of distribution, for example, within the of students' union. In this case the problem is that continuity could not probably be guaranteed the way it should. (Marttila 2008.)

4.2 Market potentials in Finland

Educational institutes, Universities and Universities of Applied Sciences
There are 20 universities in Finland, which operate under the Ministry of Education. ten of these are multidisciplinary and there are three Schools of Economics. There are also three Universities of Technology and four Universities of Art and Design. In Finland there are also six university centres, which supplement a field of university in areas, which don't have universities of their own. (Ministry of Education.)

In Finland there are 28 universities of applied sciences, which operate under the Ministry of education. There are seven municipal universities of applied sciences, eleven universities of applied sciences of federation of municipalities and ten private universities of applied sciences. Also six provincial universities of applied sciences service territorial needs. (Ministry of Education.)

As to educational software, the problem is that educational institutions have rules and regulations regarding the purchases of software. SPSS is also a standard and often

required so that the reliability of results is proved. University students should be able to use SPSS because of further studies and international connections.Therefore this kind of software should be offered to customer groups which really have an interest in and a need for this kind of product. (Marttila 2008.)

When the company wants to make educational institutions become users of the software, it should be able to show the software offers benefits which SPSS cannot offer. It can be difficult to get the position of the market leader, because SPSS is so widely used in many sectors. (Marttila 2008.)

Financial institutions, banks

At the end of 2005, there were 345 banks in Finland. Combined market share of Nordea Bank Finland, Sampo and OP-group together, is over 80 percent of bank markets in Finland. (Suomen pankkiyhdistys 2006, 2.) The bank concerns and the number of their offices can be seen in the next page's Table 1.

TABLE 1. Bank concerns operating in Finland 31.12.2005. The table is adapted from Suomen Pankkiyhdistys (the Finnish Bankers' Association) web pages.

	balance million eu-ros	human resources (concern)	offices (deposit banks)
Finnish banks		**28 976**	**1 567**
Nordea Pankki, Suomi 1)	123 711	8 910	318
OP-group 2)	52 845	11 973	680
Sampo 3)	42 985	4 369 3)	122 3)
Säästöpankki	4 894	1 106	197
Aktia	4 554	814	74
Paikallisosuuspankki	3 231	715	142
Ålandsbanken	2 170	472	26
Evli Pankki	612	289	3
eQ Pankki	540	127	1
Kaupthing Bank 4)	34 014	90	1
AsuntoHypoPankki 4)	475	30	1
Tapiola Pankki	330	42	1
Gyllenberg Private Bank 5)		39	1
Foreing Banks operating in Finland		**949**	**49**
Danske Bank	326 400	61	1
Skandinaviska Enskilda Banken (SEB)	210 471	147	1
Handelsbanken	167 500	582	36
DnB NOR Bank	135 607	5	1
Carnegie AB		51	1
Citibank		44	2
Deutsche Bank		17	1
Calyon		14	1
HSH Nordbank		14	1
Norddeutsche Landesbank 6)		6	1
EFG Investment Bank		2	1
Forex Bank			1
FöreningsSparbanken (Swedbank)		6	1
Banks in total		**29 925**	**1 616**
1) Nordea Pankki Suomi Oyj belongs to the Nordea Bank concern, balance of the concern is 325 549 million euros 2) Pohjola's human resources share is 2 788 3) Sampo Oyj's investment service companies was moved to the ownership of Sampo Pankki Oyj 31.12.2005. Human resources and offices, related to a bank operating. 4) Balance of the whole concern 5) SEB-owned subsidiary 6) Since 2.1.2006 Bank DnB NORD A/S			

Insurance companies

In Finland private companies usually take care of legal and necessary insurances. There are certain statutory insurance policies companies have to take e.g. employee pension, traffic and personal accident insurance policies. It is typical in Finland that statutory insurance premiums form the biggest share of the combined income of the entire insurance business. (Suomen pankkiyhdistys 2006, 17.)

In Finland there operate 68 insurance companies and 46 of these are Finnish. There are also 100 local insurance associations, which operate in the sector of insurance against loss or damage. Some companies take care of retirement pension insurances through a pension fund. In the year 2005 insurance income of domestic companies grew almost by 8 percent to 14.4 billion euros. The combined market share with different insurance types of the four biggest insurance company groups is 80-90 percent. (Suomen pankkiyhdistys 2006, 17.)

There are seven employee pension companies in Finland and Varma has the biggest market share of 34.4%. Ilmarinen's market share is 29.2% and Eläke-Tapiola's 14.5%. The rest of the employee pension companies are Eläke-Fennia, Etera, Eläke-Veritas and Pensions-Ålanda. (Suomen pankkiyhdistys 2006, 19.)

The biggest indemnity insurance companies in the year 2005 were If Vakuutus (market share 28.7%), Pohjola-yhtiöt (26.1%) and Tapiola-yhtiöt (18.3%). There are also other smaller companies like Fennia and Lähivakuutusryhmä. (Suomen pankki-yhdistys 2006, 20.)

Market research companies

In Finland there are 94 companies which offer market research services (Kompass). Fourteen of them are members of the Suomen Markkinatutkimusliitto Ry (Finnish Association of Marketing Research Agencies). These companies are A.C. Nielsen Finland Oy, Add Value Research Finland Oy, Consumer Compass Oy, Corporate Image Oy, Finnpanel Oy, IRO Research Oy tutkimustoimisto, TNS-Radar Research Consulting Oy, Otantatutkimus Oy, Oy Palvelu Plus - Service Plus Ltd, Reed Business Information Finland Oy, Research International Finland Oy, Taloustutkimus Oy, Tietoykkönen Oy and TNS Gallup Oy. (Suomen Markkinatutkimusliitto Ry 2007.)

TABLE 2. Market potentials in Finland.

Market potentials in Finland	
Universities	20
Universities of applied sciences	28
Bank concerns	26
Insurance companies	68
Market research companies	94
total	**236**

This table is suggesting some potential customer groups for Le Sphinx. As can be seen from the table, there are almost 50 educational institutions in Finland, where this kind of statistical software could be used. Market research companies are the biggest potential target group for Le Sphinx, because there are over 90 of them in Finland. Insurance companies are the second largest group. There are almost 70 of them in Finland. There are also 26 bank concerns in Finland.

4.3 Sphinx training seminar

The Jyväskylä University of Applied Sciences organized a Sphinx training day titled "Modern tools of quantitative and qualitative research" on March 14, 2008. The aim of the day was to introduce Sphinx Survey software. Invitations were sent to 25 Finnish universities of applied sciences and their units. The number of participants was quite small because there were only eight of them. At the end fo training day the participants completed a questionnaire collecting feedback on Sphinx Survey. The questionnaire can be seen in Finnish in Appendix 4 and in English in Appendix 5. Here are the respondents' opinions of the advantages of the software:

- flexible to use
- clear and easy to adopt
- visual, clear, produces a questionnaire

- surely easy, with more experience
- easy to use
- very easy to create a form and modify it
- easy to use, logical (Kananen, Sphinx training seminar 2008.)

Here are respondents' opinions about weak points of the product:

- in addition to working through menus, there should also be an opportunity of creating software syntax, like e.g. SPSS
- perhaps not as diverse as SPSS, for example
- transferring data into Word was difficult
- tests are more clear in SPSS
- a small number of statistical processes/tests
- graphic opportunities were not explained clearly enough
- not diverse enough (Kananen, Sphinx training seminar 2008.)

All the respondents informed that they use SPSS now. In addition, NVivo, Excel and Digium are in use. Participants' opinions of the programs were:

- SPSS: easy to use, suitable for ad hoc –surveys
- N-vivo is quite difficult; basics of SPSS are ok, but statistical analyses and else "toing and froing" is difficult
- SPSS is ok, because the respondent is used to its faults
- SPSS is very diverse and good software, but its graphics are too complicated
- Excel and SPSS work and SPSS have a lot of features
- Digium is inexpensive and easy
- SPSS is maybe too diverse for the beginner
- SPSS is complicated and hard to learn (Kananen, Sphinx training seminar 2008.)

It can be seen from the answers that the respondents appreciate versatile features and tests of SPSS. It means that one of the weak points of Sphinx Survey is its lack of sta-

tistical processes and tests. It is not as diverse as SPSS. (Kananen, Sphinx training seminar 2008.) This can also be seen in Appendices 2 and 3, where the statistical procedures of some statistical software are listed.

The respondents were asked to rate the statement "I could consider replacing my present statistical software with Sphinx". The answer alternatives were totally disagreeing, slightly disagreeing, slightly agreeing and totally agreeing. Five of the participators answered this question. Two of them thought that they are slightly agreeing and one thought that he is slightly disagreeing. Two respondents thought that they are totally agreeing, even though one of them said that Sphinx could be used alongside with other statistical software. (Kananen, Sphinx training seminar 2008.)

TABLE 3. Importance of specific features in statistical analysis software.

How important do you think the following features are in statistical analysis software?					
	Easy to use	Inexpensive price	Finnish language	Versatility	Compatibility with other software	Students' opportunity for use
Respondent 1	3	3	1	4	4	2
Respondent 2	4	3	2	4	4	4
Respondent 3	4	2	1	4	4	4
Respondent 4	2	3	3	4	4	4
Respondent 5	3	3	1	4	4	4
Respondent 6	3	3	1	4	4	4
Respondent 7	3	2	1	4	4	4
Respondent 8	2	1	3	4	4	4

1 = not important, 2 = somewhat important, 3 = important, 4 = very important

The participants were asked to mark how important they thought some specific features are in statistical analysis software. The given answer possibilities were not important, somewhat important, important and very important. Versatility, compatibility with other software and students' opportunities to use the software were considered

very important features. The most of respondents did not think that the Finnish language was an important matter in statistical analysis software. According to them, software should be easy to use and inexpensive. (Kananen, Sphinx training seminar 2008.)

TABLE 4. The most important features when purchasing statistical software.

The five most important features regarding the purchase of statistical software								
	Resp. 1	Resp. 2	Resp. 3	Resp. 4	Resp. 5	Resp. 6	Resp. 7	Resp.8
Versatility of software	1	1	1	3	1	1	1	2
Low price	4		5	4	4		3	
Broad statistical analysis calculation opportunities	2	2		5	2	2	4	1
Reliability of maintenance services	3		4					4
Ease of use		3	2	1	3	3	2	
Advantage to the organizati-on				2	5	5	5	3
Training offered by seller								5
Other users' experiences of systems			3					
Image of seller company								
Good image of product						4		
Earlier experience of software								
Fast delivery time								

1 = most important, 2 = second most important etc.

The respondents were asked to put the features seen in Table 4 in order of importance. All respondents named three to five important features which can be seen in the table. Most of the respondents thought that the versatility of software is the most important feature when purchasing statistical software. Other important features were low price, broad statistical analysis calculation opportunities, reliability of maintenance services, ease of use and the advantage to the organization. Three features were marked only once. They were training offered by the seller, other users' experiences of the systems and the good image of the product. (Kananen, Sphinx training seminar 2008.)

5 ENTERING THE EUROPEAN MARKET

5.1 Going global

Internationalization includes three main steps. They are planning, then analysing and, finally, implementation. Entering a new market area starts with the decision of going international and selecting the mode of internationalization. There is three basic ways to do it: the "organic" growth path, "collaborative" growth path and the "born global" path. After choosing the suitable path, research and analyses are required. (Äijö, Kuivalainen, Saarenketo, Lindqvist & Hanninen 2005, xiv.)

The process starts with an analysis of the starting point. The analysis of the company and the global environment come next and after that the company should start to analyze the selected target countries and the existing products. This includes the analyses of customers, competitors and entry modes, channels and partners. After that comes the stage of SWOT analysis. (Äijö, Kuivalainen, Saarenketo, Lindqvist & Hanninen 2005, xiv.)

There are also ways to make a more detailed survey to support the selected strategies. The company should plan the process for an international competitive strategy. The final stage is to operate according to this strategy. (Äijö, Kuivalainen, Saarenketo, Lindqvist & Hanninen 2005, xiv.)

For software companies it is important to go global and launch products fast using the most effective sales channels. Preinstallations on hardware have become one of the most effective sales channels. (Hoch &c. 2000, 139-140.)

These days the Internet plays a strong role as a sales channel. This is the case especially in software business where the market is the entire world. Strong incentives offered to the sales force have proved to be an important factor. European companies seem to offer less attractive incentive packages than might be expected and necessary. (Hoch &c. 2000, 141-142.)

Benefits and opportunities of internationalization

Exporting is a way of increasing the utilization degree of the plant. In addition, it can secure jobs of the employees and improves their motivation. It makes it possible to reward employees and shareholders better and to get more investments. It is possible to spread operating costs by producing goods in larger quantities. When purchasing volume increases, the prices go lower. Exporting opens new markets for the existing product range, and gives diverse opportunities to new market sectors. Through the modification of a product, volume opportunities grow. The company's brands and image can also be made more international. Technology improves through internationalization, because of foreign manufacturing opportunities and possible joint ventures. Exporting gives more opportunities to a company to sell support services, consultancy, training and technology licensing. (Noonan 1999, 5-6, 9.)

International opportunities can, among other things, include selling products without modifications, modifying products to the needs of end users, or producing new products and services. Sharing consultancy expertise in the new market area can develop export opportunities. When direct exporting is not profitable, it may be possible to licence products, brand names and technology. When entering a new market area by developing new products, the company can use research and development expertise. The company can also internationalize by using, for example, foreign branches, subsidiaries and joint ventures. It is possible to export together with other companies with similar products. Also inward licensing of products, technology, brand names and inward joint ventures are possible. Outsourcing production abroad could be a good option, if the company wants to concentrate more on marketing, for example. These examples show that there are many ways to build international markets, sales and profits. (Noonan 1999, 6-9.)

5.2 Software products and services

5.2.1 Special issues in software business

Software business is different from other fields of business in many respects. Many differences can be found between software business and traditional manufacturing or service industries. In software industry the company can, for example, make one copy or one million copies of its product and the costs are the same. That is not the case in other industries. Software companies can also have up to 99 percent gross profit margins when selling these products, which is not usual for many businesses. (Cusumano 2004, 1.)

In software business many companies are also changed from products companies to services companies even though they have not had any intention to do so. That is also important to a software company, because it helps the company to have a constant cashflow but at the same time it means that the companies have to be flexible. (Cusumano 2004, 1, 3-4.)

Customers in software business often use the same vendor because software systems cannot be changed easily (Cusumano 2004, 1). For that reason it can be hard to a new company to get a share of the market. That is why it is also important to a software company to enter the market as quickly as possible. (Philips 1998, ix.)

Software business is not really just one field of business. It is possible to use so many applications from writing a report to making graphical presentations that the range of products and services that are possible is infinite. Because this business sector is so different as to its challenges and opportunities, it needs a different approach to strategy and management. (Cusumano 2004, 2-3.)

The most common failures

One of the biggest problems related to the success of software industry is to estimate when is the right time for a launching product and going global. This is a necessity and speed is a great merit in this case. Usually poor analyses beforehand are the rea-

son for the failures. The future exporter's too positive and confident attitude is also a risk. That is why self-criticism is always needed. It is common to propose that by appointing more people time will be saved. Actually, development work should be mainly one expert's responsibility. One big reason for this is that communication takes a lot of time, naturally. (Hoch &c. 2000, 100-101.)

Software products must operate in the technical environment, with different operating and hardware systems. That's why products must be fully documented and they should be understandable for every user. Employees in software business have usually strict timetables, which might create unrealistic expectations. Tight schedules could be both a source of motivation and a cause of stress, which are behind over 40 percent of all software errors. (Hoch &c. 2000, 101-102.)

In software business, at least when a product for a narrow sector is in question, important customers may present most of the requirements. That is why it might be important to create a product which is quite easily customized or repaired. If the customers need some basic changes, implementation might cause a problem because of troubles with modifying the software. Flexibility while designing software for a narrow sector is the key factor to success. (Hoch &c. 2000, 103, 105.)

5.2.2 The most important features in software products

When the expert interviewed, Mr. Marttila, was operating in software industry, there were three important matters related to it. One of them was that the product should be easily understood and easy to direct to customers who really need it. It means that it is important to prepare a detailed customer segmentation. The second factor is to price the products correctly. The third very important matter is the way marketing and support services are arranged. When operating in a small market area, support services should be included in the price. That is not the case in large market areas but for special language areas like Finland or the Nordic countries in general it can be used. In order to succeed, the company has to have good and functional services that are included in the price. (Marttila 2008.)

When a software company wants to expand its operations, its product has to have a clear profile. One of the most difficult problems with software is that the product is suitable for almost all. The fact is that the product should be so simple that the purpose of use can be easily understood. It is important to find the right form, image and target group for the products immediately. (Marttila 2008.)

It requires expertise, which clearly turns the market leader's position over, to replace the market leader. The expertise should be strongly tested to prove that it really exists. The company has to conduct a comparison test. This kind of tests can be performed, for example, by university students. After that the company can collect feedback. The received feedback suggest elements which the company can use in marketing the products and searching distribution channels and new users. (Marttila 2008.)

The most important factor in a software product is that the customer can see its immediate benefits. This is often forgotten and the product is complicated and its definition is overextended. The user should know at once what can be done with the software. The software can not be said to be easy to use because it depends on the level of the user. Instead the question is how logical the product is. The different versions of products should include the same or similar functions even though the products develop. It means that software should be based on standard user interfaces. The most common of them are Windows and the Internet and these two, for example, have very different standards. (Marttila 2008.)

5.2.3 Software as a Service

The traditional software distribution model is sometimes referred to as "software as a product". It means that the customer purchases software and installs it on his/her computer. Software as a Service (SaaS) is also one model to distribute the software. SaaS means that software applications are hosted by a vendor or service provider and customers can use them over a network, typically the Internet. According to the International Data Corporation (IDC), there are two different delivery models for SaaS. One of them is the *hosted application management*. It means that commercially available software is hosted and delivered over the Web to customers by a provider. The other model is *software on demand*. In this case customers get from the provider a network-

based access to a single copy of an application created specifically for SaaS distribution. According to IDC's prediction SaaS will be worth of $10.7 billion by the year 2009. (SearchCRM 2007.)

Some benefits that the SaaS models have compared to the traditional model are easier administration, automatic updates and patch management, compatibility, easier collaboration and global accessibility (SearchCRM 2007). When there is only one version of the software, the vendor spends less time managing compatibility and upgrades. SaaS can also reduce start-up costs. Faster deployment times and lack of up-front licence and infrastructure costs are the main reasons fo considering SaaS. Another reason is also SaaS ability to address basic business processes so that the customers are able to focus their resources on processes that make a real difference. (Gruman 2007.)

One key issue in choosing between SaaS and the traditional model is that when using SaaS the application cannot be a factor that differentiates the company competitively. That is because SaaS is the same for all customers and it cannot really be customized. It means that the customer cannot get a competitive advantage by using SaaS. SaaS applications cannot be used when the functions are so important to the customer's operations that he/she must own them. It could cause a major business disruption, if the SaaS application didn't work some day. There is also the concern about sending sensitive information out, so the SaaS provider must be reliable. (Gruman 2007.)

As to services related to software, distribution can't be organised through a sales agent or an importer. It has to be done by the software company itself. The company should recruit a marketing organization or an advertising agency to spread information or, for example, in case of students the information can be spread via Internet. The service is not physical but the company gives the customer a right to use its product by Internet. There is no universal way of marketing this kind of service, so the company should always use a local strategy and find the right, balanced marketing mix for every country. (Marttila 2008.)

This kind of SaaS could be handled country by country by installing one server that the company owns in each country. For example, in Finland the company can make a contract with Sonera and it could then maintain the company's server. Data security

would be ensured and users can trust that nobody spies on their sensitive data. A product based on a web browser is easy to translate into different languages. For example, Google has operated successfully by using local servers and organisations in each country. (Marttila 2008.)

5.3 Ways of marketing for software company

The key to success is not only the superior product, but also the values included in it. All this requires intensive market research. After building the value status, product portfolio and marketing strategy, spring the right timing and right customer up as an important challenge. (Hoch &c. 2000, 126-130.)

Outstanding public relations and advertising skills are basic requirements for a software company. In the beginning PR events are a necessity in reaching the public and in giving information about a new product. It has been noticed that the most successful companies' managers spend about 35 percent of their time on general conferences. (Hoch &c. 2000, 131-132.)

At least in the beginning it is important to operate with aggressive marketing. Studies show that successful companies spend about 7 percent of their turnover on advertising. It has also been noticed that in software industry, the branch names of the company play an important role, not only product features. In fact, the product's value position together with the brand is the most successful combination in advertising. To attract target customers the company has to get them to try the new product at least once. (Hoch &c. 2000, 133-138.)

Getting feedback is most useful, if it is made through personal meetings, because questionnaires do not always give the right results. People are afraid of putting things on paper. (Hoch &c. 2000, 173.)

5.3.1 Marketing mix

The marketing mix can help with the identification of marketing opportunities. After finding these opportunities, the firm's resources should be taken into account whem choosing the most suitable and profitable marketing tool. Also users' and consumers' needs lead the company in the right marketing direction. (Noonan 1999, 154.)

The factors in the marketing mix are: product, price, place, promotion, people and processes. There are some general points under each of these factors in the marketing mix, which have to be kept in mind when developing a marketing strategy. This will help to secure that the right products are in the right place at the right price and with the right promotion to suit the markets. A marketing mix also advises to market with the right people and a process which suits customer needs. (Noonan 1999, 155.)

For example, in a product-factor, some of the main points are size variants. When the price is at issue, discounts and allowances should been taken into account. In case of promotion, public relations and brand recognition are main points. When planning the place-factor, the distribution infrastructure is a noticeable matter. The people-factor includes both customers and the staff. Also other relationship based matters like corporate culture are included in this factor. The processes-factor includes, for example, strategic planning, research and development and paperwork processing. (Noonan 1999, 155.)

An international marketer has to adapt these factors and general points under them according to different market places. These marketing mix decisions in different countries should have consistency, but also reflect the local situation and environment. (Noonan 1999, 155.) Marketing tools can vary from country to country. In some cases marketing has to be based on personal selling. On the other hand the Internet is a good channel to market in some market areas. It is a good way to get, for example, students to try a product by giving free periodic rights to use it for universities and colleges. (Marttila 2008.)

When it is about business-to-business product, personal selling is the most important factor in the marketing mix regardless of the marketing area. After that come, for ex-

ample, advertising and exhibitions depending on the ways of marketing that are used in that particular market area. The Internet is only one way of advertising. Typically 20% of the first year's turnover goes to launching the product. (Marttila 2008.)

5.3.2 Sales activity needs

The company has some sales activity needs when exporting to a new area. The company has to find out if there is enough production capacity. The maintained and expanded level of employment, labour and skills should also be considered. An increasing market share and international brand awareness are also important factors. The development of an international distribution network is one of the main needs. Knowledge of export orders, export distribution capacity and product innovations are major issues. One noticeable factor is also secured payment terms. (Noonan 1999, 15.)

What comes to a distributor, a diverse product range and representation of a large product line might be an advantage. Some other important matters are assuring product quality, reliable deliveries, supplying continuity, and cooperation in organizing export shipments and insurance policies. Technical support relating to functionality etc. is also a necessity. The distributor's knowledge of the product is important, for example, when promotional support with sales and marketing is needed. Compliance with market regulations and needed modifications of the product are also mainly the distributor's responsibilities. This may come up, for example, in choosing packaging modifications. Responding to growing demand with assured supply and security in agreements with agents or distributors should be of primary importance. (Noonan 1999, 15.)

When exporting to a new area, the product presentations to customers are extremely important at least in the beginning. Surveys of local needs and product modifications regarding these needs, like special packaging, should be taken care of. In case of packaging, a special unit or pack sizes might be necessary. Other factors regarding customers are competitive prices, quality assurance, guarantees and delivery to local distribution centres or directly to the end customer. Long-term supply contracts are the most successful targets for the company. Technical support for use and guaranteed

continuous supply with possibly needed replacement products or parts of products are important factors when taking care of the customers. (Noonan 1999, 15.)

Product samples and demonstrations might be needed in the new market area. A lot of attention should be paid to marketing, advertising and promotional support to create awareness and demand. Requirements regarding local storage and delivery, like protective packaging etc. should be noticed. Just like possible special packaging, also user manuals must be localized. Good service includes also after-sales service and maintenance support. (Noonan 1999, 15.)

5.3.3 Internet and partners as a marketing channel

Le Sphinx has already started an internationalization process by using partners in different countries, mostly in Europe, and also by creating web site. Partners and site are used for marketing and exporting products and services. It is possible to buy products and get help in using it via Internet and over the phone. It is also possible to get these same services through partners. (Le Sphinx 2008.)

When marketing via Internet, business is already global. It is also quite easy and an inexpensive way of marketing because of electronic orders, payments etc. These days business is not local anymore, at least in software business. It should be noticed that people all around the world read the company's web site. That is why it has to be ensured that the customers can get all the information they need. (Philips 1998, 117-119.) Le Sphinx has web pages only in French and English and the discounts for the educational institutions do not have such a prominent place they should have on the pages (Le Sphinx 2008). A larger selection of languages might be a good idea to meet the needs of the biggest customer groups. Marketing the site, for example, through business cards, emails, search engines and other promotional material is important. All the cooperation partners and interest groups should have the company's link on their web sites. (Philips 1998, 117-119.)

Le Sphinx partners play an important role by marketing the company's products meeting the needs of customers on a local level. Based on these experiences, partners recommend the best solutions to customers. (Le Sphinx 2008.)

It is relatively expensive to be in contact with customers by phone and that is why it could be profitable to create some kind of "problem list" on the web site. There the customer could be able to see the most common faults which possibly exist in the software. There should also be a possibility to update the programs. (Philips 1998, 121.)

From small companies' point of view, it is worthwhile, or even necessary to find some allies to create stronger competition against market leaders (Hoch &c. 2000, 157). Partners can also help to accomplis technology and, of course, speed up entering the market, creating market volume and share expenses and risks. Studies show that the most successful firms have over four times more partners than less successful one do. The most competitive firms have a huge network of alliances and this creates great competitive potential by accomplishing every aspects of the business (Harris & McDonald 2004, 105). Partnerships and strategic allies are also the best way to get more specialist skills for companies and so, it makes it possible to focus on the most important competencies. (Hoch &c. 2000, 181-182, 186.)

When the company is internationalizing, synergy is a requirement of success on a global scale these days. There are lots of options of different alliances. It could be a traditional joint venture, where companies combine their forces and create a new company where they have an equal position. Another alternative is to make as it were contracts between the partners, in which case it is about non-equity joint ventures. The most important benefits with joint ventures are pushing more easily into the new markets, entering new businesses, sharing marketing etc. costs and removing major competitors by turning competition into the competitive advantage. (Harris & McDonald 2004, 103-105, 107.)

6 DISCUSSION

Development proposals for products of Le Sphinx

The main strengths of Le Sphinx are a competitive price and visually user-friendly software. The price of Sphinx Survey for educational organisations is very favourable, because of good discounts for these institutions. It was noticed at the Sphinx training seminar that the possibility to bring extensive data to the software is also a strength compared to competitors. Other strengths that came out at the training seminar were ease of use, clearness and the possibility to produce questionnaires. Instead of using "ease of use" as the main argument in marketing, the company should highlight the visual look of software, which increases user-friendliness. Also other strengths should be mentioned more clearly when marketing the software. These features do not become clear enough from the company's web pages.

One of the weaknesses, which came out in the training seminar is not so diverse possibilities to analyse data compared to SPSS. As can be seen Appendices 2 and 3, there are less tests and statistical processes in the Le Sphinx software than in SPSS, for example. On the other hand, some of the participants of the training seminar thought that SPSS is too complicated, quite hard to use and too extensive for the beginners. This is why products of Le Sphinx could be suitable for education, but not necessarily for organizations, which make more detailed researches. When students move into working life, they can affect on companies' acquisitions. This means that if Le Sphinx gets students to use their software programs, the company can secure their popularity in organizations in the future.

Other competitors named at the training seminar were NVivo, Excel and Digium. NVivo was considered quite difficult to use. One participant thought that Digium is inexpensive and easy. When thinking of schools as a target group of Le Sphinx, an obvious weakness was the availability to students. The use of this software is limited to particular computers in which the software has been installed. At the training seminar the lack of a possibility to create software syntax was regarded a disadvantage. Only two participants of the seminar thought that they could replace their present software by Sphinx Survey and the other would use it alongside with other statistical

software. Participants' opinions were that improvements are needed, before it can be taken for use as only statistical software. These weaknesses should be fixed as soon as possible so that the company could succeed better in the competition over the customers.

The important features of software were considered versatility, compatibility with other software and students' opportunity for use. Also immediate benefits for customers are very important in software business. The Finnish language was not an important matter to the participants. Le Sphinx should improve the possibility to create more diverse tests. The problem related to possibilities to use should be fixed so that software is more suitable for educational needs.

Europe and Finland as a market area for Le Sphinx

Software industry is growing in Europe and it has been predicted to grow also in the future. On the other hand growth has been predicted to be stronger in Asia-Pacific and the USA than in Europe. In the European market the most growing areas are Eastern and Central Europe. That is why Le Sphinx should consider Eastern Europe as a target area. Other good points of this market area are low labour costs, educated workforce, a favourable environment for companies and financial and political stability. The most remarkable weakness of this area is low purchasing power.

Finland is a good market area to test new products because people have a positive attitude to new technical products. In Finland there is a good level of skills and know-how because of the high level of education and the development of information and communication infrastructure. This is why Finland would be a good market area to test Le Sphinx products, for example, in educational institutions. It could be a profitable way to field-test the product. On the other hand, Finland is too small a market area by itself for this kind of special software. It could be hard to find a distributor for this kind of product, because it is not a volume product.

Possible customers of Le Sphinx in Finland are 20 universities and 28 universities of applied sciences, 26 bank concerns, 68 insurance companies and 94 market research companies. The total number of possible customer institutions in Finland is 236. High schools should also be noted as potential customers. Because Sphinx Survey is user-friendly, it could probably be used in high schools. As can be seen from the results of

the market research, the Finnish market is quite small. Because of this Le Sphinx should probably not invest in Finland as an individual market area. A better alternative would be, for example, to market the products in the Nordic countries as a target market area.

Distribution and marketing of Le Sphinx

The way the company has been internationalizing so far is "organic" growth. When entering new market areas it should start with a low profile to create local markets and confidence among potential customers for the company. The best option of distribution could be to hire an employee, who is familiar with the local market. It would create trust among customers, if the company could have a representative in every country it operates. These employees would work at the expense of the company. When the distributor works as an employee of the company, the risks are minimized and the operations can be organized from France. This is the best way to get a feeling of new markets affordably. Because Le Sphinx is not yet well-known in most parts of Europe, distribution should be invested limited. Volume distributors like importers and agents do not probably take this kind of narrow sector product into their range. One inexpensive option is to hire students, for example, to organize the distribution.

Because of the possibility to use the company's software on a large scale, identification of the product has not been done thoroughly enough. Clear target groups are missing and obviously the products have been incidental products of consulting service. The company should find customers who really have a need and an interest for the product. Poor analyses in advantage are one of the most common failures. In case of Le Sphinx, exact analyses seem to be missing. Market research should have been done at that moment when the decision of internalization was made.

The goal of Le Sphinx to get into the volume markets through educational institutions will necessarily not succeed because of needs they may have for tailoring the product. Schools cannot probably afford customizing. That is why the product should be exactly identified and the purpose of use should be clear without need for tailoring, when the question is about schools as a target group. There is also another problem concerning schools as a target group. The ability to use SPSS is often required especially in universities. Because SPSS is largely used in many companies, students should be able to use it, at least, when they are moving to working life. This means

that SPSS cannot probably be replaced but Le Sphinx products could be used alongside with it. At this point Le Sphinx should not try to get the position of the market leader, but it should make it clear why its products are also a good alternative. Differences and strengths compared to SPSS should be clearly mentioned.

There is also another important matter regarding the educational institutions as a customer. The company should highlight price discounts on their web pages, for example. This should be taken into account also in the price-factor of the marketing mix. It could also be a good idea to get the product tested with potential customers by giving them free periodic access rights. One of the best ways of marketing in software business is to get potential customers to try the new product.

Le Sphinx has lots of competitors globally. The most important competitor, SPSS, is a standard extensively in Europe. It is often required from students at least in universities and also later in working life. People are used to it, regardless of its weaknesses and they believe that the results of a survey are reliable, when they have been done with SPSS. Because of this, Le Sphinx has to develop, especially regarding the credibility of the company. Customers quite often use the same vendor because systems cannot be changed easily. Le Sphinx should offer clear benefits and something different for the customers compared to competitors and the expertise should be tested.

In case of Le Sphinx "software as a service", Declic, distributional matters are quite easy to manage. The expert interview revealed that selling this kind of using service is easy. The use of a local organization, for example, a server like Sonera, could be a good option. Other products of the company are traditional "software as a product", so they are installed on the customer's computer. Software as a product involves logistical matters and more complicated distribution than in case of software as a service.

It probably is not topical to use preinstallation on hardware as a sales channel yet. However, when there is enough demand, this could be one good option because it has become an effective channel these days. In case of Le Sphinx, this kind of selling could be used with some customers like big companies, for example, if demands for hardware and Le Sphinx products are coexistent.

Le Sphinx web site is not informative enough, which might be a weakness at least when the company is growing and expanding globally. The problem list is a good way to reduce the need of fault indications and service advice. It would be important that the company is easy to find and one of the first hits in the best known search engines. Growing demand requires also globalization of marketing at the same time. At least the user manuals should be localized. Prices are not clearly mentioned and the profile of the product has not been identified. The purpose of the product should be mentioned exactly. The way the company has expressed the purpose of use of these products creates problems with credibility. The company claims that by using Le Sphinx statistical software can be done almost anything. This is not and should not be possible. Even if it could be customized to suit every requirement, it would be too expensive to customers that can't afford tailoring.

Estimation of used methods and possible further studies

The development proposals presented in the thesis can relatively easily be applied in the company. There are quite safe ways and alternatives for internationalizing. Because of versatile sources of information, the thesis is reliable. Literature and web articles about software business were used in the study. Most of the literature sources are quite new. An expert interview and the questionnaire used among the Le Sphinx training day participants have also been used as a source.

Due to the small number of the respondents, quantitative results were quite insignificant. It was not possible to make the key tests of the results of the Le Sphinx training seminar, because there were not enough participants. That is why the results of the training seminar are only suggestive. The opinions of participants were quite alike and it makes conclusions possible to a certain degree. The results of the training seminar are not valid, because the sample was too small. The training day did not bring out all the possible uses of the software. This may have the effect that some opinions of the participants were not as positive as possible. One training day is not enough when learning to use software. It is not possible to learn all the features of the software in so short period of time. Also the matter that every participant was used to SPSS, can affect to the results.

The expert interview of the software business professional, Heikki Marttila, was valuable for the thesis. Lots of important practical details of software business came up during the interview. The expert gave good advice and hints of software business and that helped to understand the business better on the practical level.

Because this survey is only suggestive, it would be reasonable to make more detailed surveys of each country where the company wants to enter. From this thesis the company gets some advices, where it would be profitable to direct marketing first in Europe. Also competitive advantages should be tested so that the company finds out the right marketing tools. In this survey some of the strengths of Le Sphinx products have come up. These strengths could be used when marketing the products.

REFERENCES

Addinsoft. Referred on 14.1.2008. Http://www.xlstat.com/en/company/

Analyse-it Software, Ltd. Referred on 14.1.2008 Http://www.analyse-it.com

Batissat C. International Manager. Le Sphinx. Interview 11.12.2007.

Batissat C. 2008. Statistical Procedures of Le Sphinx. 4.3.2008.

Cusumano M. A. 2004. The business of software: what every manager, programmer, and entrepreneur must know to thrive and survive in good times and bad. USA, New York: Free Press.

DATAMONITOR. 2006. Software in Europe. Referred on 10.1.2008. Http://www.jamk.fi/kirjasto, Nelli-portaali, MarketLine.

Eskola J. & Suoranta J. 2000. Johdatus laadulliseen tutkimukseen. 4. painos. Tampere: Osuuskunta Vastapaino.

Europa. 2008. European countries. Referred on 21.1.2008. Http://europa.eu/abc/european_countries/index_en.htm

Free Statistics. 2008. Free statistical software analysis. Referred on 4.2.2008. Http://freestatistics.altervista.org/en/comp.php

Gruman G. 2007. The Truth About Software as a Service (SaaS). Referred on 1.3.2008. Http://www.cio.com/article/109706/The_Truth_About_Software_as_a_Service_SaaS_

Harris P. & McDonald F. 2004. European business & marketing. Secont edition. Great Britain, London: SAGE Publications Ltd.

Hoch D.J., Roeding C.R., Purkert G., Lindner S.K. & Müller R. 2000. Seckrets of software success. USA, Boston: McKinsey & Company, Inc.

Kananen J. 2008. Le Sphinx: Kvantitatiivisen ja kvalitatiivisen tutkimuksen modernit työkalut. Training seminar 14.3.2008 at the Jyväskylä university of applied sciences.

Kompass. The business to business search engine. Referred on 4.2.2008. Http://www.jamk.fi/kirjasto, Nelli-portaali, Kompass. (Http://www.kompass.com/kinl/cgi-bin/KINL_ADPaction.cgi?user=)

Kovach Computing Services. Last modified 11 January, 2008. Referred on 14.1.2008. Http://www.kovcomp.com

Laatutieto. 2008. Toimitusehdot. Updated on 28.3.2008. Referred on 9.4.2008. Http://www.laatutieto.fi/terms_and_conditions.php

Le Sphinx. 2007a. FPM-Cati_fin.doc. Word file. 18.12.2007.

Le Sphinx. 2007b. FPM-Declic_fin.doc. Word file. 18.12.2007.

Le Sphinx. 2007c. Présentation.ppt. PowerPoint file. 18.12.2007.

Le Sphinx. 2007d. FPM-Scanner_fin.doc. Word file. 18.12.2007.

Le Sphinx. 2007e. FPM-SphinxLexica_fin.doc. Word file. 18.12. 2007.

Le Sphinx. 2007f. FPM-SphinxSurvey_fin.doc. Word file. 18.12.2007.

Le Sphinx. 2008. Referred on 9.1.2008. Http://www.lesphinx-developpement.fr/en/home/home_sphinx.php

Marttila H. Software business professional. Interview 22.2.2007.

Ministry of Education. Referred on 29.1.2008.
Http://www.minedu.fi/OPM/Koulutus/yliopistokoulutus/yliopistot/?lang=fi
Http://www.minedu.fi/OPM/Koulutus/ammattikorkeakoulutus/ammattikorkeakoulut/?lang=fi

Moonsoft Oy. Referred on 14.1.2008.
Http://www.moonsoft.fi/search/basic.aspx?q=spss

Noonan C. 1999. The CIM Handbook of Export Marketing: A practical guide to opening and expanding markets overseas. Second edition. Great Britain, Oxford. Butterworth-Heinemann.

Nurmi R. 2000. Johtaminen ympäristössään. Tampere: Tammer – Paino.

Philips R. A. 1998. Guide to software export: a handbook for international software sales. USA, New York: The Haworth Press, Inc.

Saari T, Vainio A. 2005. Finland - Easy Going Markets and Highly Efficient Business Environment. Referred on 14.1.2008.
Http://e.finland.fi/netcomm/news/showarticle.asp?intNWSAID=37070

Sampo Pankki Oyj. 2007a. Itä-Eurooppa: Markkinat: Miksi sijoittaa Itä-Eurooppaan? Referred on 10.3.2008.
Http://domino.sampo.fi/external/sbd/rahasto.nsf/vwnavilevel1/7E3D12BC684CD1CDC225713F0036F406?opendocument&expand=2.1.3.1

Sampo Pankki Oyj. 2007b. Itä-Eurooppa: Markkinat: Tietoa alueesta. Referred on 10.3.2008.
Http://domino.sampo.fi/external/sbd/rahasto.nsf/vwnavilevel1/F101D5161DDB199CC225713F00202A1F?opendocument&expand=2.1.3.2

Scientific COMPUTING. 2006. Review – Statistical Software. Referred on 4.2.2008.
Http://www.scimag.com/images/0602/sc62600_fig2.pdf

SearchCRM. 2007. Software as a Service. Referred on 1.3.2008.
Http://searchcrm.techtarget.com/sDefinition/0,,sid11_gci1170781,00.html

Software: Europe. 2006. Software in Czech Republic. Software in Hungary. Software in Poland. Software in Russia. Referred on 21.1.2008. Http://www.jamk.fi/kirjasto, Nelli-portaali, MarketLine.

SPSS Finland Oy. Referred on 14.1.2008. Http://www.spss.fi/asiakkaat/; Http://www.spss.fi/corpinfo/inc.shtm

SPSS Inc. Referred on 14.1.2008. Http://www.spss.com/corpinfo/index.htm

Suomen Markkinatutkimusliitto Ry. 2007. Referred on 4.2.2007. Http://www.smtl.fi/index.php?id=5

Suomen pankkiyhdistys. Rahoitus- ja sijoitusmarkkinoilla toimijat. 2006. Referred on 30.1.2008. Http://www.pankkiyhdistys.fi/sisalto/upload/pdf/Toimijat_netti.pdf

SURVO MM. 2007. Käyttöympäristö tekstin ja numeerisen tiedon luovaan käsittelyyn. Referred on 29.1.2008. Http://www.survo.fi/

Tieke. 2005. ICT CLUSTER FINLAND 2005. Referred on 14.1.2008. Http://www.e.finland.fi/netcomm/ImgLib/17/85/ITC-finland_050419_LR.pdf

Uusimäki P. International department, Le Sphinx. 2007. Opinnäytetyö. E-mail 17.12.2007. Receivers A. Tanhuala, P. Lankinen.

Zhu X., Kuljaca O. 2005. A Short Preview of Free Statistical Software Packages for Teaching Statistics to Industrial Technology Majors. Referred on 28.1.2008. Http://www.nait.org/jit/Articles/zhu031105.pdf

Äijö T., Kuivalainen O., Saarenketo S., Lindqvist J. & Hanninen H. 2005. Internationalization handbook for the software business. Referred on 18.1.2008. Http://www.swbusiness.fi/uploads/reports/1117438911_Internationalization_Handbook.pdf

APPENDICES

Appendix 1. Comparing free statistical software

COMPARING FREE STATISTICAL SOFTWARE

	ADE 4	DATAPLOT	EASYREG	GRETL	INSTAT+	MACANOVA	MATRIXER	MICROSIRIS	OPENSTAT	R	TANAGRA	VISTA	WINIDAMS
Descriptice statistics	x	x	x	x	x	x	x	x	x	x	x	x	x
Distribution Frequencies		x	x	x	x	x	x	x	x	x		x	x
Probability Distributions		x	x	x	x	x	x	x	x	x			
One Way Analysis of Variance	x	x			x	x		x	x	x	x	x	x
Two or Three Way Analysis of Variance		x			x	x		x	x	x		x	
Experimental Design		x								x			
Simple Linear Regression	x	x	x	x	x	x	x	x	x	x	x	x	x
Multiple Linear Regression	x	x	x	x	x	x	x	x	x	x	x	x	x
Logistic Regression				x		x			x	x	x		
Logit Model			x	x		x	x	x		x			
Probit Model			x	x			x			x			
Generalized Linear Models			x	x		x			x	x			
Analysis of Covariance						x			x	x			
Non Parametric Tests		x	x	x	x		x		x	x	x		
Log-Linear Analysis					x			x	x	x		x	
Time series		x	x	x	x	x	x			x			x
Survival Analysis			x		x			x		x			
Principal Component Analysis	x	x		x		x				x	x	x	x
Factorial Analysis						x		x	x	x	x		x
Canonical Correlation Analysis	x	x							x	x			
Correspondence Analysis	x									x	x	x	
Discriminant Analysis	x	x							x	x	x		x
Cluster Analysis	x					x		x	x	x	x	x	x

(Free Statistics 2008.)

Appendix 2. Comparing statistical software

COMPARING STATISTICAL SOFTWARE

Statistical Procedures	Beginning			Intermediate					Advanced			Specialized			
	InSTAT	SigmaStat	Prism	Genstat	JMP	MINITAB	SPSS	SYSTAT	S-PLUS	SAS	STATISTICA	Resampling Stats	Solas	StatXact	Unscrambler
Data importation															
from Excel	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
from other Statistical Programs		x		x	x			x	x	x	x		x	x	x
Data manipulation															
concatenate		x		x	x	x	x	x	x	x	x	x			
filter		x	x	x	x	x	x			x	x	x		x	x
join				x	x	x	x	x	x	x	x		x	x	
sort		x		x	x	x	x	x	x	x	x		x	x	x
split				x	x	x	x		x	x	x				
stack		x		x	x	x	x		x	x	x				
subset				x	x	x	x		x	x	x		x	x	x
transpose	x	x	x	x	x	x	x	x	x	x	x			x	x
transformations	x	x	x	x	x	x	x	x	x	x	x		x	x	x
randomize				x	x	x	x		x	x	x	x			
Descriptive Statistics															
at least 5 of usual (N, mean, median, SD, SEM, CV, Skewness, Curtosis, etc.)	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Distributional Fitting															
automatic test for normality		x			x	x	x			x					
curve fitting			x	x	x	x	x	x	x	x	x		x		x
Parametric Hypothesis Tests															
1 and 2 sample t-tests	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
paired t-test	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
1-way ANOVA	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2-way ANOVA		x	x	x	x	x	x	x	x	x	x		x	x	x
Repeated Measures ANOVA	x	x	x	x	x	x	x	x	x	x	x				

Appendix 2. Comparing statistical software

	InSTAT	SigmaStat	Prism	Genstat	JMP	MINITAB	SPSS	SYSTAT	S-PLUS	SAS	STATISTICA	Resampling Stats	Solas	StatXact	Unscrambler
Non-Parametric Hypothesis Tests															
Mann-Whitney Rank Sum	x	x	x	x	x	x	x	x	x	x	x		x	x	
Wilcoxon Signed Rank	x	x	x	x	x	x	x	x	x	x	x		x	x	
Kruskal-Wallis	x	x	x	x	x	x	x	x	x	x	x		x	x	
Friedman	x	x	x	x	x	x	x	x	x	x	x			x	
Welch's corrected t	x		x	x	x	x	x		x	x	x		x		
Regression/Correlation															
Simple Linear Regression	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Multiple Linear Regression	x	x		x	x	x	x	x	x	x	x	x	x	x	x
Logistic		x		x	x	x	x	x	x	x	x			x	
Stepwise	x	x		x	x	x	x	x	x	x	x		x	x	
Best Subsets	x	x		x		x				x	x			x	
Deming Regression	x		x		x				x		x				
Non-Linear regression		x	x	x	x		x	x	x	x	x				
Pearson Correlation		x	x	x	x	x	x	x	x	x	x		x	x	x
Spearman Correlation		x	x	x	x	x	x	x	x	x	x		x	x	
Contigency Tables															
Fishers Exact Test	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Chi-Square test	x	x	x	x	x	x	x	x	x	x	x		x	x	
McNemar's test		x		x			x	x	x	x	x		x	x	
Kendall's tau				x	x	x	x	x	x	x	x			x	
Mantel-Haenszel test				x	x	x	x	x	x	x	x			x	
Cochran test					x	x	x	x	x	x	x			x	
Multivariate Tests															
MANOVA				x	x	x	x	x	x	x	x			x	
Partial Least Squares				x	x	x		x		x	x				x
Clustering				x	x	x	x	x	x	x	x				

Appendix 2. Comparing statistical software

	InSTAT	SigmaStat	Prism	Genstat	JMP	MINITAB	SPSS	SYSTAT	S-PLUS	SAS	STATISTICA	Resampling Stats	Solas	StatXact	Unscrambler
Discriminant Analysis				x	x	x	x	x	x	x	x			x	
Principal Components Analysis				x	x	x	x	x	x	x	x			x	x
Linear Models															
(any of the common linear or generalized linear models)		x		x	x	x	x	x	x	x	x			x	
Mixed Models															
(with at least parameter estimates, variance components, MLE, REML)			x	x	x	x	x	x	x	x	x				
Non-Linear Models															
Regression		x	x	x	x	x	x	x	x	x	x				x
Maximal Likelihood Estimation (MLE)				x	x	x	x	x	x	x	x			x	
DOE (Experimental Design)															
Box-Hunter				x		x		x	x	x	x				x
Central Composite				x	x	x		x	x	x	x				x
Factorial				x	x	x		x	x	x	x				x
Mixture				x	x	x		x	x	x	x				x
Optimal				x	x	x		x	x	x	x				x
Plackett-Burman				x	x	x		x	x	x	x				x
Time Series															
ARIMA				x	x	x	x	x	x	x	x				
Autocorrelation				x	x	x	x	x	x	x	x				
LOWESS smoothing				x		x	x	x	x	x	x				x
Moving Average smoothing				x	x	x	x	x	x	x	x				x
Seasonal Adjustement				x	x	x	x	x	x	x	x				
QA															
Box and Whisker Plots			x	x	x	x	x	x	x	x	x	x	x	x	x
Control Charts				x	x	x	x	x	x	x	x				
Gauge R&R					x	x	x	x	x	x	x				
Pareto Chart				x	x	x	x	x	x	x	x				
Process Capability Analysis				x	x	x	x	x	x	x	x				
Sigma Measurements				x	x	x	x	x	x	x	x				

Appendix 2. Comparing statistical software

	InSTAT	SigmaStat	Prism	Genstat	JMP	MINITAB	SPSS	SYSTAT	S-PLUS	SAS	STATIS TICA	Resampli ng Stats	Solas	StatXact	Unscrambler
Classification and Regression Trees															
(some form of partitioning)				x	x		x	x	x	x	x				
Survival/Reliability/Clinical															
Relative Risk	x		x		x		x	x	x	x	x			x	
Odd's Ratio	x		x	x	x	x	x	x	x	x	x			x	
Sensitivity/Specificity	x		x		x		x		x	x				x	
ROC Curves			x		x		x	x	x	x	x			x	
Kaplan-Meier		x	x	x	x	x	x	x	x	x	x				
Gehan-Breslow		x		x				x	x	x	x			x	
Power/Sample Size															
(for at least 5 standard hypothesis tests)		x		x	x	x	x	x	x	x	x			x	
Missing Value Analysis															
Any of the common techniques				x			x	x	x	x	x		x		
Neural Networks															
(any of the common input/output perceptrons)					x					x	x				
MonteCarlo Simulations															
Random Sampling						x	x	x	x	x	x	x		x	
Markov Chain MC							x	x	x	x	x	x		x	
Resampling															
(any of the common methods, e.g. Bootstrap and Jackknife)				x			x	x	x	x	x		x		x
Programming Language															
(specialized code peculiar to this package to enhance functioning)		x	x	x	x	x	x	x	x	x		x	x	x	

(Scientific COMPUTING 2006.)

Appendix 3. Statistical Procedures of Le Sphinx

Statistical Procedures	SPHINX
Data importation	
from Excel	X
from other Statistical Programs	X (Triple S and SPSS)
Data manipulation	
Concatenate	?
filter	X
Join	X
Sort	X
Split	X
stack	X
Subset	X
Transpose	
transformations	
Randomize	X
Descriptive Statistics	
at least 5 of usual (N, mean, median, SD, SEM, CV, Skewness, Curtosis, etc.)	X
Distributional Fitting	
automatic test for normality	X
curve fitting	X
Parametric Hypothesis Tests	
1 and 2 sample t-tests	
paired t-test	
1-way ANOVA	X
2-way ANOVA	X
Repeated Measures ANOVA	X
Non-Parametric Hypothesis Tests	
Mann-Whitney Rank Sum	
Wilcoxon Signed Rank	
Kruskal-Wallis	
Friedman	
Welch's corrected t	
Regression/Correlation	
Simple Linear Regression	X
Multiple Linear Regression	X
Logistic	X
Stepwise	
Best Subsets	
Deming Regression	
Non-Linear regression	X
Pearson Correlation	
Spearman Correlation	

Appendix 3. Statistical Procedures of Le Sphinx

Contigency Tables	
Fishers Exact Test	X
Chi-Square test	X
McNemar's test	
Kendall's tau	
Mantel-Haenszel test	
Cochran test	
Multivariate Tests	
MANOVA	X
Partial Least Squares	
Clustering	X
Discriminant Analysis	
Principal Components Analysis	X
Linear Models	
(any of the common linear or generalized linear models)	
Mixed Models	
(with at least parameter estimates, variance components, MLE, REML)	
Non-Linear Models	
Regression	X
Maximal Likelihood	
Estimation (MLE)	
DOE (Experimental Design)	
Box-Hunter	
Central Composite	
Factorial	
Mixture	
Optimal	
Plackett-Burman	
Time Series	
ARIMA	
Autocorrelation	
LOWESS smoothing	
Moving Average smoothing	
Seasonal Adjustement	
QA	
Box and Whisker Plots	X
Control Charts	X
Gauge R&R	
Pareto Chart	
Process Capability Analysis	
Sigma Measurements	
Classification and Regression Trees	
(some form of partitioning)	X

Appendix 3. Statistical Procedures of Le Sphinx

Survival/Reliability/Clinical	
Relative Risk	
Odd's Ratio	
Sensitivity/Specificity	
ROC Curves	
Kaplan-Meier	
Gehan-Breslow	
Power/Sample Size	
(for at least 5 standard hypothesis tests)	X
Missing Value Analysis	
Any of the common techniques	
Neural Networks	
(any of the common input/output perceptrons)	
MonteCarlo Simulations	
Random Sampling	
Markov Chain MC	
Resampling	
(any of the common methods, e.g. Bootstrap and Jackknife)	
Programming Language	
(specialized code peculiar to this package to enhance functioning)	

(Batissat 2008.)

Appendix 4. Sphinx seminar

Kysely seminaarin osanottajille maaliskuussa 2008

HENKILÖTIEDOT

Sukupuolesi?

○ nainen

○ mies

Kuinka vanha olet?

○ -25 ○ 26-30 ○ 31-35 ○ 36-40 ○ 41-45 ○ 46-50 ○ 51-55 ○ 56-60 ○ 61-

Mikä on ammattisi/asemasi?

OHJELMISTOJEN KÄYTTÖ

Mihin käyttötarkoituksiin yksikössäsi käytetään tilastoanalyysiohjelmistoa?

☐ Opetustyö   ☐ Maksulliset palvelut

☐ Opinnäytteet   ☐ Muu, mikä? _____

☐ Tutkimus- ja kehitystoiminta

Miten tärkeänä pidät seuraavia ominaisuuksia tilastoanalyysiohjelmistossa?

	ei tärkeä	hieman tärkeä	tärkeä	erittäin tärkeä
Helppokäyttöisyys	○	○	○	○
Edullinen hinta	○	○	○	○
Suomenkielisyys	○	○	○	○
Monipuolisuus	○	○	○	○
Yhteensopivuus muiden ohjelmien kanssa (esim Excel, SPSS, PowerPoint jne.)	○	○	○	○
Opiskelijoiden käyttömahdollisuus	○	○	○	○
Muu, mikä? _____	○	○	○	○

Mikä analyysiohjelmisto/-ohjelmistoja on tällä hetkellä käytössä yksikössäsi?

Mikä on mielipiteesi tästä/näistä ohjelmistoista?

OHJELMISTON HANKINTA

Kuka yksiössäsi tekee ohjelmistojen hankintapäätökset? Ole hyvä ja mainitse ammatti/asema, ei henkilön nimeä.

Appendix 4. Sphinx-seminar

Ketkä muut henkilöt vaikuttavat hankintapäätökseen? Ole hyvä ja mainitse ammatti/asema, ei henkilön nimeä.

Numeroi tärkeysjärjestykseen seuraavat tilastoanalyysiohjelmiston hankintaan vaikuttavat tekijät. 1= tärkein, 2= toiseksi tärkein jne.

☐ Ohjelmiston monipuolisuus   ☐ Järjestelmistä kuullut kokemukset

☐ Alhainen hinta   ☐ Myyvän yrityksen hyvä imago

☐ Laajat tilastollisen analyysin laskutoimitusmahdollisuudet   ☐ Tuotteen hyvä imago

☐ Huoltopalveluiden varmuus   ☐ Aikaisempi kokemus ohjelmistosta

☐ Käytön helppous   ☐ Nopea toimitusaika

☐ Hyöty yksikölle   ☐ Muu, mikä? _____

☐ Myyjän tarjoama koulutus

SPHINX

Kokeiltuasi ohjelmaa, mitä hyviä puolia Sphinx:ssä on mielestäsi?

Mitä huonoja puolia mielestäsi Sphinx:ssä on?

Kerro lopuksi mielipiteesi seuraavista väittämistä:

	Täysin eri mieltä	Hieman eri mieltä	Hieman sama mieltä	Täysin sama mieltä
Kiinnostukseni heräsi	○	○	○	○
Ohjelmisto on helppokäyttöinen	○	○	○	○
Ohjelmisto on monipuolinen	○	○	○	○
Ohjelman käyttömahdollisuudet jäivät epäselviksi	○	○	○	○
Tilastollisen analyysin toimintoja ei ole riittävästi	○	○	○	○
Nykyinen käytössäoleva ohjelmisto on parempi kuin Sphinx	○	○	○	○
Voisin harkita vaihtoa Sphinx-ohjelmistoon	○	○	○	○
Voisin suositella ohjelma muillekin	○	○	○	○

Kiitos!

Appendix 5. Sphinx training seminar

Questionnaire to the participants of the seminar in March 2008

PERSONAL DATA

Gender
female
male

Age

-25	26-30	31-35	36-40	41-45	46-50
51-55	56-60	60-			

Profession/status
_____

USE OF SOFTWARE

How is statistical analysis software used in your organization?

Teaching
Theses
Research and development
Chargeable services
Something else, please specify
_____

How important do you think the following features are in statistical analysis software? (not important, somewhat important, important, very important)

Ease of use
Inexpensive price
Finnish language
Versatility
Compatibility with other software (for example, Excel, SPSS, PowerPoint etc.)
Students' opportunity for use
Something else, please specify

_____

Which analysis software program/programs are in use in your organization at the moment?

What is your opinion of this program/these programs?

Appendix 5. Sphinx training seminar

PURCHASE OF SOFTWARE

Who in your organization does the acquisition decisions regarding software? Please mention the profession/status, not the name of the person.

Who else affect the acquisition decision? Please mention the profession/status, not the name of the person.

Number the following features of statistical analysis software which affect purchase of the software in order of importance. 1=most important, 2=second most important etc.

Versatility of software
Low price
Broad statistical analysis calculation opportunities
Reliability of maintenance services
Ease of use
Advantage to the organization
Training offered by seller
Other users' experiences of systems
Image of the seller company
Good image of the product
Earlier experiences of software
Fast delivery time
Something else, please specify

_____

SPHINX

Now after you have tested the software, what advantages do you think Sphinx has?

What disadvantages do you think Sphinx has?

Finally, give your opinions of the following statements: (totally disagreeing, slightly disagreeing, slightly agreeing, totally agreeing)

I'm interested in the software
Software is easy to use
Software is versatile
Possible uses of the software did not come clear
The number of statistical analysis procedures in the software is not sufficient
The software which is in present use is better than Sphinx
I could consider replacing my present statistical software with Sphinx
I could recommend the software to others

Thank you!

Appendix 6. Thematical interview

1. Basic information

- What kind of experience does the person have of software business?
- What kind of products did the company offer to customers?

2. Finland as a market area

- What kind of demand is there in Finland for software products?
- What is a typical target group? Are there enough demand and potential customers in Finland?
- Is Finland sufficient or profitable as a market area?
- Are the Nordic countries a profitable market area?
- Is it possible to use the same kind of marketing within the Nordic countries?
- What kind of marketing method is the most effective for software?

    o How would you market this kind of software?

    o What things are important in marketing software?

- Is there a lot of competition?
- Are partners important in the Finnish market? What kind of partners should be used? What about the European market?

3. The software product

- What kind of features are required of the product?
- What kind of factors are appreciated?
- Is it important that the product is modifiable?
- Is the price important when buying or selling software?
- What makes a product competitive?
- Is ease of use a competitive advantage?
- Is the Finnish language required of software?
- How would it be possible to get universities and universities of applied sciences interested in this kind of product?

4. Finland vs Europe

- How does Finland differ from Europe as a market area?
- Are customers' buying habits different in Finland than in the rest of Europe?
- Does the Finnish market have common factors with the European market?
- What do you think about localization of software products?
- How should the distribution of the product be organised? What about services?
- Can Eastern Europe be divided into smaller market areas?