

Impact of Outsourcing IT
on
e-Commerce: the case of listed companies in Finland

By
Titans Tanyi Enow

M.Sc. Thesis in Accounting
Swedish School of Economics and Business Administration
2003

Institution Swedish School of Economics and Business Administration	M. Sc. Thesis
	28.07.2003
<p>ABSTRACT</p> <p>This thesis aims to study the impact of outsourcing IT on e-Commerce. The research data was obtained from some listed companies in Finland and descriptive statistics was used to analyse the data.</p> <p>147 Companies made up the sample frame and questionnaire were duly posted plus paid reply envelopes, only 23 Companies responded rated 15.65%. 8 Companies out of the 147 (5.4%) admitted that they do e-Commerce (either buying or selling over the internet). These 8 companies were taken to be the sample size for this study.</p> <p>However, with this low response rate, it will be difficult to generalise the findings of this research.</p> <p>The findings in this study, based on responses received, show that most companies carry out partial outsourcing, however, the following are the repercussion of outsourcing IT on e-Commerce; server, security of software and hardware (activities), organization driven (reason), access external capabilities and increase quality of service (benefit) and loss of control of activity and opportunist exploitation by supplier (problem).</p> <p>The following are the repercussion of not outsourcing; Software for executing sales, purchases and storefront (activities), improvement driven (reason), improve cost control (benefit) and conflict: loss of core competence and confidentiality (problem).</p>	
<p>Key Words: Outsourcing, Make-or-buy, e-Commerce, IT, Application development, Application Architecture.</p>	

Table of contents

1. Introduction	1
1.1. The research background	1
1.2. The research objective	3
1.3. The structure of study	3
2. Related Literature – e-Commerce	5
2.1. Chapter Objective and Structure	5
2.2. E-Commerce and its Benefits	5
2.3. Building e-Commerce Systems and Applications	10
2.3.1. E-Commerce Development Process	10
2.3.2. E-Commerce Architecture = Integrated Application Frameworks	13
3. Related Literature – Outsourcing	15
3.1. Chapter Objective and Structure	15
3.2. Outsourcing	15
3.3. Outsourcing IT Steps	19
3.4. Outsourcing e-Commerce IT	21
4. Review of Current Research	26
4.1. Chapter Objective and Structure	26
4.2. General Outsourcing	26
4.3. IT Outsourcing	30
4.4. Conclusion	36
5. Hypothesis Development and Methodology	39
5.1. Chapter Objective and Structure	39
5.2. Hypothesis Development	39
5.3. Methodology	41
5.3.1. Data	41
5.3.2. Data Collection Method(s)	42
5.3.3. Analytical Tools	44

5.3.3.1 Descriptive Statistics	44
6. Empirical Investigation	44
6.1. Chapter Objective and Structure	44
6.2. Description	44
6.2.1. Source of Data	44
6.2.2. Type of Data	45
6.2.3. Data Collection Method(s)	45
6.2.4. Sample frame	45
6.2.5 Response Rate	45
6.2.6 Implication for validity and generalization	46
6.3. Analysis of Data	46
6.3.1. Descriptive Statistics	46
6.3.2. Summary of Descriptive Statistics	52
6.3.3. Interview	54
7. Summary, Conclusion and Recommendation	54
7.1 Chapter Objective and Structure	54
7.2 Summary	54
7.2 Conclusion	55
7.3 Recommendation	57

List of figures

1.0 The process of e-Commerce Application Development	12
2.0 E-Business Application Architecture	14
3.0 Relationship b/w Small and Large Companies Outsourcing/Not-Outsourcing	40
4.0 Activities carried out by participating companies	46
5.0 % of Apps provided through outsourcing/not by the participating companies.	47
6.0 % of participating decision by the participating companies	47
7.0 % of reasons for outsourcing by the participating companies	48
8.0 % of reasons for not outsourcing by the participating companies	49
9.0 % of outsourcing (partial) benefits by the participating companies	49
10.0 % benefits derived from not outsourcing by the participating companies	50
11.0 % Problems of outsourcing by the participating companies.	50
12.0 % Problems of not outsourcing by the participating companies.	51
13.0 Measuring efficiency of outsourcing/not by the participating companies.	51
References	57
Books and Journals	57
WebPages	60
Appendix A: Example of questionnaire	61

1.0 INTRODUCTION

The Digital Economy refers to the economy that is based to a large extent on digital technologies, including digital communication networks (Internet, Intranets, etc), computers, software and other related information technologies. Digital networking and communication infrastructures provide a global platform to interact, communicate, collaborate and search for information.

According to Turban et al (2002, pg. 45), the convergence of computing and communication technologies through the internet and the resulting flow of information and technology that is stimulating e-Commerce and spurring vast organizational changes.

E-Commerce is becoming pervasive and has high impact on businesses as well as people's lives. Since the theme of e-Commerce is the business supported by information technology, the boundary between business modelling and information system modelling is often blurred. The increasing popularity of enterprise resource planning (ERP) and e-Commerce technologies in the last few years is presenting new challenges to the IT department of many companies. While the businesses are eager to take advantage of these new technologies to create new business value and stay competitive, IT departments are finding it more and more difficult to manage the increasing number of technologies effectively.

There are unprecedented opportunities for many firms and individuals, confronted with technologies that enable new venture creation with relatively few barriers to entry and possible quick and huge financial gains. For existing firms, these new digital technologies are being equally perceived as providing ways to increase efficiency and market reach.

The digital binding of consumers and companies in a low-cost way is as significant a technological advancement as the invention of the steam engine, electricity power generator, telephone or assembly line. The shift from supply chain to demand chain, the emergence of the Web and Mobile Commerce and the escalating pace of technological innovation are just a few reasons why business-as-usual has changed for ever.

The Internet is a sale and distribution channel and is facilitating e-Commerce - the ability to do business over the Web. e-Commerce has further improved the integration of previously isolated Information industry components. The integration of data, content, storage, networks, business application and consumer devices is facilitating the convergence of consumer electronics, television, publishing, telecommunications, and computer sectors. The computer, new telecommunication devices and, more recently, the Internet, are indeed, powerful, and impressive technologies, given the limited internal resources of companies, outsourcing applications have become a viable option.

In recent years, many functions in organizations have been actively outsourced, including the following: payroll, pension administration, information systems and technology, telecommunications, accounting, internal audit, just to name a few.

Organizations have typically been structured on a functional cost centre basis, with each function having specialised knowledge, and responsibilities and outsourcing is viewed as an important restructuring tool, significant and financial performance improvements are critical to success and long term survival of organisation. The cutting edge technology and knowledge are now recognized as competitive weapons but are expensive to acquire and successful results are always elusive when implemented internally.

The trend in many organization is to outsource entire processes and to measure the performance directly related to it using generic measures such as productivity, quality, timeliness, cycle time, output and financial. Of all business outsourced, IT is done more often than in any other area.

According to Turban et al (2002, pg. 312), most companies engaged in e-Commerce and practice a very large degree of outsourcing.

However, the impact of e-Commerce is happening in phases. According to Kalakota and Robinson (2001, pg. 4), in its first phase (1994 - 1997), e-Commerce was about presence, making sure that everybody had a web site. The second phase (1997 - 2000) of e-Commerce was about transaction: buying and selling over digital media which is focused on Order Flow and Gross Revenue.

Today, e-Commerce is entering the third phase (2000 - ?), with a focus on how the Internet can impact profitability. Profitability is not about increasing Gross Revenue but rather increasing Gross Margins. This phase is known as e-Business and it includes all the applications and processes enabling a Company to service a business transaction. In addition to encompassing e-Commerce, e-Business includes both front- and back- office applications that form the core engine for modern business models.

Thus e-Business is not just about e-Commerce transactions or about buying and selling over the Web, it is the overall strategy of redefining old business models, with the aid of technology, to maximise customer value and profits. E-Business is about P2P - Path to Profitability.

Building e-business infrastructure in-house may be a complex and expensive solution compared with using a commercial e-Commerce suite or outsourcing, which is usually quicker and less expensive, this leads us to the objective, preceded by the structure of this research.

1.2 Research Objective

To evaluate the repercussion (activities, reason, benefits and problems) outsourced IT (by Small and Large companies) has on e-Commerce, for some listed companies in Finland.

1.3 Structure

In addition to the background and research objective prescribed above, this thesis is structured as follows.

Chapter 2 is Review of Related Literature – e-Commerce. It begins with the objective and structure, and includes a review of various thesis, empirical studies (what we know) and textbooks literature of e-Commerce (systems and applications), and provide briefly definitions of essential terms.

Chapter 3 is Review of Related Literature - Outsourcing. It begins with the objective and structure, and includes a review of various thesis, empirical studies (what we know) and textbooks literature of outsourcing, and provide briefly definitions of essential terms.

Chapter 4 is Review of Current Researches. It begins with the objective and structure, and includes a review of current, relevant and significant theses (what we know) about General Outsourcing and IT Outsourcing, gives an over all assessment of the previous researches, and a conclusion.

Chapter 5 is Hypotheses Development and Methodology. This section is divided into two:

a) Hypotheses Development

It begins with the objective and structure, and includes development of hypotheses related to IT Outsourcing by listed (small and large) companies in Finland.

b) Methodology

It commences with the objective and structure, an introduction in brief of the Research Area(s). Data collection methods and the analytical tools are introduced, the discussion also include concepts and methods for each analytical tool in detail.

Chapter 6, is the Analysis of Data. It starts with the objective and structure then analyses of the data collected (using the data collection methods) in Chapter 5 and the analytical tools specified.

In chapter 7, Summary, Conclusion and Recommendation, crowns the entire study, it commence with the objective and the structure and goes ahead to give an inside view of the overall research effort.

2.0 RELATED LITERATURE – e-Commerce

2.1 Objective and Structure

The objective of this section is to bring an inside view of various theses and empirical studies plus the definition of specific terms. It is structured as follows: 2.2 e-Commerce and its benefits 2.3 Building e-Commerce systems and Applications.

2.2 e-Commerce and its Benefits

E-Commerce is much more than having a Web site, its applications include shopping in online stores and malls, buying stocks, finding a job, conducting an auction, collaborating electronically on research and development projects, and running global exchanges. To execute these applications, companies need the right information, infrastructure and support systems (Turban et al, 2002, pp 11-12).

The term Information is essentially, anything that can be digitised - encoded as a stream of bits, examples include: books, databases, magazines, movies, music, stock prices. Information is costly to produce but cheap to reproduce. The value produced by an information provider comes in locating, filtering and communicating what is useful to the consumer. It is no accident that a wealth of information creates a poverty of attention. Nowadays, the problem is not information access but information overload. The breathless pace of change and the current fascination with the information economy are driven by advances in information technology and infrastructure, and these make information more accessible and hence more valuable (Shapiro and Varian (1999, pp 5-8)).

Web systems handle transactions from customers and also provide them e-Commerce services; Intranets and web portals are used to link employees so that they can have access to more information. Intranets are commonly used for transactional and interactive processes, information sharing purposes and, increased data availability to improve corporate productivity. Relationships in e-Commerce environment are based heavily on information exchange, which has fundamental effect on market growth and structure.

In the view of Barnes and Hunt (2001, pg. 153), along the value chain in certain sectors (such as retailing and car manufacturing), inter organizational systems have been set up for the exchange of product information, orders and, invoices, competing firms in certain sectors have also collaborated to provide common communications infrastructures for e-commerce and other essential services.

According to Turban et al (2002, pg. 247), the major infrastructure needed for B2B marketplaces are:

- Server(s) for hosting the database and applications.
- Software for executing the sell-side activities, including catalogues.
- Software for conducting auctions and reverse auctions.
- Software for e-procurement (buy side).
- Software for CRM possibly related to all call centres.
- Security hardware and software.
- Software for building a storefront.
- Other software.
- Telecommunications networks and protocols.

A major trend in the infrastructure for e-business is the convergence of various data and voice networks and the driver behind infrastructure convergence is service convenience (Kalakota and Robinson, 2001, pg. 61).

According to Turban et al (2002, pg. 49), market places of any kind need to be connected to the existing information systems of both buyers and sellers.

The success of e-business strategies depends on management's proficiency in creating next generation services on a software foundation. Clearly, we have entered an era of complex, cross-functional integrated apps, called 'application frameworks', which represent the foundation of e-business (Kalakota and Robinson, 2001, pg. 149).

According to Turban et al (2002, pg. 249), the integration includes: ERP software, Customer, supplier and other databases, Legacy systems, Catalogue (product) information, Inventory systems, Sales statistics, Supply Chain Management (SCM) and DSS applications.

The global nature of e-Commerce related technology, the opportunity to reach hundred of millions of people, its interactive nature, the variety of possibilities for its use, as well as its resourcefulness and rapid growth of its supporting infrastructure, especially the Web, has resulted to many potential benefits to Organizations, Individuals as well as the Society.

As Turban et al (2002, pg. 25) puts it, the benefits of e-Commerce are just starting to materialize, they will increase significantly as e-Commerce expands. There are different ways companies, individuals, as well as society get benefits from e-Commerce, these benefits are distinct as follows:

a) Benefits to Organizations:

- E-Commerce has expanded the marketplace to national and international markets.
- Decrease cost of creating, processing, distributing, storing, and retrieving paper-based information.
- Supply chain inefficiencies, such as excessive inventories and delivery delays can be minimize.
- Innovative business models that provide strategic advantage and/or increase profits.
- It allows for a high degree of specialization that is not economically feasible in the physical world.
- Reduces the time between the outlay of capital and the receipt of products and services.
- It supports BPR efforts. By changing processes, the productivity of salespeople, knowledge workers, and administrators can increase by 100 percent or more.
- It lowers telecommunication costs.

- It enables companies to interact more closely with customers, even if through intermediaries. This promotes better CRM and increases customer loyalty.
- Other benefits include improve corporate image, improve customer service, new business partners, simplified processes, compressed time-to-market, increased productivity, reduced paper and paperwork, increased access to information, reduced transportation cost, and increased flexibility.

b) Benefits to Customers:

- E-Commerce allows consumers to shop or perform other transactions year round, 24 hours a day, from almost any location.
- Provides consumers with more choices; they can select from many vendors and from more products.
- Provides consumers with less expensive products and services by allowing them to shop in many places and conduct quick comparisons.
- In some cases, especially with digitised products, e-Commerce allows for quick delivery.
- Consumers can locate relevant and detailed product information in seconds, rather than days or weeks.
- It facilitates competition, which results in substantially low prices for customers.
- It allows customers to interact with other customers in electronic communities and exchange ideas as well as compare experiences.

c) Benefits to Society:

- More individuals work at home and do less travelling for work or shopping, resulting in less traffic on the roads and reduce air pollution.
- Some merchandise can be sold at lower prices allowing less affluent people to buy more and increase their standard of living.

- People of Third World Countries and rural areas are now able to enjoy products and services that were not available.
- Public Services, such as health care, education and distribution of government social services can be delivered at a reduced cost and/or improved quality.

Despite all these benefits of e-Commerce, there are limitations; these are divided into technical and non-technical limitations. Technical limitations include: system security, reliability, evolving standards and some communication protocols, insufficient telecommunication bandwidths in many, evolving and rapidly changing software development tools, in compatibility between e-Commerce software and certain operating systems or components.

Non technical limitations include: the cost of developing e-Commerce in-house can be very high and mistakes made due to lack of experience may result in delays. There are many opportunities for outsourcing, but where, how and where to do it are not simple issues.

Security and privacy, trust of the faceless vendor, e-Commerce is not stable (it is still evolving and changing rapidly), lack support services (for example qualified tax experts), Internet access is still very expensive and/or inconvenient for many potential customers.

However, e-commerce is rapidly expanding, as Turban et al (2002, pg. 28) puts it, the number of people who buy and sell stocks electronically in the USA increased from 300.000 at the beginning of 1996 to over 17.000.000 by the fall of 2001, in Korea, about 60 percent of all stock market transactions took place over the internet in the fall of 2001.

2.3 Building e-Commerce Systems and Applications

The diversity of e-Commerce models and application, which vary in size from a small store to a global exchange, requires a variety of development methodologies and approaches. Small storefronts can be developed with HTML, Java or other programming languages. They can also be quickly implemented with commercial packages or leased from Application Service Providers (ASP) for a fee. Larger applications can be outsourced or developed in-house.

According to Turban et al (2002, pg. 475), building medium to large applications requires extensive integration with existing information systems such as corporate databases, intranets, Enterprise Resource Planning (ERP) and other application programs.

2.3.1 E-Commerce Development Process.

The objective of e-Commerce application development is to create the application and implement them.

According to Turban et al (2002, pg. 477), the development process has five major steps:

STEP 1: E-Commerce Architecture creation- A system analysis approach:

The major objective of step 1 is to create the Architecture. This has a six-step process.

Defining business goals and vision, defining the information architecture, defining data architecture, defining application architecture, defining e-Commerce architecture and defining the organization architecture. The analysis can be supported by a set of tools and methodologies, some of which are generic to other IT applications. Of special interest is the Joint Application Development (JAD), a collaborative methodology for identifying system requirements.

STEP 2: Select a Development Option:

The major development approaches are; use an ASP to do the job (Outsourcing), buy an application then install, build the system in-house (in sourcing), join a third-party e-marketplace, enter into some kind of partnership or alliance that will enable the company use someone else's site and/or use a combination of the approaches listed.

STEP 3: Installing, Connecting and more:

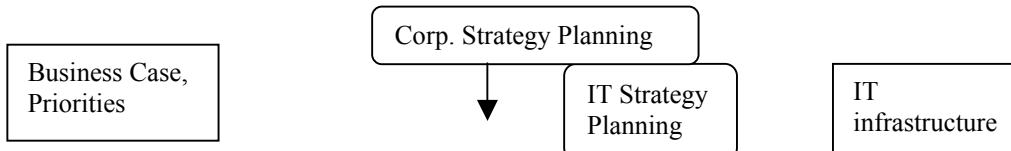
E-Commerce applications need to be connected to the corporate Intranet and/or extranets. Connections to databases, other applications, business partners, or exchanges maybe required. This can be done in-house or outsourced. The applications are tested and user reactions are examined and more.

STEP 4: Deployment:

Once the application passes all the tests, they can be deployed. Here one may deal with such issues as conversion strategies, training, and resistance to change. This step can be done in-house or outsourced.

STEP 5: Operation and Maintenance:

Operation and Maintenance can be done in house or outsourced. E-Commerce operations can be very complex in e-Commerce exchanges with many regulations. Maintenance can be a big problem due to rapid changes in the e-Commerce technology field.



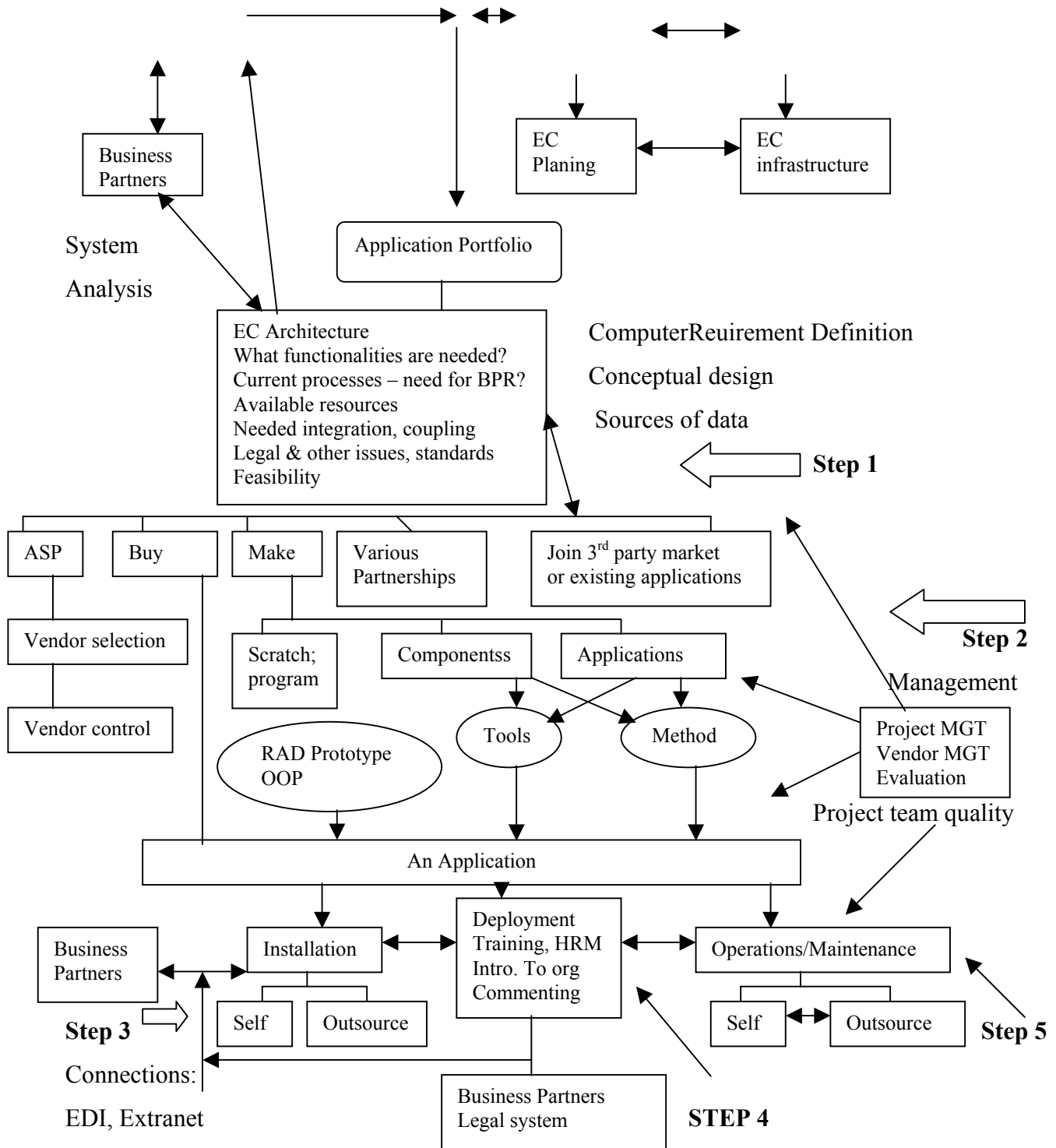


Figure 1: The process of EC Application Development (Turban et al, 2002 pg. 476)

The development process as seen in Figure 1 above can be fairly complex and costly, and it must be managed properly. A project team is usually created to manage the process. As with any large-scale

development, appropriate management include periodic evaluations of system performance, standard project management tools and techniques are sufficient for e-Commerce also.

2.3.2 E-Commerce Architecture = Integrated Application Frameworks.

The notion of integrated application frameworks has been around for a long time in new product development. The concept of modular subsystems is beginning to take root in e-Commerce software development. Designing and developing every application from scratch and in-house was the norm, in software development for a long time. The invent-everything-from-scratch syndrome of software development has been over thrown by the packaged-software revolution. Companies that do not recognize this trend will be in trouble.

Unfortunately, the road to an integrated picture has a lot of twist and turns. Unlike the old days, when you could not go wrong for buying IBM, no one vendor in the e-Commerce world can provide every modular piece of the puzzle. Hence companies purchase multiple apps from multiple vendors. As a result, many companies run the risk of having multiple applications that are not designed to work together and they find themselves having to integrate business solutions.

This situation sets the stage for understanding how disparate functional frameworks can be integrated into e-business architecture. By focusing on end-to-end processes and business apps can companies achieve the level of performance that the market demands. A clear roadmap of the various cross-functional apps and how they integrate to form the backbone of the enterprise becomes essential. Without such a roadmap, managers cannot have a clear idea of what steps and what decision to make. The complete enterprise, including customers and suppliers, cannot be integrated in one fell swoop. A staged approach is always useful in aligning software with business requirements.

Integration in established companies is often easier said than done, owing to infighting, turf issues, and lack of strong leadership, a large-scale integration of customer-facing apps, supplier facing apps, and internal apps require business transformation and reengineering of legacy apps.

Creating an integrated architecture like the one in figure 2 below is a top management issue. While management of most companies are overwhelmed with such issues as mergers and acquisitions or busy implementing solutions for isolated apps, the challenge of creating an integrated infrastructure or initiating major mission-critical application development efforts around the e-business paradigm falls through the cracks.

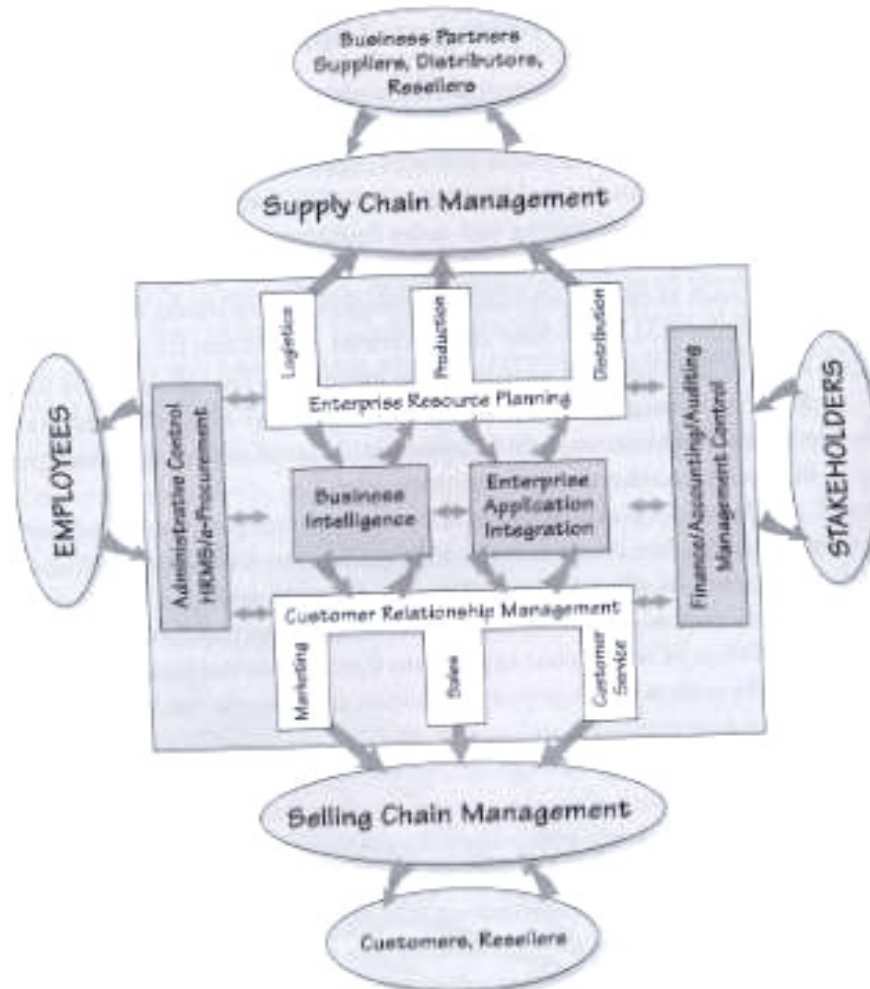


Figure 5.11: e-Business Application Architecture

Figure 2: e-Business Application Architecture (Kalakota and Robinson, 2001, pg. 164)

Figure 2 above shows how all the various application frameworks are integrated to form the model of an e-Business enterprise. This blueprint is useful because it assists managers in identifying near-term and long-term integration opportunities, based on predefined strategies.

However, e-Commerce development process as seen above can be outsourced to reap its advantages especially where there is a great deal of up-front investment, this leads us to section 3.0 where outsourcing will be discussed in detail.

3.0 RELATED LITERATURE – Outsourcing

3.1 Objective and Structure

The objective of this section is to bring an inside view of various theses and empirical studies plus the definition of specific terms. It is structured as follows: 3.2 Outsourcing 3.3 Outsourcing IT and 3.4 Outsourcing e-Commerce IT.

3.2 Outsourcing

According to Horngren (2000, pg. 383), Outsourcing is the process of purchasing goods and services from outside vendors rather than producing the same goods or services within the organization, which is called in sourcing. Decisions for a producer of goods or services to in source or outsource are also called make-or-buy decisions, sometimes qualitative factors dictate management make-or-buy decision.

The most important factors in make-or-buy decision are quality, dependability of supplier and cost. As a matter of fact, not only are the activities transferred, but the factors of production and decision rights often are, too. Factors of production are the resources that make the activities occur and include people, facilities, equipment, technology and other assets. Decisions rights are the responsibilities for making decisions over certain elements of the activities transferred.

Calingo (1997, pg. 10), in general, a viable strategy is one where the organisation is able to exploit environmental opportunities and/or ward off the threats it faces by employing its strengths and overcoming its weaknesses in order to achieve its performance goals and objectives.

Besides cost and profitability considerations, sourcing decisions also involve consideration of strategy issues, detailed financial evaluation, efficiency and risk dimensions relating to supplier quality, lead times and delivery reliability (Tayles and Drury, 2001).

According to Barthelemy and Geyer (2001), companies should outsource everything except those special activities in which they could achieve a unique competitive edge but also take transaction costs into account as most supplier markets are imperfect (and) outsourcing entails unique transaction costs – searching, contracting, controlling, and re-contracting – that at times may exceed the transaction costs of having the activity directly under management's in-house control.

Transaction Cost Economics is mainly concerned with transaction and production cost efficiency, the management literature has sought to integrate performance elements in outsourcing framework.

As Greaver II (1998, pg. 8) puts it, the outsourcing initiative becomes strategic when it is aligned with the organization long-term strategies, and when the typical outsourcing benefits have emerged over several years, the results, either positive or negative, will be significant to the organization. Strategic outsourcing takes a higher level by asking fundamental question about outsourcing's relevance to the organization and its:

- Vision of it's future.
- Current and future core competencies.
- Current and future structure.
- Current and future costs.
- Current and future performance.
- Current and future competitive advantage.

The major reasons why most companies prefer to outsource many of the support services can be enumerated as follows:

- A desire to concentrate on core business.
- The need to have services up and running rapidly.
- Lack of expertise (experience and resources) for many of the required support services.
- The inability to have the economy of scale enjoyed by outsourcers often results in high costs for in-house option.
- Inability to keep up with rapidly fluctuating demands if an in-house option is used.
- There are simply too many required services for one company to handle.

The above reasons can be broken down into the following:

1. Organization driven reasons

- Enhance effectiveness by focusing on what you do best.
- Increase flexibility to meet changing business conditions, demand for products and services, and technologies.
- Transform the organization.
- Increase product and service value, customer satisfaction, and shareholder value.

2. Improvement-driven Reasons

- Improve operating performance, this can relate to many different areas such as high quality, increased productivity, increased output and greater profitability.
- Obtain expertise, skills, and technologies that would not otherwise be available.
- Improve management and control.
- Improve risk management.
- Acquire innovative ideas.
- Improve credibility and image by associating with superior provider.

3. Financial-driven reasons

- Reduce investments in assets and free up these resources for other purposes.
- Generate cash by transferring assets to the providers.

4. Revenue-driven reasons

- Gain market access and business opportunities through the provider's network.
- Accelerate expansion by tapping into the provider's developed capacity, processes, and systems.
- Expand sales and production capacity during periods when such expansion could not be financed.
- Commercially exploit the existing skills.

5. Cost-driven reasons

- Reduced costs through superior provider performance and the provider's lower cost structure.
- Turn fixed costs into variable costs.

6. Employee-driven

- Given employees a stronger career path.
- Increase commitment and energy in non-core areas.

The outsourcing reasons are many, while the list is not exhaustive, it should provide food for thought.

3.3 Outsourcing IT Steps

Implementing most e-Commerce applications requires the use of support services. The most obvious support services are payments, security, logistics, and infrastructure and technology. The

services can be organised into the following: e-infrastructure, e-process, e-markets, e-content, e-communication and e-services.

According to Barthelemy and Geyer (2001), the following are seven suggested steps to successful outsourcing:

- Planning initiatives; Assess risks, announce initiative, form project team, engage advisers, train team, acquire other resources, address issues (Resource Management, Information Management and Project Management), and set objectives.
- Exploring strategic implication; understand organization's (vision, core competencies, structure, transformation tool, value chain and strategy), Determine - decision rights, contract length, termination date, align initiative.
- Analysing cost and performance: Measure activity cost, project future cost, measure performance (existing and future, and cost of poor performance), Benchmark costs/performance, Determine- specific risks, asset values, "make" total costs, pricing model and final targets.
- Selecting providers; Set qualification, set evaluation criteria, identify providers, screen providers, Draft Request for Proposal (RFP), evaluate proposals (qualifications, costs), perform due diligence, determine -"buy" total costs, shortlist providers, finalist provider, review with senior management.
- Negotiating terms; plan negotiation, address -high level issues and deal breakers, prepare term sheets, negotiate contract (scope, performance standard, pricing schedules, terms and conditions), announce relationship.
- Transitioning Resources; adjust team roles, compare/merge transition plans, address transition issues (communication, human resources, other production factors), meet with employees (organization and provider), make offers/termination, provide counselling and physically move.
- Managing relationships; Adjust management styles, set up oversight council, communicate, define and design (meeting agendas, meeting schedule and performance report), perform oversight role, control poor performance, solve problems and build the relationship.

The Benefits of Outsourced e-Commerce related IT are distinct below as follows:

1. Business

- Reduces the need to attract and retain skilled IT professionals.
- Enables company to concentrate on strategic use of IT.
- Enables small and medium -sized companies to use Tier 1 applications for example ERP, SCM, CRM.
- Application scalability enables rapid growth of companies.

2. Technical

- Fast and easy application deployment.
- Higher degree of application standardization.
- Access to wide range of applications.
- Application maintenance simplified and performed by Application Service Providers (ASP).
- Simplified user support and training.

3 Economic

- Low total cost of ownership.
- Low up-front investment in hardware and software.
- Improved cost control as result of predictable subscription costs.

Despite all these benefits, the following inhibitors are likely to emerge and will need to be addressed before the initiative can gain much energy. They include; uncertainty, loss of control, loss of core competencies, employee unhappiness, difficulty in reversing, and risks of failure.

- Uncertainty (significant uncertainties exist, existing costs are not well understood, anticipated savings will never materialize, providers' excellent reputations are undeserved, and superior providers to the existing internal unit do not exist).
- Loss of control (Will lose control over provider, will become dependent on providers, will lose cross-functional skills, informal networks, and corporate learning).
- Conflict (will lose core competencies, confidentiality, the conflicting interests between the parties will never work, and providers could expand into our business).
- Employee unhappiness (will fail to fulfil corporate responsibility to preserve jobs, may undermine employee loyalty, will lessen commitment to our community, and will damage morale of all employees, not just those outsourced).
- Financial (providers cannot do these same activities, earn a profit, and give a price that is less than the internal unit, and will lose economies of scale).
- Excuses (it need more study, we are too busy to study that now, it is a good idea, but the timing is bad, several pilot projects need to be successful first to prove it works, customers will hate this, there are too many hidden costs to outsourcing, and we would never actually terminate employees who would not transfer to the provider).

Thus many companies view outsourcing as a strategy.

3.4 Outsourcing e-Commerce IT (Infrastructure for e-Commerce Marketplaces)

This section is based on the various infrastructures that are needed for e-Commerce. According to Turban et al (2002, pp 247), the major infrastructure needed for B2B marketplaces are:

a) Server(s) for hosting the database and applications

There are several options for acquiring the hardware and software necessary to operate a server. Some of these tools are proprietary (such as a system from Sun Microsystems), whereas others are in public domain, such as Linux and Apache. Many Web sites require additional data storage equipment, database servers, security firewalls, multimedia servers, and other related hardware

and software associated with robust Web sites. Owning a Web server can be very costly and requires technical expertise that may not be available in-house. Therefore, rather than building and operating a website in-house, many companies choose to use Web hosting. Firms that host Web sites for their clients provide space on a Web server and frequently offer an entire suite of services to remove the technical burdens and allow the client to focus on their own core competency. Example includes dellhost.com, globalcrossing.com, exodus.com, loudcloud.com, digex.com, Angelfire.com, Netfirms.com, Freemerchant.com, and bigstep.com.

b) Software for executing the sell-side activities, including catalogue

The software performance is similar to the storefront, but includes several additional features such as a B2B payment gate, Electronic contract negotiation feature, order tracking features, security and privacy systems, ability to negotiate online, Integration with corporate back-end systems.

c) Software for conducting auctions and reverse auctions

The capabilities include: Catalogue of items to tender and their content management, search engine, reverse auction mechanism, automatic vendor approval and work flow, electronic collaboration with trading partner, ability for bidders to use m-commerce for bidding, automatic language translation, etc.

d) Software for e-procurement (buy side)

The capabilities include comparison engine for alternative vendors, search engine, ordering mechanism, usage comparison, payment mechanism, etc

e) Software for CRM, possibly related to all call centres

CRM software helps organizations better manage customer relationships by tracking customer interactions of all types. The suite of product spans all the steps of the selling and customer service cycle to help automate direct-mail marketing campaigns, telemarketing, telesales, lead qualification, response management, lead tracking, opportunity management, quotes, and order

configuration. By investing in CRM applications, companies hope to build better customer retention programs to maximise customer life time revenue.

According to Kalakota and Robinson (2001, pg. 174), CRM is driving the next major wave of investment in information technology. Spending on this strategy will continue to grow by 25 – 30 percent over the next 5 years.

f) Security hardware and software

Empirical evidence leaves no doubt that the rise in attack against computers and networks has mirrored the growth of the web (Turban, 2002 pg. 543).

The sheer growth in e-Commerce has certainly made the Internet an exciting playground for hackers and crackers. There are large number of other factors contributing to the rise in cyber attacks including: security systems are only as strong as their weakest points, security and ease of use are antithetical to one another, security takes a back seat to market pressures, Security of an e-Commerce site depends on the security of the internet as a whole and, security vulnerabilities are increasing faster than they can be combated. The various types of attack include: system and software bugs and misconfiguration, denial of service attack, input validation attack, intercepted transmission, and malicious code (viruses, worms, and Trojan horses).

Larger companies doing e-Commerce are not the only ones that need to be concerned with security issues, it applies also to smaller companies as well as individual users. Some of the major security issues that can occur in e-Commerce include authentication, authorization, auditing, confidentiality or privacy, integrity and, availability (Turban 2002, pg. 547-8).

Security technologies used include firewalls and access control, virtual private network, and intrusion detection systems.

g) Software for building a storefront

An electronic storefront must support the same steps and task that a physical store must support. A storefront is built on the company's server. It can be a B2C application and/or B2B application. In particular an electronic storefront software needs to offer a buyer the ability to discover, search for and compare products for purchasing using e-catalogues, evaluate products and services, place an order for desired products, pay for the ordered products, have their order confirmed.

The seller needs to have customers' order processed, arrange for delivery with a tracking system, provide the capability for cross-sell and up-sell, connect to inventory management modules, etc.

(h) Telecommunication networks and protocols

For e-Commerce companies of all kinds to interact with each other easily and effectively, they must be able to connect their servers, applications, and databases. For this to happen, standard protocols and data representation schemes are needed. The web is based on standard communication protocols of Internet Protocol (IP) and HyperText Transferred Protocol (HTTP). To further extend the functionality of e-Commerce sites one can utilize JavaScript and other Java and ActiveX programs. These tools allow for human interaction, but they do not address the need to interconnect back-end database systems and applications, one of the promising standards is eXtensible Markup Language (XML) and its variants.

(i) Other software:

Any other software deemed necessary by the organization for the smooth running of the entire infrastructure.

The above infrastructures are potential candidates that could be outsourced, purchased and or in-sourced, based on the cost effectiveness and the benefit that will be gained. For the sake of compatibility of the front- and back-end, care must be taken in the decision process.

Historically, early businesses were vertically integrated - they owned and controlled their own sources of materials manufactured components, performed final assembly, and managed the distribution and sale of their products to consumers. Later, nearly all firms began to contract with other firms to execute various activities along the supply chain, from manufacturing to distribution and sale, in order to concentrate their activities in their core competency. Of all business outsourced, IT is done more often than in any other area.

According to Turban et al (2002, pg. 312), most companies engaged in e-Commerce, and practice a very large degree of outsourcing. While concentrating on the core competencies, companies develop strategic alliances with partner firms in order to provide activities such as payments processing, order fulfilment, outbound logistics, Web site hosting, and customer service. In this way, overall business competitiveness can be strengthened through reducing the time-to-market and enhancing the ability to adapt to changing market conditions.

Outsourcing is a powerful tool when used appropriately. Though it may take several years for all benefits to emerge, some should become apparent almost immediately. The cost of an outsourcing mistake can be significant and difficult to reverse. Outsourcing is much easier to consummate (improperly) than it is to terminate, and recover from, if done poorly.

4.0 REVIEW OF CURRENT RESEARCH

4.1 Objective and Structure

There are many research papers on outsourcing (general, IT or e-Commerce IT), they give us a clue on where the study of outsourcing is and their contribution to the existing body of knowledge. In this section, due to space and time, significant papers, current and relevant are selected and analysed as General outsourcing, IT outsourcing and e-Commerce-IT outsourcing, they attempt to show what we know and gives an over all assessment of the researches, and a conclusion. The structure is as follows: 4.2 General Outsourcing, 4.3 IT Outsourcing, 4.4 Conclusion.

4.2 General Outsourcing

(a) Strategic sourcing: benefits, problems and a contextual model by D. Jennings (2002).

Jennings (2002) presents the strategic benefits and problems relating to the sourcing decision. These factors include issues of cost, quality, flexibility, strategic focus, leverage and diversification, the potential loss of critical skill and knowledge, and appropriation of final product value.

He develop a model (Contextual Model) structuring the contextual factors: capability, cost, technology, supply and product market conditions to enable a consideration of the outsourcing decision through a focus upon its implication for competitive advantage. The model proposes that decision needs to focus upon the consequences or competitive advantages, with competitive advantage being based upon a matching of capability to conditions in the competitive environment.

He sets out by saying, outside supply can be used to provide the entire range of value chain activities, this include inbound logistics, operations, outbound logistics, marketing and sales, service, procurement, technology development, human resource management and firm infrastructure.

Jennings applied this model to the Games Gang Ltd, a US company, and found out that the company's strategy provides leverage for financial, human and intellectual assets in the development, production and marketing of new games. Contrasting this with the competitive Games Workshop Ltd whose strategy, providing a hobby, based upon the customers' enthusiasm for collecting and gaming.

To support this strategy, the company follows a largely in-house approach to sourcing. Secondly, he applied the model to British Airways (BA) and found that BA announced a plan to transform itself to "virtual airline" thus laying off workers and providing for outsourcing of all check in personnel, baggage and cargo handling, catering and engineering and stand-by flight crews. Thus all BA strategy is to lease engines and aircraft rather than own them and to go into alliance with American Airlines. He concludes that the outsourcing decision requires the recognition of a wide range of contextual factors and the implications of their longer-term development.

b) Trends in outsourcing: Contrasting USA and Europe by A. Kakabadse and N. Kakabadse (2002).

The purpose of this research was to contrast current trends in outsourcing practices between Europe and US through a survey. The study was undertaken in two stages; initial interviews with a sample of service purchasers and service providers in order to ascertain the key issues and trends in outsourcing. This was followed by an empirical based survey of Europeans (including UK) and US based organizations. 747 senior managers involved, returned fully completed questionnaires.

The survey identifies 14 reasons for outsourcing namely: Cost discipline and control, improve service quality, best practices, focus on core competencies, enhance capabilities to develop new products and services, access to new technology and skills, reduce headcount, reduce capital cost, grow in-house expertise, reduce transaction cost improve in technology, enhance position in value chain, and enhance capability for change. They also identified areas of outsourcing, criticality of outsourcing and the impact of outsourcing on Human Resource Management (HRM).

The authors' found that for most companies, outsourcing is not undertaken to solely satisfy the pressing need for cost discipline. US companies adopt more strategically oriented approach to outsourcing through concurrently aiming to achieve best practice, improving service quality, focusing on the core competencies of the organization, attempting to better utilise and leverage technology through out the organization's processes and systems, however, European companies pay greater attention to achieving economies of scale, the non cost based benefit gain through outsourcing.

Thus both US and European companies, the most preferred relationship between service purchasers and service providers is that of a single provider who has an industry focused and proven track record.

c) Outsourcing in Edinburgh and the Lothian by W. Bailey, R. Masson and R. Raeside (2002).

Bailey, Masson and Raeside examine outsourcing in Edinburgh and the Lothian. The aims of this study were to investigate the extent and nature of outsourcing activities of typical organizations in the Lothian region, their motivations for outsourcing, how outsourcing partners are selected,

examine if locally based vendors are used, and to investigate the benefits and problems of outsourcing.

A semi-structured interview with typical outsourcers and a questionnaire were established and sent to 200 organizations. Responses were obtained from 12 public and 46 private organisations. The results of the survey show that a vast majority of organizations in the Lothian region outsource at least one or more of their activities, the most commonly outsourced activities are manufacturing components, maintenance security, cleaning and catering. The least are accounting, marketing and logistics, only 17% of the sample outsource information technology activities.

It was also found that increasing the quality of the service is the most important motivating factor for outsourcing, while selection of outsourcing contractors is based on reputation and previous contracts, advertisements and meetings at conferences and trade fairs.

The researchers identified quality services and reduced cost as the major benefits and lost of control which could lead to reduced responsiveness, increased lead time when introducing new product as the major problems.

d) Moving from make/buy to strategic sourcing: The Outsource Decision process by M. Tayles and C. Drury (2001).

Tayles and Drury researched on moving from make/buy to strategic sourcing. They put forward the outsourcing decision process. The researchers came up with a model called Sourcing Decision Model and apply the model to a case study, Engineering Plc, which has components or processes called component X, Y and Z which are possible candidates for outsourcing.

The model gives a step by step process that has to be followed before arriving at the final decision to in source or outsource.

Engineering Plc is a UK based and operates in the global market dealing in highly engineered and technologically advanced products. The research method used were interviews and meetings with managers in the company.

They found that the model was a success as it ensures that the company's strategy, regarding capital allocation is followed unless there are exceptional reasons for tactical deviation. The model contributed to more effective decisions and performance improvement, whether through greater efficiency of in-house manufacture or planned disposal of a non-strategic business unit.

The model generates strategic dialogue and shaping the company strategy as previous decisions on components were taken individually by the component manager concern. The model created the awareness of some of the technical aspects of inputs to the decision, such as costing systems, which are now clearly understood.

However they found out that there were some limitations of the model when applied to a complex and dynamic environment. Amongst these are: the availability of new suppliers, the self interest of the players, the cost approach used, dealing with the move from make to buy and tactical retention.

e) Outsourcing implications on companies profitability and liquidity: a sample of UK companies by Juma'h and Wood (2000)

Juma'h and Wood investigated outsourcing implications on companies profitability and liquidity. The researchers consider the impact of outsourcing on employment cost, research and development cost, value added, profit level and possible change in equity and assets structure.

Published data for the variables of the researchers' interest was collected from 29 UK outsourcing companies excluding companies in the financial sector due to differences in their financial structure.

Financial ratios such as profitability ratio, Return on Equity (ROE), Employee Remuneration relative to sales and Quick Ratio, were used to evaluate outsourcing companies performance before and after outsourcing announcements between 1991 to 1997. They used a benchmarking, comparing the profitability and liquidity ratios of outsourcing companies compared to average UK companies.

The researchers point out the limitations of the analytical tools (Ratio analysis) due to the variation in applying accounting principles in accounting areas such as Inventory valuation (FIFO, LIFO etc), Depreciation and amortisation, Capitalisation and expenses recognition (R&D), Leasing (Operating and Capital) Methods of Business combination (consolidation), Valuation of investments (cost, equity method), recognition of specific items in the financial statements (discontinued operations, impairments, extraordinary items).

Thus the major problem is the difficulty of ensuring comparability and consistency of the underlying accounting principles in the event year.

Juma'h and Wood concluded that outsourcing companies' profitability and liquidity decreased in the outsourcing year and recovered in the subsequent year.

4.3 IT Outsourcing

a) IT outsourcing: Evidence from France and Germany by J. Barthelemy and D. -Geyer (2001).

Barthelemy and Geyer (2001) study was based on IT outsourcing: Evidence from France and Germany. The purpose was to get a comparative analysis of IT outsourcing as evident in France and Germany in two dimensions: IT outsourcing decision and the management of IT outsourcing operations.

Regarding the IT outsourcing decision they focus on attitude towards IT outsourcing, type of outsourced IT activities, IT outsourcing motivations, and IT outsourcing decision-making and for the management of IT outsourcing operation, they focus on personnel transfer and layoffs, IT outsourcing vs. quasi-outsourcing, and concerns with IT outsourcing.

A survey was carried out through questionnaire from 500 largest firms in both countries, with 12.2 percent and 19.8 percent returned questionnaires for France and Germany respectively.

Barthelemy and Geyer concluded that despite an apparent homogeneity, there are a few significant differences between IT outsourcing in France and Germany and they include:

- German firms tend to outsource less critical activities than French ones.

- IT outsourcing joint decisions are more frequent in Germany than France.
- IT outsourcing operations more frequently entail personnel transfers and layoffs in France than in Germany.
- The proportion of quasi-outsourcing operations is larger in Germany than in France.

Thus the differences between French and Germany IT outsourcing practices are explained through cultural and economic differences.

b) Information systems Outsourcing: reasons, reservations and success factors, by E. Claver et al (2002).

E. Claver et al (2002) aimed at determining the main reasons that lead to Information systems outsourcing, the reservations presented in these types of contracts and critical outsourcing success factors.

They used transaction cost theory as the basis for analysing outsourcing decisions and give a distinction between production costs (costs related to work, capital and materials) and co-ordination costs (derived from staff management and control). In addition they look into variables such as specificity of assets, the degree of uncertainty and the frequency of transactions as additional variables for the theory.

A survey was carried out in Spanish Public Universities, questionnaire was sent to 47 IT Managers and 35 respondents were received, that is 74.5% response rate. The data obtained from the survey was treated using SPSS 9.0 software for Windows.

Their findings were as follows:

- The activities that can be outsourced include: Hardware maintenance, programming, software maintenance, Application analysis, staff and/or user training, system implementation, Network services, Support to end users, Security and Systems operation. Of all these activities, the most often outsourced is hardware maintenance with 70.1% mean.

- The most relevant reasons for outsourcing are staff cost saving, increased flexibility of the IS department, focus on IS strategic issues, elimination of troublesome, everyday problems, technology cost saving, improve IS quality, providing alternative to in-house, and increased access to new technology and reduced technological obsolescence risk. The most relevant reason is staff cost saving with 68.6% as the mean.
- Reservations about outsourcing, they put forth the following points; a greater dependence on the provider, loss of critical skills and competences, the provider does not comply with the contract, qualification of provider's staff, costs/benefits unclear, opposition from company's IS staff, hidden costs in the contract, security issues, irreversibility of the outsourcing decision, and incapacity to adapt to new technologies. A greater dependence on the provider was rated the most viable reservation variable with 68.6% as the mean.
- The key outsourcing success variables include; the provider must understand the client's objective(the best variable with 74.3% mean, the top management's support and involvement, choosing the right provider, frequency of client-provider contracts, to pay careful attention to the client's specific problems, to make a properly drawn up contract, to what is intended with the use of outsourcing and finally, a good value for money relationship.
- To choose an outsourcing provider, the following factors must be considered; service quality (74.3% as mean), previous client-provider relations, cultural proximity between client and provider, the provider's solvency and stability, the provider's reports and reputation in other universities, the price, contract flexibility and provider's resources.

Based on the analysis of the factor above, they found that IS outsourcing is a useful managerial practice in the IS departments of Spanish Public Universities because costs can be controlled.

(c) Selecting sourcing strategy for technological innovation: an empirical case study by V. Chiesa et al (2000).

The objective of this paper by V. Chiesa et al (2000), are two fold; to explain the rationale behind the choice of a definite mode of collaboration and to describe the process through which the choice is actually made.

This paper studies the problem of selecting the most adequate organizational form to access external sources of technology, in order to support the innovation process. This paper gives the various unique or shared taxonomy of organizational forms of collaboration as acquisition, merger, joint venture, alliance, consortium, networking, outsourcing, and so on.

These modes are classified on the basis of the level of integration. The modes can be high, medium or low and the level of integration require different organization and management structures.

The factors that affect the selection of organizational form of collaboration can be grouped into three, namely: the objective, content and typology of partners involved in the collaboration.

V. Chiesa et al (2000) proposed a framework for selecting the sourcing strategy of organizational form of collaboration to be adopted in a technological collaboration and is structured thus: defining at the appropriate organizational form for the company and negotiating with the partners.

This framework was validated in OFR Gruppo Riello, which manufacture and commercialises a wide range of devices for climatic comfort. Defining the appropriate organizational form for Reillo, the framework is applied thus; defining the appropriate unit of analysis, analysing that characteristics of the collaboration, eliminating the non-relevant factors, identifying the set of priorities, matching the priority requisites to the characteristics of the different organizational forms, negotiating with the (potential) partners.

It was found that the framework is a tool that supports the decision making process. Application of the proposed framework forces different functions, within the company to communicate and collaborate.

(d) Managing IT outsourcing: a value-driven approach to outsourcing using application service providers (ASP) by L. Chen and K.S. Soliman (2002).

Chen and Soliman (2002), aimed at providing a value-driven approach which is an adaptation and extension of Simon's decision-making process to guide IS managers systematically through the complex process of identifying outsourcing opportunities, evaluating their viability, managing contractual and implementation issues and assessing the service quality of ASP vendors.

They gave a clear difference between traditional outsourcing and ASP namely; the allocation of ASP revenues show a clear demand for e-Commerce, CRM, and ERP applications, traditional outsourcing often focuses on areas of software development and IT operation activities.

The value-driven approach to outsourcing ASP was adapted and extended from Simon's decision making process, which was design for making managerial decisions. This decision model consists of four phases, namely: intelligence, design, choice and review. The value-driven approach has five phases, namely: identification (identify information needs and define core competencies), analysis (determine decision making criteria, evaluate alternative solutions and select the best alternative), design (Select a service provider, determine a client-vendor relationship and prepare service contract), implementation (Prepare the technological infrastructure for ASP services and manage internal issues), and assessment (monitor service quality, assess user satisfaction and value analysis).

These five phases correspond to the four phases of Simon's decision making process. They concluded that this model has proven to be promising, though there is no empirically validated instrument for measuring the service quality of ASP, this approach has proven to be promising solution to IT outsourcing but it is still in it infancy.

(e) Using analytical hierarchy process to analyse information technology outsourcing decision by G.G. Udo (2000).

G.G. Udo (2000) proposed an Analytical Hierarchy Process (AHP) as a suitable technique for analysing information systems outsourcing decision. He classified information into two categories; commodity (can be outsourced) and strategic (kept in-house) services.

The AHP can be used to rank all the possible alternatives of outsourcing using several criteria. It converts subjective assessments of relative importance into a linear set of weights that can be used in ranking the alternatives. He viewed outsourcing IT not as an end in itself, is a part of the broader context of the firm restructuring. The benefits of outsourcing (cost savings, risk sharing, access to resource and technical staff, focus on core products) and the disadvantages (dependency on third parties, loss of control, loss of flexibility) were examined.

The AHP uses a pair-wise comparison method to rank order alternatives of a problem that are formulated and solved in a hierarchical structure. The AHP requires a problem to be decomposed into levels, each comprising of elements or factors. The AHP comprises the following steps:

- Structure a problem with a model that shows the problem's key elements and their relationships.
- Elicit judgements that reflects knowledge, feelings or emotions
- Represent those judgements with meaningful numbers
- Use these numbers to calculate the priorities of the elements of the hierarchy
- Synthesize these results to determine an over all outcome.
- Analyse sensitivity to changes in judgement

G.G. Udo (2000) applied the AHP to IT outsourcing decision analysis after identifying five groups of criteria categories, namely; strategic importance (opportunities to distinguish the firm, critical service, being stripped of knowledge, and internal expertise ineffectiveness), stakeholders' interest (customer and supplier interests, and employees' interest), vendor, cost of operations, and industry environment.

He examined the sensitive analysis using performance, dynamic, gradient, two-dimensional plot, and differences as graphical modes. While giving the advantage of AHP as having the ability to handle complex multi-criteria qualitative decision variables involved in the IT outsourcing decision-making process, he concludes by saying, this approach reduces the risk of uncertainty prevalent in this type of decision making.

4.4 Conclusion

Based on previous relevant and significant researches that are categorised into General and IT outsourcing, the following key points were identified, namely: For General outsourcing; outsourcing decision making process (models), activities that can be outsourced, reasons for outsourcing, benefits and problems of outsourcing, Financial Ratio Analysis and benchmarking were used to analysed the data (if any). For IT outsourcing; IT outsourcing decision, management of IT outsourcing operations, reasons for outsourcing, activities that can be outsourced, benefits and problems of IT outsourcing, selection of IT providers process, and Organizational form to access external sources of technology and the level of IT integration.

The various decision making process models put forth in both general and IT outsourcing include: The Contextual model by Jening (2002), Value-driven approach to outsourcing IT by Chen and Soliman (2002), Analytical Hierarchical Process by G.G. Udo (2000), and Sourcing Decision by M. Tayles and C. Drury (2001). The Contextual model has contextual factors: capability, cost, technology, supply and product market conditions. All these are examined before a decision is made on outsourcing. The Value-driven approach to IT outsourcing decision model consists of five phases, namely; Identification, analysis, design, implementation, and assessment. The Analytical Hierarchical Process classifies information into two categories, namely; commodity and strategic services and comprise the following steps; structure the problem, elicit judgement, represent judgement into numbers, calculate priorities of hierarchy, synthesize for outcome, analyse sensitivity to changes in judgement. The Sourcing decision model generates strategic dialogue and shaping of the company's strategy. It gives a step by step approach to dialogue and development of goals or objectives of the company.

The activities that could be outsourced were identified by Jennings (2002) who mentioned that outside supply can be used to provide the entire range of value chain activities, these include inbound logistics, operations, outbound logistics, marketing and sales, service, procurement, technology development, human resource management and firm infrastructure. In the view of W. Bailey, R. Masson and R. Raeside (2002), manufacturing components, maintenance security, cleaning and catering, accounting, marketing, logistics, and information technology are activities that could be outsourced. According to E. Claver et al (2002), the activities that can be outsourced include: Hardware maintenance, programming, software maintenance, Application analysis, staff and/or user training, system implementation, Network services, Support to end users, Security and Systems operation. G.G. Udo (2000), classified information into two categories; commodity (can be outsourced) and strategic (kept in-house) services.

The reasons for outsourcing (general or IT) were identified by A. Kakabadse and N. Kakabadse (2002), namely: Cost discipline and control, improve service quality, best practices, focus on core competencies, enhance capabilities to develop new products and services, access to new technology and skills, reduce headcount, reduce capital cost, grow in-house expertise, reduce transaction cost improve in technology, enhance position in value chain, and enhance capability for change. W. Bailey, R. Masson and R. Raeside (2002), increasing the quality of the service is the most important reason for outsourcing. In the view of E. Claver et al (2002), the most relevant reasons for outsourcing are staff cost saving, increased flexibility of the IS department, focus on IS strategic issues, elimination of troublesome, everyday problems, technology cost saving, improve IS quality, providing alternative to in-house, and increased access to new technology and reduced technological obsolescence risk.

The benefits of outsourcing put forth by Jennings (2002) include issues of cost, quality, flexibility, strategic focus, leverage and diversification. A. Kakabadse and N. Kakabadse (2002), identified aiming to achieve best practice, improving service quality, focusing on the core competencies of the organization, attempting to better utilise and leverage technology through out the organization's processes and systems, however, achieving economies of scale, and other non cost-based benefit gain through outsourcing. W. Bailey, R. Masson and R. Raeside (2002), identified quality services and reduced cost as the major benefits

However, Jennings (2002) identified the problems of outsourcing as the potential loss of critical skill and knowledge, and appropriation of final product value. W. Bailey, R. Masson and R. Raeside (2002), identified lost of control which could lead to reduced responsiveness, increased lead time when introducing new product as the major problems. In the same light, E. Claver et al (2002), put forth the following problems; a greater dependence on the provider, loss of critical skills and competencies, the provider does not comply with the contract, qualification of provider's staff, costs/benefits unclear, opposition from company's IS staff, hidden costs in the contract, security issues, irreversibility of the outsourcing decision, and incapacity to adapt to new technologies.

The Financial Ratio Analysis and benchmarking used by Juma'h and Wood (2000), include; Financial ratios such as Profitability Ratio, Return on Equity (ROE), Employee Remuneration relative to Sales and Quick Ratio (were used to evaluate outsourcing companies performances). They used a benchmarking, comparing the profitability and liquidity ratios of outsourcing companies with average UK companies.

Selection of IT providers process identified by E. Claver et al (2002), include the following factors; service quality, previous client-provider relations, cultural proximity between client and provider, the provider's solvency and stability, the provider's reports and reputation, the price, contract flexibility and provider's resources. According to A. Kakabadse and N. Kakabadse (2002) the most preferred relationship between service purchasers and service providers is that of a single provider who has an industry focused and proven track record.

Organizational form to access external sources of technology and the level of IT integration, according to V. Chiesa et al (2000), the various unique or shared taxonomy of organizational forms of collaboration as acquisition, merger, joint venture, alliance, consortium, networking, outsourcing, and so on. These modes are classified on the basis of the level of integration. The modes can be high, medium or low and the level of integration require different organization and management structures.

A vivid look at the previous relevant and significant researches one will realise that the researchers are very much interested in the creation and usage of models to arrive at a "make or buy" (in sourcing or outsourcing) decision, they did not explore the repercussion outsourcing IT has on e-

Commerce for various companies (small and large). Thus, this current study focuses on IT outsourcing (by small and large companies) if it has an impact on e-Commerce or not, the case of selected Finnish listed companies.

5.0 HYPOTHESIS DEVELOPMENT and METHODOLOGY

5.1 Objective and Structure

The aim of this section is to formulate hypothesis that will be tested and the methodology that will be followed in order to find an answer to the issues raised in the hypothesis. This section is divided into two: 5.2 Hypothesis development and 5.3 Methodology to follow in order to answer the question raised in 1.2 above.

5.2 Hypothesis Development

From the theoretical researches reviewed, they base on pre-outsourcing issues such as outsourcing decision making models, activities that can be outsourced, benefits, problems and reasons for outsourcing; one will realise that the current research lies heavily on the post outsourcing repercussion.

Activity	Company	
	Small	Large
Outsourcing	a	b
Not-Outsourcing	c	d

Figure 3: Relationship between Small and Large Companies Outsourcing/Not-outsourcing.

The figure above brings the following obvious issues to mind:

- a – b – Relationship between Small and Larger companies outsourcing.

- a – c – Relationship between smaller companies outsourcing and small companies not outsourcing.
- b – d – Relationship between large companies outsourcing and large companies not outsourcing.
- c – d – Relationship between small companies not outsourcing and large companies not outsourcing.

From the Decision making process, activities to be outsourced, reasons, benefits and problems of outsourcing, benchmarking of outsourced activities and the integration of the various e-Commerce applications one will realise that these variables will be analysed differently by small and large companies.

- Decision making about outsourcing will be faster in smaller companies than in larger companies because of bureaucracy.
- More activities will be outsourced in larger companies than in smaller companies because of their many functions, divisions and components.
- Larger companies have a wider range of reasons to put forth for outsourcing than smaller companies because of their many functions, divisions and components.
- The benefits of outsourcing on average will be greater in smaller companies than larger because a smaller company outsourcing one or many of her functions means there is a projection of more benefits being reaped in the future.
- Larger companies have more problems on average from outsourcing than smaller companies because of their many functions, divisions and components that are potential outsourcing candidates.
- Benchmarking or companies outsourcing policy can easily be implemented faster in smaller companies than larger ones.
- Larger companies will integrate their e-Commerce applications architecture easily than smaller companies because of the cost involved.

Thus this leads us to the following hypotheses:

HO: -There is no difference between the impact of outsourcing IT on e-Commerce by larger and smaller Companies.

HA: -There is a difference between the impact of outsourcing IT on e-Commerce by larger and smaller Companies.

The above hypotheses were developed based on the research problem I had in mind and the optimism that enough data will be available to test them, however, due to low response rate, descriptive statistics was used and the hypotheses were not statistically tested.

5.3 METHODOLOGY

5.3.1 Data

The data needed for this study is taken from companies that are listed in the Helsinki Stock Exchange (HEX). The reason being it is the only way a random sample of companies registered in Finland can be easily identified.

5.3.2 Data Collection Method(s)

The data collection methods for this study include; questionnaire, interviews, e-mails and internet (company website).

(a) Questionnaire;

The questionnaire used in this study consists of eleven questions. I will describe the structure of the questions that were presented in the questionnaire.

At the beginning, the respondents were informed that the responses to the questions will be held in confidence, only statistical results will be revealed, any and all identifying information (e-mail, addresses, etc) will be discarded upon receipt.

To start with, questions were aimed at identifying the company, their approximate size (large or small) in terms of total assets, the approximate annual budget of the IT department, knowledge about e-Commerce as a percentage of sales and purchases and who decides the e-Commerce IT to outsource. Further more, the questions required the respondents to identify how decisions about outsourcing are made, the activities that are outsourced, reasons, benefits and problems of outsourcing, how activities are measured and finally, the integration of the entire e-Commerce Application Architecture with the Financial Information System.

Firstly, the respondents were required to identify their company, the reason being that it will help the researcher to acquire more information about the company from other sources (especially the Internet). Secondly, the participants are required to given an approximate size of their company, and the approximate budget allotted for the IT department, the aim is to classify the companies into small and large. Also they were asked what percentage of their sales and purchases were derived from e-Commerce, the feedback will enable us know if they do e-Commerce (buy or sell over the web), if they do, the sixth question follows, trying to find out how outsourcing decisions are made.

Decisions about outsourcing question is drawn from the theory (sections 3.1, 3.2 and 4.3). In these sections, the outsourcing steps are laid down and movement to a next step requires a decision. The question on activities that are or can be possible candidates for outsourcing is drawn from sections 2.1, 3.3 and 4.3, aimed at identifying the possible e-Commerce IT activities that are or can be provided externally.

Next is the reason for outsourcing, this question is drawn from sections 3.1 and 4.3. The reasons are many and the list is not exhaustive, it only provides food for thought. The benefits and problems of outsourcing are aimed at identifying those elements that have increased or decreased the smooth functioning of the company. This question is drawn from sections 2.1,3.1, 3.2, 3.3 and 4.3 of the theory. The next question is based on measures used to assess if outsourcing e-Commerce IT is

profitable or not. It helps us to know if there are outsourcing benchmarks, and this question is drawn from sections 1.0, 2.1 and 4.3.

The last question in the questionnaire was based on e-Commerce application integration that helps us to know how compatible applications speak to each other and is drawn from section 2.2 and 4.3.

Actually, to get the opinion of the participants, the qualitative responses are rated from 1 to 5, for easy and fast responses by circling. Most of the approximations are tied to sales as this can be easily obtained from the Internet or other sources. For example, What percentage of your sale is from e-Commerce: (see sample of the questionnaire on Appendix A).

The responses I will receive from the questionnaire will be used to verify the expectations I put forth in 5.1 (hypotheses) above. The other methods listed below will be used if needed.

- Interviews;
- E-mails;
- Website (Internet)

5.3.3 Analytical Tools

These are the weapons that will be used to break the data collected in a form that can give a vivid understanding of the whole research effort.

5.3.3.1 Descriptive Statistics

Descriptive statistics will be used to analyse the descriptive data received that cannot be quantified. Percentages will be performed as a means of analysing some descriptive data.

6.0 EMPIRICAL INVESTIGATION

6.1 Objective and Structure

The empirical chapter begins with section 6.2, Description (what data and how), which is based on the data type, collection methods, sample population, sample size, sample method, and questionnaire used in the study. Next is section 6.3, the analysis of data consists of the results of the study, based on the questionnaire and their interpretations.

The statistical results and the analysis of data will be divided into two main groups; the descriptive statistics and Interview of IT Managers of the responding companies.

6.2 Description (what data and how)

In this section, a brief description of how and what data was collected, the sample population, sample size, sample method and questionnaire used will be presented here.

6.2.1 Source of Data

The data used for this study are responses from eleven self-administered questions sent to 147 companies listed at the Helsinki Stock Exchange as at the 28/03/2003.

6.2.2 Type of Data Collected

The data collected from the eleven questions is primary data and includes both descriptive and statistical data. Secondary data was obtained from the following websites, www.kauppalehti.fi, www.hex.fi and www.talousanomat.fi as at 28/03/2003.

6.2.3 Data collection Method (s)

The main data collection method was through posted questionnaire, secondary data for the study was obtained from the following websites www.kauppalehti.fi, www.hex.fi and www.taloussanomat.fi.

6.2.4 Sample Frame

The sample frame or population consists of all companies listed at the Helsinki Stock Exchange (www.hex.fi) as at the 28/03/2003.

6.2.5 Response Rate and Sample size

Of the 147 Companies that made up the sample frame and questionnaire were duly posted plus paid reply envelopes, only 23 Companies responded, rated 15.65%. 8 Companies out of the 147 (5.4%) admitted that they do e-Commerce (either buying or selling over the Internet), the rest either do not do e-Commerce or did not fill out the questionnaire. These 8 companies I guess will be the sample size for this study.

A thorough analysis of both the primary and secondary data of these companies can lead us to a research opinion. However with a low response rate, it will be difficult to generalise the findings of this research.

6.2.6 The implications for validity and generalization

Due to the low response rate 5.4%, I think this will not represent the strands of the entire population. The analysis to be made will be in depth and they will give an over all view of the impact IT outsourcing has on e-Commerce for some listed companies in Finland.

However, though the sample size would not represent all companies in the sample frame (population), it was expected to provide a reasonable approximation to further analyse and generalize the result.

6.3 Analyses of Data

The analysis of the data collected will commence with descriptive statistics and interview.

6.3.1 Descriptive Statistics

The data to be analysed is obtained from 8 companies, 6 out of 8 (75%) do partial outsourcing of their e-commerce IT and 2 companies (25%) do not outsource their e-commerce IT as seen in figure 4 below.

Activity	No. of Companies	%
Partial outsourcing	6	75
Not outsourcing	2	25
Total	8	100

Figure 4 Activity carried out by the participating companies.

The following statistic was based on question 7 in the questionnaire (see appendix A):

It was realized that for partial outsourcing, the server and the security of the software and hardware are the applications mostly outsourced by companies, while software for executing sales, purchase, and building store front were not outsourced.

Activity	Outsourcing outcome	Outsourcing %	Not outsourcing outcome	Not outsourcing %
a.) Server	4	26	4	18
b.) Software for executing sales	3	20	5	22
c.) Software for executing purchases	3	20	5	22
d.) Software for building a storefront	1	8	4	18
e.) Security hardware and software	4	26	4	18
Total	15	100	22	100

	1	%	2	%	3	%	4	%	5	%	outcome
1) Employee driven (eg stronger career path, staff cost savings).	1	14	1	14	3	43	2	29	0	0	7
2) Cost saving (Superior providers, turn fixed cost into variable costs)	0	0	2	33	0	0	3	50	1	17	6
3) Improvement driven (increased quality, output; management and control)	1	17	0	0	2	33	2	33	1	17	6
4) Organization driven (focus on what you do best, transform organization, increase flexibility)	0	0	0	0	4	57	2	29	1	14	7
5) Revenue driven (market access, expansion, expansion of sales)	1	14	3	44	1	14	1	14	1	14	7
6) Financial driven (reduced investment in assets, generate cash from providers)	0	0	3	42	2	29	2	29	0	0	7

Figure 7 % of reasons for outsourcing by the participating companies.

The following reasons were put forward by companies that are not outsourcing or doing partial outsourcing, they include: Employee driven, Cost saving, Improvement driven, Organization driven, Financial driven, and Revenue driven. However, Improvement driven (4 out of 5, that is 80% of respondents) is the most important reason firms outsource their IT, this is true as each respondent circled in the questionnaire either more important or most important (80%). Thus Improvement driven is the most important reason why companies do not carry out IT outsourcing, see figure 8 below.

1 = Not important, 2 = Less important, 3 = Important 4 = More important 5 = Most Important

Reason for not outsourcing	1	%	2	%	3	%	4	%	5	%	Total outcome
1) Employee driven (eg stronger career path, staff cost savings).	1	20	1	20	2	40	1	20	0	0	5
2) Cost saving (Superior providers, turn fixed cost into variable costs)	1	25	0	0	1	25	2	50	0	0	4
3) Improvement driven (increased quality, output; management and control)	0	0	1	20	2	40	0	0	2	40	5
4) Organization driven (focus on what you do best, transform organization, increase flexibility)	1	25	2	50	0	0	0	0	1	25	4
5) Revenue driven (market access, expansion, expansion of sales)	2	40	1	20	2	40	0	0	0	0	5
6) Financial driven (reduced investment in assets, generate cash from providers)	1	25	2	50	0	0	1	25	0	0	4

Figure 8 % of reasons for not outsourcing by the participating companies.

The following descriptive statistics is taken from question 9 (benefits of outsourcing/not outsourcing) of the questionnaire (see appendix A):

From the responses received, companies carrying out outsourcing of e-Commerce IT, admitted (by circling) that the following factors are either important, more important or most important benefits of outsourcing: Fast and easy application deployment, Application standardization, Low total Fixed cost, Increasing quality of service, Accessing external capabilities, Improve cost control and Low upfront investment in hardware and software. Accessing external capabilities and Increasing quality of service are the two most important benefits that companies derived when they outsource their IT, and this view is true because 5 out of 8 and 5 out of 7 companies circled more or most important respectively as the benefits derived when they outsource their e-Commerce IT as seen in figure 9 below.

1 = Not important, 2 = Less important, 3 = Important 4 = More important 5 = Most Important

Outsourcing benefits	1	%	2	%	3	%	4	%	5	%	Total outcome
1) Fast and easy application deployment	0	0	1	13	3	37	2	25	2	25	8
2) Application standardization	0	0	0	0	3	50	3	50	0	0	6
3) Low total Fixed cost	0	0	0	0	4	57	1	14	2	29	7
4) Increasing quality of service	0	0	0	0	2	29	4	57	1	14	7
5) Accessing external capabilities	0	0	0	0	3	37	2	25	3	38	8
6) Improve cost control	0	0	2	29	3	42	2	29	0	0	7
7) Low upfront investment in hardware and software	0	0	1	14	3	43	2	29	1	14	7

Figure 9 % of outsourcing (partial) benefits by the participating companies.

However, Application standardization is the most important benefit achieved by companies not outsourcing their IT, this is true as 5 out of 5 respondents circled in the questionnaire either important or more important as seen in figure 10 below.

1 = Not important, 2 = Less important, 3 = Important 4 = More important 5 = Most Important

Not outsourcing benefits	1	%	2	%	3	%	4	%	5	%	Total outcome
1) Fast and easy application deployment	0	0	0	0	3	100	0	0	0	0	3
2) Application standardization	0	0	0	0	3	60	2	40	0	0	5
3) Low total Fixed cost	1	33	0	0	2	67	0	0	0	0	3
4) Increasing quality of service	0	0	0	0	2	67	1	33	0	0	3
5) Accessing external capabilities	0	0	1	50	1	50	0	0	0	0	2
6) Improve cost control	0	0	0	0	3	100	0	0	0	0	3
7) Low upfront investment in hardware and software	1	50	0	0	1	50	0	0	0	0	2

Figure 10 % benefits derived from not outsourcing by the participating companies.

The following descriptive statistics is taken from question 10 (problems of outsourcing/not outsourcing) of the questionnaire (see appendix A):

The following factors were part or some of the problems faced by both outsourcing companies and those that do not outsource: Financial (lose economies of scale), Loss of control of activity, Employee unhappiness, Opportunist exploitation by supplier, Legal problems and Confidential problems. Respondent companies carrying out outsourcing of e-Commerce IT, admitted (by circling) that Loss of control of activity (6 out of 7) and Opportunist exploitation by supplier (6 out of 7) are important, more important or most important problems of outsourcing as seen in figure 11 below.

1 = Not important, 2 = Less important, 3 = Important 4 = More important 5 = Most Important

Outsourcing problems	1	%	2	%	3	%	4	%	5	%	Total outcome
1) Employee unhappiness	1	17	2	33	3	50	0	0	0	0	6
2) Financial	1	12	6	75	0	0	1	13	0	0	8
3) Conflict	2	29	1	14	3	43	1	14	0	0	7
4) Loss of control of activity	0	0	1	14	4	57	0	0	2	29	7
5) Opportunist exploitation by supplier	1	14	0	0	3	43	2	29	1	14	7
6) Legal problems	1	14	3	43	2	29	1	14	0	0	7
7) Confidential problems	1	14	2	29	2	28	2	29	0	0	7

Figure 11 % problems of outsourcing by the participating companies.

However, Conflict (lose core competence, confidentiality) is the most important problem faced by companies not outsourcing their IT, this is true as 3 out of 4 circled either important or more important as seen in figure 12 below.

1 = Not important, 2 = Less important, 3 = Important 4 = More important 5 = Most Important

Not outsourcing problems	1	%	2	%	3	%	4	%	5	%	Total outcome
1) Employee unhappiness	1	20	2	40	1	20	1	20	0	0	5
2) Financial	2	67	0	0	0	0	2	67	0	0	3
3) Conflict	0	0	1	25	2	50	1	25	0	0	4
4) Loss of control of activity	2	50	0	0	1	25	1	25	0	0	4
5) Opportunist exploitation by supplier	2	50	1	25	1	25	0	0	0	0	4
6) Legal problems	3	75	0	0	1	25	0	0	0	0	4
7) Confidential problems	2	50	1	25	0	0	1	25	0	0	4

Figure 12 % problems of not outsourcing by the participating companies.

The following descriptive statistics is taken from question 11 (measuring efficiency) of the questionnaire (see appendix A):

Based on questions 4, 5 and 6 (which enable us to know if the companies carry out outsourcing and e-commerce or not), the respondents were asked the yardstick they use to know if outsourcing/not outsourcing e-Commerce IT is worthwhile. From the responses I received, 2 companies admitted they measure the efficiency of their partial outsourcing system, this is done through system availability, sales through system and scorecard measurement. However the other 6 companies either do not measure the efficiency of outsourcing /not outsourcing their e-Commerce IT (as seen in figure 13 below) or did not fill out the questionnaire. For those companies measuring the efficiency of their e-Commerce IT, it is important to note that each company has her own way of measuring the efficiency of outsourcing/not outsourcing of e-Commerce IT.

Activity(outsourcing/r ot outsourcing	No. of Companies	%
Not Measuring	6	75
Measuring	2	25
Total	8	100

Figure 13 Measuring efficiency of outsourcing/not outsourcing by the participating companies.

The following descriptive statistics is taken from question 12 (application integration with FIS) of the questionnaire (see appendix):

The integration of e-Commerce applications with the Financial information Systems (FIS) is very important especially as the invent-everything-from-scratch syndrome of software development has been over thrown by the package-software revolution, companies purchase multiple apps from multiple vendors, these apps need to be integrated so that they speak to each other. From the responses received, 2 companies admitted that their apps are totally integrated with their FIS while the other companies either did not fill out the questionnaire or their apps are not totally integrated.

6.3.2 Summary of Descriptive Statistics

Although the response rate was low (5.4%), the information obtained from the participating companies can be used to draw some strands from the sample frame though not a representative of the entire population, thus generalizations cannot be made. Secondly, it is not appropriate to divide the participating companies into small and large, therefore the issues raised in Section 4.3 (conclusion) and Section 5.1 (Hypothesis) should be looked at as selected companies, not large or small.

Decision making, it was realized that participating decision making system exist, 75% of the participants admitted there is participating decision making system about Outsourcing e-Commerce IT made by the CEO, IT Manager and others. However this goes contrary to the works of Jening (2002), Chen and Soliman (2002), G.G. Udo (2000) and M. Tayles and C. Drury (2001). They put forth decision-making process in phases.

The following activities are mostly outsourced, namely: Server and security of the software and hardware. These activities are in line with the works of Jenings (2002), W.Bailey, R. Masson, and R. Raeside (2002) and E. Claver et al (2002). However Software for executing sales, purchases, and building store front were not outsourced. Therefore, the total outsourcing strategy cannot be seen in this research, what most companies do, they carry out partial outsourcing of their apps.

Employee driven, Cost saving, Improvement driven, Organization driven, Financial driven, and Revenue driven are some of the reasons companies outsource/not outsource their IT. However, Organization driven is the most important reason firms outsource their IT, and Improvement driven is the most important reason why companies do not carry out IT outsourcing. This reason was pointed out in the work of A. Kakabadse and N. Kakabadse (2002) and E. Claver et al (2002) as seen in Section 4.3.

Fast and easy application deployment, Application standardization, Low total Fixed cost, Increasing quality of service, Accessing external capabilities, Improve cost control and Low upfront investment in hardware and software are just a few benefits that the companies gained when they carrying out outsourcing/not outsourcing their IT. Accessing external capabilities and Increasing quality of service are the most important benefits that companies outsource their IT, Application

standardization is the most important benefit derived by companies not outsourcing their IT. These benefits were pointed out in the work of Jennings (2002), A. Kakabadse and N. Kakabadse (2002), W.Bailey, R. Masson and R. Raeside (2002), and E. Claver et al (2002) as seen in Section 4.3.

Employee unhappiness (preserve job, morale and loyalty), Financial (lose economies of scale), Conflict (lose core competence, confidentiality), Loss of control of activity (provider dependent), Opportunist exploitation by supplier, legal problems, and confidential problems are just a few problems that the companies face when carrying out outsourcing/not outsourcing their IT. Loss of control of activity (provider dependent) and Opportunist exploitation by supplier are the most important problems revealed by the respondent companies that outsource their IT. Conflict (lose core competence, confidentiality) is the most important problem revealed by the respondent companies that do not outsource their IT. However these problems were also identified in the works of Jennings (2002), W.Bailey, R. Masson and R. Raeside (2002), and E. Claver et al (2002) as seen in Section 4.3.

Measuring the efficiency of their outsourcing system, this is done through system availability, sales through system and scorecard measurement, whereas Juma'h and Wood (2000) used benchmarking, comparing the profitability and liquidity ratios of outsourcing companies with the average UK companies.

From the responses received, 2 companies admitted that their apps are totally integrated with their FIS, this was seen as important in the work of V. Chiesa et al (2000), the integration was in high, medium and low level and requires different organization and management structures.

6.3.3 Interview.

Due to low response rate (questionnaire) and to add more weight to this study, we unanimously agreed with my supervisor that I should conduct interviews with those companies that responses were received and a request was sent, I did not receive any response. I sent first and second reminders, to no avail. Considering the time constraint and resources, the results of this research are presented without conducting an interview.

7.0 Summary, Conclusion and Recommendation

7.1 Objective and Structure

This section brings to light the entire research effort, it begins with 7.2 Summary of the whole research, starting from scratch till the end, 7.3 Conclusion, based on the responses received and finally, 7.4 recommendations for further research.

7.2 Summary

It was very difficult for me to come up with this research topic “Impact of Outsourcing IT on e-Commerce”, but the literature ideas were there. However, this topic was finally coined from the literature that I had. I had the inspiration for this topic from taught course (2158 Strategic Financial Information Systems), my supervisor (Professor Anders Talberg) who readily accepted to supervise this thesis despite of his busy schedule and other researches (Jennings (2002), A. Kakabadse and N. Kakabadse (2002) and others).

Current and relevant papers that were significant for this study were divided into general outsourcing and IT outsourcing, the following key points were identified, namely: outsourcing decision making process (models), management of IT outsourcing operations, selection of IT providers process, and Organizational form to access external sources of technology and the level of IT integration. These points were quite interesting and they were used to set up relationships between small and large companies and finally, the hypotheses for this study (**HO:** There is no difference between the impact of outsourcing IT on e-Commerce by larger and smaller companies, and **HA:** There is a difference between the impact of outsourcing IT on e-Commerce by larger and smaller companies).

The methodology was put forth in order that data for this study could be collected; these include questionnaire, interview, e-mails and Web sites (Internet). The analytical tools which include: descriptive statistics, profitability and regression analysis were weapons set for the break down of the data so that a conclusion and generalizations could be made.

Questionnaire were duly posted to 147 Companies, listed at the Helsinki Stock Exchange, plus paid reply envelopes. 23 Companies responded, rated 15.65%, 8 companies out of the 147 (5.4%) admitted that they do e-Commerce (either buying or selling over the internet), the rest either do not do e-Commerce or did not fill out the questionnaire.

Thus the conclusion to be made in section 7.2, is based on the 8 responding companies and this is the sample size for this study. A thorough analysis of both the primary and secondary data of these companies using descriptive statistics lead us to a research opinion. However with a low response rate, it will be difficult to divide the companies (into small and large), use regression analysis and finally, generalise the findings of this research.

7.2 Conclusion

Based on the analysis of the responses received, using descriptive statistics, the following were realized:

- 75% of the responding companies carry out partial outsourcing of their apps, especially the server (26%) and security of the software and hardware (26%) are mostly outsourced, and software for executing sales, purchases (22%) and storefront (18%) are mostly not outsourced. This is very interesting because the previous current and relevant papers that were reviewed did not reveal this (partial outsourcing) and it was not my expectation. Companies tend to partial outsourcing, not total outsourcing because they wish to concentrate on the activities that are either their core competencies or they have competitive advantage.
- Decision making, it was realized that participating decision making system exist and 75% of the participants admitted that there is participating decision making system about e-Commerce IT taken by the CEO, IT Manager and others. However this goes contrary to the works of Jening (2002), Chen and Soliman (2002), G.G. Udo (2000) and M. Tayles and C. Drury (2001). They put forth decision-making process in phases.

- Organization driven (57%) is the most important reason firms outsource their IT, and Improvement driven (80%) is the most important reason why companies do not carry out IT outsourcing. This reason was pointed out in the works of A. Kakabadse and N. Kakabadse (2002) and E. Claver et al (2002) as seen in Section 4.3.
- Accessing external capabilities (5 out of 8) and Increasing quality of service (5 out of 7) are the most important benefits that companies outsource their IT, whereas, improve cost control (5 out of 5) is the most important benefit achieved by companies not outsourcing their IT. These benefits were pointed out in the works of Jennings (2002), A. Kakabadse and N. Kakabadse (2002), W.Bailey, R. Masson and R. Raeside (2002), and E. Claver et al (2002) as seen in Section 4.3.
- Loss of control of activity for example provider dependent (6 out of 7), and Opportunist exploitation by supplier (6 out of 7) are the most important problem revealed by the respondents companies that outsource their IT. Conflict for example, lose core competence and confidentiality (3 out of 4) is the most important problem revealed by the respondents companies that do not outsource their IT. However these problems were also identified in the works of Jennings (2002), W.Bailey, R. Masson and R. Raeside (2002), and E. Claver et al (2002) as seen in Section 4.3.
- Measuring the efficiency of their outsourcing system, this is done through system availability, sales through system and scorecard measurement, this was affirm by 25% of the responding companies. However Juma'h and Wood (2000) used benchmarking comparing the profitability and liquidity ratios of outsourcing companies with average UK companies.
- 25% of the responding companies apps are totally integrated with their FIS, this was seen very important in the work of V. Chiesa et al (2000), the integration was in high, medium and low level and requires different organization and management structures.

7.3 Recommendation

This study has given a gateway for further research on ‘the impact of outsourcing IT on e-Commerce’. To overcome the major limitation of low response rate in order to generalise the results, this study should be carried out in Finland or else where, taking into consideration the culture of the society.

Reference list

Books and Journals:

1. **A. Kakabadse and N. Kakabadse** (2002), Trends in Outsourcing: Contrasting USA and Europe, *European Management Journal*, April, volume 20, 189 – 198.
2. **Akomode, Lees, Irgens** (1998), Constructing customized models and providing information to support IT outsourcing decisions, *Logistics Information Management*, volume 11, 114 – 127.
3. **Al- Mashari** (2002), Electronic commerce, *Benchmarking: An International Journal*, volume 9, 182 – 189.
4. **Bailey, Masson and Raeside** (2002), Outsourcing in Edinburgh and the Lothians, *European Journal of Purchasing & Supply Management*, June, volume 8, 83 – 95.
5. **Barnes and Hunt** (2001), *E-COMMERCE & V-BUSINESS – Business Models and Global Success*, Butterworth and Heinemann.
6. **Calingo** (1997), *Strategic Management in the Asian Context: A Casebook in Business Policy and Strategy*, John Wiley and Sons (Asia) Pte Ltd, Singapore.
7. **Chiesa, Manzini, Tecilla** (2000), Selecting sourcing strategies for technological innovation: an empirical case study, *International Journal of Operation & production Management*, volume 20, 1017 – 1037.
8. **Chen, Soliman** (2002), Managing IT outsourcing: a value-driven approach to outsourcing using application service providers, *Logistics Information Management*, volume 15, 180 – 191.
9. **Currie** (2000), The supply-side of IT outsourcing: the trend towards mergers, acquisitions and joint ventures, *International Journal of Physical Distribution & Logistics Management*, volume 30, 238 – 254.

10. **Cunningham** (2001), B2B – How to Build a Profitable E-Commerce Strategy, Pearson Education Ltd.
11. **E. Claver, R. Gonzalez and others** (2002), Information systems outsourcing: reasons, reservations and success factors, *Logistics Information Management*, volume 15, 294 – 308.
12. **Ekanayaka, Currie, Seltsikas** (2002), Delivering enterprise resource planning systems through application service providers, *Logistics Information Management*, volume 15, 192 – 203.
13. **Floris H. and R. Stegwee** (2001), E-business strategy: how to benefit from a hype, *Logistics Information Management*, volume 14, 44 – 54.
14. **Furnell, Karweni** (1999), Security implications of electronic commerce: a survey of consumers and businesses, *Internet research: Electronic Networking Application and Policy*, volume 9, 372 – 382.
15. **Godwin G. Udo** (2000), Using analytic hierarchy process to analyze the information technology outsourcing decision, *Industrial Management and Data Systems*, volume 100, 421-429.
16. **Greaver** (1998), *Strategic Outsourcing: a structured approach to outsourcing decisions and initiatives*, New York: American Management Association.
17. **Harmon, Rosen and Guttman** (2001), *Developing E-Business Systems and Architecture – A Manager’s Guide*, Academic Press. From Corporate Strategy to Technology, Cambridge University Press.
18. **Horngren, Foster and Datar** (2000), *Cost Accounting – A Managerial Emphasis*, Upper
19. **J. Barthelemey and D. Geyer** (2001), IT outsourcing: Evidence from France and Germany, *European Management Journal*, April, Volume 19, 195 – 202.
20. **J. Rodgers, D. Yen and D. Chou** (2002), Developing e-business; a strategic approach, *Information Management & Computer Security*, volume 10, 184 – 192.
21. **Jennings** (2002), Strategic sourcing: benefits, problems and a contextual model, *Management Decision*, volume 40, 26 – 34.
22. **Juma’h, Wood** (1999), Outsourcing implications for accounting practices, *Management Auditing Journal*, volume 14, 387 – 395.

23. **Juma'h, Wood** (2000), Outsourcing implications on companies profitability: a sample of UK companies, Work Study, volume 49, 265 – 275.
24. **Kalakota, Ravi, and Marcia Robinson** (2001), e-Business 2.0: Roadmap for success, Upper Saddle River, New Jersey: Addison-Wesley.
25. **M. Hurley** (2001), IT Outsourcing – managing the key asset, Information Management & Computer Security, volume 9, 243 – 249.
26. **M. Tayles and C. Drury** (2001), Moving from Make/Buy to Strategic Sourcing: The Outsourcing Decision Process, Long Range Planning, October, volume 34, 605 – 622.
27. **Paul May** (2000), The Business of Ecommerce – Saddle River, New Jersey: Prentice hall.
28. **Paul Timmers** (1999), Electronic Commerce, John Wiley and Sons, Ltd.
29. **Shapiro and Varian** (1999), Information Rules – A Strategic Guide to the Network Economy, Harvard Business School Press, Massachusetts.
30. **Shy, Stenbacka** (2003), Strategic outsourcing, Journal of Economic Behavior & Organization, April, volume 50, 203 – 224.
31. **Singh** (2002), E-services and their role in B2C e-commerce, Managing Service Quality, volume 12, 434 – 446.
32. **Turban, Lee and others** (2000), ELECTRONIC COMMERCE - A Managerial Perspective, Prentice Hall International, Inc.
33. **Wang** (2001), Designing information systems for electronic commerce, Industrial Management & Data Systems, volume 101, 304 – 315.
34. **White, Sondhi and Fried** (1994), The Analysis and Use of Financial Statements, John Wiley and Sons, Inc. (USA).
35. **Ying Fan** (2000), Strategic outsourcing: evidence from British Companies, Marketing Intelligence & Planning, volume 18, 213 – 219.

Webpages:

1. **Benchmarking** – Outsourcing Benchmarking Association, <http://www.obenchmarking.com/#links> accessed on April 10, 2003.
2. **Brainwin**, IT outsourcing, consulting, and training services, <http://www.brainwin.be/en-it-outsourcing.html>, accessed on March 12, 2003.

3. **HEX plc**, <http://www.hex.com/en/index.html>, accessed on 28/03/2003.
4. **KauppalehtiOnline**, <http://www.kauppalehti.fi/4/i/etusivu/> , accessed on 28/03/2003.
5. **Outsourcing Centre**, Outsourcing Information and Case Studies from Outsourcing Centre www.outsourcing-information-technology.com/ accessed on March 12, 2003.
6. **Outsourcing Research Centre**, IT Services Outsourcing goes Strategic, www2.cio.com/analyst/report372.html accessed on March 12, 2003.
7. **Taloussanomat.fi**, <http://www.taloussanomat.fi/> accessed on 28/03/2003.
8. **UT Austin**, Centre for Research in Electronic Commerce, <http://cism.bus.utexas.edu/> accessed on March 12, 2003.

Appendix A

Questionnaire

Dear Respondent,

Please take about 3 to 5 minutes to complete the following questionnaire. Responses will be held in confidence, only statistical results will be revealed. Any and all identifying information (e-mail addresses, etc) will be discarded upon receipt.

- 1) Please what is the name of your company?
- 2) About how much (millions of Euros) are the total assets of your company?
.....
- 3) About how much (in 000's Euros) is the annual budget of your IT department ?
.....
- 4) What percentage of your sales is from e-Commerce?
.....
- 5) What percentage of your purchases is from e-Commerce?
.....
- 6) Who decides which (if any) e-Commerce IT to outsource?
a) the C.E.O b) both the CEO and IT Manager c) the CEO, IT Manager and others

7) Please put a tick on which of the following e-Commerce Application(s) are provided through:

Application	Outsourcing	Not Outsourcing
a.) Server		
b.) Software for executing sales		
c.) Software for executing purchases		
d.) Software for building a storefront		
e.) Security hardware and software		
f.) Others, please specify		

8) Please rate the following reasons for Outsourcing/Not outsourcing e-Commerce IT by circling the number that most reflects your opinion:

1 = Not important , 2 = Less important, 3 = Important 4 = More important 5 = Most Important

Application	Outsourcing	Not Outsourcing

1) Employee driven (eg stronger career path, staff cost savings).	1 2 3 4 5	1 2 3 4 5
2) Cost saving (Superior providers, turn fixed cost into variable costs)	1 2 3 4 5	1 2 3 4 5
3) Improvement driven (increased quality, output; management and control)	1 2 3 4 5	1 2 3 4 5
4) Organization driven (focus on what you do best, transform organization, increase flexibility)	1 2 3 4 5	1 2 3 4 5
5) Revenue driven (market access, expansion, expansion of sales)	1 2 3 4 5	1 2 3 4 5
6) Financial driven (reduced investment in assets, generate cash from providers)	1 2 3 4 5	1 2 3 4 5
7) Others, please specify	1 2 3 4 5	1 2 3 4 5

9) Please rate the following benefits for Outsourcing/Not outsourcing e-Commerce IT by circling the number that most reflects your opinion:

1 = Not important , 2 = Less important, 3 = Important 4 = More important 5 = Most Important

Application	<i>Outsourcing</i>	<i>Not Outsourcing</i>
1) Fast and easy application deployment	1 2 3 4 5	1 2 3 4 5
2) Application standardization	1 2 3 4 5	1 2 3 4 5
3) Low total Fixed cost	1 2 3 4 5	1 2 3 4 5
4) Increasing quality of service	1 2 3 4 5	1 2 3 4 5
5) Accessing external capabilities	1 2 3 4 5	1 2 3 4 5
6) Improve cost control	1 2 3 4 5	1 2 3 4 5
7) Low upfront investment in hardware and software	1 2 3 4 5	1 2 3 4 5
8) Others, please specify	1 2 3 4 5	1 2 3 4 5

10) Please rate the following problems for Outsourcing/Not outsourcing e-Commerce IT by circling the number that most reflects your opinion:

1 = Not important , 2 = Less important, 3 = Important 4 = More important 5 = Most Important

Application	<i>Outsourcing</i>	<i>Not Outsourcing</i>
1) Employee unhappiness (preserve job, morale, loyalty)	1 2 3 4 5	1 2 3 4 5
2) Financial (lose economies of scale)	1 2 3 4 5	1 2 3 4 5
3) Conflict (lose core competence, confidentiality)	1 2 3 4 5	1 2 3 4 5
4) Loss of control of activity (provider dependent)	1 2 3 4 5	1 2 3 4 5
5) Opportunist exploitation by supplier		

	1	2	3	4	5	1	2	3	4	5
6) Legal problems	1	2	3	4	5	1	2	3	4	5
7) Confidential problems	1	2	3	4	5	1	2	3	4	5
8) Others, please specify	1	2	3	4	5	1	2	3	4	5

11) How do you measure the efficiency of:

a) Outsourcing ; b) Not outsourcing; your e-commerce IT?

.....

12) Please circle the extent e-Commerce applications Architecture are integrated with you Financial Information Systems (FIS) for compatibility?

Not totally integrated totally integrated
 1 2 3 4 5

Please, send the responses using the paid envelope to:

Titans Tanyi Enow
 Antti Korpin Tie 4B 24 C
 00600, Helsinki, Finland.