A2006:008

Offshoring IT Services

A Swedish Perspective

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ISSN 1652-0483
Elanders, Stockholm 2006

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Foreword

Offshoring of white-collar jobs from high-cost to low-cost locations is high on the policy agenda in many countries today. We read articles in the papers estimating that large numbers of jobs will be moved offshore and that these no longer are just low-skilled jobs, instead R&D is beginning to move. To gain more knowledge of what is happening, and what the consequences are for Sweden, are important tasks for ITPS.

The focus of the present report is on the offshoring of IT services. The purpose is two-fold: the first is to provide statistical and qualitative evidence on the scope of offshoring to the extent it is possible to measure; the second is to discuss what challenges the present developments bring to Sweden. The report will also serve as input to an ongoing project by IVA – the Royal Swedish Academy of Engineering Science – called 'IT without Borders'. The objective of the IVA project is to discuss and formulate a basis for decisions on actions that can contribute to improving Swedish competitiveness in the ICT field.

The results indicate that offshoring of IT is a reality for many Swedish companies today. There is nothing indicating a decrease, rather the contrary; statistical as well as qualitative evidence points towards an increasing trend in offshoring. Sweden is a country with a long history of being open to the world. But are we doing enough to meet and to take advantage of this new wave of globalization? The conclusion of this report is that there are policy areas where actions should be considered.

The report was written by Karin Hovlin at the ITPS office in Los Angeles. Contributions were also made by Ida Björk and Markus Lindvert, both at the ITPS office in Östersund.

Östersund, April 2006

Sture Öberg
Director General

Table of Content

Summary

Offshoring of IT services has attracted much attention from policy makers, researchers and the media during the last few years. Increasingly, software development, call centers, the handling of insurance claims and payroll administration take place in countries like India, the Philippines, Estonia and Poland. ITPS has, in a number of reports, highlighted globalization and internationalization. The effects these trends have on the Swedish economy as well as benefits and challenges are subject to intensive discussion. In the present report the focus is on offshoring of IT services from a Swedish perspective. In the Anglo-Saxon world especially, there have been widespread fears of job losses when firms increasingly relocate production to low-cost countries. In Sweden, the debate is still fairly limited even though there seems to be an increase lately. The purpose of this report is twofold: the first is to provide statistical and qualitative evidence on the scope of offshoring to the extent it is possible to measure; the second is to discuss what challenges the present developments bring to Sweden. The study attempts to shed light on questions such as: What is the extent of offshoring of IT in Sweden and what are the current trends? What do we know of what types of jobs and markets that are affected? Which are the main motives and driving forces for Swedish companies that offshore activities? What are the experiences of Swedish companies? What do we know of the consequences of offshoring and what are the benefits and challenges for Sweden?

There are a number of factors that drive the new trend of offshoring of services: technological development has lowered the price of communications and made it possible to transmit digitized information across the globe, trade and markets have been liberalized and the supply of well-educated, often English-speaking labor has become available. Estimates of offshoring come mainly from large consultancy firms and they reflect the difficulty of making projections about the future. It is clear however, that in relation to the whole labor market, the numbers of jobs that are thought to be moved offshore is fairly limited. Many studies also point to the beneficial effects of offshoring, leading e.g. to increased competitiveness for the firms that offshore part of their production.

Statistical evidence reviewed in the report gives some support for the belief that there is an increase in offshoring of IT services. Trade in computer and information services is increasing; especially the export of services has risen sharply. The number of temporary work permits granted to Indian citizens is also increasing, indicating increased cooperation with Indian companies (affiliated or not). However, looking at official figures for actual relocation of jobs we see that the numbers are to all intents and purposes negligible.

The qualitative evidence, based on a number of interviews with representatives of IT-producing and IT-using companies, clearly shows that offshoring is something that is a reality today and that will increase in the future. The most important driving force is the search for lower costs. Offshoring of production does not necessarily mean that jobs are actually moved from Sweden to offshore locations. Indeed, the evidence indicates at present that this is often not the case. Instead, it seems that new activities or the expansion of existing activities are moving offshore. Even though we have no statistical evidence, most activities offshore seem to be lower level development tasks. Judging from the development in the U.S, it is not unlikely that we will see an increase also in higher level tasks and R&D.

In the report a number of challenges that need to be met by both policy makers and industry are identified. Firstly, there is a need to make the Swedish market a market characterized by high levels of competence. Secondly, the importance of creating a sophisticated and demanding home market for IT services is underlined. Thirdly, Sweden must continue to strive for open markets, embracing the labor market, production as well as in education. Fourthly and finally, there is a need for dynamic and innovative environments where Swedish companies, in cooperation with the public sector and foreign talent, can create new ideas and new innovations, thus climbing the value chain.

Sammanfattning

Offshoring av IT tjänster har fått allt mer uppmärksamhet från policy makers, forskare och media under senare år. Mjukvaruutveckling, call centers och administrativa uppgifter av olika slag sker i allt större utsträckning i länder som Indien, Filippinerna, Estland och Polen. I ett antal rapporter har ITPS studerat globalisering och internationalisering. Dessa trenders effekter på den svenska ekonomin samt utmaningar och fördelar diskuteras utförligt. I föreliggande rapport är fokus offshoring av IT tjänster ur ett svenskt perspektiv. I synnerhet i den anglosaxiska världen har det funnits en utbredd oro för att arbetstillfällen kommer att gå förlorade när företag i ökande utsträckning förlägger produktion till lågkostnadsländer. I Sverige är debatten fortfarande tämligen begränsad även om den förefaller ökat på sistone. Syftet med rapporten är tvåfaldigt: dels att presentera kvantitativ och kvalitativ data på omfattningen av offshoring i den utsträckning det är möjligt att mäta, dels att diskutera vilka utmaningar som denna utveckling medför för Sverige. Studien belyser frågor såsom: Hur stor är omfattningen av offshoring av IT i Sverige och vilka är de aktuella trenderna? Vad vet vi om vilken typ av jobb och vilka marknader som är berörda? Vilka är de huvudsakliga motiven och drivkrafterna för svenska företag som förlägger produktion offshore? Vilka är de svenska företagens erfarenheter? Vad vet vi om konsekvenserna av offshoring och vilka är fördelarna och utmaningarna för Sverige?

Det finns ett antal faktorer som driver den nya trenden mot offshoring av tjänster: den tekniska utvecklingen har sänkt kostnaderna för kommunikationer och gjort det möjligt att skicka digital information runt världen, handel och marknader har liberaliserats och utbudet av välutbildad, ofta engelsktalande, arbetskraft har ökat. Uppskattningar av omfattningen av offshoring kommer ofta från stora konsultfirmor och dom speglar svårigheterna i att göra uppskattningar om framtiden. Det är emellertid klart att i relation till hela arbetsmarknaden så är antalet jobb som förväntas flyttas offshore förhållandevis litet. Många studier pekar också på de positiva effekter som offshoring för med sig, t.ex. ökad konkurrenskraft för de företag som förlägger del av sin produktion offshore.

Statistik som presenteras i denna rapport stödjer uppfattningen att offshoring av IT ökar i Sverige. Handel med data- och informationstjänster ökar, i synnerhet exporten har ökat kraftigt. Antalet tillfälliga arbetstillstånd som beviljas personer från Indien ökar vilket indikerar ökat samarbete med indiska företag (dotterföretag eller inte). Tittar man på de officiella siffrorna över faktisk omlokalisering av jobb så ser vi emellertid att siffrorna är i princip försumbara.

Kvalitativ data som baseras på ett antal intervjuer med representanter för IT-producerande och IT-användande företag visar tydligt att offshoring är något som är en realitet i dag och som kommer att öka i framtiden. Den viktigaste drivkraften är jakten på lägre

kostnader. Offshoring av produktion betyder inte nödvändigtvis att jobb faktiskt flyttar från Sverige till platser offshore. I stället indikerar resultaten att detta oftast inte är fallet i dag. I stället förefaller det vara en expansion av verksamhet alternativt ny verksamhet som äger rum offshore. Trots att vi inte har något statistiskt belägg så förefaller verksamheten offshore vara huvudsakligen enklare utvecklingsarbete. Om Sverige kommer att följa utvecklingen i USA så är det emellertid sannolikt att vi kommer att se en ökning också av mer avancerat utvecklingsarbete och FoU.

I rapporten identifieras ett antal utmaningar som måste mötas av både policy makers och näringslivet. För det första finns ett behov av att göra Sverige till en marknad som karaktäriseras av hög kompetensnivå. För det andra understryks vikten av att skapa en avancerad hemmamarknad för IT-tjänster. För det tredje måste Sverige sträva efter öppna marknader, det gäller arbets- och produktmarknaderna liksom utbildningssystemet. För det fjärde slutligen, finns ett behov av dynamiska och innovativa miljöer där svenska företag i samverkan med den offentliga sektorn och utländsk talang kan skapa nya idéer, nya innovationer och således klättra i värdekedjan.

1 Introduction

1.1 Background

Offshoring of IT services has attracted much attention from policy makers, researchers and the media during the last few years. Increasingly, software development, call centers, the handling of insurance claims and payroll administration take place in countries like India, the Philippines, Estonia and Poland. The benefits for the companies include lower costs and increased competitiveness but offshoring also implies that jobs may move from Sweden or that jobs are created in other countries (rather than in Sweden). It appears that the numbers of jobs that are actually moved off- shore are rather limited; however when activities are relocated to other countries, there will be adjustment costs. The present report focuses on offshoring of services from a Swedish perspective. What is happening on the Swedish market and what are the challenges and possible policy responses?

Estimates of the extent of offshoring are many and varying, among them are the much-quoted 2002 and 2004 estimates from Forrester Research projecting that 3.3–3.4 million US service-sector jobs will move overseas by 2015.[1] Especially in the U.S, there has been a heated debate on the pros and cons and the possible effects of the practice of replacing goods or services that were previously produced domestically with goods or services produced abroad.[2] Discussions at websites such as www.yourjobisgoingtoindia.com and www.nojobsforindia.com fuel the public debate. This debate was particularly intense during the 2004 election year. Between January and May 2004, there were 2634 reports in U.S. newspapers on services outsourcing, many focusing on the fear of job losses.[3] The discussions have somewhat cooled down now and we see more writing that tries to analyze the present developments and how to respond.[4] The U.S. Government Accountability Office has recently published a major report to Congressional Committees describing potential effects and various policy responses.[5]

In Sweden we have not yet seen such broad and heightened public debate. However, there is some discussion going on and a recent headline in a business paper, reporting on the move of IT development by a company in Malmö, was followed by intense discussion in the comment forum.[6] There is also less academic work being done in this field, so far, trying to measure the extent of offshoring and the possible effects and

[1] Forrester Research (2004b)
[2] See e.g. McKinsey Global Institute (2004). The American debate is described in a memo from the Swedish Embassy in Washington: Outsourcing – ett huvudtema i den amerikanska valrörelsen, PM 2004-03-22
[3] Amity, Mary and Shang-Jin Wei (2004)
[4] See e.g. Friedman Thomas L. (2005)
[5] GAO (2005)
[6] Dagens Industri, 12 January 2006

consequences. But more work is under way; SNS (Center for Business and Policy Studies)[7] is conducting a project on Globalization and the Swedish Labour Market and a recent article in Ekonomisk Debatt[8], arguing the need for a decrease in real wages to take account of the increase in labor supply due to globalization, has spurred a debate.

In a number of studies, ITPS has highlighted globalization and internationalization. The effects these trends have on the Swedish economy as well as benefits and challenges are discussed. In a recent report by ITPS, the objective was to examine how to define and measure the extent of relocation and outsourcing of production.[9] In the report, a number of sources and methods are used to describe the development of activities by Swedish companies with international operations. Another recent report studies the extent of offshoring using published information concerning restructuring of firms located in Sweden.[10] A major ongoing project studies the internationalization of corporate R&D.[11]

The present development of globalization and the fragmentation of production were already a feature of the manufacturing sector. Although there are similarities, there are also differences. In the 2004 World Investment Report, UNCTAD points to a number of these:[12]

> First, although the services sector is much larger than the manufacturing sector, only some 10 percent of its output enters international trade, compared with over 50 percent for manufacturing. Second, the pace of globalization of services affected by the tradability revolution is faster than in manufacturing. Third, whereas the relocation of goods production has involved, overwhelmingly, firms in manufacturing only, service functions are offshored by companies in all sectors. Fourth, the skill intensity is generally higher for offshored tradable services than for manufacturing located abroad, thus affecting white-collar jobs in particular. And fifth, services that are offshored may be more footloose than relocated manufacturing activities because of lower capital-intensity and sunk costs, especially services that do not require high skills.

Further, a commonly held view is that for manufacturing, R&D in some industry sectors often needs to be located in geographic proximity to production. For the production of services, this is not necessarily the case.

[7] www.sns.se
[8] Persson, Mats and Marian Radetzki (2006)
[9] Mattila, Lars and Anne-Christine Strandell (2006)
[10] Jonsson, Viktor (2006)
[11] A final report from the project is expected during second quarter 2006.
[12] UNCTAD (2004) p.27

The Information- and Communications Technology sector (the ICT sector) is often considered an important sector for Swedish economic growth.[13] It was one of the sectors chosen when the Government decided to further develop its innovation strategy focusing on a number of key industrial sectors. In December 2005, a strategic program – the result of discussions and co-operation between the Government, public agencies and representatives of the ICT sector – was presented.[14] In the program it is stated that:

> "The Swedish IT and telecoms industry is one of Sweden's most important industries. IT and telecommunications play an important role in promoting innovation, employment and exports within business and the public sector."

Further, the vision for the IT and telecom industry is expressed as:

> "The international competitive IT and telecoms industry in Sweden contributes to Sweden's world-leading position as an IT society. One important foundation for this is constituted by the breadth of the home market and its demanding and advanced customers, who power products, services and systems providing high customer benefit. The industry has developed strong positions and alliances in the global market and in the international development of knowledge. This is demonstrated by new products and services for export and a world-leading position within telecommunications. The industry is thereby contributing to growth, employment and a sustainable society in Sweden and globally."

Given the importance attached to the IT and telecom industry, it is of interest to policy makers and others interested to follow the effects that globalization is having on this particular sector.

IVA – the Royal Swedish Academy of Engineering Sciences – has initiated a project called "IT without borders".[15] The objective is to discuss and formulate a basis for decisions on actions that can contribute to improving Swedish competitiveness in the ICT field. Particular attention will be paid to education and research. The present ITPS report is an input into the IVA project.

[13] The Swedish ICT sector was severely hit by the downturn at the turn of the century. Employment, production, turnover, trade have all declined during the first years of this century. In 2003, the sector employed approx 185 000 people which is almost 7% of total employment in the private sector. Of these approx 25% were employed in the manufacturing part and the rest in the services part of the sector. See further ITPS (2005a)

[14] Regeringskansliet (2005)

[15] www.iva.se/it The project is done in cooperation with Almega, Vinnova, Civilekonomerna, Civilingenjörsförbundet, IT-Företagen, ITPS, Jusek, SEKO.

1.2 Objectives and questions

The present report focuses on offshoring of IT services from a Swedish perspective. The overall objective is to provide Swedish policymakers and other interested parties with a better understanding of offshoring of IT. The purpose is twofold: the first is to provide statistical and qualitative evidence on the scope of offshoring to the extent it is possible to measure; the second is to discuss what challenges the present developments bring to Sweden.

India and Estonia are two countries that are commonly mentioned in offshoring discussions in Sweden. In order to get additional input to, and perspective on, the Swedish situation, we look closer at these two countries.

The study attempts to shed light on questions such as: What is the extent of offshoring of IT in Sweden and what are the current trends? What do we know of what types of jobs and markets that are affected? Which are the main motives and driving forces for Swedish companies that offshore activities? What are the experiences of Swedish companies in relation to offshoring? What do we know of the consequences of offshoring and what are the benefits and challenges for Sweden?

1.3 Methods and outline

The study combines a number of methods. During recent years, the literature on offshoring has grown immensely. The main focus is often the U.S. and the offshoring by U.S. companies to e.g. India. The literature in Sweden is more limited. In this study we use published information from various sources. The intention is not to make a thorough overview of available printed sources, but rather to highlight certain issues. Interested readers can use the list of references as one, among other, starting-points in the search for further reading.

We also use statistical sources to describe offshoring. As will be evident later, there are limitations when it comes to statistics, one being the fact that offshoring of services is a recent phenomenon. Offshoring of services gives rise to trade flows. However, there are methodological difficulties and statistics of trade in services are generally considered to be less reliable than statistics of trade in goods.

Finally, a number of industry leaders and representatives of both IT-producing and IT-using industries and organizations have been interviewed. In an attempt to get a more balanced view of the issues at stake, the choice of companies has been made so that different categories are represented: some small, some large, some foreign-owned, some Swedish. The number of interviews is still limited and one must bear that in mind when drawing any conclusions. Having said that, they still provide valuable insights that help us gain additional knowledge of the extent and development of offshoring.

The focus of the report is IT services. But what are those? There are a number of abbreviations floating around, ITS, ITES, BPO, KPO… and there are no commonly agreed definitions. But a few examples will give us an idea of what kind of services we are talking about. ITS or IT services are e.g. software application development and application management, IT consulting and infrastructure services. BPO stands for business process outsourcing and ITES for Information Technology Enabled Services, i.e. services that use IT in the processing and delivery of the service. BPO is the act of outsourcing processes such as accounting, marketing, human resources and payroll processing. Tasks such as call centers and customer care are also examples of BPO. When tasks become more advanced, some begin to talk about KPO or Knowledge Process Outsourcing. It can e.g. be R&D-related work that is being outsourced.

IT services are used and produced both by companies in what is defined as the ICT sector (which comprises both manufacturing and services companies[16]) as well as in ICT-using sectors.[17] (The word production refers to the production of *either* a physical good *or* a service.) Hence, to study the offshoring of IT services it is not sufficient to study only developments in the services part of the ICT sector. However, looking at statistics, this is easier said than done. ICT companies defined as manufacturing companies produce both goods and services but there is no way to distinguish between the different products.[18] What we have done in this report is to look at the manufacturing and the services sides of the ICT sector separately where it is possible and relevant and, when this is not the case, to look at the sector as a whole. When it comes to the ICT-using sectors, activities related to ICT are not reported separately. However, in the trade statistics, the reporting is done according to what type of good or service that is traded, not what type of company that is exporting or importing it. Hence, we are able to study trade in IT services.

This report starts off with a discussion on how to define offshoring and why it is happening now. Section 3 reviews the statistical evidence available and section 4 covers the business evidence. Section 5 discusses challenges and possible policy responses. Finally, section 6 draws certain conclusions.

[16] The definition used is the OECD definition of the ICT sector as a combination of manufacturing and service industries that capture, transmit and display data and information electronically. See appendix for the whole definition.
[17] In ITPS (2005b) there is a section discussing both the ICT-producing and the ICT-using sectors and certain figures are presented.
[18] Here it is interesting to note the drift from manufacturing to services. Take IBM as an example, originally a hardware producing company today it is a pure services company. Another example is Ericsson where the business segment Global Services is growing.

2 What is offshoring of IT and why now?

2.1 Defining offshoring

There are a number of concepts floating around in discussions on internationalization and globalization: offshoring, nearshoring, sourcing, outsourcing, offshore inhouse sourcing, offshore outsourcing, out-tasking, selective sourcing, multi-sourcing… Basically, offshoring is when a company moves an activity abroad. This can be done in two ways; either in-house or by contracting an external supplier. Outsourcing, on the other hand, is the act of moving an activity to an external supplier (irrespective of where that supplier is located).

In the ITPS study on defining and measuring the extent of relocation and outsourcing of production there is an extensive discussion on how to define relocation and outsourcing of production and the following categorization is proposed:[19]

Figure 1 Four cases of relocation of production

Control \ Location	National	International
Within own org.	National relocation of production within own organisation	International relocation of production within own organisation
Outside own org.	Outsourcing of production to external national supplier	Outsourcing of production to external international supplier

Source: ITPS/GAO

As can be seen, there is one dimension related to the location of production as well as one dimension related to the control of production, i.e. who is actually producing the good or service. The two boxes on the right hand side can be defined as "offshoring", where the upper box can be defined as offshore inhouse sourcing and the lower box as offshore outsourcing. The two lower boxes are both examples of outsourcing.

[19] Mattila, Lars and Ann-Christine Strandell (2006) p 20

A commonly held view is that offshoring refers to the relocation of activities to lower wage or low-cost locations. Even though this is strictly not a consequence of the definition above, when used in this report it will be used with that meaning. Figure 1 does not make a distinction between the production of goods and the production of services.

Figure 1 above only describes where production takes place and who does it. It says nothing about *why* production is located there. Often when offshoring is on the agenda, the interest is in what effects it will have on employment, and – in a longer perspective – on economic growth. Figure 1 above does not present any information as to the effects on employment. A company can, for example, choose to offshore activities that were previously done within the home country. If this is the case, the home country will loose employment opportunities. But if a company chooses to expand and does this not in the home country but at an offshore location, it will not have a negative effect on the employment of the home country. However, it could be considered as lost employment opportunities since one alternative scenario would have been that the expansion took place in the home country.

In this report we are primarily interested in the boxes on the right-hand side of figure 1 above. When looking at statistical evidence, the top right hand box, the offshore inhouse sourcing, can partly be measured by the activities by Swedish controlled enterprises with subsidiaries abroad. How many are they and how many employees do they have? In which countries are they located? It may also be interesting to look at foreign direct investments. However, relocation of activities will only be part of total investments abroad, and such investments may be financed by capital from other markets than the Swedish, so it would be difficult to learn more about the extent of offshoring by looking at foreign direct investment. The lower right hand box, the offshore outsourcing, gives rise to trade flows. A Swedish company that outsources activities to, or buys consultancy services from, an international company will be importing services which will show as part of the balance of payments.

Even though the focus is on the right hand side of the figure, it is also interesting to see the development of outsourcing. An increase of outsourcing may lead to an increase of offshoring. This could happen if there is an increased use of international outsourcing providers or if the providers in Sweden offshore part of their activities.

But which jobs is it possible to relocate? Obviously it must be services that are possible to perform at a distance and that do not require face-to-face contacts. It must also be functions that can be delivered in a digitized mode. In an EU-report[20], a number of preconditions that should be met are listed, among them: the work cannot be depending on tacit knowledge, there should be clearly defined and standardized tasks as well as well-defined work procedures and quality control mechanisms, good clear communication patterns should exist and a relationship of trust must have been established.

[20] European foundation for the improvement of Living and Working Conditions (2004)

2.2 Driving forces

So, why has there been so much discussion about offshoring the last few years?

We can start in the 19th century with the theories of David Ricardo on comparative advantage. What we see today can be viewed as the practical implications of his theory, that state that two countries can both benefit from international trade with two goods even though one of them is more efficient in producing both goods. Both countries will specialize in the production of the good that they have a comparative advantage in producing. In other words, let's specialize in what we do best.

Two initial points. First, outsourcing of services is not something new. Over a long period companies and organizations have purchased services from external suppliers, e.g. maintenance, security, accounting and IT-support. What is new is that some of these services are provided from suppliers internationally.

Second, offshoring is not anything new either. History can provide us with several examples of how firms have relocated production to facilities in other countries, often in a hunt for cost-savings. In Sweden we have seen examples in sectors such as textiles, shipbuilding and manufacturing. While we have seen offshoring before, it has dealt with goods; the new thing is that services are the target.

According to Dunning[21], there are three main motives as to why an enterprise may choose to locate activities abroad. First, a company can choose to relocate in order to profit from lower costs at other locations. These may be costs related to labor or other production costs. Second, the motive can be primarily related to the access to new and/or growing markets. And third, the relocation can be due to the fact that the company is looking for special competencies, advanced technologies, good infrastructure etc.

Other motives could be political or regulatory, e.g. to be able to sell its products in a specific market, the company needs to have a presence at the market. Another motive – which could be considered a cost motive – is that some nations have incentives in order to make companies locate in specific markets. In an article by Markusen, the usefulness of different trade theory models for explaining offshoring of white-collar services is discussed.[22] The conclusion is that by mixing and matching elements from different models, a greater understanding of offshoring can be gained.

But why has the increase in services offshoring come just now? There are at least three factors of relevance.[23]

[21] Mattila, Lars and Ann-Christine Strandell (2006)
[22] Markusen, James R. (2005)
[23] See e.g. GAO (2005) and Kirkegaard, Jacob F. (2004)

First, technological developments have lowered the price of communications and made it possible to transmit digitized information. It is now possible for companies to work on common projects, 24 hours a day in different locations around the world. Certain tasks are also becoming more standardized, making them easier to be performed at a distance which leads to greater location independence.

A second factor is the liberalization of trade and the opening of foreign markets.[24] For instance, India did not liberalize its economy until 1991, Eastern Europe has gradually opened its economies since the early 1990s, Estonia joined the WTO in November 1999 and China did the same in December 2001. However, trade in services is not as liberalized as trade in goods. The ongoing negotiations within the Doha round as well as the EU negotiations on the services directive are two examples of the striving to open up markets in services also to global trade. However, it has proven not to be that easy. Trade in commercial services still only accounts for approximately one fifth of the value of total world trade in 2004.[25]

A third factor is that in some of these and other countries there is an abundant supply of well-educated, skilled and often English-speaking labor.

In addition, one factor specifically relating to offshoring of IT services is put forward in a Forrester Research report on offshoring by European firms.[26] Forrester argues that scarce skills are being overpriced in Europe and that IT professionals earn relatively more than people working in other disciplines. The example given is of a systems architect in the UK earning £130 000/year compared to a marketing director earning £90–100 000/year. (In India the systems architect earns approx. £41 000/year.)

2.3 Some estimates of the extent of offshoring

There is a multitude of reports making estimates and projections of the number of jobs that will be moved to offshore locations. Many of these have focused on the developments in the U.S. The figures quoted vary greatly, and obviously there are no correct answers, since it is genuinely difficult to make projections about the future. However, below we will refer to a few of these studies in order to give some ideas of the extent.[27]

In a report on the Emerging Global Labor Market, McKinsey estimates that, in theory, eleven percent of worldwide service employment, translating into 161 million jobs out of 1,46 billion service jobs, could be performed remotely in low-wage

[24] The forthcoming Information Technology Outlook 2006 from OECD will include a chapter on ICT trade and globalisation of the ICT sector.
[25] WTO (2004)
[26] Forester Research (2004a)
[27] See e.g. European Foundation for the Improvement of Living and Working Conditions (2004, Amiti, Mary and Shang-Jin Wei (2005) and Kirkegaard (2005) where a number of studies and sources are referred to.

countries by 2008.[28] However, only 4.1 million of these 160 million jobs will actually be offshored. According to the report, the reasons for this are company-specific barriers such as attitudes and production scale, rather than regulatory barriers. When looking at the figures for the U.S, one should bear in mind that approximately 8 million jobs are lost or created in the American economy every quarter.

Looking more closely at the IT services sector, McKinsey estimates that this sector will relocate jobs offshore to a higher degree than the average. Of the 160 million potentially offshored jobs, 2.8 million are found in the IT services sector which is equivalent to 44 percent of the employment in this sector. In 2003, the estimated offshore employment was 371 000, a number that was expected to increase to 700 000 by 2008.

The estimate for Europe is 1.2 million jobs.[29] Most of these jobs will move from the UK while countries like France and Germany are slower movers. Sweden is expected to offshore a total of 20 000 jobs by 2015. This can be compared to 400 000 which is approximately the number of jobs that are lost or are created on the Swedish labor market each year (with some variations over the business cycle). Of the 1.2 million jobs, 150 000 are "pure" IT-jobs, i.e. 12.5 percent. In Sweden, the share of IT-jobs was twice as high (25 percent or 5 400 jobs).

The studies above refer to the effects that offshoring may have on employment. What do the spending figures look like? An estimate by Forrester in 2004[30] showed that offshore services spending in Western Europe would grow from €1.1 billion to more than €3.6 billion in 2009 (a compound annual growth rate of 27 percent). The large part is expected to come from the UK and India is believed to be the main recipient. According to another study of Europe by EITO[31], 1.1 percent of a total of €123.144 million, i.e. €1.35 billion, spent on IT services in Western Europe, was spent offshore. The share is expected to rise to 1.8 percent in 2008.

Another picture of the extent of offshoring is given by the announcements last fall from U.S. giants Microsoft, Cisco and Intel. The three companies are going to invest $1.7 billion, $1 billion and $1 billion respectively, mainly in R&D activities in India during the next 3–5 years.

[28] McKinsey Global Institute (2005) In the report, eight sectors are studied and figures from these sectors are extrapolated, creating estimates for the global economy.
[29] Forrester Research (2004a)
[30] Forrester Research (2004c)
[31] EITO (2005)

It is evident from the studies quoted above that estimates vary, reflecting the difficulty of making projections. However, looking at the figures in relation to total employment in services, it is only a very small part that is expected to be moved offshore even though the shares are generally higher for IT services than in other services. Also, even though figures are still at low levels, the rate of increase is high.

2.4 International evidence of effects

Above, we looked at estimates of spending as well as the number of jobs that could be affected. But what do we know of the effects that the present development of offshoring of services may have?

There are a number of studies that discuss the effects offshoring is having on the economy. The majority of these studies are made using American data. Since the development of offshoring is happening right now, it is genuinely difficult to estimate the effects this will have on employment and the economy. In the GAO-report mentioned above four areas of concern about the potential impacts of offshoring are identified: potential impacts on the average US standard of living, including average wages; employment and job displacement among American workers; the distribution of income; and national security and consumer privacy. The report states that on all these four issues, there is no general agreement among economists and other observers on what the effects will be. This is in part due to the fact that we are witnessing a relatively new phenomenon, that there are limitations on availability of data and that there are different theoretical expectations. Bearing this disagreement in mind, we give some examples of studies trying to estimate effects below.

American economist Catherine Mann has, in a number of studies, pointed to the benefits of offshoring.[32] She concludes that globalization of IT hardware production has made it 10 to 30 percent less expensive. Lower prices promote increased IT investment supporting productivity and GDP growth. Mann estimates that the annual real GDP growth might have been 0.3 percentage points lower per year from 1995–2002, if globalization of production of IT hardware had not occurred. She concludes that we are likely to see this development also for IT services. Increased globalization will decrease prices and increase demand, thus stimulate the diffusion of IT in the U.S. economy which in turn will have positive effects on productivity and growth.

Mann has also studied the effects of globalization on the changes in the mix of IT jobs.[33] Looking at the development between 1999 and November 2003, the number of lower paid IT-jobs decreased while the number of higher-paid IT-jobs increased. The trend is apparent also in occupations in IT-using industries, where there have been

[32] Mann, Catherine (2003)
[33] Mann, Catherine (2005)

substantial job losses among less skilled and lower paid occupations e.g. telemarketers, switchboard operators, data entry keyers and computer operators.

In a report by McKinsey Global Institute[34] some effects on the U.S. economy are discussed. The study concludes that for every $1 of U.S. labor cost offshored, $1.45–1.47 of value is created globally. The U.S. captures $1.12–1.14 of this, while the receiving country captures only 33 cents. The gains have four sources: reduced costs, new revenues, repatriated earnings and redeployed labor.

A study by research firm Global Insight, commissioned by the Information Technology Association of America, finds several positive effects on the U.S. economy.[35] Offshore IT spending lowers costs, which in turn influences the inflation rate and productivity. The result is a positive effect on real GDP. By 2010, the report concludes, real GDP is expected to be $147.4 billion greater than had offshoring not taken place. The figure for 2005 is $68.7 billion[36]

The studies above have concluded that offshoring will have positive effects on the U.S. economy. But is everyone as positive? Well, the majority seems to agree that offshoring will mainly have positive effects. However, there is also general agreement about the fact that there will be adjustment costs related to this. The effects on the economy are obviously related to how important these costs are considered to be. Hence, if you believe the number of jobs that will move offshore is great, the corresponding adjustment costs will also be great.

There are also studies, e.g. by William Baumol and Ralph Gomory[37], that argue that offshoring may have negative effects on the economy. This will happen if the countries to which activities are relocated become more productive in producing the *same* goods and services as e.g. the U.S. Then, the U.S. companies would loose competitiveness and offshoring will thus have a negative impact on the U.S. economy.

In summary, according to the studies reviewed above, offshoring seems to have mainly positive effects on the economy even though there are related adjustment costs. Unfortunately, there has to our knowledge been no similar studies made in Sweden. However, there is nothing evident that indicates that the results would be very different for Sweden.

[34] McKinsey Global Institute (2003)
[35] Global Insight (2005)
[36] The US GDP was approximately $12 500 billion in 2005
[37] See e.g. BusinessWeek Online (2005)

3 The extent of Swedish offshoring – the statistical evidence

Following the public debate in Sweden we see headlines such as:

- Här finns de nya jobben – Here are the new jobs[38]
- IT-utvecklingen flyttar från Sverige – IT development moves from Sweden[39]
- Telelogic flyttar jobb till Indien – Telelogic moves jobs to India[40]
- Vi har bara sett början av trenden med outsourcing – We have only seen the beginning of the outsourcing trend[41]
- Problem med jobbflytt – Problems related to the move of jobs[42]

Sweden is evidently not unique and headlines like these can be found in newspapers in many countries today.

Reading this, you easily get the feeling that what we are witnessing is something of a revolution, that the flows are large and rapid and that there is cause for concern. In the U.S. the opposition to and protests against offshoring have been vocal and in Sweden we have seen similar tendencies. But is it a revolution we are witnessing? What are really the facts (if there are any)? In this section, we use different statistical sources to describe Swedish offshoring of IT-services.

3.1 Trade with IT services

Sweden is a small country with a long tradition of being an open economy with substantial international trade. Trade in services is increasing rapidly; between 1998 and 2005, the trade balance in services went from a deficit of 13 billion SEK to a surplus of 60 billion SEK.[43] The service sector plays an increasingly important role in the economy. During 2005, exports of services accounted for almost 1 percentage point of the 2.7 percent GDP growth that year.[44]

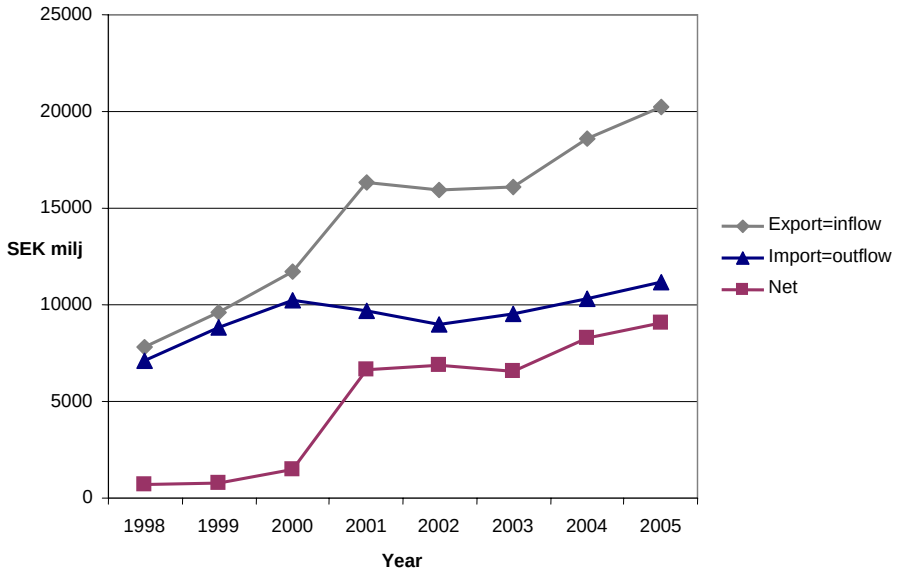
When a firm decides to buy services from a supplier abroad we see this in the statistics of trade in services. As mentioned above, trade in services is something that is relatively new but increasing. As was also mentioned, data on trade in services is usually

[38] Veckans affärer (2005)
[39] Ny teknik (2005a)
[40] Dagens Industri (2006)
[41] Ny Teknik (2005b)
[42] Computer Sweden (2005)
[43] Riksbanken, Balance of Payments
[44] Statistics Sweden (2006)

considered to be less exact than data on trade in goods. A substantial part of the traded services is likely to be trade within multinational companies which is not always recorded.[45]

The balance of payments includes a category for computer and information services. These may e.g. be database services, data processing, software implementation as well as news agency services including the provision of news and photographs.

Figure 2 Trade in computer and information services, 1998–2005



Source: Riksbanken, Balance of Payments[46]

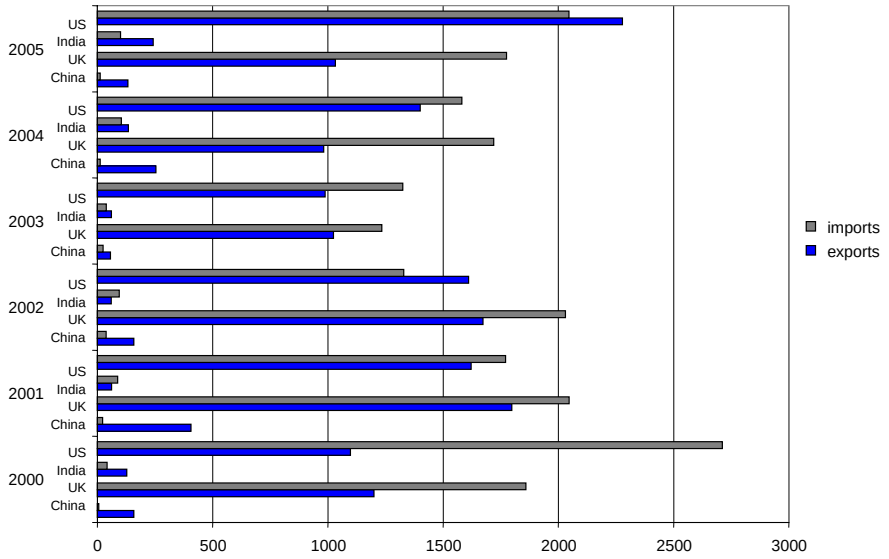
In figure 2 we see that trade in computer and information services have increased since 1998, particularly exports showing a rapid increase. We can also see that Sweden has a trade surplus in trade in this category. During the period 1998–2005, Sweden's export of services in general more than doubled and the imports increased by 55 percent. Exports of computer and information services increased at an even higher rate, by almost 160 percent, while imports increased by 58 percent. The main trading partners are the U.S., Germany, U.K. and Norway for exports as well as imports. We have a substantial trade surplus with EU trading partners such as France, Ireland and Italy but

[45] The so called third mode of trade in services according to the GATS agreement, i.e. when a supplier establishes a permanent presence in another country. See e.g. Kirkegaard, Jacob F. (2004) for a discussion on the limitations of trade data.
[46] Since the figures are from the balance of payments, exports are measured by the inflow of currency and imports by the outflow of currency. Categories 410 Computer services and 411 Information services.

also with Saudi Arabia while we have a deficit in trade with the UK, Norway and Denmark.

How has trade developed with a number of countries that are interesting when discussing offshoring? The following graph shows the development of trade between 2000 and 2005 in computer and information services with the UK, US, India and China.

Figure 3 Trade in computer and information services 2000–2005



Source: Riksbanken

This illustration gives rise to a few comments. It is rather difficult to discern any strong trends, maybe with the exception of the fact that trade with India has increased. However, it is still only a fraction of the trade with the US or the UK. Trade with China fluctuates. Trade with the UK and the US is still substantial, even though it also shows some fluctuation. Hence, it is difficult to draw any decisive conclusions from this. Estonia is not included in the figure; however trade with Estonia is almost negligible.

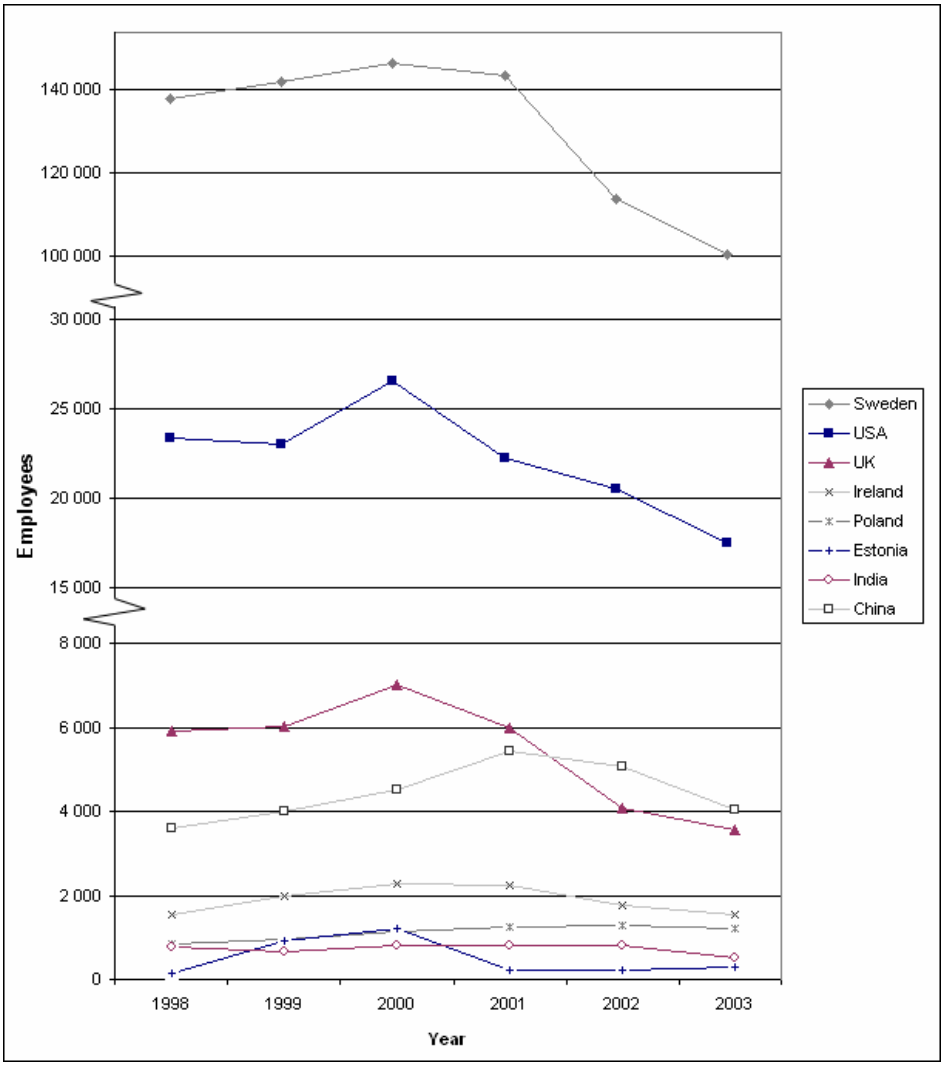
3.2 Swedish international companies

Given its size, Sweden has a large number of multinational companies. In 2003, there were a total of 844 Swedish-owned groups with business operations abroad. These companies had almost one million employees abroad and half that number in Sweden.[47]

[47] ITPS (2005c)

The vast majority of the employees are found in Europe and the U.S, only about 15 percent are found in Eastern Europe, the Baltic States and Asia.

Figure 4 Employment by Swedish International ICT companies in selected countries



Source: ITPS, Swedish controlled enterprise groups with subsidiaries abroad 2003

Figure 4 above, shows the number of employees that the Swedish ICT sector, both manufacturing and services[48] has in a number of countries. The first three; USA, UK and Ireland, represent countries that Sweden traditionally has had substantial economic

[48] Swedish Standard Industrial Classification, SNI, codes 30, 32, 33, 64, 72

exchange with, the latter three; Estonia, Poland, India and China, represent new off-shore locations. Finally, as a reference the number of employees these companies have in Sweden is included.

It is difficult to draw any decisive conclusions from Figure 4. What is clear is that there is quite a fluctuation, especially in Estonia, India and China. However, it is still possible to discern a slight tendency, starting about the turn of the century, for the number of employees to diminish in the UK, US and Ireland. This is also in line with the tendency in Sweden. It is more difficult to say anything about the other countries. Hence, one could conclude that the number of employees is decreasing in the traditionally developed countries but that this is not necessarily the case in countries that are considered low-cost countries.

It is important to underline that we do not know why the numbers decrease in some countries. It is not necessarily so that activities and functions are relocated to other locations. We also have to consider the fact that during the first years of this century, the ICT sector experienced a severe downturn. It is important to underline that we do not know why the numbers decrease in some countries. It is not necessarily so that activities and functions are relocated to other locations. We also have to consider the fact that during the first years of this century, the ICT sector experienced a severe downturn. In a chapter of a forthcoming study by ITPS on the internationalization of corporate R&D, the developments in India are studied.[49] It is noted that there are limitations to employment data, e.g. originating from the fact that only majority owned Swedish companies are included. If the Swedish ownership share is below 50 percent, employment in these companies is excluded. Also, only employment in companies classified as ICT-companies is included, meaning that employment in ICT in ICT-using companies is not included. This implies an underestimation of the actual employment in ICT by Swedish companies.

In a few years it might be possible to see whether it was a temporary dip or whether it is actually a change of trend. Unfortunately there is a delay in the production of these statistics, the figures for 2004 are still not available. However, it will be important to continue to follow the development.

3.3 International presence in Sweden

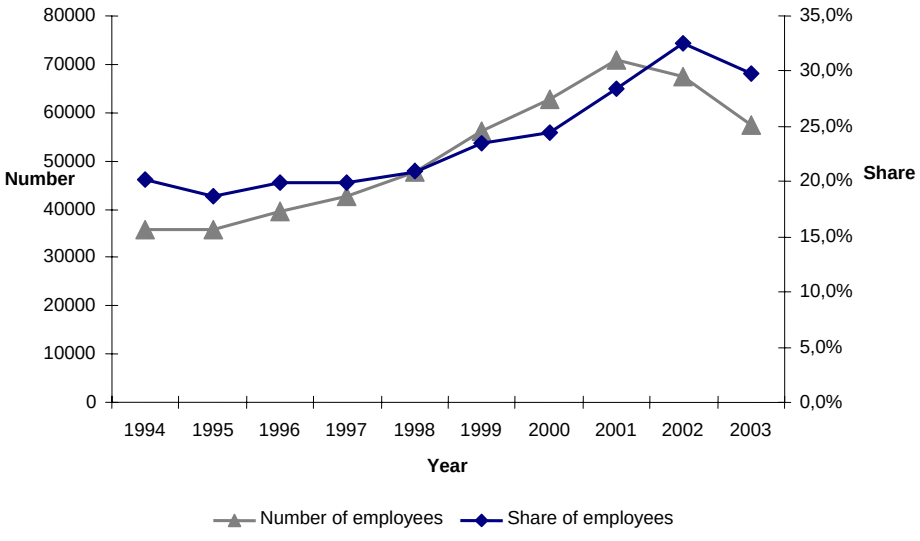
Obviously, globalization does not mean that flows just go from high-cost to low-cost locations (even though the flow to low-cost locations seems to get most of the attention at the moment). It is therefore interesting to look also at the international presence in Sweden.

[49] Mitra, Raja M. (2006)

3.3.1 Foreign controlled companies in Sweden

Figure 4 below, shows the development of the number of employees that foreign owned ICT companies have in Sweden (irrespective of what country the parent company originates from). We see that the number reached a peak in 2001 and has since decreased, coinciding with the downturn of the ICT industry. We also see that the share of employees employed by a foreign controlled company has increased from approximately 20 to 30 percent between 1994 and 2003 even though the share became smaller in 2003.

Figure 5 Employment by Foreign Controlled ICT companies in Sweden

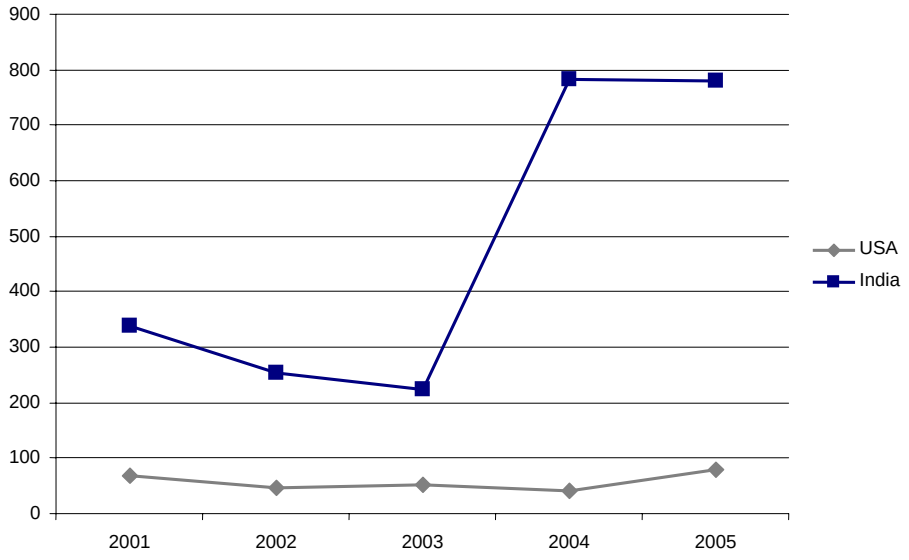


Source: ITPS, Foreign controlled enterprises

3.3.2 Temporary work permits in Sweden

In order to work in Sweden for a longer period of time, individuals need temporary work permits. It is interesting to follow the development of these permits since if companies in Sweden buy services from Indian companies or establish subsidiaries in India, it is also likely that they will bring in employees from India temporarily. This could be the case when a project is to be delivered to a client, or when employees in Sweden and India need to work face-to-face on a common project.

Figure 6 Temporary work permits for computer, electronics and telecommunications specialists 2001–2005



Source: The Swedish Migration Board

We can see that the number of temporary work permits for computer, electronics and telecommunications specialists from India has increased substantially while the number from the U.S has stayed rather constant. Between 2001 and 2005, the total number of permits has decreased from around 15 500 to approximately 8 000. India has risen to become the number one nationality, with 14 percent of the total number of work permits granted in 2005.

3.4 Statistics on restructuring

When a company decides to relocate production from one facility to another it is considered a type of restructuring which increasingly takes place across national boundaries. Two sources that can be used to measure the restructuring of companies are the layoff notice statistics published by the Swedish Labor Market Board and information gained from press reviews. Both sources have strengths and weaknesses that are further discussed in two recent reports from ITPS.[50]

[50] Mattila, Lars and Ann-Christine Strandell (2006) and Jonsson, Viktor (2006)

The Swedish Labor Market Board produces statistics on the number of layoffs that companies are planning.[51] During 2005, 1979 persons in Computer related activities[52] were affected by notices as were 2 548 persons in manufacturing of telecommunications products etc.[53] However, the final number of persons who actually had to leave is not known. The Swedish labor market board is also following up the reason for the layoffs, and since January 2005 relocation is one such category. Here we find that of the 1979 persons in computer-related activities, 443 were affected by relocation, the majority by relocation within Sweden but 118 by relocation abroad. It seems to be slightly more common for computer-related jobs to be relocated abroad than for jobs in other sectors.

Looking at information published in Swedish newspapers during the period September 2003–December 2005, a total of approximately 7 500 jobs in the whole ICT industry (both goods and services) were the object of restructuring activities. Half of these, a little over 3800, were affected by closure. Of the rest, 851 were said to have been relocated to another country, 150 by international outsourcing and another 890 were affected by a relocation that took place both within Sweden and abroad. If we estimate that 50 percent of these were relocated internationally we have a total of 1 146 jobs that were relocated internationally during this period. Some of these jobs were located to low- wage countries but not all.

3.5 Effects on the demand for labor?

The scope of the present report is too limited for an analysis of the possible effects that offshoring is having on the demand for labor in Sweden and how the composition of the IT workforce is developing. But there is some research being done in this area and one recent study shows that offshoring to low income countries tends to shift labor demand away from workers with an intermediate level of education.[54] In another study, it is shown that when Swedish multinational companies have increased investments in low income countries, they have decreased the demand for less skilled labor in Sweden.[55] This indicates that production that is being relocated off shore uses relatively more low skilled labor than production that takes place in Sweden.

Here we can also mention the research by American economists Jensen and Kletzer who have studied the impact of offshoring on workers in tradable and non-tradable sectors in the U.S.[56] They find that those employed in tradable services activities have

[51] If an employer is planning to lay off more than five employees, he is required to inform the Labor Market Board.
[52] SNI-code 72
[53] SNI-codes 30-32. These two sectors do not completely correspond to the OECD-definition of the ICT-sector, e.g. telecommunications (SNI-code 64)is excluded.
[54] Ekholm, Karolina and Katariina Hakkala (2005)
[55] Hansson, Pär (2004)
[56] Jensen Bradford J. and Lori Kletzer (2005)

higher skill levels and are paid higher wages than manufacturing workers or workers in non-tradable service activities. There is also a higher level of job insecurity in tradable activities. The rate of job loss is higher in tradable industries than in non-tradable industries.

3.6 Conclusions

The data presented in this section gives some support for the belief that there is an increase in offshoring of IT services. We have seen that trade in computer and information services is increasing, e.g. with an offshoring country like India. A recent study by the OECD examines the share of employment potentially affected by offshoring.[57] The results indicate that the exports of other business services and computer and information services are positively associated with the share of employment potentially affected by offshoring. If these results are valid for Sweden, the rapid increase in exports of IT services would indicate that the number of individuals that could be affected is relatively great.

There is also a slight tendency for Swedish IT companies to increase the number of employees in offshore locations. The number of temporary work permits granted to Indian nationals has also increased indicating increased cooperation with Indian companies (affiliated or not). However, looking at figures of actual relocation of jobs to international locations we see that the figures are almost negligible. Here, a few comments are necessary. The first is that there is a possibility that companies do not want to disclose the reasons for layoffs. To publicly state that jobs are to be moved offshore may be sensitive and companies may choose to state another reason for layoffs. Hence, the numbers may be greater than reported. Secondly, it is likely that many of the jobs that are created offshore are new jobs that were never in Sweden in the first place.

[57] OECD (2006)

4 Experiences and future development – the business evidence

Statistics and figures give one picture of the present developments. But there are disadvantages in relying only on statistics, they do not give us the whole story. One example is that there is a delay in the production of statistics, so trends may change which will not show in official statistics until a few years from now. Also, as touched upon above, there are measurement problems. So, in addition to what we can learn from figures and numbers, it is important to get an idea of what the people behind these figures are thinking. How do industry leaders reason? What are the factors driving them? What are their opinions on where we are today and what the future will bring? What are the views of Indian and Estonian companies of the Swedish market?

The following section is to a large extent based upon a number of interviews (21 in total) with representatives of IT-producing and IT-using companies.[58] The intention has been to interview a selection of companies, in order to see whether there are differences in attitudes to, and experiences of, offshoring. We have therefore interviewed both larger and smaller companies as well as companies with a varying degree of experience of offshoring. Furthermore, the majority of the interviewed companies are Swedish or foreign-owned companies in Sweden. However, we have also conducted a number of interviews in Estonia where we talked to both Swedish-owned and Estonian companies. We have also interviewed Indian companies in Sweden. We found that many of the interviewees point to similar trends and make similar observations. In the following section, only explicit differences between different kinds of companies will be mentioned.

4.1 Everyone talks about offshoring…

There is no doubt that offshoring is an issue that is high on the agenda of many companies in Sweden as well as in other countries around the world. Strategies are being developed and discussions are taking place in boardrooms.

Everyone is talking about offshoring, everyone has an opinion and there is a general agreement that offshoring is here to stay. A common perception is that there has been an increase in recent years and the development is expected to continue, probably at an even higher pace. Many stress that what we see today is not something new. Rather, we can draw a parallel to earlier developments in other industries. IT services are following textiles and manufacturing, and, after IT services, other industries will follow and be faced with the opportunities and challenges of globalization. Technological advances and hence lower costs of communications are generally considered to be what has made

[58] See the list of references for a complete list of interviews made.

offshoring possible. Many of the companies interviewed also stress that globalization is not something that can be stopped or hindered. They point out that a lot of people seem worried over the loss of jobs but that knowledge of what is really happening seems scarce. The right answer should be to be open to and take advantage of globalization.

4.2 …and many are doing it…

It is clear that many of the Swedish companies interviewed, have part of their activities abroad even though the extent and the forms differ. The Indian and Estonian companies are of course already at offshore locations. There is nothing pointing towards a decrease in the amount of offshoring activities, rather the contrary – the general feeling is that there will be a continued expansion off shore.

What are the driving forces for the companies to offshore production? In section 2.2 we looked at Dunning's three motives: costs, market and competence. Judging from our interviews, cost-cutting is by far the most important driving force. In markets with fierce competition, anything that cuts costs is looked upon with interest. There is a general pressure from customers to lower the cost of production and when it is not possible to do this in Sweden (cost of labor is mentioned as a problem), companies start to look at locations offshore. However, "costs" is a multifaceted concept. It is easy to look primarily at the cost of labor but there are also costs related to e.g. cultural differences, distance, administration etc. Several of the interviewees stress that it is important to look at all aspects, otherwise the gains made from lower labor costs will be obliterated by the increased costs due to other factors. Some of the interviewees also underlined that costs are not the only reason, for a few not even a main reason. However, taken together, the impression from the interviews is that costs are central to many offshore decisions.

To offshore in order to get access to new markets does not seem to be a major reason for the majority of companies. Some companies set up facilities in markets they also have an interest in, but this does not seem to have been the decisive factor. One aspect of the market perspective however, is that customers are influencing location decisions. Say for example that a big client has a major operation in China, then this company wants support also locally, hence an IT-supplier will set up operations in China. So, the more globalized the customers become, the more globalized the IT-suppliers will be.

The competence motive, to get access to competence that is not available in the home market, does not seem to be a major reason to offshore production either. If the issue of competence is mentioned it is not that the specific competence is not available in Sweden but rather that the price is too high, hence it is actually an issue of cost. Since the bubble burst in Sweden at the beginning of 2000, the supply of labor is generally considered to have been sufficient. However, it is beginning to show that the Swedish market is picking up, wages are on their way up and it is beginning to be more difficult to recruit key

personnel. Several of the interviewees also underlined the high level of competence available in e.g. India and Estonia. Every year 2.5 million people graduate from universities in India, 250 000 of whom are engineers[59] and more than half of the companies that are certified at SEI CMM level 5 are from India.[60] The quality of higher education in e.g. science and maths in the former East European countries was also stressed.

Another factor of importance that was mentioned is that speed and time to market has increased rapidly over the last say 10 years at the same time as a product's life cycle has decreased. By using facilities in different locations and in different time zones, product development times can be made shorter.

A commonly held view is that offshoring is facilitated by the fact that production tends to be divided into smaller and more distinct parts and tasks are standardized. This allows a firm to have different production facilities in different geographical locations. We found support for this also in our interviews, especially when it comes to the large multinational companies. Today it is possible to deliver services whose parts have been produced at different locations. Production facilities are located where they are most needed and can serve larger areas and countries. This is mutually reinforcing; when more than one location is used so the need for standardized and common processes becomes more evident. There is also an issue of economy of scale; one facility can serve customers in different locations.

These were a number of driving forces behind offshoring. But is it possible to say anything about where the initiative to offshore comes from? Judging from our interviews but also from media reporting, there seems to have been somewhat of a "copy-cat" situation during the last few years. Everyone does it – so should we! The fact that there appears to be a positive correlation between the announcement of an outsourcing decision and share price, gives some support for this.[61] Other companies' actions also serve as an inspiration. As an example, the fact that Skype has a development center in Estonia creates interest among other companies.

From IT-using sectors we also hear that the IT-suppliers themselves are driving outsourcing and offshoring. Companies should focus on their core business and should not deal with IT, the argument goes. Once again, cost-cutting that has been central to many offshoring discussions is attractive to any board. Finally, venture capitalists may influence a decision to offshore activities. In the U.S, venture capital companies may encourage or insist that companies they are investing in should use offshore strategies.[62]

[59] Economist (2005)
[60] SEI CMM, SEI is Software Engineering Institute that developed the Capability Maturity Model for evaluating and measuring the maturity of the software development process of organizations on a scale of 1 to 5. There are less than 100 that are certified at level 5.
[61] Cohen Linda and Allie Young (2005)
[62] See e.g. Jonsson Franchi, Helena (2006) and Association of Computing Machinery (2006)

We have not found any evidence of this in Sweden; however the majority of companies interviewed are not financed by venture capital. One company also stated that the fact that they already had development abroad was viewed favorably by venture capitalists.

Several of the interviewees underline the fact that the acceptance from the customers has increased during recent years. A few years ago there was a greater uncertainty and the knowledge of offshore production was not as great. Today, clients have more experience and accept that a service can be produced almost anywhere and still be delivered locally. It seems as if the more competition that customers experience the more interested in an offshoring alternative they are. As a generalization, the public sector seems to be less keen on offshoring while global companies are much faster in accepting new delivery forms. We asked whether the clients have an opinion regarding where the services are produced. This does not seem to be the case when the customer is of a certain size, the only thing that matters then is the service level agreement (SLA). For smaller companies however, the importance of local presence seems greater, at least initially.

On the question of where production is located today and what regions will be of interest in the future, there were no surprises. Countries like India, China[63], the Baltic states, and Russia are mentioned. It is difficult to draw any conclusions from this small sample. However, we can note that the countries mentioned correlate well with the countries cited in different studies.[64] Many countries have some kind of agency or activities in order to attract foreign investments. However, the companies that we have interviewed do not seem to have used these kinds of services to any great extent. Also so far as location is concerned, the importance of knowledge of English is stressed by several interviewees.

Many of the interviewees also underline the fact that the scene is constantly changing – companies will need to review location decisions. But on the question of whether production could also be relocated back "home" to the Swedish market, the answer was: what's home? reflecting the fact that most of the companies interviewed are global companies. Sweden will be evaluated just as other locations. Given the fact that costs are driving offshoring, most companies do not believe that production that has been relocated to low-cost countries will be relocated to Sweden. Both the Estonian market and certain Indian locations are experiencing high wage increases and high labor turnover, and many believe that the cost advantage will decrease in the coming years. This seems to be especially true for Estonia where the wage gap is expected to close in somewhere between 5 and 15 years. Companies in Estonia mention countries like Ukraine, Poland, Romania and Russia as countries that will become more interesting.

[63] In China, manufacturing still dominates even though R&D is increasing. For more information on Swedish presence in China, see Schwaag Serger, Sylvia (2005).

[64] See e.g. Annual Global Services Location Index, A.T. Kearney, November 2005 where India and China tops the list and Russia is on 27th place. Also, EITO (2005), India is said to have the highest IT offshoring activity, accounting for more than 88% of total offshoring spending by Western European companies. Eastern Europe and Russia follow with an 11% share.

The Indian market is of course much larger, but here we see companies that choose to establish in other cities and not necessarily in Bangalore.

Some companies have chosen to work with partners thus allowing a greater degree of flexibility should they want to change locations. Others have their own affiliates in offshore locations. One company pointed out that the cost savings are greater if the activities are done in-house. However, to be able to run an own affiliate, the size of the business cannot be too small according to this company.

Fears that jobs will be moved to offshore locations resulting in job losses are raised on different occasions, e.g. in the media. What are the experiences of the companies interviewed? There seems to be few cases where jobs have actually been relocated and where employees in Sweden are laid off. A common case is rather that the jobs that are created offshore are part of an expansion that the company chooses to do offshore instead of in Sweden, partly due to the fact that costs are considered too high in Sweden. As a generalization, the activities that are relocated are more often lower level development and labor-intensive tasks while the higher end tasks stay closer to home. However, this is not a static situation. American multinationals are leading the trend of setting up R&D centers in India. There is nothing that indicates that we will not see an increase in R&D offshoring also in Sweden.

4.3 … but there are also limitations and some are more skeptical…

But there are others who are more skeptical. As time has passed, we have seen an increase in reports of not-so-good experiences. Gartner for example, estimates that 50 percent of outsourcing contracts (i.e. not necessarily offshore) signed between 2000 and 2004 will fail to meet expectations.[65] Similar results are found in a recent study of the Swedish outsourcing market by Accenture.[66] In a report by PriceWaterhouseCoopers[67] on offshoring in the financial services industry it is noted that the satisfaction levels in offshore projects have been low; only 50 percent in their survey stated that they are satisfied. They point to the fact that there has been a tendency to underestimate costs and to take little account of cultural differences.

Some of the persons interviewed also expressed a more skeptical attitude. They are of the opinion that adjustment costs of relocating production are too high. What you gain in lower production costs (mainly cost of labor) is too small to compensate for the increased costs related to e.g. distances. The issue of management becomes extremely important (and costly).

[65] Cohen Linda and Allie Young (2005)
[66] Accenture (2006)
[67] PricewaterhouseCoopers (2005)

One company also pointed to more intangible and tacit knowledge that is needed to do an efficient job. It may be related to the market, the industry, the product and, where this is lacking, this will mean less efficient production.

Also companies that do have offshore activities point to similar limitations and challenges. Greater distances are often accompanied by greater costs, the importance of standardization and common processes increase, management and communication is vital, it is important to have wider knowledge of the industry and the products. Some have also experienced high wage increases and a high labor turnover rate. It seems to be easier for larger companies to handle this since they can offer other forms of remuneration (e.g. a career within the company) than a smaller company can do. There are also adjustment costs related to staff in Sweden that may have to be retrained or, in certain circumstances, laid off. Finally, the client is always local and the importance of local presence cannot be neglected.

We see rather few differences between the opinions and experiences of companies that are present in the Estonian market and those in the Indian or other markets further away from Sweden. Evidently, greater distance increases risk and costs and those on the Estonian market underline the benefit of being close to Sweden (not only geographically but also culturally). But on the other hand, wage inflation is very high and companies are already looking for locations in countries around Estonia. Given the size of the Indian market, issues such as wage inflation – even though a problem – could be handled by going to other cities and regions. We also got the impression that the importance of the local market is greater for the companies in Estonia than for those in India.

Issues of potential problems and limitations appear fairly well defined. Whether a company chooses to offshore production or not will depend on the relative importance attached to these issues.

4.4 …however, the flow will continue.

What do we know of what is happening around the corner? Will the pendulum swing back, resulting in less interest in the offshore markets? From the evidence available to us, there is nothing that indicates that the offshoring trend is about to slow down. Rather the contrary. Many international studies indicate an increase in offshoring and the data presented in this study also gives some support for this. However, the developments might not be as dramatic as some articles and reports indicate. It appears that there have been cases where companies have underestimated the costs of moving production and the gains have consequently not been as great as expected. However, knowledge increases and it is likely that companies will be able to make better informed decisions. There is also the increased interest from and acceptance by customers that is likely to have a positive impact on the scope of offshoring. As pointed out in section 2.1, an increase in outsourcing may lead to an increase in offshoring. A study

by Accenture indicates a strong development in IT outsourcing during the next three years.[68] The study also concludes that Swedish decision-makers are more open to use suppliers in low-cost countries than are their Scandinavian counterparts.

The world continues to globalize and so do people and businesses. Sweden has a long history of being an open economy; the Swedish industry is highly internationalized and will continue to be so. That businesses that are faced with competitive pressure look at ways to increase their competitiveness e.g. by lowering costs, is only natural business behavior. Anything else would be surprising.

[68] Accenture (2006)

5 Challenges for Swedish competitiveness and possible policy responses

In the globalized world, countries need to stay competitive in order to continue delivering wealth to their citizens. What can we say about challenges that Sweden is facing in the light of globalization and increased offshoring of IT services? What are possible actions that policy makers can take in order to meet these challenges? In this section we will consider these issues. We point to a number of possible areas of policy response. The objective is not to present an exhaustive list or formulate concrete policy recommendations; rather it is just to highlight a few areas where policies need to be developed.[69]

In spite of Sweden being a country with a long history of openness to the world, the political debate on the consequences and challenges of globalization is still fairly limited. Sure there are initiatives, such as the project Teknisk Framsyn (Technological Foresight)[70] and the recent book by the leader of the Liberal Party, Lars Leijonborg on the global challenges. The Government's innovation strategy also has globalization as one starting point. However, we can just go to our southern neighbor where the Danish prime minister heads Globaliseringsrådet (the Globalization Council) since last spring. This is a consultative body consisting of members from the Government (four ministers in addition to the Prime Minister), employers' and employees' organizations, industry as well as academic institutions. The purpose is to discuss Denmark's role in the global economy and a strategy will be presented later this year.[71] In the U.S, the United States Government Accountability Office responded to widespread congressional interest and worked between May 2004 and November 2005 to produce a major report on offshoring of services.[72] The press also seems more active in the debate on globalization in e.g. the U.S.

Looking at competitiveness, we find that competitiveness is not really a well defined concept even though it is widely used in political as well as in business contexts.[73] Each year a number of reports and studies are published trying to rank countries' competitiveness. There are others that focus on countries' IT penetration and readiness to use and apply new technologies. In this report we will not discuss how competitiveness is

[69] For a review of policy responses in the U.S. see GAO (2005) where four areas where proposals have been put forward are reviewed. The areas are: improving US global competitiveness, addressing effects on the U.S. workforce, addressing security concerns and reducing the extent of offshoring. In ACM (2006) there is a chapter dealing with policies and politics of offshoring in selected countries. See also e.g. Kirkegaard (2005) for suggestions of European policy response and McKinsey Global Institute (2005b) for the U.S.
[70] www.tekniskframsyn.nu
[71] www.globalisering.dk
[72] GAO (2005)
[73] For a discussion see e.g. the PTS report Konkurrenskraft och "Terms of Trade" Regleringsbrevsuppdrag nummer 3, 2005
Dnr 1-010-2005/0053

defined or study these reports, we will only note that the concept is widely used to describe nations' or companies' ability to compete.

A nation and its political leaders can be striving to become or to stay competitive. A company or an individual can do the same. But it is important to understand that the motives and driving forces are not necessarily the same. A Swedish company that decides to offshore production to say India does not do that to make Sweden more competitive than India. Instead the driving force is obviously to be more competitive than its competitors in the global marketplace. What is good and rational for an individual company is not necessarily good for a nation even though it might be. An example: if an offshoring decision leads to an increase in a company's competitiveness and a gain of market shares and this in turn leads to increased profits and an increase in the activities in the home market, both the nation and the company gain. But if the increased profits are used to expand activities in e.g. offshore markets and the original offshoring decision implied a contraction of activities in the home market then the nation loses.

How is the competitiveness of Sweden viewed by industry leaders that we have talked to? Interestingly enough, when asked about the state of Swedish IT, a range of different answers is given, going from very good to very bad. However, when trying to acquire more information on what the strengths are, several of the interviewees are of the opinion that Swedish companies are good at complex problem-solving, teamwork, management, knowledge of system operations etc. The high level of "IT literacy" is also highlighted as a strength of Swedish society.

A number of issues or challenges emerge as important to a continuing discussion of Swedish competitiveness.

5.1 High level competence – in great demand

In a traditional case of structural adjustment, the answer to increased competition from low-cost countries is to climb higher up the value ladder. If lower level IT-jobs are performed offshore, we need to concentrate on the higher level. To do this, skills and education are vital. The first challenge is consequently how to make the Swedish market one characterized by a high level of competence.

Sweden has witnessed a sharply decreasing interest in IT-related education during the last few years. Between the academic years 2000/2001 and 2003/2004, the number of students in IT-related university programs decreased by 40 percent even though the last 1 or 2 years have indicated a renewed interest.[74] The Government, universities and the ICT industry are working to stimulate interest in higher education in IT-related fields,

[74] Government Bill 2004/2005:175

e.g. in campaigns such as "Välj-IT".[75] It is apparent that there is a continuing need to stimulate an interest in science and technology. It is important to stress that it is not only the ICT industry that needs employees with IT skills, instead these skills are demanded also in ICT-using sectors. This needs to be done at higher levels of the educational system. However, it also needs to be done at earlier stages of the educational system, maybe already at the daycare stage?[76] This of course implies a need for the training of teachers to include technology-oriented subjects.

However, competence is not only an issue of quantity. The quality of education must also be internationally competitive. The focus from the Government has lately been on increasing the proportion of young people attending higher education and a question is whether quality aspects have been receiving too little attention. The importance of quality in the educational system cannot, of course, be overestimated. With increased mobility, knowledge and talent will be attracted to the best educational systems at all levels. The Swedish educational system is competing with the best in the world. The use of benchmarking could be explored to a higher degree in the process of improving quality.

It is also important to constantly review the need for new and changing competencies. This does not necessarily have to do with science and technology but can be related to e.g. languages and culture. Do curricula need to change or adapt? Project management skills and the experience and knowledge to run projects that cover different nations, cultures and languages will become more and more in demand. Generally, language and culture competencies will be demanded. In the U.S for example, there has been a large increase in school districts offering Mandarin programs in order to meet the future demands of the labor market. This is something we have not yet seen in Sweden. There will also be a changing demand in IT competencies. In a report by ACM, it is concluded that in countries where IT commodity production is being offshored, we will see an increased emphasis on applications knowledge and a reduced emphasis on programming skills in order to meet the demand for middle and upper level IT work.[77] Obviously, research and development, both basic and applied are of utmost importance. Different policies to increase both publicly and privately funded R&D should be explored.

In the interviews we made for this study, most companies shared the worry that the number of persons studying science and engineering has decreased. They expressed the need for continuing to create an interest among young people to study subjects like maths and science. On the issue of whether the Swedish educational system is supplying the right competencies in the right quantities or not, the responses were more mixed; some believe it is satisfactory while others are more doubtful.

[75] Välj IT can be translated to Choose-IT, a campaign that is targeting upper secondary students aiming at stimulating interest in IT-related educational programs. www.valjit.nu
[76] More than 90% of Swedish children aged 2-5 were in daycare 2004.
[77] Association of Computing Machinery (2006)

In a survey by international companies (i.e. foreign-owned companies operating in Sweden and Swedish companies that operate abroad), the importance of a good supply of high-skilled labor was considered a factor of importance for decisions to invest in Sweden.[78] The supply of low-skilled labor was not considered as nearly as important as the supply of high-skilled labor. It is worrying that a relatively large part of the companies surveyed believe that they will face difficulties recruiting high-skilled labor within the next five years.

Over the years there has been increased talk of lifelong learning and continuing education and training. In the present situation this becomes increasingly important. The workforce needs to constantly update and adapt skills and competence.

Ways to develop and expand elements of lifelong learning should be explored further. This is of course of common interest and responsibility for both the public sector and individual companies. Companies need to make sure that their employees' skill levels are adapted to a new situation with increased global competition.

When offshoring takes place, certain competencies (primarily lower level) are relocated to other locations and hence no longer available on the Swedish market (or at least not in the same quantity). A question is whether this will have any effects in the longer run. Related to this is also the fact that often an individual's career starts with lower-level, more simple jobs and then works up, becoming more and more skilled. But if the lower-level jobs are offshored to a greater extent, what will be the consequences, if any?

5.2 The importance of sophisticated demand and the domestic market

Even though production will take place at different locations around the world, the customer will remain in the local market. The importance of an advanced home market is often underlined and it will continue to be so in an era of globalization. A second challenge is therefore the importance of creating a sophisticated and demanding home market for IT services. More sophisticated and demanding customers will put pressure on suppliers to deliver innovative solutions and require close cooperation between client and supplier in order to solve complex problems. Customer contacts and customer dialogue is obviously taking place locally. Hence, if the number of advanced projects increases, it is likely to have beneficial effects on the Swedish home market.

Still, the Swedish market is limited and this obviously is something that is difficult to change. But smallness can sometimes be an advantage. In a small market, it may be easier to act and react more rapidly to e.g. new technologies and innovations. Hence, the smallness can be turned into an advantage in competition with larger markets.

[78] Vikström, Peter (2005)

Also, by placing the Swedish market even more at the forefront of development and application of new technologies, the smallness could be compensated somewhat.

Historically, Sweden has seen successful examples of cooperation between the public and the private sectors in a number of areas. The cooperation between Ericsson and Televerket are of course one such example. Today the market situation has changed, markets are deregulated to a large extent and companies do not enter these kind of long-term projects, neither do governments. It is of course necessary to adjust to a new market situation, but there are still plenty of opportunities for the public sector to act as a sophisticated agent of demand and an advanced buyer in order to develop solutions for e.g. e-government and the health sector. By using the instrument of public procurement, public agencies can procure and drive the development of new services and applications. This could be of special relevance to smaller companies that can have more difficulties entering the market.[79] If later they want to explore the international market, they have reference cases which will be an advantage.

5.3 Striving for open markets

Globalization works in all directions. Often the public debate is focused on the threatened and actual flows *from* countries like Sweden to e.g. low-cost locations. But countries such as Sweden can of course also benefit from globalization. The third challenge we have identified is the need to continue to strive for open markets.

As mentioned above, Sweden is an open economy with a long tradition of international trade and a large number of multinational companies. The Swedish Government, irrespective of the political composition, has always been a proponent of increased liberalization of trade. Evidently, it is important that this continues to be the prevailing policy. This is especially important when it comes to liberalization of trade in services, where much remains to be done in the context of multilateral negotiations.

However, there are not only goods and services that cross national boundaries, companies and people move as well. The Swedish labor market and educational system need to be open to and attract the best talents from other countries. Mobility will increase, people will come and stay a few years, then move on. Swedes will move abroad for a few years, come home and then maybe leave once again. An open society can attract talent, capital and new ideas that can work with Swedish resources to create dynamic and innovative environments. In order to attain this, both labor markets and educational systems need to be open to people from other countries and other cultures. This includes countries outside the European Union.

[79] See Tervahauta, Per och Marcus Zackrisson (2004) for an extensive discussion about how public procurement can be used to promote entrepreneurship and how the regulatory framework is viewed by SMEs.

In Silicon Valley, the number of immigrant scientists and entrepreneurs is substantial. When countries like India and China fairly recently opened their economies, some of these immigrants have returned to their home countries but kept economic and social ties to the U.S, thus creating a "brain circulation" (as opposed to the brain drain that earlier received attention).[80]

The globalized world requires countries like Sweden to have educational systems that are internationally compatible as well as competitive. The best talents should be attracted to the Swedish universities and labor market. Universities that attract international students may find that the students stay a while after finishing their studies. Universities should make sure that there are no obstacles for foreign students to attend Swedish universities. An increased mobility of professionals will also increase the demand for internationally compatible education also at lower levels. Men and women coming to work in Sweden may bring their families and Swedes that pursue an international career also demand internationally compatible education. Thus, global mobility requires global schooling. It is therefore necessary to see whether education at lower levels needs to be complemented by internationally compatible programs.

An open market attracts foreign capital. Sweden, as well as many other countries, has agencies at both national and local level working to attract foreign investments. There is a continuing need to work to attract foreign investment to Sweden. We have also seen an increased presence of companies from offshore markets that have established offices in the Swedish market. Indian giants Wipro, Infosys and TCS have had activities in the Swedish market for a number of years, creating competitive pressure on companies already established on the Swedish market. Their activities are still fairly limited, but given the increased acceptance of and interest in offshore production of services, it is not unlikely that they will expand their business here. A question is also whether they will expand by acquiring companies locally.

When an increased portion of the services production takes place in offshore locations, the need for employees from these locations to come to Sweden, e.g. to work closer to the client, will increase. In section 3.3.2 we could see an increase in the number of temporary work permits granted Indian computer specialists. It is important that administrative procedures linked to e.g. work permits are simple and flexible in order not to put unnecessary burdens on the companies and/or hinder talent from entering the Swedish market.

[80] Jonsson Franchi, Helena (2006)

5.4 The need for dynamic, innovative environments

As globalization works in several directions, could Sweden be an offshore location for some kinds of production? Offshore production carries a connotation of low cost or low wage, and even if Sweden is a low-cost country e.g. compared to the U.K or parts of California, it is unlikely that Swedish companies could compete with low costs. And it is probably not desirable. Instead, the strengths of Swedish companies lie with complex problem-solving, the development and application of new technologies and innovation, i.e. the creation of intellectual property. Hence we need to make sure that the Swedish market is a thriving seedbed for new ideas and new innovations that may later compete on the global market.

A fourth challenge is therefore the need for dynamic and innovative environments where new companies can start up and grow and where companies in cooperation with the public sector and foreign talent can create new ideas and new innovations, thus climbing the value chain. In a sense, the need for dynamic, innovative environments summarizes the challenges outlined above since in order to create such environments it is necessary to have world-class education and R&D, to have an advanced domestic market and to be open to capital and talent from abroad. The availability of venture capital is of course another factor of importance for innovation.

In his books and theories on the creative class Richard Florida, a professor at George Mason University, argues that it is the creative class, i.e. people who add economic value through their creativity who are central for economic growth. Places (cities, regions, countries) that have the three T's of economic development i.e. Technology, Talent and Tolerance, will be more successful than others. Sweden is considered to be at the top of the list of the Global Creativity Index.[81] A recent paper from ITPS scrutinizes Florida's conclusions concerning Sweden's position in the creativity ranking.[82] The conclusion is that even though much of Florida's analysis is valid, there are also flaws in the evaluation of Sweden, e.g. the level of tolerance may not be as high after all (judging e.g. by the difficulties that immigrants have in integrating into Swedish society and the labor market). Whether or not Florida's present analysis of Sweden is correct, his thinking on the creative class is interesting and relevant in the context of increased offshoring and globalization.

The Swedish Government presented its innovation strategy, 'Innovative Sweden – a strategy for growth through renewal', in June 2004 and recently strategies for certain sectors have been presented (e.g. telecommunications, automotive and biotech). However, all the objectives of the original strategy are yet to be fulfilled.

[81] Florida, Richard (2002/2004) and (2005)
[82] Magnusson, Lars (2006)

6 Conclusions and suggestions for further studies

In this report we have looked at statistical and qualitative evidence to describe the scope of offshoring. We have also discussed what challenges the present developments bring to Sweden.

During the last few years there has been somewhat of a buzz when it comes to offshoring. There has been much talk and a lot has been written about new markets where companies can save much money by relocating production. But lately, the number of new articles seems to have become less and the big headlines are not as frequent. Are we witnessing a dying hype? Absolutely not. Sure, there are fewer headlines but in real life companies are becoming more and more internationalized, both suppliers and customers. There is an increasing acceptance from customers that also services can be produced in different locations around the world. All evidence presented in this report points to an increasing trend in offshoring, a trend that to a large extent is led by American and British companies.

Offshoring of production does not necessarily mean that jobs are actually moved from Sweden to offshore locations. Indeed, the evidence indicates that at present this is often not the case. Instead, it seems as if it is new activities or an expansion of existing activities that is taking place offshore. Costs are often central to offshoring decisions. Even though we have no statistical evidence, most activities offshore seem to be lower level development tasks. Judging from the development in the U.S, it is not unlikely that we will see an increase also in higher level tasks and R&D.

Sweden is a country with a long history of being open to the world. But are we doing enough to meet and to take advantage of this new wave of globalization? The conclusion of this report is that there are policy areas where actions should be considered. We indicate a number of challenges that need to be met by both policy makers and industry. There are actions that need to be taken in order to improve quality of education and competence. With increased mobility, knowledge and talent will be attracted to the best educational systems at all level. The Swedish home market can be stimulated e.g. through an increased demand from an advanced and sophisticated public sector. Using public procurement, the public sector can play an important role in the market by intelligent purchasing of new technology and new applications. Swedish society must become more open to talent and competence from other countries by having an open labor market and educational system. Finally, there is a need to create environments where new ideas and innovations can be fostered. This includes having a business climate where taxation, labor market regulations etc are conducive to the growth of companies.

This report has a limited scope and there are a number of issues that would benefit from further studies. A few of these are mentioned below:

- There is a continued need to follow the extent and the development of the extent of offshoring, i.e. to acquire a deeper understanding of the issues discussed in this report. New and better data are needed.
- What are the effects on the demand for certain IT skills? What jobs or tasks are moved offshore and what new ones are created? Will we follow the textbook example and offshore the lower level tasks and create higher level ones? How will wages develop? What are the consequences for the educational system?
- What will be the consequences for the Swedish ICT sector? How will its competitiveness develop?
- What are the effects of offshoring in the recipient countries? This could e.g. be effects on growth, income distribution, human rights or corporate social responsibility etc?

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Small ICT Company, December 2005

Large multinational ICT Company, January 2006

Large multinational IT-using Company, March 2006

Appendix

The ICT Sector is defined in the following way since 2002. The NACE codes correspond to the SNI02-codes.

NACE Rev. 1.1	NACE activities
ICT Manufacturing	
30	Manufacture of office machinery and computers
31.3	Manufacture of insulated wire and cable
32	Manufacture of radio, television and communication equipment and apparatus
33.2	Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes except industrial process control equipment
33.3	Manufacture of industrial process control equipment
ICT Services	
51.84	Wholesaling of computers, computer peripheral equipment and software
51.86	Wholesaling of other electronic parts and equipment
64.2	Telecommunications
71.33	Renting of office machinery and equipment, including computers
72	Computer and related activities

The Swedish Institute for Growth Policy Studies (ITPS) is a Government Agency responsible for providing policy intelligence to strengthen growth policy in Sweden. ITPS primarily provides the Government Offices, Members of the Swedish Parliament, other state authorities and agencies with briefings based on statistical material, policy papers and key analyses. Business policy and regional development policy are areas given high priority.

Changes in policy should be based on:

- Statistic data and analyses of the structure and dynamics of industry – to obtain an up-to-date view of future challenges and opportunities.
- Evaluation of results and effects of policy measures and programmes – to provide benchmarks and learn from measures implemented earlier.
- Policy intelligence in order to look outwards and ahead – what issues are likely to come on the growth policy agenda in the future?

These represent the principal missions of ITPS.

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