

Master Thesis in Informatics

# ICT Awareness in Small Enterprises in the Indian Tourism Branch

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Göteborg, Sweden 2006



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## SUMMARY

The boom of information and communication technology (ICT) in India is a well-known phenomenon with a positive impact on the economy. As tourism industry and small companies are of big importance for India's economy, this thesis examines the ICT awareness in small travel agents and tour operators, in terms of ICT awareness definition, its level, and the affecting factors. A seven weeks long field study was made in 4 large Indian cities. The awareness was defined in terms of consciousness about ICT benefits and barriers, and technological and strategic issues. The ICT level was found to be relatively high for a developing country but low when considering the opportunities in India. The factors with a positive effect on the ICT awareness level were the national economical and technological development trends, and the positive attitude towards ICT. The negative factors were the lack of education within the companies, bureaucracy, physical infrastructure problems and the cultural and social norms. The level could be raised by acting on business and governmental levels.

The report is written in English.

Keywords: ICT, e-commerce, India, small companies, tourism.

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## Contents

<i>Index of figures</i> .....	VII
<i>Glossary</i> .....	VIII
<b>1 INTRODUCTION</b> .....	<b>1</b>
1.1 BACKGROUND .....	1
1.2 PROBLEM.....	2
1.3 PURPOSE.....	3
1.4 DELIMITATIONS.....	3
1.5 DISPOSITION .....	3
<b>2 THEORETICAL FRAMEWORK</b> .....	<b>4</b>
2.1 DEFINING IT, ICT AND E-COMMERCE .....	4
2.1.1 <i>Information technology</i> .....	4
2.1.2 <i>Information and Communication Technology</i> .....	4
2.1.3 <i>E-commerce</i> .....	5
2.2 JUSTIFYING THE CHOICE OF CHOSEN EXPRESSIONS .....	6
2.3 DEFINING SMALL ENTERPRISES.....	8
2.4 DEFINING ICT AWARENESS BY EXISTING DEFINITIONS .....	9
2.5 DEFINING ICT AWARENESS THROUGH THE BENCHMARKING STUDY OF DTI IN UK.....	10
2.6 ICT AWARENESS.....	12
2.6.1 <i>Technology and adoption</i> .....	12
2.6.2 <i>Environmental influences</i> .....	14
2.6.3 <i>Process and Deployment</i> .....	16
2.6.4 <i>Awareness and people</i> .....	18
2.6.5 <i>Perceived Impact</i> .....	20
2.7 SUMMARY .....	22
<b>3 METHODOLOGY</b> .....	<b>24</b>
3.1 APPROACH OF THE RESEARCH .....	24
3.2 COLLECTION AND ANALYSIS OF DATA .....	24
3.2.1 <i>Selection of the companies</i> .....	25
3.2.2 <i>Questionnaires</i> .....	26
3.2.3 <i>Interviews</i> .....	26
3.2.4 <i>Observations</i> .....	28
3.2.5 <i>Literature study</i> .....	28
3.3 PROBLEMS AND LIMITATIONS OF THE METHODOLOGY .....	29
<b>4 EMPIRICAL FINDINGS</b> .....	<b>30</b>
4.1 FINDINGS FROM THE QUESTIONNAIRES .....	30
4.1.1 <i>Companies' background</i> .....	30
4.1.2 <i>Computers and operating systems</i> .....	31
4.1.3 <i>Adoption of ICT</i> .....	31
4.1.4 <i>Internet and e-mail</i> .....	34
4.1.5 <i>Websites</i> .....	34
4.1.6 <i>Software systems and databases</i> .....	35
4.1.7 <i>Miscellaneous</i> .....	35
4.2 FINDINGS FROM THE INTERVIEWS .....	36
4.2.1 <i>ICT use</i> .....	36
4.2.2 <i>Investment</i> .....	39
4.2.3 <i>Opportunities and benefits</i> .....	41
4.2.4 <i>Problems and barriers</i> .....	42
4.2.5 <i>Advantages and disadvantages of being "small" and "Indian"</i> .....	43
4.3 OWN OBSERVATIONS .....	46
4.3.1 <i>Companies</i> .....	46
4.3.2 <i>Company photos</i> .....	47
4.3.3 <i>Websites</i> .....	50

4.3.4	<i>Software systems</i> .....	50
4.4	LITERATURE STUDY .....	52
4.4.1	<i>Economic politics and development of India</i> .....	52
4.4.2	<i>Import and export</i> .....	53
4.4.3	<i>R&amp;D</i> .....	53
4.4.4	<i>Government and institutions in India</i> .....	54
4.4.5	<i>The physical and information infrastructure</i> .....	55
4.5	SUMMARY .....	56
4.5.1	<i>Questionnaires</i> .....	56
4.5.2	<i>Interviews</i> .....	57
4.5.3	<i>Observations</i> .....	57
4.5.4	<i>Websites</i> .....	58
4.5.5	<i>Literature study</i> .....	58
<b>5</b>	<b>DISCUSSION</b> .....	<b>59</b>
5.1	TECHNOLOGY AND ADOPTION .....	59
5.1.1	<i>Technology adaptation by innovation characteristics</i> .....	59
5.1.2	<i>The companies' e-commerce development</i> .....	60
5.2	ENVIRONMENTAL INFLUENCES .....	61
5.2.1	<i>Contribution by other actors</i> .....	61
5.2.2	<i>National-level environment and cultural factors</i> .....	62
5.2.3	<i>Perception of ICT opportunities</i> .....	64
5.2.4	<i>Exploitation of ICT opportunities</i> .....	65
5.3	PROCESS AND DEPLOYMENT .....	67
5.3.1	<i>Use of e-tools in processes</i> .....	68
5.3.2	<i>Technology usage degrees</i> .....	68
5.4	AWARENESS AND PEOPLE .....	70
5.4.1	<i>Business processes and skills</i> .....	70
5.4.2	<i>Competence and awareness</i> .....	70
5.4.3	<i>Recognising potentials and drawbacks</i> .....	71
5.5	PERCEIVED IMPACT .....	72
5.5.1	<i>Adoption and perceived value creation</i> .....	72
5.5.2	<i>Relative advantage of innovations</i> .....	73
<b>6</b>	<b>CONCLUSION</b> .....	<b>74</b>
6.1	THE ICT AWARENESS .....	74
6.2	THE AWARENESS LEVEL .....	74
6.3	THE AWARENESS FACTORS .....	74
6.3.1	<i>Positive factors</i> .....	74
6.3.2	<i>Negative factors</i> .....	75
6.4	RAISING ICT AWARENESS .....	75
6.4.1	<i>Recommendations on a business level</i> .....	75
6.4.2	<i>Recommendations on a governmental level</i> .....	76
<b>7</b>	<b>REFERENCES</b> .....	<b>77</b>
	<b>APPENDIX 1 : QUESTIONNAIRE</b> .....	<b>86</b>
	<b>APPENDIX 2: INTERVIEW QUESTIONS</b> .....	<b>89</b>

## Index of figures

<i>Figure 2.2: Model of ICT awareness</i> .....	12
<i>Figure 2.3: Revolution of ICT use in e-commerce (Currie, 2000)</i> .....	13
<i>Figure 4.1: Average number of computers in comparison to the number of employees</i> .....	31
<i>Figure 4.2: Adoption of Internet, e-mail, websites and software systems</i> .....	33
<i>Figure 4.3: Purpose for Internet use</i> .....	34
<i>Figure 4.4: Purpose for e-mail use</i> .....	34
<i>Figure 4.5: Use of marketing channels</i> .....	36
<i>Figure 4.6: Observed use of paper files and books in a bank in New Delhi, similar way of storing information to the interviewed travel agencies and tour operations.</i> .....	39
<i>Figure 4.7: Interior of an Internet café in Lajpat Nagar (one of the wealthier areas) in New Delhi</i> .....	44
<i>Figure 4.8: Tangled cables and wires in Central New Delhi.</i> .....	45
<i>Figure 4.9: A monkey makes its way from the tree to the lamp post using the wire infrastructure.</i> .....	45
<i>Figure 4.10: A printed commercial sign outside of a travel agency office: “ON LINE BOOKING OF DOM &amp; INTL. AIRLINES TICKETS”</i> .....	47
<i>Figure 4.11: Exterior of a travel agency office</i> .....	48
<i>Figure 4.12: Working place in a travel agency office</i> .....	48
<i>Figure 4.13: Interior of a travel agency office: an altar with deities.</i> .....	49
<i>Figure 4.14: Interior of a travel agency office: Lord Ganesh, protector of the office</i> .....	49
<i>Figure 4.15: Software systems, e.g. the widely used Tally accounting system, are available everywhere. Here, at a price of Rs. 4950 (roughly \$100)</i> .....	51

## **Glossary**

CD-ROM: Compact Disc – Read Only Memory

CEO: Chief Executive Officer

CRS: Computer Reservation System

DTI: Department of Trade and Industry

ERP: Enterprise Resource Planning

GDP: Gross Domestic Product

GDS: Global Distribution System

GEM: Global Entrepreneurship Monitor

GSM: Global System for Mobile Communications

ICT: Information and Communication Technology

IM: Instant Messaging

ISP: Internet Service Provider

IT: Information Technology

KMS: Knowledge Management System

LAN: Local Area Network

MSME: Micro, Small and Medium Enterprise

NGO: Non-governmental Organisation

OECD: Organisation for Economic Co-operation and Development

R&D: Research and Development

SARS: Severe Acute Respiratory Syndrome

SIDO: Small Industries Development Organisation

SME: Small and Medium Enterprise

SRS: Strategic Restructuring Model

SSI: Small-Scale Industry

STE: Small Tourism Enterprise

UNCTAD: United Nations Conference on Trade and Development

WTO: World Tourism Organization



# 1 Introduction

## 1.1 Background

The great diffusion and the extent of the individual use of information and communication technology (ICT) in the Indian society are not as well-known as the Indian software industry, although it is also quite impressive. ICT has made unusually big progress in India when taking the relatively undeveloped communication and infrastructure in the country into account. The introduction of computers in banks, schools, government institutions, offices and homes was surprisingly large already in the 1990s (Singhal & Rogers, 2001). Cyber cafés boomed in Indian large cities and only in Hyderabad, almost 600 Internet-providing shops were introduced in the first six months of 1999 (ibid.). The information technology (IT) and the Internet is nowadays present everywhere in Indian metropolitan cities, in form of cyber cafes, computer use in schools and in individuals' behaviour, such as preferring to send e-mail to making the more costly telephone calls. This is however limited to the larger cities, as the majority (92 %) of all Internet users in India live in the 68 largest Indian cities and towns according to NASSCOM survey (Ahura, 2000).

The IT sector is one of the fastest growing sectors of Indian industry (Planning Commission (d)) and the tourism and travel industry is third largest net earner of foreign exchange (Planning Commission (e)). The foundation of the tourism corporation initiated by the Indian government is present in each state (MEA, 2003), but still, the tourism sector continues to be "ignored" and is performing below its potential" (Agarwal, 2000). The contribution that the tourism sector makes to the Indian economy in terms of percentage share of all employment is amongst the lowest ones in the world, despite the fact that India has the highest number of persons employed in travel and tourism (Planning Commission (b)). The report of Confederation of Indian Industries stated in 2000 that the travel industry could start employing about 50 million people by 2020, as opposed to 20 million in 2000 (Agarwal, 2000).

In Europe, tourism is dominated by, so called, Small and Medium Enterprises (SMEs) which are throughout this text also referred to as "small enterprises" or "small companies"<sup>1</sup>. Approximately 94 % of the tourism branch consists of enterprises having less than 10 employees and the contribution to countries' GDP is great (European Commission, 2003). These companies therefore bring vast opportunities for the Indian economy. As the economy is dependent on the small-scale industry (small-scale industries make up almost 40% of the gross industrial value added in India (SIDO, 2005a)), the small enterprises in the mentioned industries should especially be taken into account when talking about market opportunities.

Today, it is almost assumed that every business makes use of the Internet and the ICT (UNCTAD, 2001). Tourism is one of the most important sectors that apply ICT and the one that is most influenced by ICT employment (Wiig, 2003). In every enterprise, small or big, the Internet can contribute to the marketing of products and services and increase the effectiveness of the organisation (Liikanen, 1999). Since the tourism is an industry that is fully based on information, service and reliability, each information provider (e.g. hotel, restaurant, car rental, region, travel agent) must organise their data in an easily accessible and attractive way, and keep it up-to-date (ibid.). ICT can influence the structure of the

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<sup>1</sup> see section 2.3

tourism industry by for example giving an opportunity to reduce the transaction and distribution costs (Wiig, 2003). The Internet and e-commerce may offer many possibilities to every link in the tourism supply chain (Wiig, 2004). Thus, the ICT and e-commerce represent a big opportunity for every country for improving their relative positions in the international market. This especially concerns the tourism sector in developing countries that can, by the use of ICT, gain competitive advantages (Trepper, 2000).

A recent study of the Internet use in small tourism enterprises (STEs) in Malaysia (Karanasios & Burgess, 2006) shows that mainly basic Internet activities such as email and websites were used among these companies but the great importance of the Internet was demonstrated although the companies did recognise some obstacles, such as high costs, internal capacity and so on. The study suggests that companies that are not online and do not perform e-commerce are placing themselves into a disadvantage.

A trip to north India in August 2004 gave a chance to witness the vast progress that ICT has made in India. The offshore industries in Indian so called IT-metropolises are indeed well-known but the actual use of ICT by individuals, that is not mentioned as often, was unexpectedly widespread and high. This was surprising due to the low overall level of the infrastructure and education in the country. As contacts with small travel agents and tour operators were made and their services used, the extent of the ICT use in the tourism business seemed to be much lower compared to the European level.

The value of ICT and the positive impact that it makes on today's society and business is hard to deny. Recognising the importance and the extent of both tourism, ICT and SMEs in India, one would maybe expect that small tourism enterprises in India have some advantage in terms of ICT use. A country such as India, which has made rapid steps towards the development and deployment of ICT, certainly has a potential to reach even further. In India, many associations, such as NASSCOM<sup>2</sup>, are implementing activities for raising awareness and growth of ICT in the country. The advantages of ICT use never seem to stop emerging, but awareness of ICT has to be present in order to recognize a certain benefit of it and to justify its adoption. Therefore, we believe that an increasing ICT awareness must be a trigger for a growing use of ICT.

## 1.2 Problem

The general use of ICT is an issue that has been addressed in scientific studies. Both ICT in small companies and the impact of ICT on tourism industry are comprised but there is very little work available on the use of ICT in small enterprises within the tourism sector or the effects that ICT has on the tourism companies in India. Neither does the existing literature and research provide a clear explanation of what ICT awareness actually is.

The previous mentioned trip to India motivated us to explore the ICT awareness in the travel agencies<sup>3</sup> and tour operators<sup>4</sup>, assuming that the ICT use will be raised with increased

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<sup>2</sup> [www.nasscom.org](http://www.nasscom.org)

<sup>3</sup> a travel agency is "a variety of services associated with travelling such as transport (including car rentals), accommodation and package tours on a fee or contract basis, are sold to the public through travel agencies" (WTO, 2002a)

<sup>4</sup> tour operators are "businesses that combine two or more travel services (e.g., transport, accommodation, meals, entertainment, sightseeing) and sell them through travel agencies or directly to final consumers as a single product (called a package tour) for a global price. The components of a package tour might be pre-established, or can result from an "a la carte" procedure, where the visitor decides the combination of services he/she wishes to acquire" (OECD (2003))

awareness of ICT. Considering the lack of adequate scientific work, we need a theoretical support to be able to approach the awareness of ICT and to explore the use of ICT in Indian tourism sector. Three following questions will be studied:

- 1. What is ICT awareness and how should it be theoretically defined?*
- 2. What is the level of ICT awareness in small travel agencies and tour operators in India?*
- 3. What is affecting ICT awareness in these companies and could the awareness be raised?*

### **1.3 Purpose**

The purpose of this thesis is to explore the ICT awareness by the analytical and theoretical framework. The aim is also to analyse the level of ICT awareness in small travel agencies and tour operators in India and to explore the factors affecting ICT awareness in these companies. Furthermore, the purpose is also to examine whether the ICT awareness could be raised, and to develop suggestions on how it can be done if possible.

### **1.4 Delimitations**

Having limited time to perform our study field, this thesis is focusing only on the travel and tour operators in five Indian metropolises. It is limited to those companies that in some way and to some extent are using the ICT in order to provide a level of consistency.

It is impossible to make general statements about India, which is a country that is comparable to Europe by the size and by the diversity of languages, cultures, religions and other differences (Andersson, 2004). Therefore this thesis does not aim to create a suggestion on whether and how the ICT awareness in all Indian travel and tour operators companies can be raised. It is only concerned with the group of the companies that is by size and by business focus similar to those who took part in the field study.

### **1.5 Disposition**

Chapter 1 is followed by the theoretical framework (Chapter 2) where we explain the theories applied in this thesis. Next, we give a description of the methodology that we have used (Chapter 3). In Chapter 4 we present the findings from the interviews, observations and the literature study. Next follows a discussion of findings (Chapter 5) and finally, in Chapter 6, a conclusion is presented.

## 2 Theoretical framework

The understanding of the different terms mentioned in the thesis can vary. To provide consistency, a definition of the concepts below will be made.

The term of IT is well-known and well-used, and we assumed it to be understood somewhat similarly by different people in the start of our research. However, the definitions of IT and ICT still differ and we felt that it could cause confusion. Besides IT and ICT, another term that is used when talking about today's business technologies is e-commerce. Hence, it is important to separate the three concepts and provide a clear definition of these and to justify the use of the chosen expressions. We will first give a definition of these three terms and then try to explain the difference between them. Then, we will argue for the choices we have made when applying these.

Another definition that is crucial to make in this thesis is the one of the term small companies. The classifications and measurements used for defining small companies are used very differently. We will also describe the ICT awareness that is a central issues in this thesis and a base to this chapter.

### 2.1 Defining IT, ICT and e-commerce

It is not easy to find a definition that clearly describes the difference between IT and ICT. In short, the definitions of both IT and ICT talk about hardware, software and networks by which information is retrieved, recorded and displayed.

The World Bank, which is working on providing help to the developing countries with funds and proficiency needed to exploiting ICT, defines IT and ICT as following:

#### 2.1.1 Information technology

*“Information Technology refers to the creation, storage and processing of data, including hardware (computer networks, servers, storage devices, and desktop computers), system software (operating systems, middleware, programming languages), and software applications.”*

World Bank (2002, p.3)

Another of World Bank's definitions says that:

*“Information Technology is the use of technology, such as computing and software, in support of information processing.”*

World Bank (2005, p.6)

#### 2.1.2 Information and Communication Technology

*“Information and Communication Technology consists of hardware, software, networks, and media for collection, storage, processing, transmission, and presentation of information (voice, data, text, images).”*

World Bank (2002, p.3)

Given that the World Bank makes different investments and research in the poverty areas to foster the ICT development, we considered its definition of IT and ICT to be of appropriate level to this thesis. However, the above definition of the World Bank does not give us a clear distinction between IT and ICT, wherefore we need to take a look at some other definitions, too.

Heeks (1999, p.3) defines ICT as following:

*“Information and Communication Technologies can be defined as electronic means of capturing, processing, storing and communicating information.”*

and Hamelink (1997, p.3) says that:

*“Information and Communication Technologies encompass all those technologies that enable the handling of information and facilitate different forms of communication among human actors, between human beings and electronic systems, and among electronic systems. “*

Further, Hamelink (ibid., p.3) divides ICTs into the following groups:

***Capturing technologies***, with input devices that collect and convert information into digital form. Such devices include keyboards, mice, trackballs, touch screens, voice recognition systems, bar code readers, image scanners and palm-size camcorders.

***Storage technologies***, producing a variety of devices to store and retrieve information in digital form. Among these are magnetic tapes, floppy disks, hard disks, RAM disks, optical disks (such as CD-ROMs), erasable disks and smart cards (credit-card sized cards with memory and processing capacity for financial transactions or medical data).

***Processing technologies***, creating the systems and applications software that is required for the performance of digital ICTs.

***Communications technologies***, producing the devices, methods and networks to transmit information in digital form. They include digital broadcasting, integrated services digital networks, digital cellular networks, local area networks (LANs), wide area networks (WANs, such as the Internet), electronic bulletin boards, modems, transmission media such as fibre optics, cellular phones and fax machines, and digital transmission technologies for mobile space communications (the new Low Earth Orbit satellite voice and data services).

***Display technologies***, which create a variety of output devices for the display of digitized information. Such devices include display screens for computers, digital television sets with automatic picture adjustment, set-top boxes for video-on-demand, printers, digital video discs (which might replace CD-ROM drives and audio CD players), voice synthesizers and virtual reality helmets.

### 2.1.3 E-commerce

Trepper (2000, p.xiii) defines e-commerce as “any business transaction that takes place via digital processes over a network”. A definition of e-commerce, which is internationally

agreed worked out by OECD, is explained in UNCTAD's E-commerce and Development Report 2001 (UNCTAD, 2001). It includes following three aspects which are in this section explained according to what is said in this report (ibid.):

- 1) Networks
- 2) Processes
- 3) Actors

*Networks* can be defined by a *broader* and a *narrow* definition. The first one says that:

*“an electronical transaction is the sale or purchase of goods and services, whether between businesses, house-holds, individuals, Governments, and other public or private organisations, conducted over computer-mediated networks. The goods and services are ordered over those networks, but the payment and the ultimate delivery of the good or service may be conducted on- or offline”* (ibid., p. 6).

The other definition, the *narrow* one, states that:

*“an Internet transaction is the sale or purchase of goods and services, whether between businesses, house-holds, individuals, Governments, and other public or private organisations, conducted over the Internet. The goods and services are ordered over the Internet, but the payment and the ultimate delivery of the good or service may be conducted on- or offline”* (ibid., p. 6).

UNCTAD (2001) states that the broader definition is more relevant for the countries where e-commerce is already being broadly used since it includes networks for electronic data interchange (EDI). It is explained that smaller or less developed economies will rather use the narrow definition of the e-commerce since the major networked used here is the Internet.

The above definitions include only a “commercial transaction” that is made between two or more parties where an agreement between them is made about the purchase or selling, regardless of how the final payment is made.

The second dimension of e-commerce, *the processes*, includes activities or businesses processes of e-commerce. The definition of the e-commerce including only the selling and purchasing aspects is more favourable among many countries. Though, some would like to include business processes, such as marketing and advertising, in the definition of the e-commerce. Such types of processes will be extremely important in the future where more integrated electronically processing systems are to be used.

There are three different types of e-commerce in terms of the *actors* involved in the process: business-to-business (B2B), business-to-consumer (B2C) and business-to-government (B2G). Totally 80 % of e-commerce is related to B2B. However, B2C e-commerce has impact on the interaction of the people and it also affects the way they live.

## 2.2 Justifying the choice of chosen expressions

We can from the definitions see that IT and ICT are linked together and therefore it is difficult to make a clear distinction between them. Both two technologies are, according to

the definitions above, referring to software, hardware, computer networks and digital devices for information processing and presentation. However, we can distinguish a keyword that makes ICT differ from IT, and that is *communication*.

The previous definition of Hamelink (1997) talks about ICT as telecommunication and digitization and refers rather to advanced technology equipments. He states that *digitization* is a common feature of ICTs. He talks about four different stages of ICT development, where the *first* one is the long period of information transmission by carriers, pigeons, smoke signals and similar while the *second* one is the invention of telegraph, telephone, radio and television. The *third* phase began with the first electronic computers and chips, when the integration of telecommunication and computer technologies became possible by the foundation of networks. Today, in the last stage of ICT development, the emphasis is on digital systems, networks and telecommunications, where flexible digital systems are replacing earlier analogue modes of information handling. Digitization makes all forms of signals to be converged into digital form, making them identical in technical sense, and with that it provides a wide range of multi-functionality such as bringing together and integrating different broadcasters, cable companies, telephone carriers, computer manufactures, Internet users etc. Digitization also makes communication channels more expended and powerful and information handling gets more flexible, reliable and cheaper. Hamelink (ibid.) talks about ICT as “smart” technologies. The “smart phones” that are regular telephones with screens, modems and smart card readers, with the possibility of checking e-mails, doing tele-shopping, surfing on the Internet, is just one example of ICT. However, most of the research does not cover these advances technologies, but rather more simple forms of ICT such as Internet, computers, telephony, broadband connectivity and similar. For example, Pierson (2003) explores the adoption and use of ICT by Belgian micro-enterprises, where he divides ICT into telephone-related and computer-related ICT. The first one comprises technologies such as mobile phones, faxes, GSM phones and digital ISDN lines. The computer-related ICT refer to computers, networks and Internet connections. Another example is the article of Wiig (2003) on how ICT and e-commerce can contribute to the tourism industry in Namibia. It analyses the advantages that the tourism supply chain can gain by the use of Internet, web pages, computer reservation systems, such as GDS, networks and similar.

In many papers, ICT is referring to Internet and very often one talk about e-commerce, too, in the same context. Vickery et al. (2004), for example, investigate barriers of adopting both ICT and e-commerce in small companies. This paper examines the use of Internet, the broadband connectivity, use of Knowledge Management System (KMS) and the use of Internet as a mean for e-commerce. E-commerce is, as we explained earlier, the use of computer networks for different purpose, though, mostly used is Internet network in developing countries according to OECD’s definition (UNCTAD, 2001). In the same work, a model survey for measuring e-commerce is presented. Here, it is possible to recognise following key areas to be measured under the term e-commerce: a) ICT systems (PCs, workstations, terminals, Internet); b) e-commerce via Internet; c) e-commerce via EDI or other computer-mediated networks. In the work of Kimberley (2001) a very simple distinction between IT and e-commerce is made, saying that IT is used **within** an organisation whereas e-commerce is used **between** organisations and individuals.

Summarizing, we could conclude that ICT, in some way, is an extension of IT since it involves a broader aspect of today’s technologies and therefore we prefer to use the term of ICT in this thesis. The advanced digital technologies, such as those mentioned by Hamelink (1997), will however not be examined because we don’t believe it is appropriate when

discussing ICT in a developing country such as India. Instead, the stress will rather be put on more simple forms of ICT, such as Internet, networks, softwares and similar.

Since the e-commerce are simple or complex business transactions that are conducted over computer or network utilising electronic devices (Fellenstein & Wood, 2000), we consider it being a part of ICT. To be able to use the advantages of e-commerce the ICT needs to be utilized, therefore these two terms are strong connected to each other. As e-commerce is being of big importance for businesses, it will also be discussed though this study.

### 2.3 Defining small enterprises

It is hard to define companies by scale or size since the definition varies very much and depends on the work for which it is to be defined. The terms *Small and Medium Enterprises (SMEs)* and *Micro, Small and Medium Enterprises (MSMEs)* are used by many researchers around the world and often, they are seen as a same group of enterprises. However, they are diverse in terms of needs and objectives and still there is no standard definition valid for all economies (Levy & Powell, 2005). The definition differs in various countries e.g. small enterprises in one country can be regarded and defined as large companies in another country (Hallberg, 2000).

For distinguishing these, groups of variables such as size and turnover are used (Levy & Powell, 2005). India is for example using a measurement for small-scale industry in terms of investment and revenues (SIDO, 2005b). According to Hallberg (2000), the most common definition of SMEs uses the measurements in terms of the employment size. She means that there are two limits used for defining small companies: the *lower* one: 5-10 employees and the *upper* one: 50-100 employees. In developing countries the lower one is most common in use. The *upper* limit for medium enterprises is between 100 and 250 employees. However, Pierson (2003) uses also a term of micro enterprises when talking about small businesses with less than 10 employees according to the European regulation. European Commission (2002) has set following limits:

*Micro enterprises:* 1-9 employees

*Small enterprises:* 10-49 employees

*Medium enterprises:* 50-250 employees

The difference between micro and small companies according to Hallberg (2000) is that micro companies often are family businesses or self-employed people with small chance of growing into larger firms while the small ones have more chance to get competitive and international.

Most of the researchers to which we will be referring in our thesis are using the term of SMEs and it is used to refer to both small and medium companies as a same group. What we mean is that all theories and researches made are concerning both small and medium enterprises together, that is, no distinction between these two is made. Following the distinction of Hallberg (2000) between micro and small companies and regarding the fact that very few companies included in our field study were family businesses with low chance of growing, the choice we made was to employ the term of *small* enterprises in this thesis<sup>5</sup>.

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<sup>5</sup> the term of small enterprises will be used when referring to different theories or researches that actually are talking about SMEs or MSMEs.



The limit of employee size was set to maximum 15 since we felt that 10 employees could be too little, while setting a limit to more than 15 employees could create a great difference between the companies. The measurement by turnover and investment used by the Indian government was discarded since it would not only complicate our selection of companies but also generate companies with a certain financial level. Since the thesis is trying to identify the awareness of ICT and not only the financial possibility of use, this measurement was not relevant.

## **2.4 Defining ICT awareness by existing definitions**

The term of ICT awareness is used as a central issue throughout this thesis. The theoretical frameworks for examining the ICT awareness in small companies seldom provide an overall representation. Therefore, it is important to give a precise definition of this term. Many papers talk about ICT awareness, but none of them give neither the actual definition of the word awareness nor a tool to measure it. Wilson (2004) criticises the great amount of different perspectives, which all highlight different parts of the ICT use and awareness using diverse methods but failing to give a multi-level analysis.

The ICT toolkit of the World Bank (2005) which acts as a guideline for their own ICT projects, talks about raising awareness of ICT and its importance. Here, the awareness is the recognition of what ICT can do, how it can be a catalyst for change and how it can be enhanced. The ICT awareness is here also associated with the risks, pitfalls and limitations of ICT. It discusses the fact that ICT needs to match businesses' needs and requirements and explains the importance of the strategy used when adopting ICT as well as the significance of the correspondence with companies' objectives. Further, it emphasizes that ICT may require some kind of re-organisation in form of internal skills and knowledge or the way of working. This toolkit tries to raise awareness and knowledge about the risks that have to be taken into the consideration when implementing ICT.

A survey on ICT was conducted by COMPAS (2005) where they estimate the awareness and usage of ICT together with the barriers and constraints to ICT adoption and utilization among agri-businesses in the city of Ottawa. Similar to the toolkit of the World Bank (2005) mentioned above, it covers different kind of barriers to ICT adoption and tries to evaluate the advantages that ICT brings to the companies. The mentioned survey, however, does not provide an explanation of the term of ICT awareness. Here, the examination of ICT awareness was done by letting the respondents themselves rate their level of awareness of different ICTs.

Many governments are examining the use of ICT and are trying to suggest the tools for raising awareness among the users or potential users of ICT. Madras School of Economics (MSE) (UNPAN, 2003) prepared a study for the government of the Union Territory of Pondicherry (India) on the various economic sectors and examined the growth factors, policies and programmes set up by the government. The government of Pondicherry had already taken some initiatives to encourage the ICT, such as introducing e-governments and promoting ICT education in the state. The study indicates that the private sector is of big importance for the IT industry in Pondicherry and therefore must be encouraged. To make the IT sector grow, it suggests the government to interact more with the private sector so that private entrepreneurs become more aware of the opportunities of the ICT. However, the study also suggests that this must be done by the ICT professionals who are aware of the disadvantages of ICT.

According to Meager et al. (2002), there is a significant difference between the meaning of words *knowledge* and *awareness*. The term *awareness* is defined in the following way:

*“Awareness occurs when an individual is sufficiently informed about a subject for him/her to be conscious of its existence and its broad subject matter.”*

(ibid., p. 11)

This is opposed to the definition of *knowledge*, which is the following:

*“Knowledge requires a theoretical or practical understanding of a subject.”*

(ibid., p. 11)

Meager et al (ibid., p.12 ) claim that:

*“It is possible to demonstrate awareness without having any substantive knowledge of a subject, but not vice versa.”*

The definition of word awareness as given by WordNet (2006) is the following:

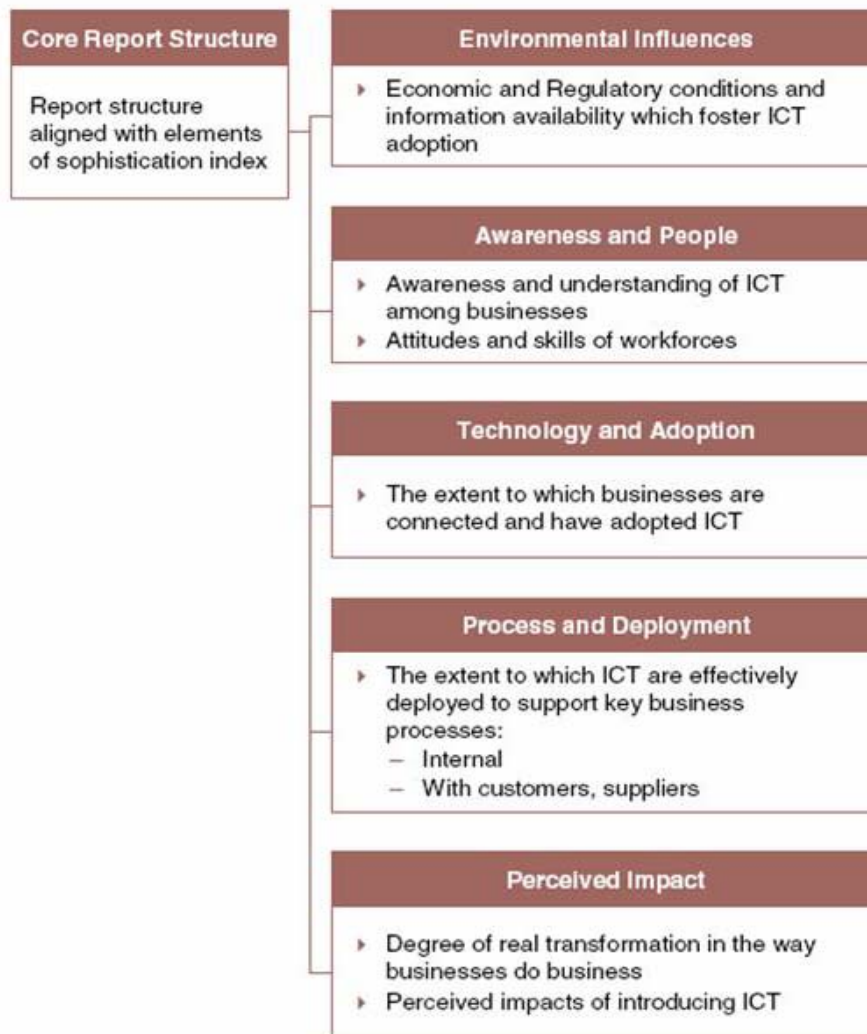
*Awareness, consciousness, cognizance, cognisance, knowingness -- (having knowledge of; "he had no awareness of his mistakes"; "his sudden consciousness of the problem he faced"; "their intelligence and general knowingness was impressive")*

The awareness is here described as the consciousness and knowingness, as defined by Meager et al. (2002).

We could now conclude that a clear definition of ICT awareness does not exist but we can from above observe that awareness of ICT is most often connected to the use and barriers of ICT. Using the given definitions of awareness, we could state that in technological matters, a person does not have to have knowledge of ICT, i.e. detailed understanding of how a personal computer or a software system functions, but a certain degree of awareness and knowingness is required to “be conscious” of the existence of the technology and its broad subject matter. We define here the broad subject matter as the issues that can be related to the adoption and use of ICT, such as technological and strategic issues, as well as the potential benefits and risks of such. So, the term ICT awareness is used in this thesis to reproduce the degree of consciousness of the ICT, both strategically and technically, and the recognition of the benefits and problems acquired from ICT adoption and use.

## **2.5 Defining ICT awareness through the benchmarking study of DTI in UK**

The Department of Trade and Industry (DTI) in the United Kingdom makes an annual benchmarking study on how businesses in UK and other countries are deploying ICT. The model is used to analyse the ICT adoption and deployment, and the sophistication index of the ICT use (DTI, 2004). It is shortly presented below.



**Figure 2.1:** *The International Benchmarking Study 2004, DTI (2004)*

Under the “Technology and adoption” the Department of Trade and Industry (ibid.) measures the extent to which the businesses are connected and have adopted ICT, for example if they have Internet connection, a website, LAN, EDI and similar.

“Environmental influences” are the external factors that influence the decisions of businesses concerning the adoption of ICT. The category refers to factors such as competitors, market and government. Businesses can be influenced by information on ICT provided from a range of different sources such as the governmental authorities, or be threatened and constrained by regulations and national standards in their adoption.

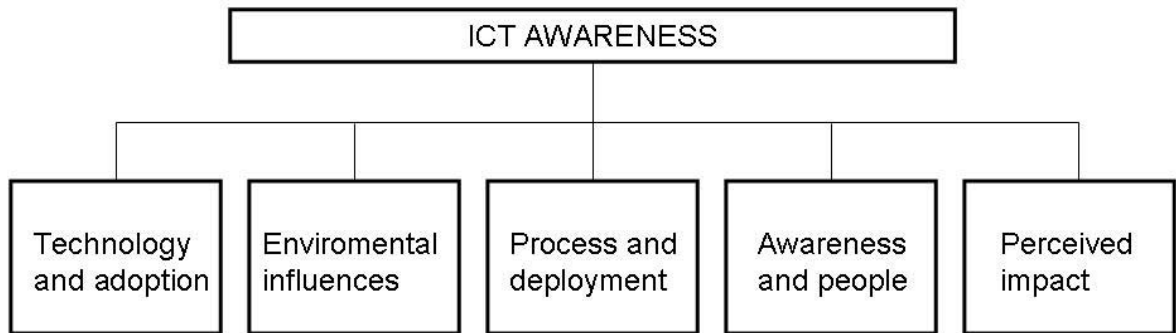
“Process and deployment” refers to how businesses use ICT to support business processes, both internal and external. It includes the use of Intranets, the information available online, ordering and payment, integration between systems, activities which are supported by ICT and transaction between the company and externals.

“Awareness and people” comprises businesses’ openness to changes, their attitudes to ICT and reaction to new technologies as well as their recognition of barriers to the use of ICT.

These indicators also include whether businesses have a written ICT strategy and the way they perceive their ICT skills to be within the organisation.

“Perceived impact” measures the impact perceived by businesses by introducing ICT. It analyses the way that ICT changes the businesses of companies and what benefits are gained from the use of ICT.

This model is relevant to this thesis, as it analyses awareness of ICT in the companies and other relevant issues, such as the macro-level influences, the technology adoption, process support and the ICT impact perception. These factors can be related to our previous definition of ICT awareness which comprises the consciousness of ICT and issues related to the ICT use and adoption. We will therefore use the framework of this model to get a holistic picture of what is in this thesis defined as the ICT awareness. Thus, a new model derives which will be used as a model of ICT awareness throughout this thesis.

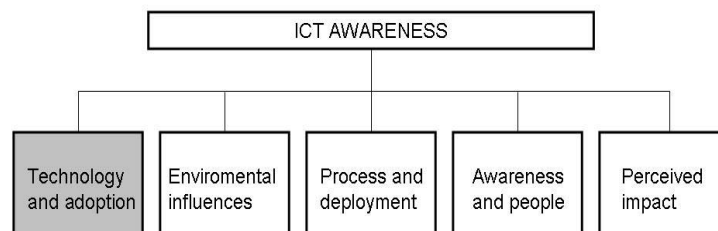


**Figure 2.2:** Model of ICT awareness

The model, however, lacks theoretical depth. We will therefore in the following section try to analyse each category with the theories from different sources.

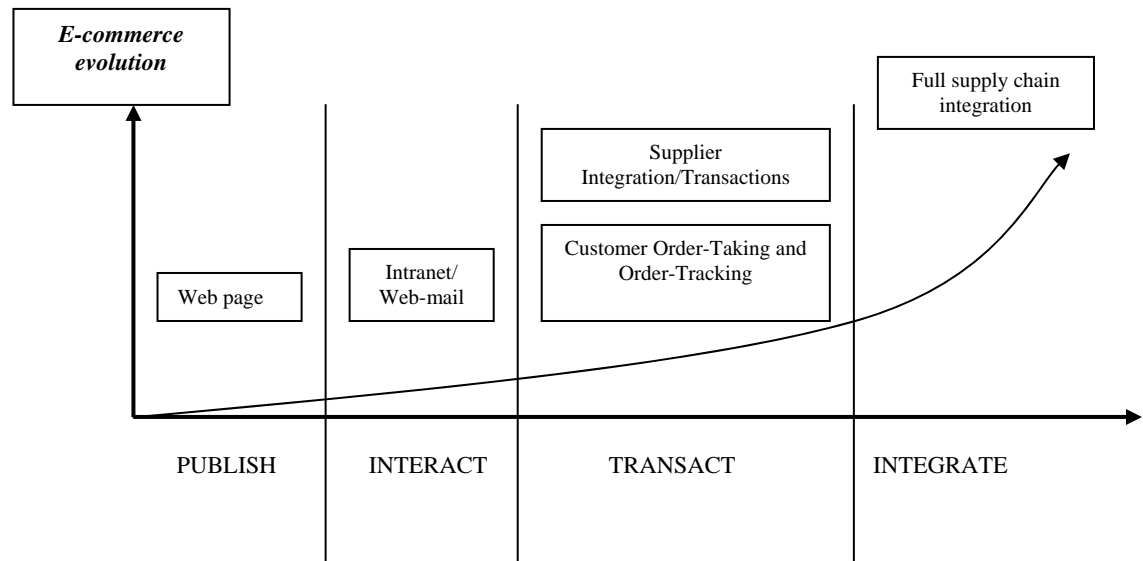
## 2.6 ICT awareness

### 2.6.1 Technology and adoption



A model on the evolution or growth of the ICT use in e-commerce is given by Currie (2000). It is a four-stage model that describes an organisation’s e-commerce development

as the publishing, interacting, transacting and integrating stages. The model is showed below.



**Figure 2.3:** Revolution of ICT use in e-commerce (Currie, 2000)

Here, Currie (ibid.) means that the first stage is a “window on the world”, where only a website with the information on the company (without online-order taking and such) is set up. Many small enterprises are on this stage or they have not even initialised the e-commerce evolution. The second stage allows interacting, passing documents through e-mail and connecting through Intranet. The third stage is where transactions between the organisation and its customers and suppliers are made via Internet, and the orders can be taken online. This leads us to the fourth stage, which is a fully integrated business approach.

One of the most famous researchers within the adoption theory is Everett Rogers. He has done research on innovation adoption and his theories are used as reference in many works, papers and articles. An innovation is according to Rogers (1983) regarded as an idea, practice, or object that is perceived as new to an individual or other unit of adoption. He means that if the idea seems new to the individual, it is an innovation, but it does not need to involve new knowledge. According to him, one can know about an innovation without yet having a favourable or unfavourable attitude towards it, nor have adopted or rejected it. Though, he states that an innovation is not necessary desirable for all adopters but it depends of situation if an innovation is favourable enough to be adopted.

According to Rogers (ibid.) again, the rate by which an innovation is adopted depends on the characteristics of innovations which are: relative advantage, compatibility, complexity, trialability and observability. *Relative advantage* refers to whether an innovation is perceived as the idea it replaces. What matters here is how big advantage an innovation is perceived to present. Relative advantage can be measured in e.g. economic terms, satisfaction or social-prestige. If an innovation is *compatible* it means that it is perceived as consistent to the adopter’s needs, values, beliefs and past experiences. A compatible innovation will be adopted more rapidly. *Complexity* of an innovation measures how difficult an innovation is to understand and use. Generally, complicated innovations will be adopted slower since new knowledge and skills are needed to be developed to understand it. An innovation that is *trialable* will often be more rapidly adopted since an individual can try it and learn its function before adopting it. It is more easily experimentable.

*Observability* means that the results of an innovation are visible to others. An innovation will be adopted faster if its results are observable to other people.

Rogers (ibid.) says that one would expect the innovations to be adopted rarely, regarding the relative stability of organisations and the existing barriers to change in an organisation. However, he means that innovations are adopted all the time in almost every organisation since it is a part of the fundamental process that every organisation undergoes. The barriers to innovation adoption and organisational characteristics will be discussed in the section 2.6.4.

The adopters are by Rogers (ibid.) divided by their innovativeness, e.g. the time when they first adopt an innovation. Not all will adopt an innovation at the same time. This rather happens in a sequence. Rogers (ibid.) identifies five groups of adopters (1) innovators, (2) early adopters, (3) early majority, (4) late majority and (5) laggards.

(1) *Innovators* are people who are eager to try new ideas. They have more developed social relationship and have a larger communication network than others. However, innovators must deal with the uncertainty that an innovation brings, e.g. the risk that the innovation gets unsuccessful. Innovators play an important role in a social system by adopting and launching new ideas.

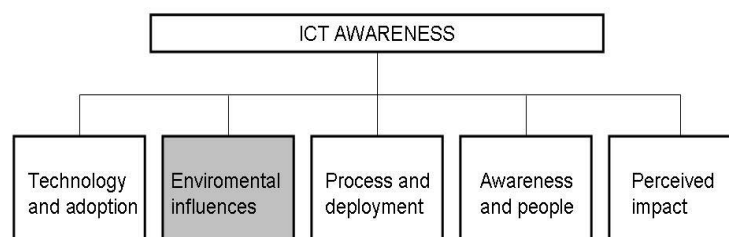
(2) *Early adopters* are the one who inform themselves before adopting new ideas. They estimate the risk before adopting an innovation and by doing this they act as a role model for their network.

(3) *Early majority* has much longer decision period than innovators and early adopters. They are usually somewhere in-between the very early and very late adopter groups. They are often very careful for some time before totally adopting an idea.

(4) *Late majority* are the group who are sceptical about new ideas and adopt often because of the economic necessity or because of the pressure from their network. They are almost the last ones to adopt new innovations and before they do that they need clearly to see the advantages. Also, their limited resources make them wait until they are sure that an innovation is successful.

(5) *Laggards* are the last group to adopt an innovation and they are almost isolated from the social system. When they decide to adopt, it is done on basis of some similar idea that has previously been used.

## 2.6.2 Environmental influences



Networks, such as customers, suppliers, partners, family, can according to Van der Veen (2004) be a driving force for adopting e-commerce. He means that their contribution can make a firm realise opportunities by providing information and expanding their knowledge. They can act as motivation and support and they can put pressure on firms to adopt an innovation. Al-Qirim (2003) means that competitiveness from outside can also play a decisive role for the adoption, and shows that small enterprises are regularly seeking for innovation when they find themselves in a competitive environment. He demonstrates other researches which illustrate how a strong competition creates a greater need for ICT innovations. Therefore, companies in a highly competitive environment will be more pressured to adopt e-commerce than others in an uncompetitive surrounding.

The environmental influences also include a pressure from customers' needs and requirements. According to Buhalis (2003), the main barrier for customers who do not use Internet for purchasing online, is the cost of accessing it. Though, other barriers have been recognised by the research: customers do not feel secure in making the purchase by themselves; they are concerned with security issues; they would rather talk with a real person etc. Those who do not use the Internet for these purposes will of course use other distribution channels for making reservations or purchasing service or products.

To merely focus on the ICT-diffusion and awareness in the enterprises is not enough, as they are affected and controlled by the political and national environment. This environmental focus is widely used when analysing the entrepreneurial issues, as it is done in e.g. the Global Entrepreneurship Monitor (Manimala et al., 2002), which is furthermore referred to as GEM. It is important to take the environmental influences into account, as they alone may affect the ICT awareness critically. It is, for example, a matter of course that a tour operator with a high level of ICT-awareness and a sophisticated knowledge and implementation of ICT will not have full use of it as long as its partners, clients and suppliers are not using the technology. The micro-scale focus is not enough – it is necessary to consider the whole nation's ICT-awareness, which has to develop to allow the advantages on local level (Wilson, 2004).

The enterprises depend on several levels of entrepreneurial conditions in the country (Manimala et al., 2002). As it is described in the GEM (ibid.), while the general national framework affects the development of entrepreneurs and their perception of opportunities, the actual exploitation of the opportunities may depend on the conditions that are entrepreneurship-specific. There is a distinction between the perception and awareness of the opportunities, and their actual use and exploitation. These are governed by different factors. The factors that are claimed to govern the perception and awareness of the opportunities are the external trade openness, the government, the financial markets, the technology and R&D, the infrastructure, the management, the institutions and the labour market in the country. The factors that are claimed to affect the exploitation of these opportunities are the following: financial support, government policies and programmes, education and training, R&D transfer, commercial and professional infrastructure, market openness and ease of entry, physical infrastructure and social and cultural norms. The awareness and use of ICT can be analysed using these factors as tools.

The need to consider several aspects of the context is also brought up by Wilson (2004) in his Strategic Restructuring Model (SRS). He claims that the existing models for measuring the ICT and its diffusion in different countries lack precision and are not adequate enough to reflect the complex nature of the issue. He therefore presents a multidisciplinary framework that conquers the difficulties, the SRS model, which is based on the political

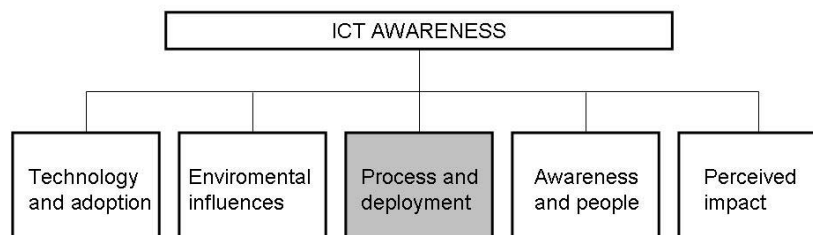
economy context and lays out the patterns of IT diffusion. He means that both structure and agency are central actors in large societal innovations like the information revolution.

According to Wilson (2004), the information technology is seen as a resource, which is promoted by those who benefit from it and opposed by those who would be disempowered by the technologies. He argues with the fact that people are more interested in what benefits the technology can bring them, rather than in the technology themselves, while Mansell and Wehn (1998) actually compare the information technology with “tools” or “capabilities”, as opposed to an assembly of automatic transformative agents. This supports Manimala et al’s framework, but SRS will not be used as a part of the analysis, as it has a macro-level focus.

There is also a certain important aspect of what the GEM (Manimala et al., 2002) considers as *social and cultural norms*. The traditional understanding of time belongs to the social and cultural patterns of the society that affect the everyday life, and as a consequence, the awareness, adoption and use of ICT.

According to Mårtensson (2000), there are two general ways to perceive time, the linear and cyclic perspectives. The linear perspective is used to measure things by the means of time. It is a theoretical way of perceiving time, as one assumes that time “exists”, so different actions require different amounts of time. This gives a possibility to count forwards and backwards in time. The cyclic perception is practical, as it is based on human experience. The patterns of the nature’s laws repeat themselves in cycles, e.g. days and nights, seasons and so on. It is repeated in the historical patterns, mental activity, physical needs, and so on. An example from the Hinduism religion is the reincarnation, which is a cyclic occurrence. These two attitudes can coexist in different contexts, but the extent of the cyclic or the linear understanding is conditioned by culture.

### 2.6.3 Process and Deployment



Jain (2003) means that, processes in small enterprises usually are done without any electronic tools. One of the reasons is that the knowledge within such organisations is generally more tacit than in digital form and the management “knows” how to do things and what is happening in the organisation. However, according to Vickery et al. (2004), small enterprises can benefit much by using ICT in business processes such as communication, information and resources management. Communication between the organisation and its stakeholders can help increase their relationships by using Internet-based interaction. Buhalis (2003) underlines the opportunities that the Internet provides for travel agencies, such as external interaction either through a website or by using e-mail. The presence on the Internet makes it possible to make a communication with customers all over the world as well as it creates a good marketing and promoting opportunity (ibid.) by for example



providing information about company's products or services on the website (Vickery et al., 2004).

Information about the customers can be managed by introducing databases, which improves the correspondence between the company and customers. Further, there are sophisticated ICT tools such as Knowledge Management System (KMS) and Enterprise Resource System (ERP) that provides an opportunity to share and store knowledge of the company. Otherwise, electronic files and networked computers can be used for managing documentation, data processing and other functions such as invoices (Vickery et al., 2004).

Van der Veen (2004) has sum up the following most common aspects used in the research of the degree to which a technology is used:

**Activity.** Looks at what business activities are supported by ICT.

**Application.** The use of different applications such as Internet, website, Intranet etc are measured. Though, it is stressed that the existence of ICTs in an organisation does not mean that they also are used.

**Value creation.** Benefits and value gained and perceived by using ICTs<sup>6</sup>.

**Intensity of use.** This dimension measures the intensity and frequency of the innovation use. It considers questions such as: how much, how often or how widespread it is used.

**First time of use.** Classifies users into different groups of adopters according to Rogers' theory depending on when the innovation has been adopted, e.g. number of years that a company has been used ICT.

**Stage of development.** Measuring adoption of Internet by using a stage or level development model. For example, Daniel et al. (2002) suggest the clustering of companies into four different groups according to the stage of e-commerce adoption in which they are at present: developers, communicators, web presence and transactors. *Developers* are those who are using minimal level of e-commerce and are in the phase of development of e-commerce services, such as Internet and e-mail communication and web presence for advertising their businesses. The *communicators* are those who already are communicating via e-mail and Internet; and are exchanging documents electronically with their customers and suppliers. Their focus of development lies on the development of their websites to provide information of their businesses or products. The third group, *web presence*, is using e-mail and Internet for both internal and external communication, they are exchanging documents electronically and they already have developed websites. Their focus is, instead, on developing online transaction, such as receiving orders online. *Transactors*, which is the last group, is already taking orders online. This group is using a high level of e-commerce and is therefore undertaking development in more advanced areas such as payment online.

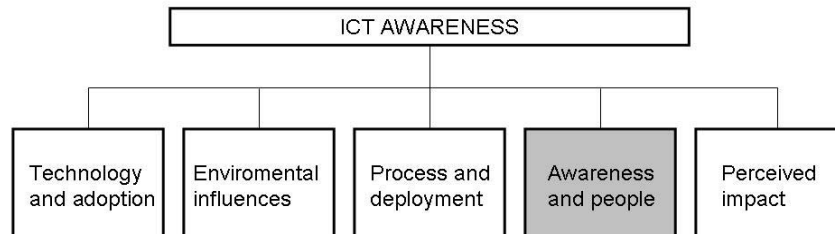
Similar to this model, Boudreau (2003) demonstrates three dimensions of a simple ICT usage usually used by researchers. These are time, reliance and diversity. *Time* is simply evaluated by how much an ICT tool is utilised which we consider to be comparable to Van der Veen's variable of *intensity of use*. *Reliance* refers to the extent to which one is dependent on the technology for carrying out a work process. *Diversity* measures the different software features being utilised, which are the same as measuring what

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<sup>6</sup> see also section 2.6.5

*applications* are used and what *activities* are supported by ICT in the above model of Van der Veen.

#### 2.6.4 Awareness and people



Means & Schneider (2000) mean that companies easily can be reluctant to new technologies since it brings changes into the organisation. Both political and psychological obstacles can be met. They mean that, by the adoption of new technologies, people have to learn new ways of doing things and sometimes, when new processes are adopted, the old skills of employees may be forced to be “threw away”. Further, they explain that new firms have no such problems, as there are no existing traditions, cultures or work processes that have to be changed or set aside.

Leadership plays an important role in the adoption of new technologies since it is a decision to be made by the management, office managers, CEO and similar (NAES, 1991). Small businesses are very special in the terms of centralisation. Often, the manager of the company is the one responsible for decision-making which makes the decision-making process more autonomous while it in larger firms generally involves more time and consultancy (Pierson, 2003). Therefore, Pierson (ibid.) means, that personal motives can have more influence in the decision-making in small companies. However, personal determinants such as age and education of CEO have been demonstrated as an irrelevant factor affecting the ICT adoption in small enterprises, according to the study of Müller-Falcke (2002). Also, from his findings, it has appeared that the factor that influences the ICT adoption the most is the size of the company. Both study of Al-Qirim (2003) and the one of Van der Veen (2004) use size as an important variable of organisational factors influencing the ICT adoption. The findings of Al-Qirim (2003) confirm those of Müller-Falcke (2002), where it has been showed that the companies that have adopted ICT in their work are larger than those who lag behind and who are more sceptical to the innovation adoption. However, Blili and Raymond (1997) show that small enterprises are more flexible and adaptable to changes, both in environmental, technological and operational, which is considered as an important characteristics of an enterprise and can be enhanced by the use of ICT (Golden & Powell, 2000).

Factors such as lack of ICT knowledge and experience can also, according to Van der Veen (2004), be primary barrier makers for adopting ICT or e-commerce, making companies not wanting to invest time or money in something uncertain. Knowledge and experience in ICT is therefore the key determinant for innovation adoption. The findings of Borga et al. (2003) also demonstrate that one of the major obstacles for ICT and e-commerce adoption in small enterprises are organisational and managerial factors, the main reason being the lack of internal qualifications and experience.

Other variables' influences on e-commerce tried out by Al-Qirim (2003) are *IT emphasis and IT department*. Those findings show that the emphasis on IT such as IT-related knowledge, resources, capabilities, is likely to have an impact on the innovation and e-commerce adoption in a company. He means that firms that invest more seriously in ICT, e.g. by introducing an IT department, and who have ready assesses such as infrastructure, will adopt an innovation earlier. However, smaller firms are restricted in the terms of financial resources, trained personnel and cannot afford much professional service (Welsh & White, 1981). That is why most of them do not have any formal and not even an informal IT department. Those who have outsourced ICT operations need to have some basic knowledge of ICT to be able to select services providers and to control and monitor their operations (Al-Qirim, 2003). Jain (2003) means that small enterprises are not much ICT-focused particularly since they usually do not have an IT department and since most of the decision-making is done by managers or finance people.

According to Al-Qirim (2003), some studies show that a positive and an encouraging attitude towards changes are important in e-commerce adoption. An organisation that has a positive attitude to changes will have an environment that will benefit to innovation adoption. Further on, a company will be more willing to adopt an innovation if it is more open to new ideas and new knowledge. However, Al-Qirim (ibid.) means that companies never innovate because of the innovation itself. What also matters is how they perceive the innovation, that is, if the innovation is seen as a strategic step, a goal or a solution it is more likely to be adopted. Still, the ability of a company to explore new knowledge also depends on its individual members. He refers to individuals who are providing the company with new perspectives and information flow. They are also, in one way or another, facilitating the adoption of an innovation in the company.

Though, one of the greatest barriers to small enterprises for not using and adopting e-commerce is the lack of the awareness of its potentials according to Lunati & Faverie (2000). Even UNCTAD (2003) states that, the developing countries are not using the potentials of ICT most because of the lack of awareness of the benefits gained by ICT. Vickery et al. (2004) explains that the cost of the ICT and e-commerce is the main barrier for small enterprises for adopting these technologies. Special emphasis is on enterprises with less than 10 employees who will develop a simple website without any e-commerce functions which can be very costly. Another great obstacle is the lack of technological knowledge within the company since the small enterprises are more focused to day-to-day operations and often there is no time for learning about new technologies (ibid.).

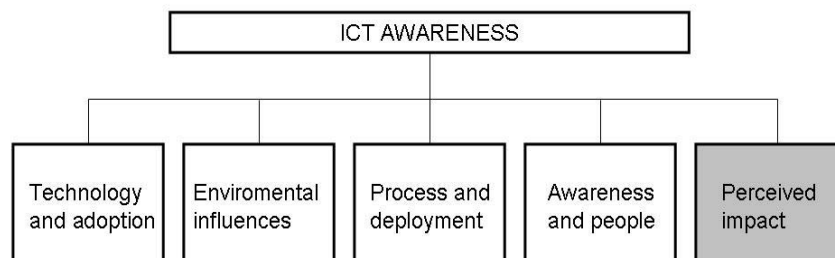
According to Müller-Falcke (2002), new ICT is considered as a tool for improving the quality and quantity of information flows. The common problem of small companies is that the information within the organisation is the responsibility of the entrepreneur. The quality and the quantity of information will therefore depend on the extent to which the entrepreneur is able to handle the task, while larger companies are more competent in handling more specific and larger quantity of information. Another obstacle is that small enterprises face, beside information problem, a problem of resource. They have less capital than larger companies and therefore they can face difficulties in financing their operations. The fact that resources of manpower are restricted makes small companies employ generalists rather than specialists. Therefore, the performance of specialised functions is limited in small companies. Another restriction of adopting ICT in small companies can be the fact that the decision-making is done intuitively and therefore more risks are involved (ibid.)

According to Vickery et al. (2004), the most common reason for not adopting Internet and e-commerce is the lack of suitability for the business. Other barriers can be network infrastructure, cost factors and security and reliability factors.

The proceedings of Vickery et al. (ibid.) show that small enterprises most often focus on day-to-day operations which result in the lack of human resources, knowledge and time to understand the benefits of ICT. Understanding these benefits require skilled personnel which can also simply be employees who are interested in technology. However, it is suggested that the lack of ICT skills does not necessary has to be an obstacle for adopting ICT and e-commerce. It is rather internal technologies that are not equipped for ICT services. ICT adoption can for example bring the risks of viruses and other system failures. Further on, complete adoption of e-commerce often requires restructure of business processes. Due to that, strategic and management capabilities are also required, something that many small enterprises do not have or are too costly to access (ibid.).

Cost factor is generally the basic issue for small enterprises according to the above mentioned proceedings of Vickery et al. (2004). Many of those companies will not adopt e-commerce if the benefits do not outweigh the costs of adoption and maintenance. Often, small enterprises can only afford a simple website without any e-commerce functions. However, whether a company will adopt ICT or not does not depend only on the company itself. The availability of Internet connections and other communication services can be a vital factor. E.g. a good and available broadband connectivity may push the companies to adopt e-commerce, while slow Internet connections and data transfer can rather discourage companies from adopting ICT. Small enterprises are also more sensitive to local restrictions that large firms, such as Internet costs, business laws, taxation of Internet costs etc<sup>7</sup>.

### 2.6.5 Perceived Impact



The knowledge and information about businesses and clients are often not shared to a great extent between employees and managers in small enterprises according to Vickery et al. (2004). Müller-Falcke (2002) means that information is one of the most important factors for a competitive advantage and through the use of ICT, information can be managed at a low cost. The decreased information costs itself can increase the contribution of ICT to an organisation. This happens through following:

- 1) With lower information cost, more information is able to be transmitted which makes the quality of existent information higher.

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<sup>7</sup> these factors are further examined in the Literature study, see section 4.4

2) Communication and exchanging information is done faster which reduces uncertainty within the organisation.

3) The decision-making can be improved

4) New business opportunities and possibilities of changing the competitive position of the companies are able to arise.

Trepper (2000) means that, it is hard for an organization to compete on the market if it is not using e-commerce because the information exchange with partners and customers is than not easily made. He means also that not using e-commerce is ignoring information and resources available. Another benefit of using e-commerce and Internet is the geographical advantage which can help companies to expand more quickly.

ICT can, according to Müller-Falcke (2002), also be a tool for increasing flexibility in an organisation which is considered to be a competitive advantage. Especially small businesses are characterized by being flexible so by using ICT they can augment their main characteristics. The increase in flexibility is achieved when the aim is for example, to speed up internal processes or when the process of external information exchange is to be attained. Since small businesses are better in adapting to changing conditions they can make better use of ICT to enhance their own flexibility. Though, this is only achieved if the company uses and adopts ICT in the right way (ibid.).

Van der Veen (2004) identifies two types of benefits of e-commerce, the organisational and strategic value creation.

*The organisational value creation* is described as improved efficiency and effectiveness of an organisation. It is a value creation that is related to time, cost, distance and communication.

The study of Van der Veen (2004) shows that e-commerce more often brings organisational value to companies, resulting in saving time and money, improving the company's image and creating more efficiency and more quality of existing services. Increased efficiency and changes in the management and in the production processes of businesses can be managed by e.g. computerising documentation, data processing, handling of invoices and incoming orders (Vickery et al., 2004).

Reduced costs are gained by Internet-based transactions and information flow between organisations or, by allowing customers to find the lowest price for a product/service by themselves. Transaction costs can be those of fax and phone who are reduced when conducted through the Internet. Another example of reduced costs are those related to searching for suppliers, reaching potential buyers and costs of providing information on the availability, characteristics and prices of products or services (UNCTAD, 2001).

*The strategic value creation* is related to possibilities for new products, markets, and services (Van der Veen, 2004). The improved quality and efficiency of services (organisational value creation) can itself bring a strategic value creation by offering possibilities for introducing new services. Tourism businesses that are using ICT can broad their range of existing products and services, according to UNCTAD (2003).

E-commerce can also improve relationships between company and its partners and customers (Trepper, 2000) but also within the organisation (Vickery et al., 2004). It allows

small businesses to compete with the large ones, also on the international markets through selling their products and services online (Trepper, 2000).

Despite all benefits that ICT can bring to a company, not every one will necessary adopt it. What matters in an adoption of an innovation is the relative advantage that it can provide to an organisation as well as the extent to which it matches to an organisation's needs, values, work practices and objectives. In brief, it is more likely that a company will adopt an innovation if its relative advantage is understood by the company and if the innovation is regarded as consistent with the company's values, needs, objectives and similar (Rogers, 1983).

## 2.7 Summary

The term of ICT, which is the central issue in this thesis, is described as technologies used for processing and communicating data and information and is in some way an extension of the term IT. E-commerce is, on the other hand, defined as business transactions taking place over a network. Since the ICT is necessary to use in order to be able to apply e-commerce, this thesis will also discuss the issue of e-commerce.

Small companies are together with medium-sized enterprises commonly named SMEs but there is no common worked out definition for these two terms. In many countries and organisations the variables used for describing small and medium enterprises are different. Discarding the variables such as turnover and revenue, the definition of small enterprises in this thesis will be using the number of employees as measurement, setting a limit of 1-15 employees.

Awareness is defined as consciousness and knowingness of an issue and its broader subject matter. To be aware of ICT does not require having a deeper knowledge about ICT. It requires being to some extent conscious about it and about other issues that are related to it, such as its benefits and barriers. The framework of ICT awareness in this thesis includes following: technology and adoption; environmental influences; process and deployment; awareness and people; and perceived impact.

*Adoption* of ICTs is usually done by a principle of publish-interact-transact-integrate. Small companies first publish a simple website and continue by interacting with others through Internet and e-mail. A step further is taken when transactions are made online and the last step includes a full supply chain integrated into the e-commerce. Adopting an innovation depends on its characteristics such as what advantage it is providing, how complex it is to learn or how well it matches the needs of the adopter. Adopters are divided in different groups depending on how fast they will adopt a new idea (innovation). Those who adopt earliest are more likely to be larger companies with open attitudes to new ideas and a better risk management. They are also more likely to be cosmopolitans, having a greater social network with higher goals and objectives than other.

*Environmental influences* are all externals that make impact on the adoption of ICT, good or bad. Competitiveness has been showed to have a great impact on adopting ICT but even pressures from customers or family can act as a driving force. However, external factors can also be a reason for not adopting new technologies, for example, if customers do not feel comfortable in making online reservation, than the existing ICT functions are useless. Other factors to be taken into the consideration are those controlled by the political and national

environment, such as: external trade and market openness, government, financial markets, technology and R&D, infrastructure, infrastructure and social and cultural norms, among others.

*Process and deployment* comprise the way that businesses use ICT to support their activities and transactions and the benefits that are gained by using these. Factors such as the intensity of use, that is, how often and how much the technology is used, may be utilised to examine deployment of ICT. Further, different user groups can be identified based on when an innovation has been adopted. The use of ICT, such as Internet and websites, can improve both internal and external communication and information processing at the same time as it is providing opportunities for marketing and promotion.

*Awareness and people* is the openness of businesses to changes, their attitudes towards ICT and the recognition of barriers. Small companies are more flexible and adaptable to changes than bigger ones but their centralised management often makes the decision-making depend on one or two persons. Implementation of ICT is enhanced by the knowledge about ICT and the relevant infrastructure. Unfortunately, the common problem in small enterprises is that they focus on daily operations, not having time, financial or human resources for learning and adopting new things. It is also showed that size matters; as companies get bigger they adopt more ICT. However, a positive attitude toward changes enhances the adoption of ICT and the lack of ICT skills does not necessary need to be an obstacle. Rather, it could be the lack of the relevant infrastructure in the company or in the country that restrains the adoption.

The great *impact* that ICT makes in small companies is the low cost of information and communication management, both internally and externally. Since small companies are of flexible nature, ICT may help them improve this competitive advantage by speeding up their internal processes and information exchange. The organisational value creation of ICT brings the efficiency and effectiveness to an organisation; it is reducing costs and increasing the quality of processes and services. The strategic value creation is the opportunities for new or improved services and markets and better external relationships. However, in order to benefit from ICT, the relative advantage of ICT has to match an organisation's needs, values and objectives.

### **3 Methodology**

This chapter deals with the determination of research design and sources of data. The research approach used is briefly presented and thereafter follows data collection and data analysis methods. Finally, the delimitation of the method used is discussed.

#### **3.1 Approach of the research**

The discussion about positivism versus constructionism is relevant for understanding the approach of our research. Positivism is an objective approach where the researcher stands independent of the research area, the selection of data is quantitative and the focus is on investigating the question and the causes without affecting or even getting involved in the problem. The constructive approach demands that the researcher is subjective and dependent of the research area and he or she needs to get involved in the problem and will therefore be affected by it. The researcher also has to try to understand the situation rather than only find the underlying factors, therefore the data that is collected is qualitative (Thurén, 2002).

Our work was started as a positivistic research, as the background of the research problem was analysed to create a base for the questionnaires and interviews. Then a seven weeks long field study in India was performed, where we have made interviews with small travel agencies and tour operators and made observations in these companies in a constructive approach to understand the situation. At last, literature findings were gathered in order to collect the secondary data about the factors that were not covered by the results from the field study.

#### **3.2 Collection and analysis of data**

To triangulate the data, along with extending the study to several different cities, different ways are used to obtain the data. The methods used were questionnaires, interviews, simple observations and literature study. That is to say, both quantitative and qualitative data have been collected, which we consider essential for an accurate approach. The following characteristics are given by Backman (1998):

The qualitative data:

- Information obtained reflects feelings, thoughts, ideas and attitudes of the interviewed person
- Figures are not used in this method; no statistic data is being produced.
- Statements are verbal.

With this method it was possible to grasp a holistic picture and obtain a better overview of the problem, as the interviewed persons were given a chance to share their views and opinions on the issue. This made it possible to see the problem from several perspectives due to the diversion of the opinions. At the same time we realise that multiple perspectives can cause confusion and counteract a reasonable conclusion.

The quantitative data has following characteristics (Backman, 1998):

- Different measures, calculations and estimations are performed with the help of calculations and statistics.



- Examples of a quantitative method are experiments, tests, questionnaires, and forms.

The quantitative approach allowed us to receive precise facts that could be measured and compared in a clear fashion to distinguish different factors and see trends. This was achieved by using questionnaires.

We see two dimensions that could be used for describing the level of a company's ICT level: the *breadth* and the *depth*. The breadth would represent the actual quantitative use of technology, e.g. the number of computers in the company, the currently used software systems and the information infrastructure. The depth would be the qualitative extent of the use of the resources and the awareness about the benefits, potentials and problems.

In our study, both of the dimensions were taken into account. The breadth was measured mainly by the multiple choice-questions in the questionnaire, where questions about the infrastructure, organisation, and the extent of use of hardware and software were asked<sup>8</sup>. The depth was measured by the comments to the multiple-choice questions, the open questions in the interview, by discussing the ICT-issues, the possibilities and problems, and the future plans with the managers of the companies<sup>9</sup>.

### 3.2.1 Selection of the companies

The primary selection of the companies was made by the Swedish Trade Council in New Delhi. These companies were located using following media: phone-calls (JustDial service<sup>10</sup>), the Internet and personal acquaintances. The selected companies were situated in New Delhi, Hyderabad, Bangalore and Bombay<sup>11</sup>. The aim was to make up a selection of companies that were situated in the largest Indian cities. The companies to be interviewed were required to be using ICT in some way and to be situated in a big city. Bangalore, Hyderabad, Bombay and Pune are often named in IT-context. The ten largest cities in India are Bombay, Calcutta (Kolkata), Delhi, Chennai, Bangalore, Hyderabad, Ahmadabad, Pune, Surat and Kanpur<sup>12</sup>. The city of Calcutta (Kolkata) was excluded from the study, since it would be too costly and take too long to travel there. The five other largest cities were to be included in the study. After the earthquake (tsunami) in December 2004, however, Chennai was omitted from the study due to the risk of aftershocks and considering the damage that was made to the infrastructure. Totally forty companies were selected for the interviews in the primary selection, ten companies in each mentioned city. The criteria for the selection were the following:

- Small companies (1-15 employees)<sup>13</sup>
- Business focus on ticketing, hotel reservations and/or tour operating

The so-called middlemen were omitted from the study, as the pattern of the use of ICT in those companies was expected to be different from the direct ticketers, agents and operators.

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<sup>8</sup> see Appendix 1

<sup>9</sup> see Appendix 2

<sup>10</sup> Just-dial is Indian Operator Assisted Telephonic Search Engine, see [www.justdial.com](http://www.justdial.com)

<sup>11</sup> *Bombay* was renamed to *Mumbai* in 1996 by the Shiv Sena party, and the city is widely referred to by its new name on eg. maps and traffic signs. However, since the name was never approved by the Indian government, the official name of the city is still *Bombay* (Andersson, 2004). Hence, we have chosen to refer to the city as *Bombay* in this thesis.

<sup>12</sup> with the population of 16.4, 13.2, 12.8, 6.4, 5.7, 5.5, 4.5, 3.6, 2.8 and 2.7 million respectively in 2001 (City Mayors Statistics, 2005)

<sup>13</sup> see section 2.3

The secondary selection, whose outcome was another twenty selected companies, was made from the contact network of some of the managers of the companies, and also some were found and contacted by us personally while we were in India. In total, we had a network of sixty companies selected by two different methods.

The contact person in the Swedish Trade Council in New Delhi warned us that along with hospitality and consideration, we should expect “bad treatment” from the companies that could be suspicious or unwilling to cooperate. This has been taken into account when contacting the companies, and when the interviews were made.

### 3.2.2 Questionnaires

A web-based questionnaire was developed as a mean to prepare additional questions before each interview and to gain some important basic information about each company. Since the interview questions were of semi-structured character<sup>14</sup> we felt that we needed to prepare additional questions that could be relevant during the interviews as well as to adjust questions used in the interviews. The questionnaires were structured containing multiple-choice questions. Structured questionnaires, according to Halvorsen (1992) are a method of data collection where questions are predetermined and the data from different respondents is easier to be analysed and compared. The questionnaires were done this way since we wanted to have strict raw facts. However, the majority of the companies did not answer the web-based questionnaires, so they were instead filled in before each interview. The thirteen questionnaires carried out in the study, are in the used to make the analysis of the *breadth* dimension of the use of ICT among the companies.

### 3.2.3 Interviews

Interviews were *semi-structured*, meaning that the respondents had an opportunity to express their own thoughts while answering the questions, at the same time as there was possibility for asking additional relevant questions (Halvorsen, 1992). Thus, the questions were open and they required much involvement from the respondent. This method was chosen because of the possibility of gaining as much information as possible at the same time as one is able to lead the interview in the desirable direction. It was also possible to adjust the interviews in the way so that more emphasize was put on more interesting issues, all depending on the company and the circumstances.

#### *Conducting the interviews*

The interviews were conducted during a period of seven weeks during March and April 2005. Approximately one week was spent on arranging practical matters, i.e. accommodation and travelling between the four mentioned cities.

The interviews were performed with the managers or directors of the companies. Initially, sixty selected companies were contacted, as we have already described in section 3.2.1. Thirty-eight of those did not participate in the study because of the following reasons: seventeen failed to answer the telephone calls and e-mail inquiries and twenty-one were not interested in participating in the study. The majority of the latter ones were the companies that were located by us personally. The interviews were performed with the remaining

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<sup>14</sup> see section 3.2.3

twenty-two companies. Thirteen of them turned out to be relevant for our research and they will in this study be called primary interviews. The remaining nine did not match our requirements in the terms of size or business focus but some of them have despite been used as a reference material. These will be called reference interviews. The empirical findings are for the most based on the primary interviews but in cases where the reference interviews were used, this is clearly commented.

The interviews were taped where the respondent allowed it to minimize the risk of lost data in cases when there was not enough time to note down the exact answer during the interview and also where misunderstandings emerged because of the difference in accents and similar. The answers have also been noted on paper regardless of whether the taping was used or not.

Each interview began with presenting the aim of our research and stating the anonymity of the companies in the study. All respondents were informed about why the recorder was used and their permission was required, in case they would feel uncomfortable being recorded. Each interview lasted for approximately one hour, however, the total time taken to carry out an interview could vary, depending mainly on the responses and the possibilities given by the managers, as the difference between the managers' attitudes towards the interviews was considerable. While some were very talkative and didn't mind if the interviews was going to last one or two hours, others were busy with the daily routines which pointed out that they were stressed. Some also acted uninterested, which made it hard for us to perform closer discussion on the issues. In two cases, the level of English among the managers was quite low and therefore it made the communication difficult. In both cases, the interviews had to be shortened and only the most important questions were asked.

One interview per day was performed, the reasons being the following. The Indian understanding of time is quite unlike the Western. Forslund (1998) means that whereas in Europe the time is "running" (linear), the time in India is "rotating" (circular). In India, business is made without a rush and being late for an appointment or being asked to wait for longer periods of time is considered acceptable. So, if a tight schedule would be made, it could easily be destroyed by this cultural attitude to the time-keeping (ibid.). This was also experienced in practise; when calling the manager one week in advance, before coming to the city, to set up a date and a time for the interview, we were instead asked to call back the day of arrival. The managers were almost all flexible in the terms of time, however some continued working when we arrived. In these cases, the interviews were characterized by disturbance of ringing phones and long pauses between the questions.

Another reason, more practical than the first one, for doing only one interview per day, was that the traffic in the largest cities in India is very heavy, and with some bad luck it might take up to a half a day to go from one side of the city to another. Since the companies were to be situated in different parts of the city, we did not want to risk missing an interview.

### ***Processing of interviews***

After each interview, all data was immediately transcribed from the notes to an electronic document. Issues that we have failed to note down during the interview were instead obtained from the tape recorder. Because of the difference in speech flow, language domain and accent, situations emerged when the same thing was perceived in two different ways. The tape recorder was again taken in use to gain the accurate data. Yet, as the recorder was of bad quality, not so much trust was put on it as a mean for registration of data. The most of the transcribing was made from our notes. Further on, when transcribing the data, it was

done into different categories to make the analysis and the comparison of company profiles easier. To attain as high reliability as possible, the transcribing was done separately. It was instead at first done by one of the interviewers, then letting the other one fill in the gaps and inspect if all the data was perceived the same way.

### **3.2.4 Observations**

Observations are a qualitative method used for collecting information by monitoring the people acting in their natural environment and critically noting the details. Thus, one notices what people *do* which can be different from what they *say* (Patel & Davidson, 1994).

The plan was to take part in the reality which companies face every day, making observations after each interview by moving around the office during the working hours and observing the way people in the companies work and to study their opinions, ideas, thoughts and inputs on use of ICT. However, this was not possible to carry out since the managers and the personnel were, as we wrote earlier, often very busy and too stressed even during the set-out time for the interviews, so as observers we would clearly interfere with their routines. Instead of staying after the interview, the impressions on the working environment before the interview, during the talk and directly afterwards, were noted down. Also, the performance and attitude of the interviewed persons were observed. Totally eight companies were observed. The result of the observation will in the empirical findings section be presented in short, presenting only the most interesting aspects.

By making such limited observations, we aimed to collect information on the Indian working culture and to create an image of the atmosphere. Even if this approach of making observation is very subjective and despite the fact that the observations do not have much impact on the actual conclusion at the end of the thesis, they were of high significance for us when interpreting and estimating the answers we could rely on and the replies that we could put emphasize on in this thesis.

An observation of companies' websites was also made in order to create an understanding of how sophisticated the websites and their functions were. We have also made a small observation of the software systems used in the companies, in order to obtain some more information about them. This was done by looking up specifications on the Internet.

### **3.2.5 Literature study**

As a supplement to the field study, a study of literature was done in order to cover the important aspects of theoretical framework, which we were not able to obtain through the interviews or the questionnaires. The literature study was made by using GEM (Manimala et al., 2002) as a main theoretical framework. The model deals with environmental factors affecting ICT awareness which are earlier described in section 2.6.2. The GEM was analysed by the means of a literature study and interviews, combined with observations where possible. The results provide an overall picture of the political and cultural aspects that influence the decisions made by businesses when adopting ICT. These aspects demonstrate the environmental factors that serve as a background to the issue, and made it possible to trace down the causes of the current level of the ICT awareness in the tourism industry businesses.

However, it should be mentioned, that the factors of above mentioned GEM model were not analysed in detail. One of the reasons is that we did not find it appropriate to make a deeper

analysis of political and economical factors as it would bring us to a different level than other findings in this thesis. Another reason is the fact that the literature study did not have a direct link to the companies that we have interviewed. What we mean is that the literature findings could not directly be related to the results from the field study because the literature covers general information about the political or economical situation in India. Since the different factors in the GEM model were not discussed in detail with the respondents (and some were not discussed at all), we did not have a possibility to obtain enough information on how the factors from these two models actually influence companies who took part in the study. In order to avoid too many speculations around the issues, we felt that there was no need putting too much weight on analysing all of the macro-level details in the the GEM.

### **3.3 Problems and limitations of the methodology**

Since we have applied both quantitative and qualitative method to our work, the possibility of performing a large number of interviews and observations was limited. Hence there was a risk that the results would not be representative for all small travel agencies and tour operators in India but only for the group of companies that we have interviewed, especially when considering the geographical size of India and the fact that travel agencies in India are numerous. The main reason for not choosing more companies to interview was the lack of time for the research. Further reason for not having conducted more interviews was those explained in section 3.2.3.

Another risk with the chosen method is that the persons we have performed interviews with could have felt a pressure to some degree and therefore have not been totally honest with their statements. Others were too stressed to answer immediately and to be able to think and consider the answer. The biggest factor that could affect the results was the Indian culture, which is very different from the European. The language barriers were also a problem when conducting the interviews, as the communication with the representatives from the companies have been affected and could have influenced the results. Despite the fact that the English language is widely used in Indian business sphere, some of the managers interviewed might not have understood the questions correctly due to their poor understanding of the language. A way to work around it could have been to ask the managers to fill in the questionnaires by themselves, but this would have resulted in fewer comments and less possibility for conversation and follow-up questions. Here, the observations had a big influence. We have, for example, noticed that we sometimes unconsciously did consider some data less reliable because of the bad English spoken by the interviewed person or a superior attitude. Many times, we also perceived that some respondents had an attitude that made them too proud to say anything bad about their businesses. We are therefore aware of the fact that a high grade of subjectivity could have made some negative affects on the result. Observations of the companies in terms of their attitudes and their working environment is presented in the section .4.3.1.

Locating the travel agents and tour operators in India has not been a problem but it was hard to get in contact with them while being in Sweden. The telephone connections were unsatisfactory, making it impossible to have any kind of conversation via telephone. It was difficult to communicate via e-mail, too, as the companies did not answer, or in some cases failed to receive the e-mail. Due to the telephone connection condition, it was impossible to follow up the e-mail by calling the company, which is recommended when making business contact with Indian companies (Forslund, 1998).

## 4 Empirical findings

Here, we will present the primary data gathered, divided into the findings from the field study and the ones obtained from the literature study. As pointed out earlier, the data from the field study was collected from thirteen *primary* interviews. In cases where the data was obtained from the reference interviews, it is pointed out, which is explained in the section 3.2.3. When quoting a company's manager, the reference is made by the name of the company. The names are however made up in order to preserve the anonymity that we assured to our respondents at the time of each interview.

The chapter is introduced by the data obtained from the questionnaires, to present an overall picture of the ICT use in the companies. This is followed by quantitative findings from the interviews, divided into five major subjects. After that, we present observations of eight interviewed companies. Here, we also present own observations of company's websites as well as the description of the three software system that were found to be used in the companies. Finally, the results of the literature study are presented.

### 4.1 Findings from the questionnaires

#### 4.1.1 Companies' background

5 companies out of 13 were part of a corporation or had branch offices. Only one company was grounded before year 1995, the rest were grounded after that. Four companies were grounded between 1996-1998, other four between 1999-2001 and the remaining four between 2002-2005. In other words, there was no majority of companies being grounded within a particular period (except that all but one are grounded after 1995), which makes our selection of companies of very different age within that spectra. The number of employees in the companies was mainly between 4-7. Only three of the companies had 1-3 employees and two of them had between 8-14 employees.

All companies had an objective to grow, except one that wanted to stay the same size. All of the companies had English speaking employees. In 11 companies the tours and packages were sold. Ticketing was made by 8 companies and hotel reservations were made by 7 companies. 4 of 13 companies offered all three services while the others offered two or only one of these.

4 of the companies were dealing with both inbound<sup>15</sup> and outbound travels<sup>16</sup> and 6 out of 13 focused only on the inbound. 3 of the companies did not answer this question. Besides these three groups of services, a small number of companies was also dealing with things such as car rentals and event management. The companies focused on both Indian and foreign customers.

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<sup>15</sup> inbound tourism is involving non-residents received by a destination country from the point of view of that destination (WTO, 2002b)

<sup>16</sup> outbound tourism is involving residents travelling to another country from the point of view of the country of origin (WTO, 2002b)

#### 4.1.2 Computers and operating systems

The average number of computers per employee turned out to be 0,68, with a steady increase as the number of employees increased, see figure 4.1. However, some companies had field workers who were not using computers at all. The average age of computers was 2 years. Updates were made approximately every second year. In 8 companies, the computers were interconnected by some sort of network. 4 of the companies used Windows 1998, 3 used Windows 2000<sup>17</sup> and 2 were using Windows XP. The IT support was outsourced in 6 of companies who answered this question. Only one had an IT employee and one had plans for hiring one.



Figure 4.1: Average number of computers in comparison to the number of employees

#### 4.1.3 Adoption of ICT

From the chart 4.2 it is clear that almost all companies that were grounded between year 1998 and 2004 started using Internet right after the start-up. The ones who were grounded before that were not as fast in adopting Internet. These companies instead began using Internet between year 1999 and 2002. E-mail is generally adopted at the same time as Internet in the companies grounded between year 1998 and 2004. Two of these companies, however, did not follow the same pattern. One of them (grounded in year 1998) adopted e-mail 3 years after the Internet and the other one (grounded at year 2001) 2 years before. The remaining ones, founded before year 1998, adopted e-mail at the same time as Internet, except one, that began using e-mail 2 years before Internet.

11 companies out of 13 used software systems. 6 of those were founded between year 2001 and 2004 and began using software systems right from the start, or one year later. The

<sup>17</sup> two of these used Windows 1998 and Windows 2000 at the same time

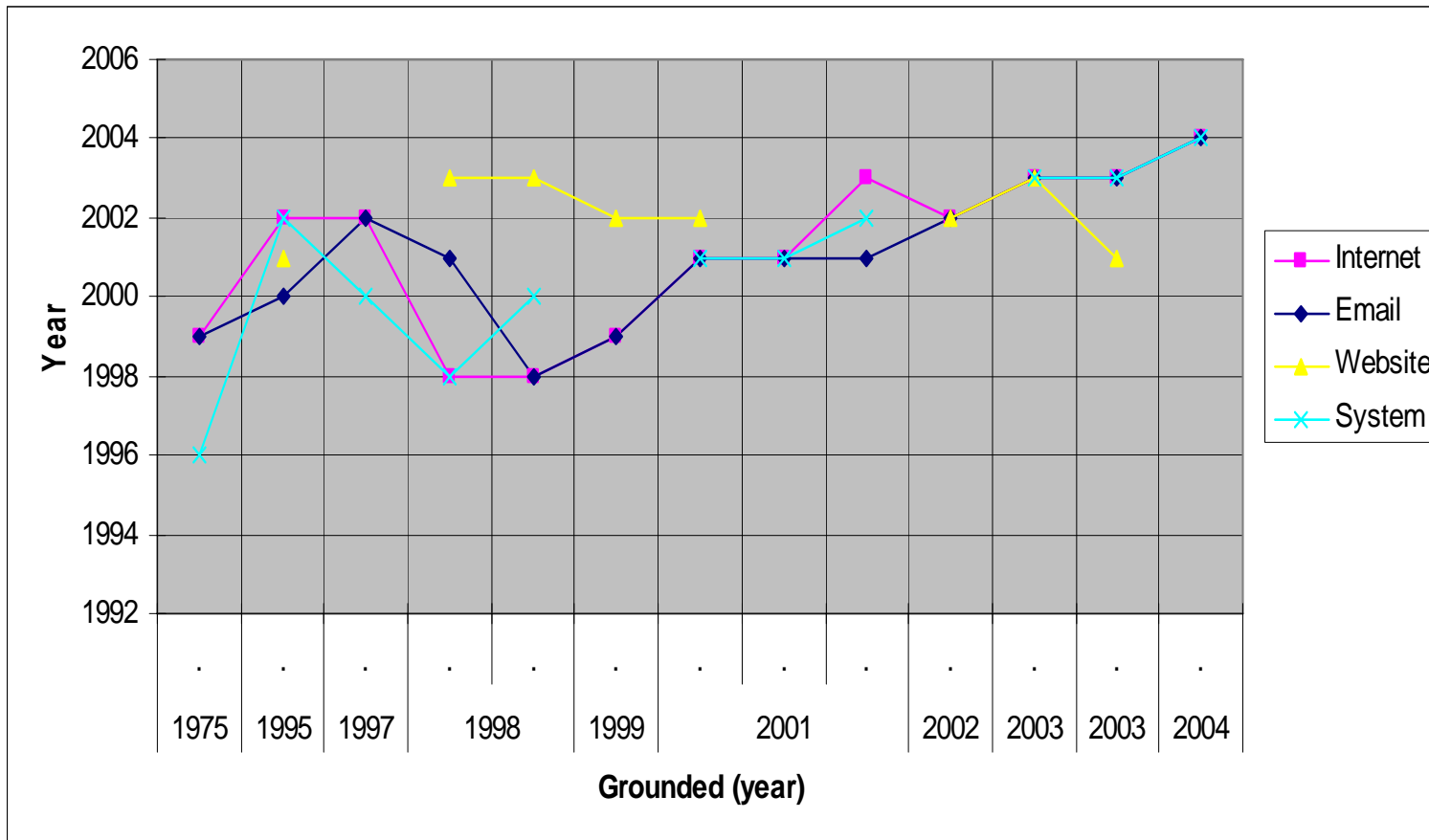
adoption of software systems in the remaining 5, founded between year 1975 and 1998, was very different. The adoption was made between year 1996 and 2002 during the IT boom, where only one of those (founded in 1998) used software systems from the beginning.

8 companies had a website, 2 of those had one from the beginning and one had a website two years *before* its beginning<sup>18</sup>. All three of these companies were founded between year 2002 and 2003.

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<sup>18</sup> this company was part of a corporation which was founded in 1997





**Figure 4.2:** Adoption of Internet, e-mail, websites and software systems

#### 4.1.4 Internet and e-mail

The browser used was Explorer. Those who answered the question on what type of Internet connection used, had broadband, except one company with a dial-up connection. In 10 companies out of 13, all employees used the Internet. In the remaining 3, where butlers and fieldworkers existed, the percentage of employees that used Internet was approximately 60%.

All of the companies used Internet and e-mail for business and other purposes. Chart 4.3 and 4.4 show how many companies used Internet or e-mail for each given purpose. Each company had several purposes for Internet and e-mail use.

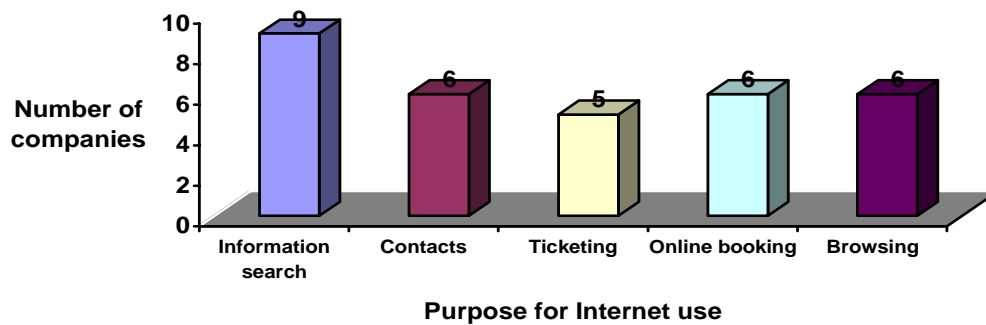


Figure 4.3: Purpose for Internet use

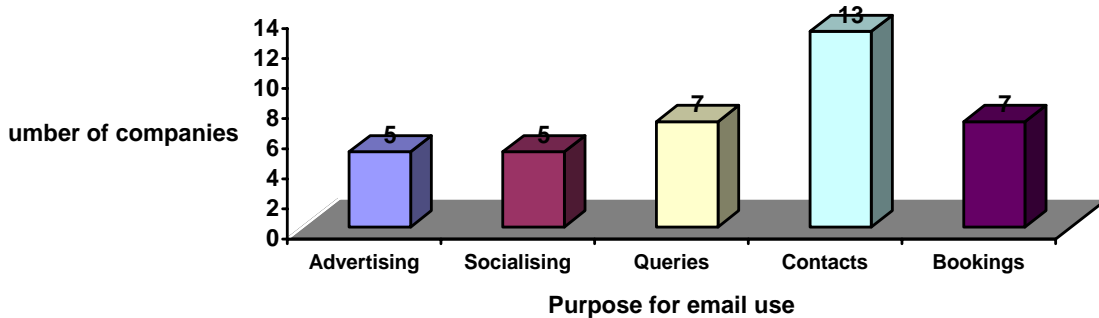


Figure 4.4: Purpose for e-mail use

#### 4.1.5 Websites

8 companies had a website. All 5 companies that did not have one were planning to develop a website sometimes in the future and 2 were already in progress. Only one company had its website in 5 different languages, the remaining 7 had it in English only. All websites were

hosted by another companies, except for one who maintained it by itself. The updates of websites were done differently in the companies. While some made updates twice a year, the others did it more frequently. There were 2 companies who never updated their websites.

7 companies wished that their website was more frequently updated while the 8 one considered its website enough updated. In that company, the updates were made several times a year, the packages being the part that was updated, not the general information since the prices and hotel availability were not presented on their website. Half of the companies considered that their website contained correct and relevant information while the remaining half thought their websites needed improvement.

#### 4.1.6 Software systems and databases

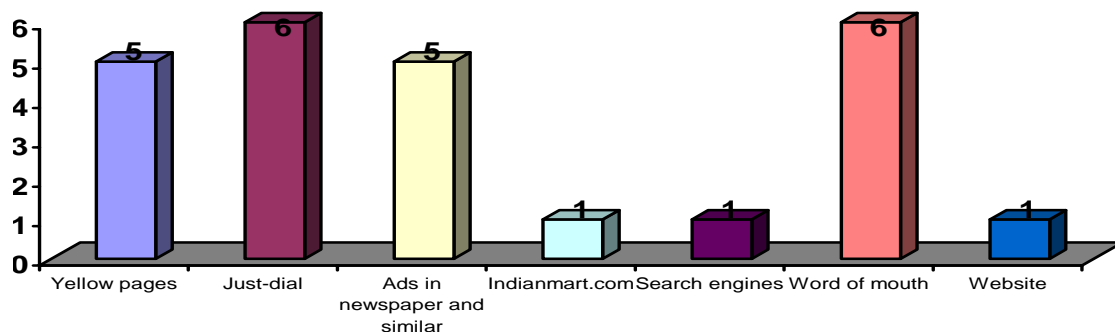
11 companies were using some of the following software systems: Tally, Amadeus or Galileo. Both Galileo and Amadeus are global distribution systems, widely used by the travel agencies, hotels, airlines and similar for making reservations of travel services. Tally is an Indian-made accounting software famous among small and medium sized businesses. For more information about mentioned systems see section 4.3.4.

The most used system was Tally which was found in 8 of these companies. 3 companies used Amadeus and 2 used Galileo. Note that the majority of these had Tally along with Amadeus *or* Galileo. 3 out of these companies reported to have one other system or own packages besides Tally, Amadeus and Galileo. These were though unidentified. 2 out of 13 did not use any systems but both were planning to buy either Amadeus or Galileo in the future. One company stated that they were considering buying a travel systems called Payana, developed by the Indian company Infosys.

In 6 companies all the employees used the software systems. In the remaining 4 that answered this question, approximately 40 % of employees used the systems.

11 companies out of 13 stated that they had some kind of database. 6 companies could however not specify the kind of the database they had. In the remaining 5, the database was found to be Excel or Word files where the data was stored. One of the companies also used the outlook address-book as a database to store the customers' contact information.

#### 4.1.7 Miscellaneous



**Figure 4.5:** *Use of marketing channels*

50% of the companies believed that their business was meeting the demand of the customers and the other half believed the opposite. Marketing and advertising were mainly done by the word-of-mouth, magazines and newspapers, yellow pages and Just-dial service. Some were also listed on the different search engines and communities, e.g. Indiamart.com. Some also marketed themselves by sending bulk e-mails.

3 of the companies believed that their use of ICT was enough for reaching their goal while one believed the opposite. 9 of the companies did not answer this question. 4 of the companies answered the question about if the ICT was expected in the business like theirs and their answers were positive.

9 of the companies believed that their use of ICT is typical within the Indian companies of the same type and size as theirs. 2 of them did not have an opinion and 2 of them did not answer.

The main technologies adopted by the interviewed tour agencies and tour operators were the following: Internet, e-mail, websites, Microsoft Office, GDS, IM, databases, fax and cell phones. None of the companies had any kind of portal and 2 of them did not even know what that was.

## **4.2 Findings from the interviews**

### **4.2.1 ICT use**

#### ***ICT use in the company***

The companies themselves regarded their ICT use very basic. However, all managers expressed the extreme importance that Internet and ICT had in their business. Many of them said that the business was started because of the Internet and that it would be impossible for them to run the same kind of business without it. One of the managers even compared the importance of Internet with the importance of electricity. Others also meant that it was essential.

*“I think ICT is important. It is difficult to do business without it,  
We are totally dependent on it.”*

/Manager of Ramu Travels

The manager of Krishna Tours meant that people in India were not very comfortable with using Internet and e-mail two years ago. The phone was at that time more frequently used in the company but she thought that the use of ICT was growing bigger in Hyderabad and that *“people are one by one slowly learning how easy it is”*. The manager of Shiva Tours & Travels (*reference interview*) also meant that the ICT was more and more used in the past two years. He said that: *“everything used to be manual: bills, strip sheets. Now it’s all on the computer”*.

The manager of Himank Tours & Travels, thought that the Internet was very important and he stated that *“without Internet there is no business”*. He expressed that *“everybody”* had

online business nowadays. ICT in general was important for him, since his business would not survive without it, according to him. Bharat Tours had similar thoughts and replied with the following statement: *“No industry can survive without ICT, it’s a part of our life”*. One of the employees agreed with him and said: *“You can’t survive without e-mail”*. When asked whether there still were companies that did not use ICT, the comment was *“we are not living in the stone age”*.

*“We did not know about those things. Slowly, we have learned”*.

/Manager of Dhruv Travels about why they did not use Internet from the beginning.

### ***Information and communication management (working practices)***

All the companies used e-mail to communicate with their stakeholders. Queries from the customers were, in all the companies, received either by e-mail and phone, or by personal visits. However, the queries were processed by directly calling up the customer to discuss the query. This was because they considered it being the fastest way for communicating and providing better service to their clients. Also, further communication with the customers turned out to be personal visits since the customers *“wanted to be convinced in person”* as the manager of Sanjit Tours & Travels expressed it. One of the managers also invited his customers to dinner in order to meet them in person and in order to get to know them, which creates an opportunity for a long-term partnership. The manager of Krishna Tours was using e-mail when sending a greater amount of information to customers as they saw it as more convenient than phone.

*“We put things in writing rather than explaining when they (customers) do not understand. We are functioning in written communication”*

/Manager of Krishna Tours

However, the manager of Krishna Tours believed that the essential of the “personal touch” would remain in the future but that the ICT use would help the initial planning, giving the customer more details before the personal contact, which is considered a part of a good service.

*“A good service pays off”*

/Manager of Bharat Tours

Communication with hotels was also mostly managed by telephone since the e-mail communication was generally regarded as slow, mainly because the hotels did not reply fast enough. Only one company did not have any problems with using e-mail to communicate with hotels and other partners. They found e-mail being a very effective communication tool and they felt that hotels replied their e-mails very quickly. They used e-mail for communicating with their customers and partners, but also phone was sometimes used after the personal contact between them was established. They informed us that the choice of the communication channel depended on those with whom the communication was made. E.g. fax and phone were used with hotels which did not have a developed ICT infrastructure.

The communication within the company was mainly done in person. Only one company, now and then, used e-mail for internal information distribution. For example, the queries were first received by the manager and then distributed to the employees. This was done to

be able to keep an eye on what was going on in the company, according to the manager. Some companies used IM and chat to communicate with their partners. Cell phones turned out to be an important tool for the communication with customers, since all the managers were available 24 hours a day in order to provide service to their clients. Also personal visits were made when needed. Fax was very rarely used.

Online bookings for customers did not exist in interviewed companies. One of the managers explained that online booking systems would require more manpower and more expenses for the company. Another company stated that less than 1 % of all travel agencies and tour operators in India were providing the opportunity for online booking. He was though not concerned with this issue. He rather considered it more important to provide good service such as fast reaction when a client is in trouble or needs help.

### ***Payments***

Payments in the companies were done by check, cash, bank transfers, bank drafts, credit cards and Western Union transfer among others. The credit cards were however rarely used since customers were unwilling to leave their credit card numbers according to the manager of Jayram Travels. The online payment systems were considered too costly or insecure, especially for the start-ups in India. Only one of the companies actually had plans to get Internet banking in the future<sup>19</sup>.

### ***Databases***

When asked about databases, most of the companies answered that they had one, though it turned out that the information was simply stored in Excel or Word files. Still, many companies stored information in paper files as well. For example, Krishna Tours had a major source of information about hotels and restaurants in India in book form while they had a large pool of information on different cities and destination stored in computer files, something that they saw as a big advantage.

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<sup>19</sup> this was the company that was in corporation with the government



**Figure 4.6:** Observed use of paper files and books in a bank in New Delhi, similar way of storing information to the interviewed travel agencies and tour operations.

### ***Technical support***

The technical support such as updates of hardware and software in the companies was mainly outsourced to another company. Only Ashok Travels had an IT employee.

*“We have a guy who does this”.*

*/Manager of Ashok Travels*

The majority of the companies thought that they were too small to be in need of an own IT employee. The support of the hardware was usually hired when needed.

*“We are not a very big company to require an IT person.”*

*/Manager of Dhruv Travels*

## **4.2.2 Investment**

### ***ICT training in the company:***

The training on ICT was different throughout the companies. Almost all the companies trained their employees when a new system was introduced, either by themselves or by hiring an expert. Training was also given when a new person was employed. However, none of the companies was constantly training their employees on the use of ICT, this mainly

because they expected that their employees knew how to work with a computer. Only Jayram Travels' manager claimed that he could consider employing an IT expert in the future so the company could learn more about ICT and e-commerce.

### ***ICT investments***

Not more than two of the companies had an annual budget for ICT investment (200,000 Rs respectively 100,000 Rs<sup>20</sup>). The first one put their budget only on the website maintenance and the other one had no plans for bigger investments since they were trying to be cost effective. Two other companies had plans for introducing an ICT budget in the future and the remaining had no budget at all for the investment on ICT. The reason of the absence of the ICT budget in remaining companies was either because the current investment on ICT was regarded as sufficient or because of the lack of financial resources. Those who had plans for investing more in ICT in the future felt that their present investments were not enough. They considered their business being dependent on ICT. The manager of Dhruv Travels expresses it as "*the more you invest, the more you get*".

### ***Recent improvements***

Three of the companies made recent improvements in the terms of ICT, which were purchasing more computers, updating the Internet connection and getting more e-mail Ids. One of the companies even signed a contract with another web hosting company because their present website was not giving them much profit. By making new changes on their website they were hoping for more improvements and benefits.

### ***Possible improvements***

All of the companies were generally agreed that their business in some way needed improvements. Increased knowledge and awareness about ICT and its possibilities, such as both new and existing technologies and the best search engines was one of the possible improvements recognised by three of the companies. Dhruv Travels admitted that so many new technologies were coming up every day and that they were not aware of everything. However, their possible improvement of their business was to have all information in the computers so they could change the way of working. Another need recognised by the companies was the improved information on the requirements of their customers and on the market, such as information on different cities, hotels, places, sightseeing and so on.

*"I don't have any time for (learning) these things"*

/Manager of Himank Tours & Travel

The technological improvements were more or less of the same type in each company. Most of the companies stated that they would, if they had more resources, invest in computers, databases and software systems as well as they would like to get a faster Internet connection. There has also been expressed a wish for improved business processes such as communication and operational procedures. E.g. Ashok Travels wished to purchase a kind of operation/external communication package to be able to improve their operational

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<sup>20</sup> which is approximately 1900 EUR respectively 3800 EUR



procedures. They also wanted to get ISO-certificate. One of the companies, Bharat Tours, even felt that they wanted to have a portal and to develop more identical websites in order to “be everywhere”, while another one thought that the need for more ICT depended on the size of the team, meaning that if the company grows, the need for more computers will arise. Bharat tours, together with other companies that deal with foreign customers, show a greater maturity in the ICT use than the ones dealing with Indian customers.

### **4.2.3 Opportunities and benefits**

#### ***Benefits gained from the use of ICT***

All of the companies cut their telephone and fax cost by using Internet. It was mainly e-mail that was perceived as the main benefit, as the communication and transaction was made faster and easier and more convenient way of doing business was gained by using ICT. The manager of Dhruv Travels stated that their cost of communication decreased by 70 % by using the Internet. Before they had to make phone calls to other countries (e.g. Russia) and now the e-mail had become a substitute for this. Further on, the use of ICT also improved the query process and information flow and it was regarded as a time saving factor. Ramu Travels claimed that ICT also cut the cost of manpower since the word and excel files were used instead. Sanjit Tours & Travels saw an advantage in having a website because it let the customers know more about the company and their background, an opportunity that not every company was giving to their clients. One interesting benefit, recognised by Krishna Tours, was the aspect of the e-mail agreements which weighed more and are more legally bound than the agreement over the phone. Another advantage of e-mail use recognised by the same company was the possibility of sending a large amount of information to a customer, by which it was possible to give better explanation of some things in written form than face-to-face.

*“We have decreased transport, postal and phone costs.  
Phone and courier services are almost no longer used.”*

The manager of Himank Tours & Travels

#### ***Opportunities of being situated in big cities***

The companies recognised great opportunities in being situated in one of the Indian metropolises. The most common opportunities recognised were those concerning the large market, where people could afford spending money. The manager of Krishna Tours mentioned that the IT sector in Hyderabad was growing due to the cheap labour and low standard of living. According to him, Hyderabad was on its way up and would become like Bangalore, the Indian city of IT.

Generally, the companies regarded Internet connections as faster than in smaller cities where computers were less accessible. The manager of Jayram Travels pointed out that the broadband connection was much better and less expensive in Bangalore than in Delhi. According to him, the Internet connection was better even in Bombay which was regarded as a business city. However, Ramu Travels meant that the technology could be used

everywhere and that, as he put it: *“it depends on yourself how much ICT you will use”*. For Ashok Travels, being situated in a big city, it brought the opportunity of receiving lots of information on ICT, such as newly launched software.

### ***Government support and programs***

None of the companies received help from the government but they did not make any efforts to apply for it, either. As the manager of Jayram Travels, who was aware of these governmental organisations, said: *“they are not coming to us; we have to come to them”*. Since all the companies were private-owned, the managers had an “I did all this by myself” attitude, meaning that they did not need any help from the government or anybody else, that ICT development and the development of their business were their own responsibility. Their attitude towards the government was mainly reluctant. Almost half of the companies felt that the government hindered them in their work, by complicated visa policies, bureaucracy and the present taxation system in the country. Generally, the companies did not expect any help from the government. However some desire for the government support and help with e.g. advertising, marketing, IATO (Indian Association of Tour Operators) membership and less bureaucracy was recognised. Only one company expressed a wish for a participation in programs on ICT-orientation and conferences for start-up businesses.

When asked about the different existing government organisations and programs for small businesses, only three of the companies recognised them by name but none of them actually could explain what they were working with. The manager of Bharat Tours was the only respondent to have a government position, something that he saw as a major benefit in making customer relations. Regularly, he received news letters from the Ministry of Tourism. However, neither he used any help provided by the government programs and organisations for small enterprises. He shared other respondents’ opinion about not needing any help from the outside.

*“No help from the government”*, the manager of Shanti Travel (reference company) said. One of the employees explained: *“He (the manager) does things on his own, he doesn’t believe in the help of anybody.”* When talking governmental programs that facilitate loans for small companies, the manager stated that he *“doesn’t believe in taking loans”*.

#### **4.2.4 Problems and barriers**

##### ***Problems, risk and barriers of ICT:***

Most of the companies were not aware of any barriers with the ICT adoption. They regarded ICT as something good and useful, something that they would not be able to operate their business without. The problems recognised were generally the technical and security issues. The main risks seen were viruses, “fake” messages and various spam despite the use of programs such as Norton AntiVirus. The manager of Bharat Tours complained about how the filter could not be set up since the queries of unknown persons were constantly received. One company complained on the pornography that their stuff was receiving. Other problems with ICT were hacking and copying of the websites. While some saw these issues as something serious, making them reformat or reprogram their computers, other did not worry much stating that these were the issues that they could not help at the

present. The Internet connectivity was also seen as a problem by some of the companies. Slow Internet connection and insufficient band breadth were other obstacles for not adopting more ICT in the company. Jayram Travels stated that they faced high costs for the hosting of their website. Some companies also mentioned the credit card payment as a problem since not many customers were willing to leave their credit card numbers. Blackouts were generally not seen as a barrier to ICT.

Himank Tours & Travels saw a problem where a customer book through e-mail and later cancel the query or does not make payment. When asked about the direct customer-to-airline online booking systems, Karvan Tours told us that they did not see it as a threat for the company. They did not worry about losing customers that way since they had “a very different way of selling” in India, where “a human touch” was vital.

#### **4.2.5 Advantages and disadvantages of being “small” and “Indian“**

##### ***Difference recognised between Indians and Western companies***

When asked about the difference between India and Western countries, all companies were agreed about the great culture difference. Mostly, they expressed the difference in customers’ attitude. They meant that the Indian customers were characterised by the greater need for a face-to-face contact, or at least by a telephone call while in the West, the online services were appreciated instead. In India, customers were “more happy to be convinced in person“, as the manager of Dhruv Travels put it. Having travelled a lot, he did not observe this feature in neither Europe nor in other Asian countries, meaning that it was quite unique for India. Though, he also meant that this slowly was changing, that India soon would become an “IT power” in less time compared to Europe and that it would, in the coming future, outrun the European countries.

The companies were also agreed that Europe and Asia were different in the terms of ICT use. They meant that the use of ICT was more spread in Europe than in India. The manager of the Krishna Tours meant that having a computer at home was a matter of course in the western countries, while in India it was a luxury.

*“They are on a higher ICT level than we are, that’s for sure. For example, when a plane is delayed, the customer is informed by a message on the mobile phone. We don’t even know it’s delayed”.*

*/Manager of Shiva Tours & Travels (reference interview)*

However, the companies had quite different thoughts about which countries benefit most by the use of ICT. Most of them felt that there were no difference in benefits perceived or did not have any opinion about this issue. Manager of the Sanjit Tours & Travels told us that he believed that Asian companies gained more by using ICT because Indians travel mainly to South-East Asia. Therefore the contacts were primarily done through e-mail, something that, according to him, few European travel agencies did. He also meant that the time difference was a problem that was not easily overcome by using e-mail.

##### ***Bigger vs. smaller companies***

The majority of the companies felt that bigger companies gained more by using ICT than the smaller ones, the major reason being the financial and resource advantage of the bigger companies. They also thought that bigger firms received more benefits as they had more spending power and opportunities as well as they had more employees that could make use of the existing resources. Only two of the companies had different thoughts and stated that the benefits gained from using ICT depended on how it was used. They indicated that small companies could do more business than the bigger ones, meaning that smaller companies had more chance to conquer the market since they “kept coming as mushrooms”.

### ***Infrastructure in India***

All of the companies were very satisfied with the Indian telecommunication infrastructure. The manager of Sanjit Tours & Travels told us how only 10-12 years ago, the waiting time for a telephone line could be up to five years. Now, it was received instantly. There were some blackouts occurring especially in the summer time, but it did not at all affect the business of respondents. One company stated that they even had a power back-up which could keep electricity going on for 2-10 hours, without even noticing when the blackout occurs. Other one had a generator who kept the electricity going for two hours and made the business problematic if the black-out lasted for a longer time.



**Figure 4.7:** *Interior of an Internet café in Lajpat Nagar (one of the wealthier areas) in New Delhi*



**Figure 4.8:** *Tangled cables and wires in Central New Delhi.*



**Figure 4.9:** *A monkey makes its way from the tree to the lamp post using the wire infrastructure.*

## 4.3 Own observations

### 4.3.1 Companies<sup>21</sup>

#### *Ashok Travels*

We had a hard time to find the office. No marketing signs were set up outside. It was first when we got into the main entrance of the building that we knew that we were at the right place. Entering the agency we were received by the secretary who led us to the manager. The office was a small room but very modern and up-to-date. There were computers in each corner of the room where the employees were sitting and working. The manager was around 35 years old, seeming very interested and honest in answering our questions. Under the interview the phones calls were received constantly by employees giving us an impression of a busy travel agency but also an up-to-date manager, mentioning the fact that the office was equipped with webcam and MSN Messenger and a credit card terminal.

#### *Bharat Tours*

This was the company owned by a manager that was politically involved. The agency was situated in the building of the Ministry of Tourism. The manager was overwhelmed by our study and showed a genuine interest in our work from the start. He seemed to be a good businessman with knowledge about existing technical solutions. His answers gave an impression of honesty but he had a tendency to talk about other things, too, which sometimes resulted in a discussion about subjects not essential to our work.

#### *Dhruv Travels*

The fresh and quite big office was situated in the centre of New Delhi and it was very easy to find. We got received by a middle aged manager who was extremely friendly and involved during the interview. He seemed to care very much about his employees and his customers, which gave us a feeling of a professional and down-to-earth leader. We felt that the answers given were reliable since the manager, without any doubts, admitted things that he was not aware about.

#### *Jayram Travels*

The interview was made at a hotel which was owned by the manager. He was not a talkative person, gave very short answers and we felt that it was hard to make a conversation with him. He shared some very positive ideas about ICT but we felt that there were rather a vision of his business, and not something that he actually will be realising in the nearest future.

#### *Himank Tours & Travel*

This company was driven in an extremely small office with room for only one desk. It was situated in a kind of business centre which was full of similar travel agencies and tour operators, with a self-made sign outside the door. At the desk inside the office there was a very old computer. When received a phone call, the manager used "Trains at a glance"<sup>22</sup> to find information. The manager had a quite poor knowledge of English which made it hard for us to rely on his answers. He often could not motivate his answers, either because of his poor speaking skills or because he did not understand what we were asking. We also got an

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<sup>21</sup> names of the companies are made-up, see the beginning of Chapter 4

<sup>22</sup> the Indian national train timetable

impression that some of his statements were made in order to appear more competent and aware.

### ***Krishna Tours***

This was the only company who had a female manager. She had very good English speaking skills and a great charisma. She seemed to be very professional and service minded. Our impression was that she was very honest and that we could fully trust on her answers.

### ***Ramu Travels***

This company also appeared to be a trustful source. The interview was made in an office similar to other ones: small and hard to find since it was placed in a building without any visible signs. The manager was a younger man, stressed but willing to discuss the different issues we wanted to identify.

### ***Sanjit Tours & Travels***

The office was situated a bit off the city centre in a quite nice area. The phone was ringing all the time and visitors came by. The manager seemed to be a competent and professional businessman. He was concentrated on the interview and we felt that he gave us reliable answers.

## **4.3.2 Company photos**

The following photos were taken at different cities and will not be connected to the different companies' names or cities for the purpose of maintaining their anonymity.



**Figure 4.10:** A printed commercial sign outside of a travel agency office: “ON LINE BOOKING OF DOM & INTL. AIRLINES TICKETS”



**Figure 4.11:** *Exterior of a travel agency office.*



**Figure 4.12:** *Working place in a travel agency office*





**Figure 4.13:** Interior of a travel agency office: an altar with deities.



**Figure 4.14:** Interior of a travel agency office: Lord Ganesh, protector of the office

### 4.3.3 Websites

As we presented earlier, eight companies out of thirteen had a website and all of them were presented in English language. Only one of them offered information in four different foreign languages, besides English. This was the company who had a corporation with the government. However, none of the companies had information presented in any local Indian language.

All websites looked very sophisticated, with logical structure and user-friendly interface. The menus were arranged in a consistent way and it was easy to find the information needed. It was only one or two websites that we felt had too much links in every page. For example, when clicked on one menu, you were linked to a page that, besides the information about the chosen heading, contained more links to other headlines. This characteristic was experienced negative since it was easy to lose the orientation on the website.

By the time of the interviews, only one company's website contained functions such as sending online queries. The remaining ones offered information about the company and their services. Besides this, most of the companies had very much good information about India and detailed information about different destinations and itineraries.

In the time of writing, one and a half years after the interviews, we can see that three companies strongly improved the looks of their websites. They have also introduced some simple functions for sending online queries. One of them even offered a more advanced possibility of booking where the customer is required to login to be able to make a booking. The booking is, however, not valid at once. Instead, once a booking is placed it first has to be processed. We wanted to test this function so we created a login and placed a hotel reservation. When the booking was placed, we did not receive any further feedback from the company. Instead, the status of the reservation was "processing" even several months later.

### 4.3.4 Software systems

In section 4.1.6 we presented the use of software systems in the companies which were identified as being Amadeus, Galileo and Tally. In this section, we present more detailed description of these systems in order to create more understanding of what functions they have in companies' businesses. Hereby, we also try to make a picture of why these systems are so widely used among travel agencies and tour operators.

#### *Amadeus*<sup>23</sup>

Amadeus, the first global distribution systems to get certified with new ISO 9001:2000 Quality Management Standard, provides reservation systems to travel agencies and airlines. The database contains approximately 500 airline inventories, 53 000 hotel properties, 50 car rental companies and other travel services such as ferry, rail, cruise, travel insurance and tour operators. Amadeus offers both front and mid/back office services to its customers. The first one supports the tasks that involve services against the customers of travel agencies, such as booking of hotels, ferries, airplane tickets etc. The other one handles more administrative services such as the management of cash flow, invoices, accounting and similar.

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<sup>23</sup> Amadeus (2005)

We are not aware of which applications were used by the companies that we have interviewed. However, we believe that only the Front office services were used since the Windows Office and Tally was generally used for the back office tasks.

### ***Galileo***

Similar to Amadeus, Galileo offers global distribution services for the travel industry. It covers over 600 airlines, 60 000 hotels and 40 car rental companies and it servers 44 000 travel agencies in 115 countries. It is offering several systems to its customers including functions such as itinerary management, booking of car rentals, accommodations, transportation etc. It also offers services such as e-ticketing, storing and modifying of travel destinations, storing of customer, itinerary and corporate information (Galileo, 2006).

Like Amadeus, we are ignorant of how the use of Galileo looks like in the interviewed companies.

### ***Tally***

Tally Solutions Pvt. Ltd. is an Indian company who started its operations in 1986 offering business solutions. Tally Solutions' is the fastest growing software companies in India and also the most popular and used financial accounting software. It's the most preferred business accounting software among small and medium size businesses. Tally has over 2 million users in 100 countries. Tally has traditionally focused on small and medium enterprises but is now expanding into larger companies, too (Tally Solutions, 2006).



**Figure 4.15:** Software systems, e.g. the widely used Tally accounting system, are available everywhere. Here, at a price of Rs. 4950 (roughly \$100)

Tally is made in the way that one doesn't have to be an accountant or a computer expert to be able to use Tally. It is the first company in the world to develop accounting software with no codes; all items are instead referred with regular names (Tally Shop, 2006).

## 4.4 Literature study

### 4.4.1 Economic politics and development of India

India is the world's populous democracy with a GDP growth of 5% in the past years and an industry growth of approximately 6% (Swedish Trade, 2006a). In India, two-thirds of labour force belongs to the agriculture industry which accounts for 25% of its GDP (Economist, 2003).

India's economy went through a crisis in 1991, when a liberalising reform programme had to be done in order to save its closed economy. The reform programme showed immediately remarkable results in economic growth. The industrial sector grew since then (Swedish Trade, 2006a) and the increased establishment of foreign companies (Economist, 2003) and privatisation of some state-owned enterprises was the fact<sup>24</sup>. However, the rapidly growing industry in India is the service industry which accounted for 49,4% of GDP in 2001/2002 (Economist, 2003) and it is much the reason why India's economy is one of the fastest growing economies (World Bank, 2006).

Even if the liberalising reform made some tremendous effects, the policy of Indian trade remains somehow restricted. India is one of the few countries that forbid foreign investment in retail trade (World Bank, 2006) and has as high tariffs as 20% on non-agriculture in 2004 (CIA, 2006) and agriculture tariffs lie between 30-40 % (World Bank, 2006). A study of Mattoo et al. (2004) witnesses the positive effect that the gradually liberalized domestic economy and growing external market for services have made on the service industry. Liberalized services like information technology and telecommunications services have created great employment opportunities; it has stimulated Indian economy and attracted foreign direct investment. Service sectors such as retail have not created the same income opportunities, due to the less competitive market, both domestic and foreign, and because of almost no undergoing reform (ibid.).

India's economy is still relatively small comparing to the global GDP. India's population makes up 17% of the world but it accounts only for less than 2% of the global GDP (Dahlman, 2005). The state sector in India has a low level of productivity and is employing a very small percentage of its population (only 7% of total employment). One of reasons is the high level of unionisation which restrains labour reforms (ibid.).

In the matter of economic and institutional regime, India has a lead over countries in South Asia and Africa, reason being a strong democracy, the tradition of entrepreneurship, a stronger infrastructure supporting private enterprise and more efficient capital markets, among other. Property rights are not fully secure in India but have lately developed to better and private ownership is far strongly protected than in China. India has fairly low level of investment if compared to Korea and China but it is comparable to Poland, Brazil and Russia in terms of investment rates (between 21% and 22%) (ibid.).

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<sup>24</sup> privatisation of government-owned industry was however stopped in 2005 but still wakes up political debate (CIA, 2006).

#### **4.4.2 Import and export**

Since 1991, the Indian export had a growth rate of 10% per year, right until 2001 when the growth rate was only 6% (Swedish Trade, 2006b). The ratio of India's export of goods and services is about 15% of its GDP which is low compared to China's 33% (although it is almost at the same level as Brazil which lies at 15.5%) (Dahlman, 2005). However, according to International Monetary Fond, India has a potential to increase its foreign trade by up to 80%. Even if India is today making up only 0.8% of the total world trade, the prognosis for its economic growth is looking good thanks to the present reform friendly government (Swedish Trade, 2006b). Lowering tariffs would, according to Dahlman (2005), encourage Indian export by allowing enterprises to import the needed materials and technologies. Today, the protection of tariffs in India is one of the highest in the developing countries (ibid.).

India is one of the leading countries in software industry and only Bangalore has around 150,000 software engineers which is according to the recent report in of Cohen (2005), "approaching the kind of numbers only Silicon Valley can boast". The lack of Indian-made software in use is explained by Kumar & Siddharthan (1993) in their case study on the enterprises in India, where they state that enterprises from developing countries seldom benefit from their own technology in terms of competitive advantages. They refer to the theory of Vernon, which states that the exports from developing countries are first possible in the maturing phases of the given product's life cycle, when cutting the costs is more important than the product innovation. This means that while export of time- and cost-demanding programming is taking place, the actual development of software systems will be made abroad (ibid.).

#### **4.4.3 R&D**

India has a strong R&D infrastructure and a great innovative capacity. From 1991 to 2000 the number of scientific and technical personnel has increased from 4,8 million to 7,7 million. (Dahlman, 2005). India is a popular hub for setting up research labs, where one can find some of the brightest people of scientific, mathematical and analytic skills (Cohen, 2005). For example, General Electric (GE) has set up a research lab in Bangalore for serving Texas Instruments' chip manufacturing, which is the biggest GE's lab outside the US. Some other high-tech companies, to set up research labs in India are Cisco, Intel, Sun Microsystems and Motorola. All these giants are developing technology for export and application outside India. However, some of the companies, such as Hewlett-Packard (HP) are instead focusing on finding technologies suitable for the people of poor countries like India. For example, it was HP that invented keyboard for Hindi language. Following the paths of HP, Microsoft has also joined with a research centre in Bangalore to assist India and other Asian countries with their needs of special technologies, such as software in Indian languages (ibid.).

In the Mid-term Appraisal of the 10<sup>th</sup> Five Year Plan (Planning Commission (d)), it is recognised that the government of India has to invest more on the present research of the wireless connectivity in rural areas and broadband, along with some more emerging areas such as wireless LANs, new Internet protocols and so on.

Despite that India is provided by large masses of R&D, it has a hard time "turning its research into profitable applications", as Dahlman (2005, p.76) expresses it. He argues with the fact that India has the adult literacy rate at 65 % and that the average schooling is five

years, which is having impact on the benefit that the technology and innovations makes on India's people and their development (Dahlman, 2005).

India does spend very little on R&D (0.78% of GDP in 2001). 70,5% of total R&D is spent by the central and state government. Enterprises are spending approximately 27% and the rest comes from universities and other higher education institutions (Dahlman, 2005). The report of Dahlman (ibid.) suggests that India's R&D would be encouraged from finding more sources for financial funding.

#### **4.4.4 Government and institutions in India**

The government of India has made some initiatives to assist small enterprises financially, by giving them help to facilitate their entry to competitive market. This is done by facilitating the taking of loans and helping the companies to win customers abroad (Manimala et al. 2002). Some governmental programmes and other institutions provided for the small companies are following, among others.

##### **SSI and SIDO**

The Ministry of Small Scale Industries (Ministry of SSI) is in charge of designing the policies and programmes for the small enterprises (Manimala et al., 2002). SIDO, functioning under the Ministry of SSI, is a nodal Development Agency<sup>25</sup> for small industries in India. SIDO's main functions are to facilitate small industries sector by, e.g. offering facilities such as the technology upgradation, modernisation and infrastructure and providing training and skills development. The role of SIDO is also to give guidance to the government in formation of policies to benefit the promotion and development of small companies. (SIDO, 2005c).

##### **SENET**

A web-based Small Enterprise Information and Resource Centre Network (SENET) project was launched in 1998, becoming by 2001 an interactive knowledge portal. Its purpose is to link the SSI promoting agencies, to build up an information network concerning small enterprises, to help in office automation, provide web-enabled application and hosting solutions (Manimala et al., 2002).

Despite that these programmes were all designed to facilitate the development of the SSIs, these are far from being a solution to the problems faced by the companies. The small companies do not seem to receive enough information about the programmes (Manimala et al., 2002), The GEM report concludes that the programmes are good but ineffective as they fail to be implemented in a right way (ibid.).

##### **NASSCOM**

NASSCOM is the premier trade body and the chamber of commerce of the IT software and service industry in India. The objectives of NASSCOM are to advance the development and research of software industry in India and to facilitate business and trade of software and services. NASSCOM also encourage the diffusion of IT in the country, enabling the citizens to benefit of IT's advantages. It is much thanks to NASSCOM by being a supporter of some

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<sup>25</sup> a Development Agency is set up by many countries to supervise and coordinate Governmental interventions SIDO (2005c)

important issues such as free trade, zero tariffs, property and data protection laws, among the others, that the industry of IT in India has grown (NASSCOM, 2006a).

NASSCOM is struggling to protect and to promote the interest of IT software and service industry in India and abroad. It has for example driven campaign against pirate software (NASSCOM, 2006b), it is active in research and helps promoting Indian IT both internationally and in India and is working on creating awareness of the potential of IT sector (NASSCOM, 2006c).

The government of India took fifth place in the rankings of so called e-government readiness among the countries of South and Central Asia in 2005. In the global e-government readiness India ranked 87 (also in 2005) with an index of 0.4001 (the world's average was at this point of time 0.4267 (UN, 2005). E-governance is the use of ICT application to create interaction between the government and citizens or businesses and to deliver governmental services in an effective way (Planning Commission (d)). According to the Mid-Term Appraisal of the Tenth Five Year Plan (ibid.), areas where the government of India will put its effort are infrastructure and design applications to support the development of India's e-readiness, among others.

#### **4.4.5 The physical and information infrastructure**

The poor infrastructure of India has been one of the reasons why India's economy did not meet up to its potential (Dahlman, 2005). In 2001, India had the lowest infra-structure rating among the 29 countries that were participating in the GEM research (Manimala et al., 2002). Only 56% of India's roads are paved (compared to 88 % in most East Asian countries) and rail freight accounts to only 5% of Indian traffic units (79% in China). The power cuts are still a concern for manufacturers in India, which especially small industries suffer from because of the high costs of having their own power generators. It costs a small enterprise one-sixth of its capital to have its own generator (Dahlman, 2005).

The 2002 GEM research states that progress in the ICT and telecom sectors probably improved the ratings in 2002. The telecom sector is growing fastest in India. Manimala et al. (2002) mean that, the infrastructure in India had a great weight on the decision of the geographical location of industries.

#### ***ICT infrastructure***

The diffusion of ICT in India has been amazing in the past decade. The number of fixed-line subscribers has grown from 21.5 to 44 million only between 1998 and 2004, and for the mobile subscribers the numbers are 1.2 million respectively 47.3 million. The numbers show that there are more mobile than fixed-line subscribers in India. However, the numbers result in a teledensity of only 87 subscriptions per 1000 people in 2004 (Dahlman, 2005).

Despite the incredible development of India's economy and software industry, the ICT penetration in India is still low (Planning Commission (d)), which is also demonstrated by the figures above. There were only 0.40 connections per 100 people in 2004, compared to 2 connections per 100 people in China, 11 in Malaysia and 58 in South Korea. High prices of personal computers, lack of IT applications in local languages, high dial-up charges (ibid.), low spending and high level of regulations are only some of reasons for this (Dahlman, 2005). Dahlman (ibid.) means that there is a crucial need of not only developing and investing in infrastructure, but also in providing these services at lowest costs and

promoting the application of ICT. He shows that the domestic demand of IT services accounts for less than one-fifth of total IT turnover and therefore, developing IT applications for domestic market is needed.

### ***Internet Service Industry***

Launched in 1995 by the state, Videsh Sanchar Nigam Limited (VSNL) was the only Internet provider in India until year 1998 when the monopoly ended by the government and it was possible for private operators to provide Internet Services. Regulations for the Internet Service providers (ISPs) were very liberal, e.g. leaving them the choice of setting own tariffs. According to ISPAI (2006), it is of a national interest to spread and expand number of such ISPs, in order to promote the benefits of IT-services to the citizens and also to enable the country to take place and develop along with the global e-economy in the world.

The end of VSNL's monopoly, resulted in a growing number of Internet subscribers, from 10 000 in April 1995, to 140 000 by the end of March 1998. Between March 1999 and March 2001, the growth rate of Internet subscribers was more than 200 % per year. In December 2003, the number reached was 4.1 millions. This was due to the open competition and lowered prices, which was conveyed by the end of monopoly. However, from April 2001, the growth rate started to decline when policies towards information progress were pressed by operational, procedural and regulatory issues which restrained diffusion and the benefit of Internet to the country (ISPAI, 2006). Presently, India had 38.5 million Internet users in India according to the Online Banking study made by IAMAI (2006). This, however, makes only a 3.45 % penetration of Indian population<sup>26</sup>.

### ***E-commerce***

India would do well by establishing policies that would ensure the competitive pricing of Internet services. Also, in order to profit from the e-commerce market, an appropriate regulatory environment and legal infrastructure to deal with online transactions is needed (Dahlman, 2005). The above mentioned study of IAMAI (2006), shows that 50 % of the Internet users participating in the study, would start using Online Banking if the safety and security of using it could be guaranteed (ibid.). Apart from the security issues, other obstacles of the growing e-commerce in India are: limited Internet access among customers and small business, IT systems and processes unprepared for e-commerce activities, lack and cost of hardware, unreliable Internet connections, low PC penetrations, and many more (Dahlman, 2005).

## **4.5 Summary**

### **4.5.1 Questionnaires**

Findings from the questionnaires showed an overall picture of companies' backgrounds and their ICT deployment. We have seen that the companies were mainly grounded between 1995 and 2005, had mail managers and the majority had between four and seven employees.

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<sup>26</sup> population of India is 1 112 225 812 people according to the latest updates of Internet World Stats (2006)



In half of the companies, number of computers was almost the same as number of employees. In other half, number of computers was clearly less in comparison to the number of employees. The main ICTs used in the companies were following: Internet, e-mail, websites, Microsoft Office, GDS, IM and cell phones. Companies used Word or Excel files as database.

The adoption of Internet and e-mail was made from the start-up or one year after in the companies that were grounded between year 1998 and 2004. Those companies that were grounded before year 1998 started using these technologies at least three years after the start-up.

Six companies, founded between year 2001 and 2004 adopted software systems right from the day one or one year later. The adoption in the remaining companies, founded before year 1998, was made between 1996 and 2002, where only one of those used software systems from the beginning

The adoption of websites in the companies was made later than of Internet and e-mail. Eight companies had a website and two of those (grounded between year 2002 and 2003) had a developed website from the beginning. None of these companies had a website *before* year 2001, even if they were founded before this.

#### **4.5.2 Interviews**

The interviews showed that companies identified the importance of the ICT and the increase of their Internet and e-mail use during last few years. Still, results show that it still is very important with a "personal touch" between the companies and their customers in India.

The main benefit of ICT was experienced being reduced costs, improved communication and improved business processes. Some obstacles with the ICT adoption were recognised as the technical and security issues, expensive maintenance of websites and slow Internet connections. The Indian infrastructure was considered as very satisfied.

Being situated in a big city was considered as a great market opportunity together with opportunities of better Internet connections. Government was rather seen as a barrier for the travel industry because of the bureaucracy and complicated visa policies.

The technical support was outsourced in all companies except one and training on ICT was not done continuously, only when, for example, a new system is introduced or a new person employed. Investments were done on the Internet connectivity, computers and websites.

#### **4.5.3 Observations**

Respondents were unlike each other in terms of their attitude and interest towards the interviews. Still, we consider that we have got reliable answers. We felt that the majority of respondents were professional and hard-working businessmen with good English skills. Yet, some seemed to us as being too over-confident to admit negative things. When they talked we felt as they were rather talking about their visions than about things that will actually be done.

#### **4.5.4 Websites**

Most of the companies had well-structured websites and provided good information in English. One company had its website translated to four more languages. Since the time of interviews, three companies improved the looks of their websites and implemented functions for sending online queries. One of those had more sophisticated solution, where the customers had to log in before making any bookings. This, however, did not seem to work perfectly according to our testing.

#### **4.5.5 Literature study**

Literature study was based on GEM model (Manimala et al., 2002) that points out the following factors affecting exploitation and perception of ICT: structures, institutions, R&D, infrastructure and social and culture norms, among others.

The liberalising reform of India's economy in 1991 made some great positive impact but still some of the sectors remain vulnerable because of the governmental restrictions. Still, compared to other Asian countries, India has an advantage in having strong democracy and a better infrastructure for supporting entrepreneurship. The telecommunication and Information technology, being liberalised, are in India the most growing sectors and they give great prospects to the Indian economy, which still has a way to go to reach its potentials.

India is a popular place where many international companies are setting research labs and some of them are even making ICTs for the people of developing countries, such as India. The government of India is also making some efforts to advance the ICT in the country but according to Dahlman (2005) India does not invest enough on R&D. He also means that India has a hard time to make the ICT into something profitable because of its low literacy rate and education.

In India, there are a numerous number of institutions that are trying to help small companies financially and helping them benefit from ICT, such as SIDO, SENET and NASSCOM. These institutions are important as they are struggling for better conditions of the information technology sector and small companies.

The ICT infrastructure in India has done great developments in the past decade, especially after the ending of state's monopolies of Internet services in 1998, which has resulted in a tremendous increase of Internet subscribers and users. However, only 3.45 % of Indian population uses Internet (IAMAI, 2006) and the total ICT infrastructure in the country is not much prepared for the e-commerce activities because of the low security which is one of the biggest barriers to e-commerce use (ibid.).

## 5 Discussion

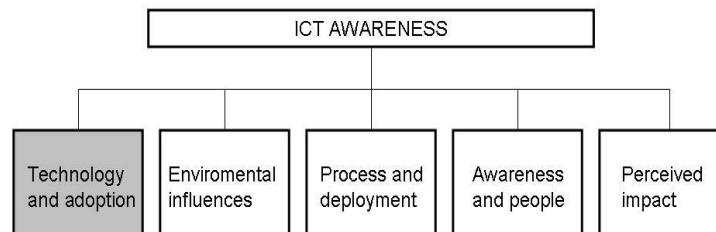
In this part, we discuss the results of the field study in terms of the theories that we have presented in the theoretical framework overview (chapter 2).

The definition of ICT awareness stretches throughout different subjects and dimensions, and should be limited to the specific subject of research to be able to provide a framework to base the research on. The definition of ICT awareness is presented in the theoretical framework and is used throughout our work.

The results showed a level of ICT awareness that varied between the different companies. The overall level was quite high when considering the Indian infrastructure and overall development. But when considering the availability of ICT solutions, the opportunities and the growing ICT market, the ICT awareness was quite low. This will be further discussed in this section, together with the factors that contribute to the awareness.

The factors that affect the ICT awareness are plenty, and can be concluded in five different factors – the technology and adoption, the environmental influences, the process and deployment, the awareness and people and the perceived impact. The factors are interconnected and some of the aspects that are specific for the country itself have an effect on more than one factor. The different factors will be discussed in this part according to the results that were received.

### 5.1 Technology and adoption



*Under the “Technology and adoption” the Department of Trade and Industry (2004) measures the extent to which the businesses are connected and have adopted ICT, e.g. whether they have Internet connection, a website, LAN, EDI and similar.*

#### 5.1.1 Technology adaptation by innovation characteristics

To discuss the results in terms of technology and adoption according to Rogers’ theory (1983), the characteristics of relative advantage, compatibility, complexity, trialability and observability are used.

The relative advantage of the technology in the companies was mostly put in economic terms, as the managers talked about reducing costs by adopting ICT. The cost reducing factor was greatly recognised in mail and telephone expenses, while few of the interviewed

managers actually talked about more long-run aspects as reducing the enquiry processing time or cutting down on paperwork. The satisfaction or the social prestige of owning a certain software system or a piece of hardware did not seem to be taken into account by the managers as they saw the ICT as a useful tool for making business, and not something that created personal satisfaction or status.

The technology's compatibility to the users' values, beliefs and experiences is hard to measure, as it varies as the attitudes are shifting. We have experienced that most businessmen in India no longer see the ICT as an impossible, expensive and complicated solution that requires a challenging journey into the depths of the bureaucratic system. ICT was everywhere in the business society and it is a fact that the ICT-age is to stay. Still, the belief that a computer system is less convenient than paper files was present in some of the companies. It was also considered to be complicated and hard to manage, and despite that some managers took computer courses, almost all companies that answered the question rent external technical support and installation services, and possessed little knowledge of new ICTs. This was not because the managers did not want to have a part of this but rather that, despite being the essence of a good business, they considered that there was too much to learn about new technologies and thus hard to understand for a regular person. These beliefs and attitudes result in a slower adaptation rate even for less complex systems.

The trialability of the ICT systems is reduced by the conservative ways of the software sales in India where the western ways are only starting to emerge, and the companies consider any new software purchase as an expensive and quite risky investment. The effects of ICT diffusion were mostly perceived by observing other companies' ICT use. This attitude speeds up the adaptation as the difference between the adaptors and the non-adaptors is big. The ICT is a "must" and companies do not want to stay behind, as they stated themselves.

There were a small number of early adopters that did inform themselves by observing companies abroad which already had adopted different technologies. Some of the managers had travelled a lot in the western countries and tried to follow their ways. However, most of the companies were late majority as they argued that they had to adopt the ICT since all the other companies were doing the same thing. The limited resources, no budget planning for the technologies and the fear of new technology were clear signs of the late adoption. However, there was a vast amount of laggards that were not included in this study, simply due to the fact that they did not use neither the Internet nor computers in their business.

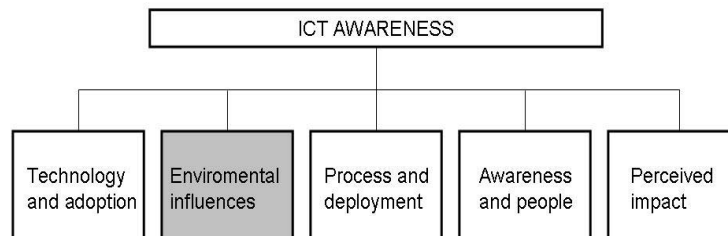
### **5.1.2 The companies' e-commerce development**

According to Currie's model (Currie, 2000), which measures the development in four stages (the publishing, the interacting, the transacting and the integrating), the interviewed companies did not reach the later phases or the high levels of such development. Most of them were still in the Publish stage, as the e-commerce level still was as low as setting up an occasional homepage. Most of the homepages contained only the information about the companies and there were no possibilities of purchasing the services online. Very few companies were moving on to the Interact stage by sending documents electronically and similar, even if these companies considered it to be very flexible. Others preferred personal touch for information exchange. The next stage, Transact, was hard to reach in these companies due to the fact that, for example, customers were not willing to make credit card transactions. Since the companies were small, they perceived the setting-up and maintaining costs of a transaction or online order system as unnecessarily high. There was still a long

way to a full supply chain integration as the tools for integrating business processes were still mostly unknown for the companies' management.

Since almost all of the companies were planning to expand within the nearest future, most of them were very positive to innovation. While some of the companies were trying out new ways to use ICT, others were more careful because of the perceived risks associated with investing in new technology and the lack of the general knowledge about the innovative technologies. Despite the fact that much of the new technology is built or developed in India or the rest of Asia, it seemed to reach the "regular" people in these countries much later than the western countries that own the offshore businesses, and the companies were aware of this.

## 5.2 Environmental influences



*“Environmental influences” are the external factors that influence the decisions of businesses concerning the adoption of ICT. The category refers to the external factors that affect the ICT adoption, such as competitors, market and government. Businesses can be influenced by information on ICT provided from a range of different sources such as the governmental authorities, or be threatened and constrained by regulations and national standards in their adoption of ICT.*

### 5.2.1 Contribution by other actors

The environmental influences play a big role in shaping the companies' ICT profile, as well as the rest of the business profiles. According to Van der Veen's theory (2004) discussed in the section 2.6.2, the contribution of environmental networks affects the awareness of technology greatly. Many managers stated for example that "everyone is using the Internet", which made them begin using the same technology. In large cities, where a lot of people are trying to find a way to make money fast and a lot of businesses emerge, it is expected that the competition is often stronger than in small ones. The small tour operators and travel agencies which we have interviewed experienced that bigger companies have more advantages and benefits in terms of finance and resources. We believe that such a pressure would, to some extent, force companies to explore and adopt the ICT innovations. According to Al-Qirim (2003), the pressure could be one of the key factors for ICT adoption.

As the external environment can force the adoption of ICT in companies, the effect could also be the opposite. Buhalis (2003) means that, barriers to the adoption can come up if

customers, for example, do not feel comfortable in using a certain ICT solution. For the same reason, we believe that none of the companies in our study did offer online bookings since it was too costly and since a very small fraction of Indian travel agencies offered that. Apparently, there was no demand from customers for such service because of the importance of the human contact in the sales process. Neither there was pressure from the competitors since only such a small fragment of the agencies were offering online bookings. According to Van der Veen (2004), these two factors: customers and competitors, are creating needs or requirements for adoption of an innovation.

So as a chain is never stronger than its weakest link, the ICT infrastructure does not reach its potential until all of the actors in the business processes and distribution chain will adopt the technologies to a common extent. As long there is an actor that draws back the development, e.g. hotels that do not use Internet to make bookings or customers that do not wish to pay online, even the most sophisticated ICT system will be worthless. Therefore, it is extremely important that the ICT awareness is developing throughout the whole population, on a national level, so that the tourism sector can use the advantages of ICT to all of its potential and increase it further.

## **5.2.2 National-level environment and cultural factors**

### *The cultural aspect*

Apart for the “peer-pressure” aspect of environmental contributions, there are more environmental factors that affect the patterns of ICT awareness, according to Wilson (2004) among others. The national-level environment is an important factor in his theory. An example is the demand situation, such as the one which we have discussed above. As we can see from the results, the companies that dealt with the foreign customers got a bigger demand of ICT and therefore were forced to provide such, simply to be able to stay on the market. But the companies dealing with the Indian customers had still not come that far. As we have seen through the interviews, a regular Indian customer appreciates the human contact in business and it is very important for the customers to talk to the salesman on the telephone, or, even better, come for a personal visit. A conversation about the details of the trip, the conditions of the deal and just some friendly chat while sipping some chai is what creates successful business, according to the managers of the companies – and our own observations. We think that these business patterns are sure to change, but it will take time, since they are deriving from the Indian culture. We believe that the cultural premises in India are changing towards the western ways, but they are still strong and still do shape the people’s attitudes. The attitude towards time that we have in the west is distinguished by the saying “time is money”. In terms of ICT, this could, for example, mean that one should not waste time talking about details that could be obtained online or about making arrangements that could be made by just a few clicks. After experiencing the Indian business culture in small travel agents and tour operators, we believe that this kind of attitude would probably not be applicable to 100% in India. Since the Indians traditionally perceive time in a circular perspective (Mårtensson, 2000), something that can also be observed from our field study, there would be no value in making business in a rushed way, except for emergency situations and last minute trips, of course. The contact that the interviewed companies made with their business partners such as hotels, where fast response is essential, was surprisingly often made by telephone, but this was in order to be able to create a personal contact. The fact that there was no drive from the customers or the business partners, shows that, there

still was no acute need to explore or adopt the new technology that speeds up some of the businesses' processes. Here, we have an explanation for why the e-commerce evolution still did not reach the Transact and Integrate levels of the Currie (2000) model.

### ***The cost and security issues of ICT***

In some cases, the customers might not use Internet services due to the high internet cost (Buhalis, 2003). In India, there is a huge gap between the middle class, that sees ICT as a necessity, and those that consider even a local telephone call a luxury. We have showed the positive outcome the lowered prices of Internet connection and a more competitive market in this sector have had on the ICT usage in India after the ending of state's monopoly of Internet Services in 1995. The interviewed companies did not at the present consider the cost of Internet as high or an obstacle but the fact that *none* of the companies adopted Internet before 1998<sup>27</sup>, demonstrates clearly that the growing number of Internet service providers has, to some extent, had an effect on the companies' use of Internet, since the highest growth rate of Internet subscribers in India has been between 1999 and 2001.

The security aspect of ICT was hard to grasp because of the companies themselves that considered the e-business insecure and too costly but at the same time they preferred to contact a real person to make a reservation, which also is discussed above. However, regardless of the possibility that the Indian culture is or could be a constraint to the adoption of e-commerce, we think that it would be hard for the companies to adopt more advanced ICT services due to the bad quality of infrastructure and security, which is also a reason why systems in India are unprepared for e-commerce activities, as Dahlman (2005) states. India is not fully ready for all-covering e-commerce, especially not in such small companies as those in our study, who lack knowledge and skill about more advanced technologies. Another reason is that opportunities provided by ICT, such as e-commerce, are not to be used if there is no demand for it. As long as companies' partners, such as hotels, do not adopt appropriate ICT, nor will the travel agencies and tour operators do that. Also, as long as the customers prefer personal touch, the effects of the e-commerce use within travel agencies and tour operators will probably not be successful. However, a demand must be created, and that's why we are not excluding the possibility that the Indian business culture could be changed with the increased use of ICT and e-commerce. But first, the businesses and citizens have to experience the advantage of it in order to change.

### ***The contribution of government to the ICT***

Considering the results of our literature study, we are convinced that the government plays a big role in contributing to the development of a country, and therefore also to the development of ICT. The government of India would need to make the ICT available and affordable for its citizens and businesses. We have seen the effects of liberalizing ICT services and the government's involvement in the liberalising reform programme. The government of India is aware of the problems that India faces and it is undertaking measures to benefit the development of ICT. Being active as e-governance, it contributes to the awareness of ICT in the country but it still has a way to go in, for example, by creating appropriate local ICT applications or lowering tariffs would do well to the Indian businesses, according to Dahlman (2005). As Mattoo et al. (2004) state, sectors such as retail does not contribute much to the Indian economy due to less competitive market and

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<sup>27</sup> showed in Figure 4.2

other restraints as much as the liberalised service sector has done. Therefore, we believe that the government can do much more to increase the ICT use in the country and compared to other countries in South Asia, it has more potential for doing this.

The small companies that took part in our study saw the government as something that stands in their way because of the bureaucratic procedures. We think that both government and businesses would benefit by a smoother use of governmental services and by a better corporation between these two actors. We suppose that the companies would in this way feel more comfortable in taking advantage of the help that the government is providing them as well as it would be possible for the government to influence more on the development of the enterprises. We believe that this is true especially in the case of companies that have been taking part in this study. Considering that the tourism is essential for the development of India as much as the small companies are, both tourism and small travel agents and tour operators would profit if a closer interaction with the government was established.

### **5.2.3 Perception of ICT opportunities**

The cultural framework is one of the factors that both Manimala et al. (2002) and Wilson (2004) mention in their studies. Manimala et al. (2002) classify the different factors according to whether they affect the awareness or the adoption and exploitation of ICT. Despite the theoretical difference between the two aspects, there was little difference between their levels in the companies in this study. Since the awareness of the technology is rather low, it is not much higher than the adoption and exploitation.

The factors that affect the perception of the ICT opportunities are the external trade openness, the government, the financial markets, the technology and R&D, the infrastructure, the management, the institutions and the labour market in the country (ibid.). Here, we discuss the following factors: Infrastructure, R&D and Management.

#### ***Infrastructure***

The infrastructure was, according to the managers of the companies, very satisfied as it has improved a lot during the past decade. But despite the fact that Indians were pleased with the state of the infrastructure in the country, we have experienced a much lower level of physical and information infrastructure than in the European countries, which surely did constraint the opportunity of ICT perception. We don't see the physical infrastructure as something that could directly affect the ICT diffusion in small companies but in the long run, it makes a difference. The companies in this study did, for example, not see the power cuts as a problem. Some of them even had their own generator. Their everyday business did, however, not depend 100% on the connection of Internet or systems in the same way as these factors would be crucial for enterprises in which the whole process stops in the case of a system breakdown. So, if travel agencies and tour operators are to reach a higher level of adoption stage, an infrastructure of high quality has to exist.

#### ***Research and development***

As we have showed in the literature study, India's technology and R&D are known in the whole world and many western companies have already outsourced their technology



development and R&D to India. At the same time, India's own companies expand and build up R&D units, such as NASSCOM. We consider this being a great benefit for the travelling agents and tour operators, not only in terms of direct business advantage as more people travel and more international tourists come to India to take advantage of their services, but also the fact that the technology and R&D is associated with India and so wide-spread, means that the consciousness about ICT increases. In addition, since the technology becomes so wide-spread, it is almost impossible for the companies to get round it since it is necessary for them to be able to keep their services up to date and reach out to the customers as Liikanen (1999) explains. The above is also valid for the ICT institutions. As their number is growing, the benefit that they are making to small companies is obvious. However, the fact is that there is a lack of local ICT applications in India and lack of demand for ICT services (Dahlman, 2005). We believe that with so many domestic experts that India possesses, one could suppose that the Indian-made systems should be cheaper and supposedly considered easier to use by the Indian users. Software and applications built up for Indian people, such as Hindi versions of software, would also contribute to the ICT development in India. However, even though India is popular for its large pool of English speaking people, the percentage of these, considering whole Indian population, is in fact extremely small if believed in Ajay Gupta (2006), the director of HP Labs India, which stated that there were 60 million English speaking people in India but only 10% who actually could do transactions in English. According to these figures, we are left with a great amount of people who would benefit from the ICTs that are tailored especially for them.

### ***Management***

The ICT management varied greatly. Some managers travelled much abroad which made them take over the "western" ways of running a company. They let themselves be inspired by other cultures and tried to move up to the international standards while others did not have the same ambitions. It seemed that the larger and faster growing companies were the ones adopting more international standards. However, this could be a reversed dependency as that larger companies deal with more customers and make more international deals, so they are forced to acquire new ways of management, while the smaller companies deal with less customers and in most cases manage the company in a more traditional Indian way.

#### **5.2.4 Exploitation of ICT opportunities**

The factors that affect the exploitation of the ICT opportunities are the following: financial support, government policies and programmes, education and training, R&D transfer, commercial and professional infrastructure, market openness and ease of entry, physical infrastructure (which is discussed above) and social and cultural norms. (Manimala et al., 2002).

These factors are rising in India, but have by far not reached their true potential. The governmental programmes that were mentioned in the section 4.4.4 were not all known to the company managers. Those that were known and made available to the managers were, according to them, too time-costly due to the bureaucratic systems of the institutions. The factors discussed here are governmental programmes and policies, as well as cultural and social norms.

### ***Governmental programmes and policies***

The governmental programmes are designed to make India the number-one IT power in the world. However, we feel that this is rather made on a macro level, and though the results of these policies and programmes are obvious in the long run, they do not help the small enterprises in the short run. On the contrary, as we have explained earlier, most of the companies' managers had a negative attitude towards the government and complained about the bureaucracy. The programmes and policies did not seem to reach out to these companies; they had to actively find the information about the programmes. We believe that the government policies do try to help the small companies by making it easier to acquire ICT and opening up the market, but this was not recognised by the companies themselves. However, the fact that the Indian ICT break-through both on a national and an international level was a result of more liberal governmental policies shows that the government has taken steps in the right direction. This brings us to the aspects of freer R&D transfer, more open commercial infrastructure and the market openness. We see the Indian market as a perfect growing ground for the companies, as the economy is improving and the governmental policies are getting more liberal – but at the same time, the interviewed companies had a great competition in form of big enterprises, which did not provide an easy growing ground for emerging small companies.

### ***Social and cultural norms***

The social and cultural norms play a very big role in the extent of the exploitation of ICT. The technological resources might exist but they are not used to their full potential because of the culture aspects. E.g. the staff in the interviewed companies continued calling offices and hotels despite of the existing e-mail services. The rich Indian culture is present everywhere in the country, even in cities like Bangalore where many international companies have settled down. As there is a distinct fast-lane culture in the Western world, where time is money and time efficiency is a virtue, in India it is rather an advantage to step aside from the time as such and let the business take as long as needed, according to our experience during the two months long stay in India. In such situations, we believe that there would be no big value in time-saving applications that replace human contact as the contact is being an essential part of a deal.

ICT is a connection, a bridge between the company and its potential and actual customers. In India, it is used as a walkover to personal contact, as the detailed tendering and the actual purchase is done in person. This differs a lot from the Western way of doing business, where the two parties meet in the middle of the "ICT-bridge" and fulfill the purchase process using the technology, not the personal contact. The social psychology is the major reason for this, as people from Western cultures, especially in Nordic countries, tend to be more careful and often avoidant in personal contacts than Indians, and prioritize fast, cheap and easy purchases based on technology, while Indians value meeting and creating relationships with partners, customers and companies. The manager is the front figure that takes care of the PR and the personal contacts, which contrasts with the western way of non-personalized telephone support services. It also simplifies the process of acquiring new customers via personal PR and "word of mouth". Contact and availability is the highest priority in personal relations, as well as personalization, and this is hard to uphold when basing business processes on ICT.

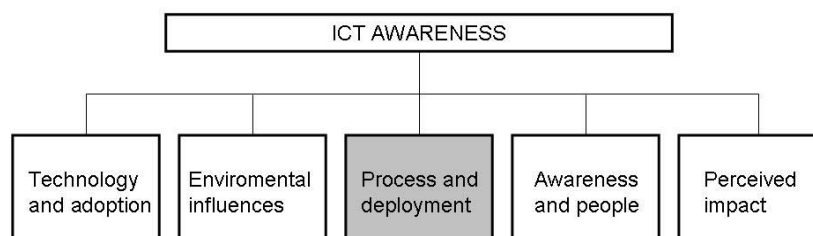
We see the flexibility and possibility of bargaining and tailoring the products as a major obstacle to the wider use of ICT, especially by customers. While wishing to reduce the price or get extra value from the offering, the customers will be likely to contact the companies in person as the Indian bargaining process is an important way of interacting, building business relationships and socializing. Another major obstacle is the bureaucracy that still is present in the country. The visa acquiring processes that were mentioned in the interviews can serve as an example here. The processes cannot be handled online, because original documents, signatures, etc are needed to complete the applications. Therefore, more contact is made in person, by postal services and on the telephone. When the offer is being discussed or the purchase is being made, the aspect of time is not as important as the actual process. As the attitude to time is different from the linear understanding that is usual for Western cultures, and the time does not “run out” except while making urgent purchases, there is usually no need for speeding up the process and streamlining it by using ICT.

Since the cultural aspects are an obstacle to using ICT, there would be a need for a very large paradigm shift for the Indian businessmen (and customers!) in order to start using the whole potential of ICT applications and systems and also in order to be able to realise the benefits of it.

However, some companies that showed mature levels of ICT awareness, preferred using e-mail to phone. This shows how traditions can be overrun by technological progress. Technology is also seen to be used in ways that are unusual for western companies, e.g. some used IM to communicate to their partners, which is not as usual for western ways of making business, and not acceptable in established companies and corporations. This shows a bigger flexibility and a greater awareness in the given cases.

There are other factors that affect the level of ICT awareness, through entrepreneur attitudes and the business environment. The competition is strong but the fighting spirit is seen clearly. The attitude to the future is more optimistic and daring than we would expect in Europe and particularly Sweden, and there is more self-praise and direct advertising in the statements than would be socially accepted in northern countries. This attitude becomes a problem when help is offered by the authorities and the government, as the managers do not recognize it and value independence, building the business “on their own”.

### 5.3 Process and deployment



*“Process and deployment” refers to how businesses use ICT to support business processes, both internal and external. It includes the use of intranets, the information available online, ordering and payment, integration between systems, activities which are supported by ICT and transaction between the company and externals.*

### 5.3.1 Use of e-tools in processes

The fact that the small enterprises usually use no electronic tools (Jain, 2003) was partly supported by our findings when considering processes such as Public Relations, but in general, the business processes were supported by electronic tools at least to some extent. The Internet presence of some companies certainly do increase their marketing possibilities, but since the websites were very simple and did not provide any possibilities for purchasing online, they were basically plain contact information holders with no advanced functionality. For this reason, we think that, what would according to Buhalis (2003) create a great advantage by interacting through the website, does not fully reach its potential as long as the opportunities are not seized.

The information management and data processing, that could, according to Vickery et al. (2004), be done electronically to improve the knowledge distribution and data storing possibilities in the companies, were in the interviewed companies made with help of some simple computer tools. The managers used simple Excel tables as databases, which was a large step up from the paper-based data storage but they were not yet realising the real potential of database tools and data mining. We believe that the level of ICT awareness was still too low for being able to make use of such advanced technologies. The majority of the companies did use software systems for accounting where eight out of eleven users were having Tally. Here, we see how Indian-made software is acquired with ease and used widely.

### 5.3.2 Technology usage degrees

To discuss the ICT awareness in process and deployment further, Van der Veens (2004) technology usage model is used. The different aspects of the model are as follows (the business activities and processes supported by ICT in the companies were discussed above in section 5.3.1 as a discussion to the “Activity” part<sup>28</sup>).

The use of different applications was not too extensive in the interviewed companies. Every company used the Internet and e-mail since the research was carried out on such companies as a group. Eight companies out of thirteen had a website, but the information and the functionality of the sites did not by far reach the potential of e-commerce. The websites were not updated frequently enough according to most companies’ managers themselves, and the information in half of the cases was not considered entirely correct and relevant, which shows that the usage of the web technologies is very poor as compared to the potentials.

The software systems owned by the companies were however used on a regular basis, and it seemed natural for the managers to describe the functions and the purpose of the systems. However, due to the insufficient use of other ICTs, there was no reason to believe that the software systems were used to their full potential. Though, the above model of Van der Veen stressed the fact that the existence of ICTs in an organisation does not mean that they also are used.

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<sup>28</sup> see the model of Van der Veen in section 2.6.3

The same goes for the usage of databases. Most companies claimed that they had some kind of database but could not specify which kind, or called plain Word and Excel files a database. The usage of Word files to plainly store the data is a step further from storing the same data on paper, however, as the possibilities with ICT are much bigger than this we consider this kind of ICT usage being very basic.

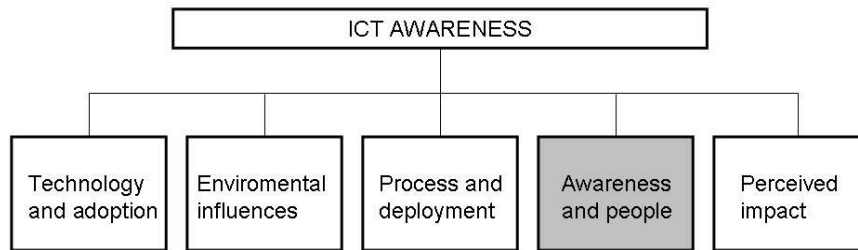
As value creation is considered, most of the companies that answered the question, believed that the company's use of the ICTs was sufficient for reaching their goal. The short-term benefit such as cut telephone costs were recognised by all of the companies, some too saw the legal and the global marketing advantages of using e-mail and websites in customer relations. But there is still a very long way to go to realising the whole potential of creating value with the help of ICT. The value creation will be more discussed in section 5.5.1.

In section 5.1.1, the companies were classified in terms of ICT adoption. A pattern of ICT use could be recognised- the companies that started up around the time when ICT boomed in India (around year 2000) started adopting technologies like Internet and e-mail from the very early start. The older companies adopted those technologies a few years after the start-up but also in their case the adoption was made close to years 2000-2001, just like in the other companies. Therefore, if classified on the amount of years that those basic technologies were used, the companies were on approximately the same level. For the eight companies that had a website, the adoption patterns are somehow later than for Internet and e-mail.

If using the clustering of e-commerce adopters into the groups of: developers, communicators, web presence or transactors (Daniel et al., 2002), the interviewed companies could be placed somewhere in between the group of *communicators* and *web presence*. As the results from our field study showed, all the companies were more or less using Internet and e-mail for communication (communicators) and more than half of the companies did have a developed website for marketing and providing information about their business and services (web presence). Since not all of the companies did exchange documents electronically (as *communicators* do), nor did all companies have a website (*such as web presence*), we don't believe that the companies have the qualities of both groups. However, it would be wrong to place them into the *developers*, since the level of adoption in the companies was higher than only e-mail and Internet communication. We also exclude that the companies belong to the *transactors* since the companies did not yet achieved that level of using online transactions. The only online function recognised was the possibility of sending queries online, for which e-mail was generally used. This model of Daniel et al. (ibid) is similar to the one of Currie (2000) which we have already discussed in the section 5.1.2. Here, we have concluded that very few companies were moving on to, what Currie (ibid.) calls *interaction* stage, which is comparable to the group of *transactors* in the model of Daniel et al.(2002). Instead, we rather considered them belong into Currie's stage of *publishing* (which is similar to the cluster of *web presence* in the other model).

If evaluated by Boudreau's model (2003), the reliance was not so large for the ICT usage. Although the managers agreed that they could not be able to run the business without ICT, the companies did not only rely on the Internet and computer tools in the business processes. Many of the processes, such as booking, contact with the clients and partners, and paying were still often done face-to-face and by telephone, and archived in paper form. The time aspect, as well as the diversity, was discussed above in terms of Van der Veen's model (2004).

## 5.4 Awareness and people



*“Awareness and people” comprises businesses’ openness to changes, their attitudes to ICT and reaction to new technologies as well as their recognition of barriers to the use of ICT. These indicators also include whether businesses have a written ICT strategy and the way they perceive their ICT skills to be within the organisation.*

### 5.4.1 Business processes and skills

Most of the companies that were started up year 1999 and later, having access to the Internet and e-mail, started using them for business purposes very early, in many cases from the start, and in those cases they did not meet the obstacles to ICT adoption where, as Means & Schneider (2000) state, new ways of doing business has to be introduced. This could to some extent be justified by the fact that many companies announced that their business was started because of the Internet. We have also recognised that some of the processes were developed on the basis of the technologies available. An example of this is that companies that were grounded during the year 2001 and later, had developed a website at the start-up, while the older companies took longer time to do it – the websites came up much later.

Another big change that the adoption of new technologies can bring to a business, according to Means & Schneider (ibid.), is the decreased essence of some skills in companies and organisations. The results of our study did not comply with this theory, possibly due to that the use of ICT did not cover the processes entirely in the companies. For example, the business data was still often obtained from physical data sources and contacts were made in person or by telephone. There was however one company that believed that adoption of more advanced ICTs would require more manpower and would therefore be costly. We believe that this kind of change would rather be an obstacle to ICT than the fact that different skills would need to disappear.

### 5.4.2 Competence and awareness

The employees and managers had some knowledge about ICT but lacked in-depth competence and insight about the new technologies, which they were aware of themselves to some extent. They were generally aware of the fact that they did not have time for learning new things, and that there was simply too much to learn. In this case, we can’t see that a speedy ICT adoption is possible. Van der Veen’s showings (2004) prove that the lack of knowledge, experience and training on ICT can have a negative effect on ICT adoption in the companies, which we fully support and therefore we have hard time to believe that

there is enough knowledge in the interviewed companies to be able to explore the opportunities ICT. This brings us back to our definition of ICT awareness in section 2.4 where we have stated that awareness of ICT does not have to be the knowledge of technical nature but a consciousness about what opportunities or risks ICT can bring. Without some kind of knowledge about how a certain ICT could affect a business, organisational or strategically, we have a hard time to see that a company could motivate itself to adopt an ICT.

The decision making in the companies was done by the manager, both when taking decisions about ICT and other matters. According to NAES (1991), the companies have a very vertical hierarchy and this can be a problem when a manager, who is the decision maker, does not possess enough personal ICT awareness, which is reflected by the general ICT-awareness in the business. This complies with the theories of Borga et al. (2003), and the rest that were presented in the section 2.6.4, saying that the obstacles are mainly set up by the lack of internal knowledge and experience. So, the actual suitability of the ICT innovations is not the same as the perceived suitability. Therefore, a full potential is never realised and the companies lag behind the ICT development.

The companies' small size is the largest obstacle to investing in IT-specialists, and as stated in the Müller-Falcke's work (2002), since the economical resources are restricted the specialised manpower investments are not a high priority. The companies in general did not have IT-departments, which was not surprising due to their small size. Al-Qirim (2003) means that the ICT awareness grows when a company introduces an IT-department and Jain (2003) shows that the lack of ICT focus is connected with the hierarchy of small companies. As we have written above, the companies in this study acknowledged this dilemma themselves, but did not see it directly as a problem. One manager had an interest point of view and meant that the IT department grows as the company grows. This is of course true, but based on our experience and the theoretical framework that we have presented in this thesis, we would also like to claim the opposite: the business is growing as the ICT use grows. The statement about that the investments in ICT pay off is, of course, only true if it is use in right and appropriate way.

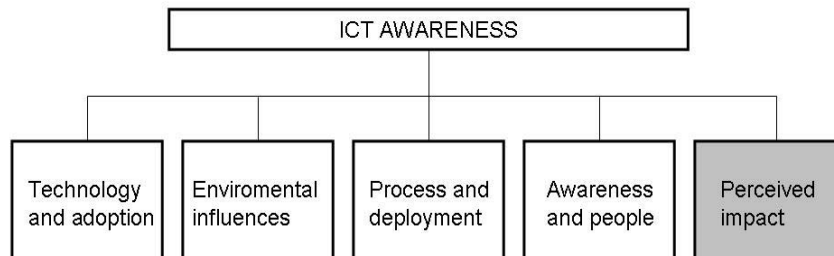
### **5.4.3 Recognising potentials and drawbacks**

The managers did generally recognise some potentials and positive effects of using ICT, which was to be a considerable factor when adopting ICT in the companies, according to Al-Qirim (2003) and Lunati & Faverie (2000). This, however, applies to quite short-term benefits such as cut telephone costs, and we don't think that the awareness reaches the information storing and mining possibility, time and manpower saving and customer care, to name just a few benefits that have a less straightforward and immediate economical impact. What the results showed in other words, which is in accordance with UNCTAD (2003), is that there was still much potential benefit to be recognised, such as the long-term advantages of the ICT. The tasks that the use of ICT is concentrated on are as listed by the Vickery et al. (2004), and based on the results we believe that in order to be able to shift forward from only day-to-day routine tasks to supporting business processes, the companies need to be equipped to be able to handle the technologies, and the business processes often have to be restructured.

The cost factors and the reliability factors were recognised by the managers, who meant that the costs did dropped drastically since they adopted Internet and e-mail, but in this case the

managers talked about the physical structure of ICT, such as Internet connection and so on. The costs of e.g. reengineering the business processes were not taken into account, and the managers were not aware of both the possibility and the costs as a consequence. The reliability of the ICT was still low in the eyes of the managers. Many talk about crashes, breakdowns and viruses, which is of course a big problem if the knowledge of the solution and possible ways of avoiding the problem is lacking. Some managers talked about the lack of safety in case of crashes, viruses and such without being able to specify or give example. These problems are directly linked to costs of ICT – but we think that, as the education and the awareness are growing, both the real problems and the “mythical” ones, such as the vague non-specifiable threats, could be outrun.

## 5.5 Perceived Impact



*“Perceived impact is by DTI (2004) expressed as “the extent to which the adoption of ICT fundamentally changes the way businesses do business”. They measure the number of sales made online for those companies that offer ordering online and the benefits of using ICT, such as improved communications, simplified processes and reduced costs.”*

### 5.5.1 Adoption and perceived value creation.

All of the companies that were investigated used Internet and e-mail. By the start of using Internet many companies changed their way of doing business. The companies adopted Internet between year 1998 and 2004 and by then e-mail was also starting to be used in most of the cases. The general ICTs used among the companies were Internet, websites, software systems (such as booking and finance system) and databases in form of excel or word files. Very small number of companies differed from others in the use of technology by using for example chat and IM for communicating with partners. Even if the companies regarded their use of ICT as basic, its impact on their businesses could be recognised in many business areas.

Regarding the organisational and strategic value creation according to Van der Veen (2004), we can conclude that it is the organisational value creation that was most acknowledged among the companies. The companies recognised benefits of ICT use in terms of improved communication and information management thanks to the possibility of establishing contacts with their partners, receiving queries from the customers and sending large amount of information back to them through e-mail. Another benefit was recognised by the use of cell phones that resulted in a better provided customer care, where managers could be available 24 hours per day. This possibility was making them flexible and services minded



towards their customers. This also points to a strategic value creation explained by Van der Veen (ibid.) where quality and efficiency of services improved in the companies because they were able to give their customers what they want: good service and conviction in person.

The information management in the companies was supported by ICT to some extent and we could see some fragments of changed work styles, for example where companies stored information in data files instead of paper files. The internal communication and information process was still done mainly in person, reason for this being the small number of employees, according to the companies themselves. However, they believed that, together with other business processes, information and communication management could be improved by using more ICT. Their good experience of ICT made them reflect on further investing in ICT to benefit their businesses. Even if the majority of the companies did not have a budget for ICT investments, some desirable improvements in ICT deployment were recognised in terms of more computers, better Internet connection, more databases and software systems. Others were though rather thinking strategically in terms of more websites to be able to market themselves more. A great importance and opportunities was recognised in owning a website but we had a hard time to recognising more strategically thinking among companies, such as opportunities of introducing new products (UNCTAD, 2003) or the opportunity to compete with bigger companies (Trepper, 2000). None of the companies actually talked about the possibilities where customers can use the website to make a query or to read about the services (and maybe make a decision before contacting the company) in order to cut down the time from the employees or the manager needed to give all the information in person, even if these possibilities were available. The results showed that that companies' use of ICT still needs more improvement in terms of basic infrastructure (more computers, better Internet connection etc.) and we believe that more stable finance is needed in these companies before strategic improvements become the number one priority.

### **5.5.2 Relative advantage of innovations**

Rogers (1983) says that a company will not adopt an innovation if its relative advantage does not match the companies' needs. This confirms why companies did not have IT employees or an IT department. As mentioned before, the companies in general did not feel that they were big enough to be in need of an IT department. The managers thought that their current use of ICT and the level of ICT use were appropriate to the companies' needs and requirements. Still, many companies wished to gain more awareness and knowledge about its opportunities, even if concrete examples were not able to be specified.

As we already mentioned in section 5.1.1, the largest benefit of ICT gained in the companies was expressed in terms of economic and time saving which resulted in a positive perceived impact. The companies in general regarded ICT as very important for their businesses even if its employment sometimes caused problems. The security risks and low quality of Internet connection were major disadvantages of using ICT but they did not see it as a setback. Therefore, these results show that, regardless the existing risks and pitfalls, the positive impacts gained through the use of ICT outweigh the negative ones.

## **6 Conclusion**

### **6.1 The ICT awareness**

The ICT awareness is in this thesis defined as a degree of knowingness and consciousness about benefits and barriers of ICT use and adoption and its technological and strategic issues.

### **6.2 The awareness level**

The level of ICT awareness varies greatly between the companies, but two general conclusions can be drawn:

- The ICT awareness level is high when considering the present obstacles to ICT that India still faces in many ways as a developing country. The opportunities for ICT development are very high for the small companies in this study.
- The ICT awareness level is low in the companies when considering the spreading of ICT in the country, i.e. the availability of technologies on the market. The exploitation of the opportunities of ICT development by the companies in this study is quite low.

### **6.3 The awareness factors**

There are lots of companies in the Indian travel and tourism sector, and many of them have few employees and no computers at all. Therefore, it is hard to draw a conclusion for the whole of the Indian tourism branch, as the different sizes of the companies, the extent of using ICT, the age of the company and so on would affect the outcome. What we can see in the group of companies that we have chosen, is that the awareness is overall on a very basic level, but the different dimensions can be quite developed and the awareness can be quite sophisticated due to different factors. The Indian infrastructure is still developing, hindering the ICT diffusion and the huge growing potential for the ICT awareness is also held back by the traditional and cultural influences. The rest of the aspects that were included in the framework used to analyze the ICT awareness give a very optimistic picture of the rapid and thorough spreading of ICT awareness in the small companies within the tourism branch in India.

The positive versus negative factors that affect the ICT awareness are presented below.

#### **6.3.1 Positive factors**

- ICT is generally considered as a business crucial investment in the companies
- The companies try to grow and develop
- The ICT environment in India is becoming stronger due to R&D and off-shore activities

- The Indian government is rolling out ICT reforms and shows support to the ICT sector
- The positive impacts of ICT are recognised by the companies as more significant than the negative ones. In the long term, the positive impacts outweigh the negative ones.

### **6.3.2 Negative factors**

- The companies do not invest in exploration of new ICTs which makes it hard when motivating the adoption of new technologies
- The companies do not invest enough in education for the managers and employees which results in that the potential of the existing technologies is not reached, and the risks of ICT use are exaggerated. ICT can be seen as a costly and complicated process
- The long-term value creation is overlooked
- Limited resources do not allow large investments in ICT
- Other actors' low ICT awareness holds back the companies' ICT development
- The Indian cultural heritage limit the use of ICT as face-to-face contact is still greatly valued, and time-saving functions are not considered crucial
- The infrastructure in the country is not fully developed
- Low security limits the possibilities of e-commerce
- The bureaucracy slows down the innovation processes
- The governmental programs and institutions do not reach out to the companies, which reduces the companies' interest in cooperating

## **6.4 Raising ICT awareness**

ICT awareness can be raised greatly in several ways; this part can serve as a suggestion of how it can be done. These recommendations are based on the conclusions that were reached in this study and are aimed to give a guidance of how to improve the ICT awareness in the companies in the study.

### **6.4.1 Recommendations on a business level**

- Invest more into ICT education, both for employees and managers
- Allocate time and resources to look into new technologies and explore the ways to make advantage of the ICT opportunities

- Work out strategies for long-term ICT investment as a way of expanding the business and gaining value

#### **6.4.2 Recommendations on a governmental level**

- Create a sustainable development plan on a national level to raise the ICT awareness among the businesses as well as the individuals
- Invest further in Indian-adapted software production
- Reach out to the businesses when rolling out support programs
- Develop the infrastructure in the country
- Reduce the bureaucracy in business processes

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## Appendix 1 : Questionnaire

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### A: GENERAL:

A 1 Name of the Company:

A 2 Address:

A 3 E-mail / Name \_\_\_\_\_

A 4 When did your business start? Year \_\_\_\_\_

A 5 Is Your Company a part of a corporation?

1. Yes
2. No

(Please be aware that the questions refer to the use of ICT in Your office, not to the company as a whole).

A 6 What is the objective of the company in the following 3 years?

1. To stay the same size
2. To grow
3. Don't know

A 7. How many employees does your company have?

1. 1-3
2. 4-7
3. 8-14
4. More than 15 (How many \_\_\_\_\_)

A 8. How many computers (including PCs, laptops, workstations and terminals) are there in total in Your Company?

1. 1-2
2. 3-5
3. 6-10
4. More than 10 (How many \_\_\_\_\_)

### B: INTERNET

B 1 Does Your Company use the Internet for business purposes?

1. Yes
2. No

IF YES:

B 2 When did Your Company start to use the Internet?

1. 0 year after start-up
2. Within 1 year after start-up
3. 1-3 years after start-up
4. 3-5 years after start-up
5. More than 5 years after start-up

B 3 How many percent of the employees are using the Internet for business issues?

1. Less than 30%
2. 30-50%
3. 50-80 %
4. 80-100 %

B 4 For what purpose is Your Company using the Internet?

1. Promoting and marketing services
2. Information Search
3. Direct or indirect contact between customers/suppliers/clients/partners etc
4. Purchasing or selling on-line
5. Fun/ entertainment
6. Other \_\_\_\_\_?

B 5 How often is the Internet used in Your Company?

1. Every day
2. A few times a week
3. A few times a month
4. More seldom

IF NO:

B 6 Have you considered using the Internet for business purposes?

1. Yes
2. No

B 7. What are the reasons for not using the Internet for business purposes?

1. The Internet has no relevance for the business
2. The access to Internet is too expensive
3. The Internet would be a waste of time for my employees
4. Other: \_\_\_\_\_

### C: E-MAIL

C 1 Does Your Company use E-mail for business purposes?

IF YES:

C 2 When did Your Company start to use E-mail?

1. 0 year after start-up
2. Within 1 year after start-up
3. 1-3 years after start-up
4. 3-5 years after start-up
5. More than 5 years after start-up

C 4. How many percent of the employees are using E-mail for business purposes?

5. Less than 30%

6. 30-50%
7. 50-80 %
8. 80-100 %

C 5. What is the purpose of using E-mail?

1. Contacts with customers/suppliers/partners
2. E-mailing friends (Socialising)
3. Making queries
4. Making bookings
5. Other \_\_\_\_\_

C 6. How often is the E-mail checked?

1. Every day
2. A few times a week
3. A few times a month
4. More seldom

D: WEB SITE

D 1 Do you have a Website?

IF YES:

Please state the address of Your website \_\_\_\_\_

D 2 When has Your website been initiated?

1. 0 year after start-up
2. Within 1 year after start-up
3. 1-3 years after start-up
4. 3-5 years after start-up
5. More than 5 years after start-up

D 3. Who is responsible for maintaining your website?

1. An employee
2. Another Travel Agency
3. A web hosting company
4. A friend
5. Other \_\_\_\_\_

D 4. How often is your website updated?

1. Monthly or more often
2. Every 2 months
3. Several times a year
4. Twice a year
5. Never
6. I don't know
7. Other \_\_\_\_\_

D 4 Do You think that Your website should be updated:

1. More often
2. More seldom
3. Neither

D 5. Do you think that your website contains relevant and correct information?

1. Yes
2. No
3. Comments \_\_\_\_\_

D 6. Do you think your website needs improvement?

1. Yes
2. No
3. Comments \_\_\_\_\_

IF NO:

D 7 Is Your company planning to develop a website?

1. Yes
2. No. Why \_\_\_\_\_

E: SOFTWARE

E 1 Do you have any kind of software system?

IF YES:

E 2 What kind of system is it? \_\_\_\_\_

E 3 When did You start to use it?

1. 0 year after start-up
2. Within 1 year after start-up
3. 1-3 years after start-up
4. 3-5 years after start-up
5. More than 5 years after start-up

E 4 How many percent of the employees are using it?

1. Less than 30%
2. 30-50%
3. 50-80 %
4. 80-100 %

IF NO:

E 5 Are You considering purchasing some kind of software system?

1. Yes
2. No. Why not? \_\_\_\_\_

F: OTHER

F 1. Do You use any one of the following?

Intranet	Yes	No	I don't know
Extranet	Yes	No	I don't know
Portals	Yes	No	I don't know
Database	Yes	No	I don't know
Other	_____		

F 2. Please state the relevance of the following things for Your Company:

	Not important at all		Is of some importance		Neither		Imp.		Very Important
Internet									
E-mail									
Web Page									
IT in general									

F 3 Do You consider the use for ICT in Your Company typical for the businesses of the same size and type in India?

1. Yes
2. No
3. Don't know

G: COMMENTS



## Appendix 2: Interview questions

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### **A. BACKGROUND**

1. What is Your position and for how long have You been working here?
2. What did You do before this?
3. What positions do the employees have? Do all of them speak English?
4. Does Your company mostly focus on domestic or foreign tourists?
5. What is Your business focus: inbound or outbound tours?
6. Describe what happens in terms of communication and information exchange when a customer is making a query or a booking.

### **B. INFORMATION MANAGEMENT**

7. How is the information about your clients managed (e.g. in databases, files, papers)?
8. How is the information about hotels, other companies and contacts managed?

### **C. COMMUNICATION AND COOPERATION MANAGEMENT**

9. How is the internal communication made?
10. How is the external communication with partners, suppliers etc. made?

### **D. INNOVATION**

11. Do You train Your employees on using ICT?
12. How often do You update Your hardware and software?
13. Are You considering updating Your Operative System?

### **E. USE OF ICT**

14. By whom is Your website hosted?
15. How is the technical support, computer purchases and updates made in your company?
16. Do You use outsourcing?
17. How are the payments to the hotels and other companies made?
18. How do the customers make their payments?
19. How do you market Your Company?

### **F. COSTS AND INVESTMENT**

20. Has the use of ICT reduced your costs = Does it outweigh the purchasing and implementation costs?
21. Do you have annual budget for ICT investment?
22. Do you think that it is enough?

### **G. OBJECTIVES AND PROBLEMS**

23. Do You think that Your business meets the demand of Your customers?
24. What do You think could be improved in Your process/supply chain?
25. What would You change if You had more resources and why?
26. Have You taken any initiatives to increase the awareness of ICT in your company?
27. Do You think that the existing use of ICT in Your company is enough for reaching Your goal?

28. Do You see any barriers with the adoption and use of ICT?
29. You are situated in one of the big Indian IT cities. Do You see this as an opportunity in the terms of use and adoption of ICT?
30. Do You see the Indian telecommunication infrastructure as a barrier for ICT use?
31. Do You feel that small businesses benefit more from using ICT than big companies or the other way around and why?
32. What have You gained by the use of ICT?
33. Do you think that the use of ICT is expected in businesses like yours and why/why not?
34. Are there any specific features that Indian tourist agencies possess and in that case why?
35. Do You think that the Asian companies gain more by using ICT than the European ones and why/why not?

## **H. GOVERNMENT AND INSTITUTIONS**

36. Have You heard about some of the following organisations:
  - a) SIDO (Small Industries Development Organisation)
  - b) SSI Board
  - c) SENET network (Small Enterprise Information and Resource Network)?
  - d) NASSCOM
37. If yes: what do you know about their programmes? Have You had contact with them? Have You gained anything?
38. Have you received enough help from government to introduce ICT to your company?
39. Do You expect or would you need anything from them?
40. Do You feel that the political systems hinder You in Your work? In what way?

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