

# Teldok

IOIE

## *20 seconds to work*

*Home-based telework*

*Swedish experiences from a European  
perspective • State of the art 1995*

Lennart Forsebäck

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TELDOK was initiated in 1980 by the Board of Telia, Sweden's largest telecommunications operator, to facilitate early and easy-to-read documentation on the use of telecommunicating information systems.

TELDOK aims at documenting, as early as possible, working applications of new information systems and arranging study trips and seminars directly related to this task.

TELDOK activities are coordinated by an Editorial Board with wide representation from the IT corporate user community, academia, trade unions, government authorities, suppliers, and Telia AB.

The TELDOK Editorial Board welcomes new ideas concerning the study and documentation of working applications of new communications technology systems. The Editorial Board can best be reached by sending email to PG Holmlöv, Telia, 100070.1724@compuserve.com.

TELDOK has issued more than 150 publications, mostly in Swedish, that are distributed regularly and at no cost to 3,700 professionals in Sweden and the Nordic countries. Other recent TELDOK publications in English include...

TELDOK Report 90E: *Telecottages, telework and distance education*. June 1994.

TELDOK Report 89: *Office Information Systems*. May 1994.

TELDOK Report 86E: *The TELDOK Yearbook 1994*. February 1994.

Via TELDOK 21: *Information Technology, Social Fabric*. May 1993.

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# **20 SECONDS TO WORK**

**Home-Based Telework.  
Swedish Experiences From a European  
Perspective**

**State of the Art 1995**

**Lennart Forsebäck**



**Translation by**

**Jonas Gunnarsson  
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# TELDOK's Foreword

Many people will be given the opportunity to work flexibly in the information society. That is one of the goals of the information society which the Western nations have adopted, and one which is receiving increasing attention. In Sweden, the Minister of Labour (see the interview in chapter 7), the IT Commission and the Parliamentary Working Rights Committee are some of those deeply committed in the matter. In the EU, teleworking is one of the areas at the top of the agenda when the *EU's Information Society* is to be realized.

In Sweden, we have for quite a while talked about telecottages and companies that cooperate in networks, about telecommuting, neighbourhood offices and working at home, about teleworking, as well as tele-healthcare.

Lennart Forsebäck, a resident of Nyköping, well-known author and consultant on flexible work, was commissioned by TELDOK to write the report *20 Seconds to Work*, which concerns home-based telework. Lennart's report concerns *neither* those who take their work with them home on evenings and weekends, *nor* those who work exclusively in their homes. Lennart tells the story about ten people and their families where the teleworker works at home a large part of the week, but also still has his or her working place "at work." TELDOK feels that Lennart has managed to do this in a very sensitive and vivid way. The examples are taken from companies, municipalities, and local authorities and other institutions, in short, the entire labour market.

In his descriptions and analyses, Lennart Forsebäck shows that for many employers and employees this is an excellent solution that everybody gains from – if they have the courage to actually implement it. According to Lennart's calculations, as many as 150-200,000 employees work at home more than one day per week. This corresponds to 6-9 per cent of all white-collar workers and 4-6 per cent of all Swedish employees. The potential for home-based telework is naturally much larger. Lennart's work serves an important purpose and he has made a description of the state of the art in order to stimulate the movement toward more and better flexible work.

Lennart Forsebäck's report *20 Seconds to Work* is part of TELDOK's Sweden Programme. The programme is primarily intended for smaller companies and municipalities that want to develop their businesses and activities with the aid of modern modern information- and telecommunication technology. It is briefly described on the back cover and more thoroughly at the end of the report.

TELDOK has treated the topic of flexible work in several other reports. Recent examples are Report no. 97, *Dare to Be a Visionary*, no. 96, *Seen and Heard via Picture Communication*, no. 90, *Telecottages, Telework and Teleeducation* (available in English) and no. 85, *Care and Advice on the Wire*. With the exception of Report no. 90, the reports are unfortunately only available in Swedish.

Lennart Forsebäck, thank you for your interesting, solid and valuable report, which we hope will be read attentively both in Sweden and abroad. Finally, a thank you to all the families that volunteered for the study!

We wish you pleasant reading!

*Bertil Thorngren*

Chairman

*Göran Axelsson*

Member

The TELDOK Board of Editors

# The Author's Preface

When I first started discussing the work of authoring a report on telework in Sweden with TELDOK, I was of the firm belief that such a report readily could be authored without resorting to interviews, that is without letting the voices of any single teleworkers be heard. I thought that both at home and in the rest of Europe there ought to be material enough for such a report in the form of analyses, statistics, etc. Fortunately, I was convinced to revise my opinion. Telework is very much a personal event, where certain experiences can be generalised and a few common conclusions be drawn, but where in the end it is the individual experience that is decisive.

This having been said, it is obvious that it is the people who I had the pleasure of interviewing to whom I would first like to express my heartfelt thanks. Women and men, employees and managers, analytically and pragmatically minded, enthusiasts and doubters and everything in-between, who all literally opened both their homes and their hearts. And who have liberally shared their experiences, expectations and misgivings. Without their participation, openness and generosity with regards to impressions, reflections and sometimes the innermost thoughts, this report would simply not have been realised.

I also extend profound thanks to my friend Lennart Ivarsson at the Nyköping Folk Highschool and Britt-Marie Thulestedt at the Swedish Central Organisation of Salaried Employees (TCO). Lennart has, with his unusual combination of profound knowledge of IT and society in general, contributed with valuable opinions, while Britt-Marie has been a useful discussion partner during the course of the work. I would also like to thank Göran Axelsson, TELDOK, whose advice I have greatly valued.

We know the industrial society's way of working relatively well, along with its risks and problems in factories, in workshops and in the offices' hierarchies and modules. The mass production society has been made science in the forms of Fordism and Taylorism. When it comes to teleworking and flexible work, there are at best fragments of information and knowledge to be found. The step to a more structured knowledge about the subject thus appears great to me.

Finally, let me consequently, and with great humility, give voice to the hope that the report *20 Seconds to Work* will give a few contributions on the path toward more knowledge about teleworking, a way of working that is trying to find its way in the new freedom in time and space that today's computer- and telecommunications furnish us with.

Nyköping in November 1995

*Lennart Forsebäck*

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# 1 Introduction—Definitions, Delimitations and Reading Instructions

When I undertook the commission to develop the report "20 Seconds to Work" for TELDOK, I was inspired by the idea of giving teleworking a face and an identity. This was naturally naïve, which was soon evident from the interviews I made, which constitute an essential part of this report.

For teleworking has as many faces as there are who practise it. Certainly they have some conditions in common, not least that they are all pioneers. But above all, the choice to telework from one's home—or to elect not to do so—is the joint result of a number of different conditions, perspectives, and judgments. In other words: an equation with a very large number of factors.

## Teleworking Has Many Faces

An ambition with the present report is against this background to aim to mirror multitude and show nuances, rather than to bring forth similarities. A natural consequence of this approach is that both advantages and disadvantages are illuminated, discussed, and evaluated.

Today it is technically possible for large employee groups to telework, in Sweden as well as in the rest of the Western World, from home or in other ways. A very small portion of the theoretically eligible teleworkers opt to take that step in practice. In the step between theory and practice there is a multitude of factors, some of them simple, others composite and complex.

For someone who fundamentally believes in the opportunities to add new qualities to work and human life through this new freedom in time and space, it is especially important to seek to systematise, analyse, and evaluate these factors.

## Highlights and Pitfalls

When I in the form of interviews have attempted to capture around ten teleworkers on the Swedish labour market and their everyday life in 1995 the result is a few snapshots, showing how the new freedom in time and space can be used. The conversations give an image of a new way of life, with new sources of joy and memorable moments, but also with problems, risks, and pitfalls.

It has been my ambition, not only in the introductory interviews but also in the ensuing analysis and discussion, to seek to give a correct picture of the advantages and disadvantages that go with teleworking.

Concerning the sample of cases studied, I have had the ambition to provide a reasonably broad view of the Swedish labour market, private and public enterprise, smaller and bigger companies, and of course the experiences of both men and women.

Teleworking takes many expressions: work from home, from telecottages, neighbourhood offices and satellite centres, mobile teleworking, etc. This report almost exclusively treats home-based teleworking aided by data and telecommunication in accordance with the definition given below. Except where otherwise stated it is this form of telework which is referred to.

## Home-Based Teleworking—a First Delimitation

Home-based work has taken place throughout the ages. In order to discern the novelty of what is now happening, it is essential to specify what new features of this "homework" that deserve to be observed. First of all you should *distinguish between employees and self-employed persons*. That a self-employed person has his or her home as place of work is not in itself something new. That customers or principals are to be found at a geographical distance, and that the self-employed person communicates with these via the telecommunications networks is practically a matter of course. This applies to e.g. consultants, as well as other self-employed persons. These groups are therefore left outside the scope of this report.

If you then proceed to the employees, a distinction is necessary in order to *distinguish the genuine teleworker from the commonly found person working overtime or doing extra work*, who from time to time works on nights and weekends from home. In the chosen definition is therefore included that home-based teleworking refers to an employment situation in the traditional sense, and that work—completely or partially—should take place within "normal office hours," and that it should be of a certain extent and regularity.

Interview or survey investigations not making this distinction run the risk of confusing all employees working overtime, who perhaps once a week takes home a report or memorandum to read or work on, with the genuine teleworkers.

In the present report it has been defined as a minimum that *work from home should take place regularly and on an average equalling at least one work-day a week, and that it in some form, through a contract in writing or a silent agreement, should be settled between the employee and the employer*.

As is further shown in Chapter 4, in Sweden this group includes a *maximum* of 150–200,000 employees, equalling six to nine per cent of the white-collar workers or four to six per cent of all employees.

## Telecommunication a Prerequisite

The most important component of a definition, which aims to capture what is genuinely new, is probably all the same that *work should be performed with some form of computer- and telecommunication support*. This means that work supervision is exercised, contacts with principals, customers and above all colleagues and superiors are maintained and work results presented at least partially through telecommunication.

The word "tele", from Greek, means far, "farspeak" as in telephony, "farwriting" as in telegraphy, or "farcopying" (from Latin "fac simile", i.e. "makes similar") as in telefax.

In the great languages the prefix "tele-" is used throughout to describe teleworking. We find it in the English "telework", in the French "télétravail", in the Spanish "teletrabajo" as well as in the German "Telearbeit". Even though it in these languages too in a strict sense means "far", it naturally connotes in an entirely different way than the Swedish "distance working" to that *telecommunication is a prerequisite for the work to be performed*.

The argument that has been made so far can be illustrated through a simple typology as in figure 1.

|                           |     | Work is performed           |                          |                      |
|---------------------------|-----|-----------------------------|--------------------------|----------------------|
|                           |     | Without telecom support (A) | With telecom support (B) |                      |
| <b>In the home:</b>       |     |                             |                          |                      |
| Entirely (1)              | 1.A |                             | 1.B                      | Focus in this report |
| Partly (2)                | 2.A |                             | 2.B                      |                      |
| Evenings/<br>weekends (3) | 3.A |                             | 3.B                      |                      |

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Figure 1 Work from the home with and without the support of telecom.

To further illustrate the typology we could consider a few typical professions or work situations in each square. In category 1.A we find for example the municipal child-minder, who performs virtually all work from home, but is hardly aided by telecommunication. Category 1.B includes for example an insurance clerk or an accounting adviser who does not have any other place of work than home and who at the same time is heavily dependent on telecommunication for doing his job.

In category 2.A we find for example the typical teacher, who along with his teaching duties may perform a considerable amount of work, such as correcting exams and tests as well as preparations, at home. He or she is hardly dependent on telecommunication for the performing of work, except as an exception.

Category 2.B includes the larger part of the new form of work that is emerging, i.e. work from home is combined with visits to an office and visits to customers or principals. Some examples are the salesman, who from day to day can choose between working from home and visiting an office, or the parent of small children, who may allocate part of his working-hours to home. Telecommunication is a prerequisite.

In category 3.A we find the large group of employees, who a few nights a week or on the odd weekend brings home a little "paperwork".

To a growing extent, as in category 3.B, part of work correspondence is managed electronically from home on nights and weekends. Telecommunication facilitates work for the person who even before worked overtime at home, since the possibilities of electronic communication makes it possible to handle from home work tasks such as correspondence, which previously by necessity were managed from a traditional place of work.

In the report at hand attention is exclusively paid to categories 1.B and 2.B. It is here that an evolution toward something genuinely new takes place, namely that an employee can *work from home, full-time or part-time, regularly, during normal office hours, to an extent of at least one day per week and aided by computer- and telecommunication.*

### "Teleworking" —a Broader Concept

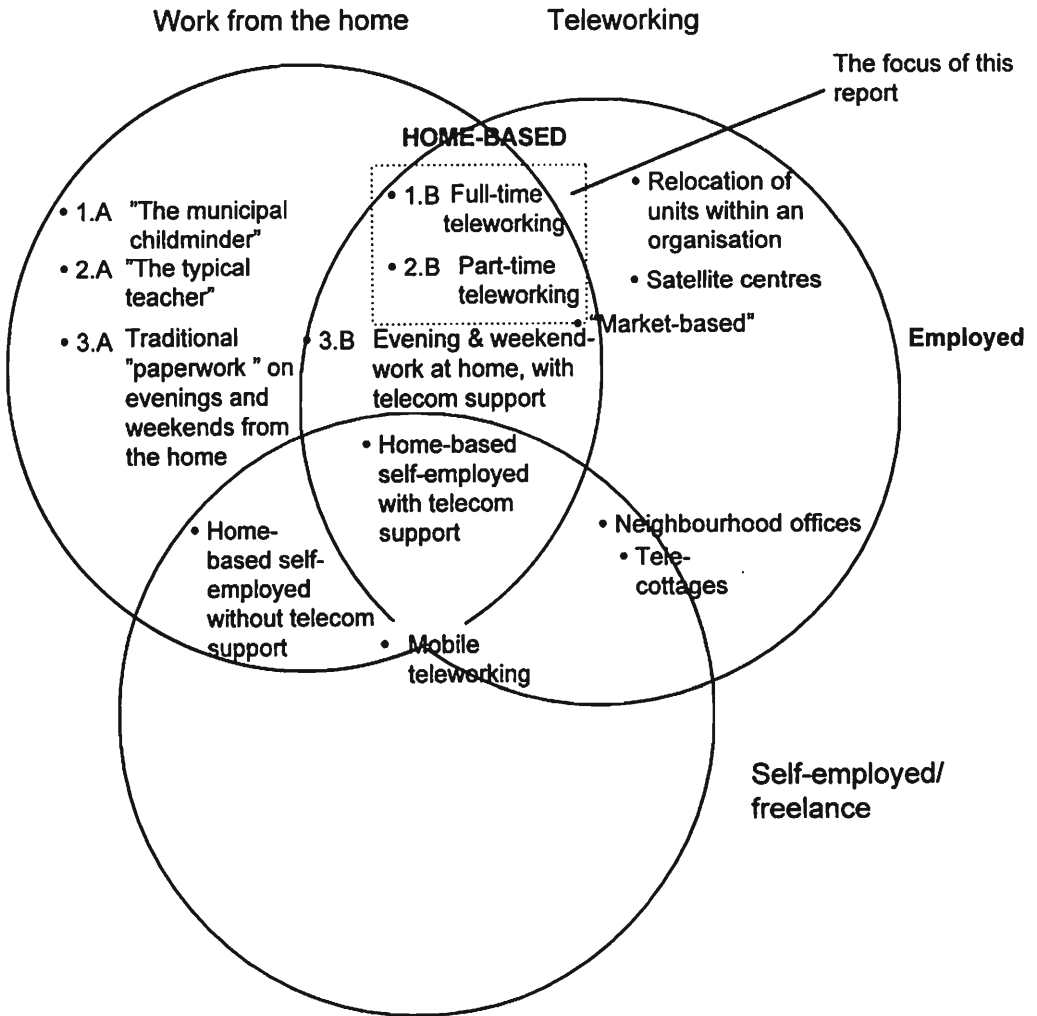
As was mentioned earlier, in the international literature concepts such as "teleworking" or in other languages the prefix "tele" and the word in question corresponding to "work" is used throughout. In other words, this report deals with certain parts of this broader concept.

Figure 2 puts the delimitation of this report, "home-based teleworking aided by telecommunication" into the broader context "teleworking", as the concept is today normally defined in European and North American literature. The definition is neither uncontroversial nor universally accepted.

Taking into consideration that the definition has been adopted all the same, not least within the framework of the European Commission's work with the issues in question, it does however deserve to be related. Above all, the delimitations of this report are highlighted if they can be related to and contrasted with kindred phenomena. Besides home-based teleworking according to the definition accounted for above, "teleworking" *can* refer to parts of a unit or a function which are relocated in relation to the normal place of business of a company.

### Alternative Forms of "Teleworking"

*Relocation* means that whole units, departments or functions within a company are located to a place outside the normal place of business. In practice—in Sweden as well as internationally—this is often about so called back-office functions, customer and order reception, booking services etcetera, being located to sparsely-populated areas with often low overhead costs and favourable conditions for recruiting motivated and loyal members of staff.



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Figure 2 Home-based work and teleworking. Employed and self-employed.

It is doubtful whether this represents "teleworking" in the real sense. Work tasks are certainly performed aided by data and telecommunication. But the novelty consists ultimately of that these tasks, from being performed from a large city office shared with other units of the company, are now performed from a smaller place commonly located at a greater distance from the majority

of customers or principals *and separated from other units and functions of the company.*

### **Satellite Centres, Telecottages and Neighbourhood Offices**

In the opinion of the author, a more genuine form of "teleworking" are so-called *satellite centres*, which means that a company locates a place of work with members of staff from several units and *consequently with different organisational belonging in the company* to a place outside the main place of work. Members of staff active at a satellite centre *communicate mainly with co-workers at their own unit at the main place of work, aided by data and telecom.*

So-called *telecottages* are based on that several *employees* at a company with its main business located at another place *and/or self-employed persons* rent part of a common office and fall back on partly shared equipment and in some cases services. Today there exist about 20 telecottages in Sweden, generally located in very sparsely populated areas.

When the corresponding phenomenon occurs in more densely populated areas, generally located in or close to residential areas, and as a rule within commuting distance to a larger city or town, you talk about so-called neighbourhood offices. Correspondingly, this can imply *both employees and self-employed persons*, who—either more permanently or on an hourly basis—rent part of a common office with access to equipment and usually certain services. The first neighbourhood office in the true sense in Sweden came into existence in Nynäshamn, to the south of Stockholm, in June 1995.

### **"Market Based" and Mobile Work**

In the United States and Great Britain the terms "telework centres" or "telework service centres" are sometimes used to denominate neighbourhood offices and satellite centres.

To be *"market based"* involves seeking to work when suitable—aided by data and telecommunication—at customers and principals. This is often combined with home-based teleworking and/or work from a traditional office.

*Mobile work*, which may be performed *both by employees and self-employed persons*, implies that work, when possible and suitable, is carried out in connection with travel, hotel stays etcetera. This form of "teleworking" too is commonly combined with work from home and/or a traditional office.

Finally, the self-employed person may of course work from home – this might even be the standard for a consultant working on his own. To a varying degree data and telecommunication are then used at work. In the cases where work is mainly executed aided by data and telecom, e.g. for receiving and discussing commissions or for presenting work results, this is defined in the international literature as a form of "teleworking".

As is further evident from the definition established within the EU, co-operation aided by data and telecom between primarily small and medium-size enterprises is also included as a form of "teleworking". On this point it is however reasonable to question if the phenomenon really does belong under the

generic term "teleworking". In a not too improbable scenario, where most companies co-operate in virtual networks, vast numbers of people would consequently become "teleworkers".

Sometimes the term "telecommuting" is used synonymously with "teleworking", which further contributes to the confusion of ideas. In a strict sense "telecommuting" makes up a part of the broader concept of "teleworking". To begin with it implies that certain trips to work, for example a few days a week, are substituted with work from home, from a satellite centre or from a neighbourhood office aided by data and telecom. Moreover, it exclusively applies to employees, not self-employed persons.

## **Motives for the Delimitation**

The delimitation was chosen for several reasons.

Of the various forms of "teleworking" applied today, home-based teleworking is undeniably the most common. There are many indications that this will remain the case.

One's home is not a neutral arena. Our homes contrast strongly with other life arenas as the most private one, as "the ultimate entrenchment".

That is why the meeting between the environment, that we have spent so much time and effort planning and decorating, and the new function, to work, is so exciting and sometimes problematic. Not with domestic work, as the unsalaried work is called, but with so-called gainful employment.

## **The Disposition of the Report**

The experiences of teleworking are to a significant extent generally applicable across national borders. This is one of the motives for attempting to mirror the Swedish experiences in a European perspective in the report. Another motive is naturally the importance the European Community places on information technology (IT) and "telework" to get economies going and create employment opportunities. These ambitions have been tangibly expressed through a rather large number of analyses and studies, providing valuable information and knowledge.

Chapter 2 attempts to give an account of Sweden's special conditions regarding telework.

Chapter 3, "For Better and for Worse—in the Words of Ten Teleworkers" contains a documentation, based on interviews, of nine case studies.

Chapter 4 attempts to present a picture of both the potential and the extent of telework. This is no easy task, but it is important considering the veritable jungle of starting-points and various definitions, found in our domestic studies as well as in the international literature.

Chapter 5, "A New Way of Living, Working and Thinking" is naturally to a great extent based on the opinions and experiences expressed in the interviews in Chapter 3. At the same time there has been an ambition to mirror these against existing documented experiences, statistics, analyses etcetera from the rest of Europe.



In Chapter 6, "The Economics of Teleworking—Costs, Investments and Effects" the ambition is to give a summary account, based on some typical examples and alternative calculations, of the profits employees and management can make.

The title of Chapter 7, "The Prospect of the Year 2000," may give ideas of predictions, prophecies, and visions. This is not the intention. Instead, the ambition is, using among other things the views expressed by the teleworking Swedish Minister of Labour as a starting-point, to show a few factors, which to all appearances will shape the conditions for teleworking in a medium-term perspective.

## 2 Sweden Has Special Conditions

In several respects, Sweden has special conditions and motives for teleworking.

### A Sparsely-Populated Country

Sweden is one of the most sparsely-populated countries in Europe. The population density, i.e. the number of inhabitants per square kilometre, is 19 in Sweden, which may be compared with the Netherlands at 360, Belgium at close to 330, Great Britain at 235, and Germany (BRD 90) at fully 220. The average for Europe (EUR 12) is slightly more than 145 inhabitants per square kilometre. Even in comparison with the United States, with a population density of close to 27 inhabitants per square kilometre, Sweden is a sparsely-populated country.

On top of this comes the peripheral geographical location in relation to the great West European markets.

Second only to Denmark, Sweden has the largest dwelling space per capita, 47 square metres per inhabitant, to be compared with for example France at 31.5 square metres, Great Britain at a little less than 27, and Germany (BRD) at just under 35 square metres per person.

### Sweden—a World Leader in Telecom

In several respects, the country's IT infrastructure has internationally unique qualities. This applies to for example the number of telephone connections and subscriptions per capita as well as the number of mobile phones and telefaxes per person, where Sweden is one of the world leaders. When it comes to possession of personal computers Sweden ranks internationally—beside the United States—at the top.

From a historical perspective it might be of interest that telephony caught on quicker in Sweden than in any other country. In 1885 Stockholm had not only the world's highest number of telephones per capita but also in absolute terms the largest number.

On the whole, the construction of the Swedish telephone network system was rapid by international comparison. Even at the beginning of the twentieth century Sweden had—along with Denmark and Norway—the largest number of telephones per capita. In 1923 a long-distance cable, which was then the longest in Europe, was built between Stockholm and Gothenburg.

The co-operation between L. M. Ericsson, a dominating company for many products and on big and important markets, and the former monopoly Televerket (Swedish Telecom) was as far as can be judged of tremendous importance to the early and general adoption of telephony as well as later IT innovations, product development and penetration.

## **The Most Deregulated Telecom Market in Europe**

The costs of telephony in Sweden are very low by European or international standards. Beside Iceland the costs of Swedish telephony have for a long time been the lowest in the world both for companies and households. Even if conditions have changed a little, for one thing as an outcome of the *de facto*-devaluation of the autumn of 1992 and subsequently weak exchange rate for the Swedish *krona* (SEK, as of October, 1995, SEK 1 was roughly equivalent to D-Mark 0.20 or U.S. \$0.15), Sweden is still among the less expensive telephone countries in Europe.

Undoubtedly, this is partly due to that Sweden is the most deregulated telecom market in Europe. Internationally, according to OECD assessments New Zealand is the only country which can be compared to Sweden when it comes to having a deregulated telecom market. Even if the European Commission appears firmly resolved to force through a liberalisation of all European telecom markets from January 1 1998, many doubt whether the telecom markets of all member countries really will be deregulated on that day.

For the consumers of teleservices, companies as well as households, keen competition brings with it not only strong downward pressure on prices but also rapid product development. The Swedish telecom market today offers something like a zone of experiment when the old national monopolies of Europe have to adapt and find new products and markets in a radically changed situation.

## **Keen Competition on the Telecom Market**

The Swedish telecom market is not only deregulated in a formal or theoretical sense. In practice, competition is very real. On the Swedish market Telia, the former monopoly, meets competition not only from the domestic Tele 2 but also from for example BT, AT&T, and Telecom France. BT founded a new company, Telenordia, in 1995 together with Tele Danmark and the Norwegian Telenor. Telenordia intends to invest SEK 2.4 billion in the Swedish telecom market within the coming 5-year period. Distant actors too, such as for example Singapore Telecom, have shown an interest in the Swedish telecom market. In the field of mobile telephony there are three keenly competing actors, Telia, Europolitan, and Comviq.

## **The World's Strongest Trade Union Takes a Positive Attitude towards Telework**

From an international perspective the Swedish union movement has a unique strength. This applies not least to the unions of salaried employees. The total affiliation rate is about 83 per cent, to be compared with for example Great Britain at barely 40 per cent, Germany at slightly more than 30 per cent, the United States at around 15 per cent and France at only 10 per cent. Unlike the development in the rest of Europe, the rate of affiliation in Sweden – as well as in the other Nordic countries – has continued to grow in the 80s and 90s.

Of pivotal importance is naturally, against this background, the attitude of the union organisations toward teleworking. As is shown in a coming chapter a marked change took place in the views expressed by TCO (The Swedish Central Organisation of Salaried Employees) on the topic of teleworking. From being clearly negative earlier, the attitude of the organisation today could be summarized as cautiously positive.

## **High Rate of Gainfully Employed Women**

In a longer historical perspective, the Swedish union movement has assumed a positive attitude towards technological development—even if it has meant that structural change was precipitated and many jobs were lost.

On the Swedish labour market there are also other features which may be of importance concerning the development of teleworking. The ratio of gainfully employed people, i.e. the part of the population that has a job, is continuously high, even if Sweden since the beginning of the 90s has had an unemployment rate comparable with the rest of Europe. The high rate of gainfully employed women particularly contributes to this. In 1990 48 per cent of the Swedish labour force was made up of women, to be compared with the corresponding European average (EUR 12), 38.4 per cent.

## **A Service-Producing Country**

A development like this required a massive build-up of particularly the municipal child care system. Second to Denmark Sweden has the most extensive publicly financed child care system in the Western World. Fully 30 per cent of all children under the age of three are in public child care. For the higher ages, up until the mandatory school age, the share is 65-70 per cent.

Sweden has an extensive service sector from an international point of view. The service sector's share of the GNP was 70.5 per cent in 1994. Among the OECD countries only Denmark (73.4 per cent) and the United States (71.1 per cent) had a more extensive service sector. Internationally, Sweden nowadays has a small industrial sector.

### 3 For Better and for Worse — In the Words of Ten Teleworkers

#### A Career Mum with Small Children

– Teleworking was the only way I could combine a career with being a mother of small children, Mari Hellblom says. She is 35 years old and a controller at ABB Generations in Västerås, 100 kilometres west of Stockholm. The company produces and sells generators and has a total number of 620 employees, out of which 50 work in Mari's unit.

Mari, who holds a university degree in economics, is a woman in the midst of her life and her career. With her common-law husband Gunnar she has the children Sanna, aged seven, and Fredrik, five years old. A few days a week, mostly on Tuesdays and Thursdays, she tries to leave from work after lunch to be able to collect the children from their day-care centre around two o'clock, and come home to the yellow villa right by the Mölntorp sluice of Strömsholm's Canal.

#### Fact Box Mari Hellblom

*Age:* 35

*Family:* Cohabiting with Gunnar, children Sanna, 7, and Fredrik, 5

*Place of residence:* Mölntorp in Hallstahammar Municipality

*Occupation:* Controller at ABB Generations

*Type of business:* Manufacturing and selling generators

*Total number of employees (in the Swedish company):* 620

– of which at the unit in question: 50

*Organisation situated in:* Västerås

*Number of teleworkers in the organisation:* 1

*Equipment used in the home by the teleworking employee:*

*Computer:* Portable Apple 68040 with docking station

*Modem:* (built-in) 28,800 bps

*Fax:* Fax modem

*Telephone:* Yes

*Printer:* No

*Copying machine:* No

*Cost of equipment package, including furniture:* Around SEK 45,000

#### Telework or Play in the B-Team?

– I wanted to avoid ending up in a sort of B-team on the labour-market just because I had children, Mari says.

– For a while after we had our second child I tried working only 75 per cent, but it didn't work out. My job demands 50 working hours a week of me. With the demands I have on myself and think others are entitled to have, it is simply impossible to work part-time.

– I felt a divided loyalty. When I was at work I thought I should be at home and vice versa. To stay at home for an entire, fixed day a week proved impossi-

ble. Meetings, conferences, and travel came up, and in reality I often had to work on my day off.

At least twice a week Mari now instead tries to spend a few hours in the afternoon with the children before their bedtime. After that it is time to start working again.

- Now the kids and I have the time to do things together, before bedtime around seven o'clock.

### Important Being Close to the Children

- Certainly, I sometimes feel inadequate today too, but it is an incredible improvement. During the nearly ten hours I sit at home and work, I feel close to the children and my husband.

- It feels good too, to be able to take a few minutes off and talk to Gunnar or have a cup of coffee.

- On the afternoons when I go home early it is the children who have priority. Nowadays, when the children are older, I usually connect the office phone over to my house when I go home. I receive phone calls and call other people myself five or ten times, with telephone conversations lasting anything between five and twenty minutes. I don't charge my employer for time spent talking on the phone, but that is a price I am willing to pay.



*Teleworking was the only way I could combine the job I have with being a mother of small children, Mari Hellblom says.*

- In my job it is essential to be able to give quick answers or advice. I look at my position as controller as a company service function, and then you must be accessible.

The rooms of the Mölntorp villa are large. Mari does not have a particular study, and instead uses the dining table in the spacious living-room for her work material. From there she has a view not only of the kitchen but also of the canal, the little bridge, and the sluices, which in the summer let through pleasure-boats every other hour.

Mari sits there at least two evenings a week in front of her little portable computer with built-in modem for fax and e-mail, which she brings home along with a number of binders. She often has to work at least part of Saturday and Sunday as well.

### **A Lot of "Homework" During Work-Load Peaks**

Mari's job has predictable and substantial work-load peaks, particularly for a few weeks in connection with the annual report.

- It is especially valuable to be able to work from home then. If I didn't have that opportunity I would hardly get to see my family.

But other tasks also follow certain set patterns: strategic planning in spring, budget work in autumn as well as the monthly follow-up, prognoses and work with simplifying routines and continuously improving financial strategy. The work week has its special rhythm, too.

- I usually start the work week on Monday by planning what to do that week. Included in this is not least to "save up" work to do at home. Putting together prognoses, results and budget, as well as reading and preparing for meetings are things that I do at home in the evenings. On Mondays I usually have a talk with my boss before the managerial group meeting in the afternoon.

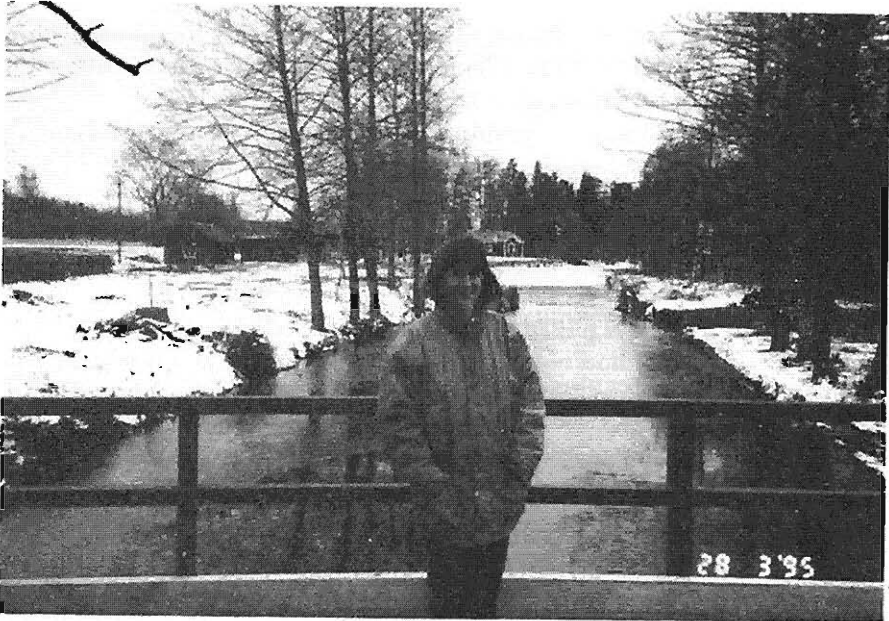
- Besides Tuesdays and Thursday afternoons I try to leave early one more day a week.

### **Mari Would Like to Do More Home-Based Teleworking**

- But I would like to work more from home, preferably about half the work week. Soon, when we get so-called "remote access", I hope I can do so. Then I will be able to bring home a big portion of the time-consuming reporting and registration routines.

But Mari would not want to be a full-time home-based teleworker, even if it were possible.

- A very important part of my job is being a "sounding board" to our departments, especially to project managers and project leaders. This is often really a matter of visiting work and direct communication, and then you have to be face to face with each other. Otherwise it doesn't work.



*To take a walk around the bridges and sluices by Strömsholm's Canal is a source of stimulation and energy.*

## Twice as Efficient at Home

Mari is the only controller in her unit. Being two is otherwise the norm. Even if Mari does not admit to doing the job of two people, she does not hesitate to say that she gets a lot more done at home.

- It is much easier to work efficiently from home. I get done in two hours what would take four at the office.

Is it then entirely without problems to combine the roles of an ambitious and successful career woman and a mother of small children?

- Especially in the beginning I felt the pressure very much. I thought I had to prove that part-time home-based teleworking was really possible. Then of course I am the one who suffers. I have time least of all for myself, and it is always my time that gets occupied by other matters. The only time I have for myself is when I play tennis once a week.

- We now have a cleaning lady, but there is still not enough time. If we for example want to go to the cinema in the city, it takes the whole evening.

- It can be hard to shut off work. But even on the nights I work, I try to draw firm limits. I usually shut down my computer a minute before the nine or ten o'clock news begins.

## There is No Alternative

According to Mari the advantages outweigh the disadvantages. Despite having to make a few sacrifices she does not want to give up her job and her career.



- I really don't see any alternative. I think my job is very stimulating. There is a lot happening and I feel like I am part of it. I get to take part in discussions and I think people pay attention to what I have to say.

- There has not been any problems with management or co-workers. On the contrary, many colleagues and acquaintances spontaneously say: "This is how I would like to work!"

- But you have to dare to make the move. Naturally it is more of a responsibility to work from one's home. And there is no one to blame but yourself if it does not work out.

Mari has so-called regulated working-hours, she checks in and out at work and keeps a record of hours worked from home. As much as possible she tries to take out compensatory leave for overtime hours worked, usually in connection with holidays and of course in summer, when the old landscape of Västmanland surrounding her is at its most beautiful.

### **Wants to Encourage Others to Try**

Mari does not have a contract regulating work from home. Her employer has paid for the equipment, but Mari does not charge for work space and telephone bills.

- I don't think it matters since I am charged for local calls to Västerås. But when we get "remote access" I will probably feel differently. Then, I will be able to access all systems at work, I can register and send information directly to for example my boss. That means my modem will be hooked up for much longer periods of time.

- Moreover, I would like to have a printer at home. It would save a lot of time.

Mari has also lately been thinking that maybe she needs a formal contract.

- With the boss I have now it is no problem. We both know the conditions and what is expected of me. But things sometimes change...

And I think that I probably would want to work in this manner all my life, says Mari, who wants to encourage other career women of her age and with small children to try it for themselves.

- For many women my age teleworking is probably a prerequisite for having the courage and being able to concentrate on your profession, says Mari.

## Never Again "Market Based"—The Salesman Who Had Enough

When the author first speaks to Kjell Prando, aged 40, he is very excited about being a "market based" salesman with Rohm & Haas, a chemical company. And that is understandable. Being market based means that Kjell can work from his house in Värmdö Municipality in the Stockholm archipelago two days a week, on Mondays and Fridays.

### "Call Me Later – I Just Got One On the Hook!"

"Call me later! I just got one on the hook!" Laughing, Kjell tells me that he sometimes jokes with colleagues and customers who call him.

As a salesman at a multinational chemical company, which among other things produces bonding agents for adhesives and grout for the construction industry, Kjell's customers are companies in the Nordic countries, especially southern Sweden, Finland and Denmark. Kjell spends Tuesday through Thursday every week with these customers, or on the road to and from them.

#### Fact Box Kjell Prando

*Age:* 40

*Family:* Cohabiting with Marita, daughter Anna, age 1

*Place of residence:* Södra Kopparmora in Värmdö Municipality

*Occupation:* Salesman with Rohm & Haas

*Type of business:* Manufacturing and selling chemicals, for example bonding agents for adhesives

*Total number of employees:* 12,000

– of which in the Swedish company: 90

– of which at the unit in question: 3

*Organisation situated in:* Landskrona

*Number of teleworkers in the organisation:* 7

*Equipment used in the home by the teleworking employee:*

*Computer:* A 486

*Modem:* 28,800 bps

*Fax:* Yes

*Telephone:* Yes, and a GSM mobile phone

*Printer:* Yes

*Copying machine:* Yes

*Cost of equipment package, including furniture:* SEK 125,000 – 150,000

### The Company Moves

In 1994 the company decided to "bring the family together", which in concrete terms meant that the Stockholm office was shut down and the employees were offered to move to Landskrona, 600 kilometres south of Stockholm. The salespersons were offered to stay in the Stockholm region, working with their homes as a base. To Kjell the choice was not difficult. He saw the opportunity to enjoy being close to nature and water and the seasonal changes of the Stockholm archipelago.

For some of his colleagues the decision was not as easy to make. And out of the administrative staff of 30 people, which worked in the office in Solna a few

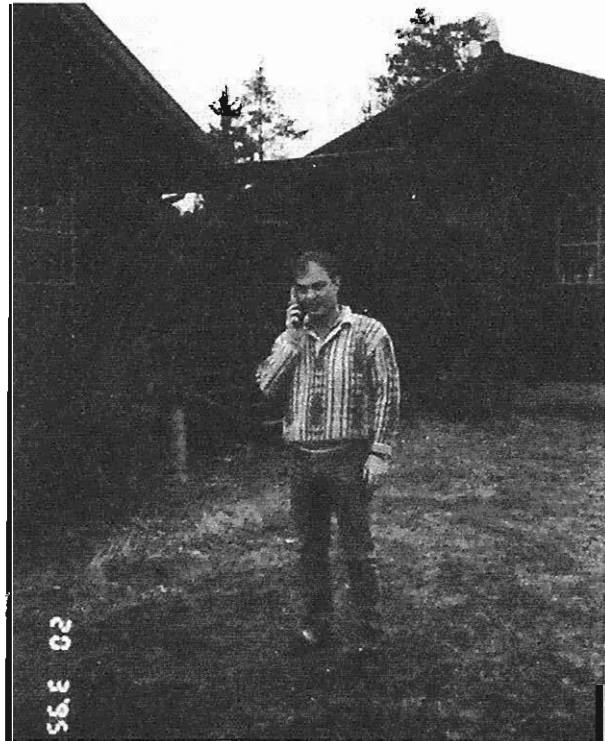
kilometres outside central Stockholm, only ten per cent wanted to make the move to Landskrona.

As for Kjell the prospect of not having to go to and from Solna, a trip of 2-2.5 hours back and forth twice a week, was enticing. Being able to get up a little later and perhaps finish a little earlier in the evening.

### Not Used to Being a Secretary and a Messenger

But the adaption to being "market based" and having the office at home brought with it difficulties, which Kjell had not fully anticipated. It created frustration, a sense of being inadequate, arguments with his common-law wife, and even personal problems.

- It takes a long time to become your own messenger and secretary, Kjell says. I think I'm a good salesman, but maybe not cut out for administrative tasks.



*I looked forward to enjoying the seasonal changes of the Stockholm archipelago, Kjell Prando says.*

- In my new role as self-administrating salesman I've had to spend a disproportionate amount of time writing letters and sales reports, entering statistics

and tasks like that, which other people used to do for me. I was inexperienced when it came to using the computer as a tool for word-processing and calculation. "Secretarial work" was sluggish.

- It was an entirely new experience to replenish "the expense storage", as was going to the post office every day to leave and collect mail and other things which the messenger used to do for us.

- Sure, I was more efficient and productive, Kjell says. Really I made the work of eight hours in five hours. But to what cost? And God knows how I spent these three hours. Probably just doing messenger and secretarial tasks, which I didn't care for particularly anyway.

Communication with co-workers worsened. Even if the salespersons kept in touch with each other and tried to get together at least once a month, "horizontal communication" was not upheld in the organisation. Originally the intention was to arrange meetings with all company staff once a month, but this never came about.

## **An Addition to the Family**

On top of this there were other problems. In May 1994, at about the same time that Kjell left the Solna office to start working from home, he and his common-law wife Marita had their first child, Anna. Even though Marita was on maternity leave from work there were many arguments.

"You've been home all day. Couldn't you at least have...." Such reproaches were common. "You don't have to do anything else. And it would only take ten minutes." That was how it could sound.

There was a bad atmosphere in the cosy villa on Värmdölandet. "Every day is like a weekday," Marita would sometimes say this about life with the part-time home-based Kjell.

The realization that being "market based" was not without disadvantages grew in the autumn of 1994. The illness and decease of Kjell's father in the winter contributed to a crisis. Kjell increasingly questioned his existence as a salesman without a firm basis in the organisation.

## **Constantly Bad Conscience**

- I had constantly bad conscience both towards my family and work. There was never enough time, and this led to friction both at home and at work. We argued quite a lot at home and at the same time my customer contacts - essential to a salesman - grew worse.

In February 1995 Kjell had had enough of it. He decided to leave Rohm & Haas. When we meet in March 1995, Kjell declares that it is now out of the question to sit at home and work two days a week. A new addition to the family, their second child, is due in May. This means that the house must be substantially enlarged, and Kjell intends to do a lot of construction work himself.

- Being "market based" probably suits many people, depending on their age, family, personality, etcetera, Kjell says. But it was not good for me in the long run.

Still, Kjell in many ways teleworked "by the book". He was careful to take breaks on fixed hours; lunch at twelve o'clock and coffee breaks at 9.30 a.m. and 2.30 p.m. During breaks he would connect the phone over to the Landskrona office.

### **Advanced Equipment**

The company has been generous and done a lot to make the salespersons adjust to working at home. They have all received high quality equipment; computer, laser printer, fax, copying machine, well-equipped telephone, filing cabinet, desk and chair, and book-shelves to a total value of SEK 125,000-150,000. Telecommunications work excellently with the AXE digital switchboard system. "The technical side of things" has been perfect according to Kjell. The employer has also seen to that Kjell has been fully covered by insurance. On top of that every salesperson has received net SEK 600 (after tax) a month as compensation for the home office.

This home office measures up to the demands of the tax authorities of being "well separated from the living quarters," since Kjell has furnished a guest cottage in the garden as an office.

### **High Demands on Accessibility**

Financially the transition to being a part-time home-based teleworker did not make much of a difference to Kjell and his salesperson colleagues. They all have cars on the firm. It is in other words on the social level that big changes have taken place.

Theoretically there is the possibility to work flex-time, for example to work evenings and then take a day off when the weather is good. Kjell has sometimes been able to do this, as have the colleagues that even once in a while had a game of golf during "working hours".

But the demands on accessibility are high. The customers demand to talk to "their" salesman during office hours, which sets definite limits for the opportunities to "run away". The close contacts with England and Finland with each one hour's difference in time further extends the number of hours Kjell must be accessible.

Contacts are upheld primarily by phone, with about 20 calls daily. In addition Kjell receives 5-10 faxes a day and e-mail or other computer-computer communication about ten times daily. It is mainly with the Landskrona office that Kjell communicates via e-mail. Only a few of the roughly 30 customers that Kjell is responsible for uses e-mail.

In practice, to be "market based" means that the salesman develops social relations primarily with customers. At the same time contacts with sales staff colleagues are important. This applies to the sharing of experiences as well as being able to talk about and test ideas, and of course social interaction in itself.

## Problems with New Co-Workers

- Today, we are a close team of six salespersons, Kjell says. We would probably stick together even if we were scattered throughout. But there will be problems when new co-workers are hired. It will be very difficult to establish a spirit of community with the new salespersons, if you never get to see each other. The same thing applies to the administration in Landskrona. Talking to and instructing colleagues you have known for a long time is OK. It is much more difficult with newly hired people you've never met. That is when you miss the regular coffee breaks and the information meeting we had every Friday, Kjell says.

There is no hustle and bustle in Södra Kopparmora on a chilly Monday in March. With the exception of Kjell's common-law wife Marita and his daughter Anna there is not much company to be had in the idyllic spot in the archipelago.

- I talk to the deer in the garden every day, Kjell says jokingly.

## Kjell Would Prefer a Neighbourhood Office

What would be the ideal way for Kjell to work?

- A neighbourhood office or telecottage, within ten kilometres distance, where I could work some day every week. That'd suit me perfectly. We looked into the opportunities to rent a small office "on neutral grounds", that is somewhere central in Stockholm. Some of my salesperson colleagues were even prepared to pay for an office like that out of their own pockets. But it didn't happen. It was too expensive.

## Freedom of Choice Is Important

- If I were to work part-time from home, the ideal arrangement would rather be to stay at home one day a week, either on Mondays or Fridays. Preferably with the option to go to the office even on that day if it was necessary or if I simply felt like it, Kjell emphasizes.

This is something Kjell will consider when he applies for a new job. In the future he will be hired as a consultant by Rohm & Haas. They do not want to waste his knowledge of selling and the close customer relations he has established at the 30 companies he has been responsible for with the managing directors, technical managers, and managers in charge of purchasing.

- I keep an open mind. But I don't want to go without the feeling of community that work can give you. Never again "market based" salesman, Kjell says.

*After this interview was conducted Kjell got it the way he wanted. In autumn 1995 he will start a new job as a salesman with OSI, a chemical company owned by Union Carbide. When he wants to he can sit at home and work. And Kjell will take advantage of this. But there is also an office for Kjell in central Stockholm. Kjell has got his freedom of choice.*

## An Avant-Garde Teleworker

Not only in Sweden but all over the world IT companies are in the lead concerning teleworking and other forms of flexible work. This is hardly the effect of their having access to their own advanced and inexpensive technology, equipment, software, or other services. Rather it is because these companies see the possibilities earlier and more clearly than other companies.

At the same time creating an image is definitely a source of motivation. They want to practice what they preach, and employees become at once guinea pigs and living proof that it is possible to work more or less independent of time and space.

Naturally, the IT companies do not know in advance all about the social, practical and other problems that teleworkers confront. To a company, that constantly has

to develop and launch new products, it is especially valuable to analyse and evaluate the experiences of the pioneers, who work with their own home as a basis.

### Practice What You Preach

Sten Nikolaev, who turns 40 in 1995, is an ambitious man who tries to practice what he preaches. He is a Master of Electrical Engineering from the Swedish Royal Institute of Technology. For two years he and ten other employees at Intel Sweden have been home-based teleworkers. With the exception of one colleague, who has the same kind of job as Sten, it is salespersons and applications engineers at the company who telework.

An important part of Sten's job is "preparing the grounds", i.e. pave the way for the companies that use Intel processors and other "building blocks" in

#### Fact Box Sten Nikolaev

*Age:* 40

*Family:* Wife Ginger and children Simon, 7, and Fredrik, 2 years old

*Place of residence:* Stockholm

*Occupation:* "Architecture Manager" with Intel Sweden, i.e. providing IT and computer managers with information about technology and the future

*Type of business:* Subcontractor to the computer industry

*Total number of employees:* 35,000

– of which in the Swedish company: 25

*Organisation situated in:* Solna

*Number of teleworkers in the organisation:* 10 (in the Swedish company), total approx. 1,000

*Equipment used in the home by the teleworking employee:*

*Computer:* Portable 486

*Modem:* 14,400 bps

*Fax:* Yes

*Telephone:* Yes, and a GSM mobile phone

*Printer:* Yes

*Copying machine:* No

*Cost of equipment package, including furniture:* About SEK 55,000

their products. In his work Sten visits companies and gives presentations of what can be achieved using today's powerful processors. The computer manufacturers and their sales forces then get to reap the direct profits of Sten's work.

## Telephone Plugs to the Hotels of the World

As "Architecture Manager" with Intel's "Field Intelligence", Sten Nikolaev is probably one of the most sophisticated teleworkers in Sweden. Being able to work with equal ease from home, while travelling, or from a hotel room as from a traditional office is part of the company's business concept. With his powerful IBM Think Pad, which he takes good care of just as his other equipment, Sten has liberated himself from practically all the restrictions of geography. Working from home is now part of everyday life, and so is being able to efficiently use every work-hour when he is travelling. Sten has 50 travel days a year, mostly to the United States and Great Britain. Telephone plugs suitable to the country he is visiting is the most important feature of his survival kit, at least as necessary as his tooth-brush and other things in his toilet bag.

## Company Policy Decisive

Initially Sten and his colleagues were hesitant. The degree of voluntariness is debatable. The American company decided to promote teleworking for certain categories of employees on a world wide basis. Sten did not really have an option. If he had one, it was working at the temporary guest office set up for teleworkers at the Solna office. At the same time the company made substantial investments in the training of the soon-to-become teleworkers.

- The company communicated clearly that they wanted us to show in practice how our products can be used, and that it is possible to work wherever you are. Of the 35,000 people employed close to a thousand now telework, mostly from their homes. In addition, the company has set targets for increased flexibility and efficiency, as well as a savings target on overhead costs of 25 per cent.

- The Swedish office moved to new premises in Solna, a few kilometres outside central Stockholm, and reorganised at the time we started teleworking. Naturally, the timing was not coincidental.

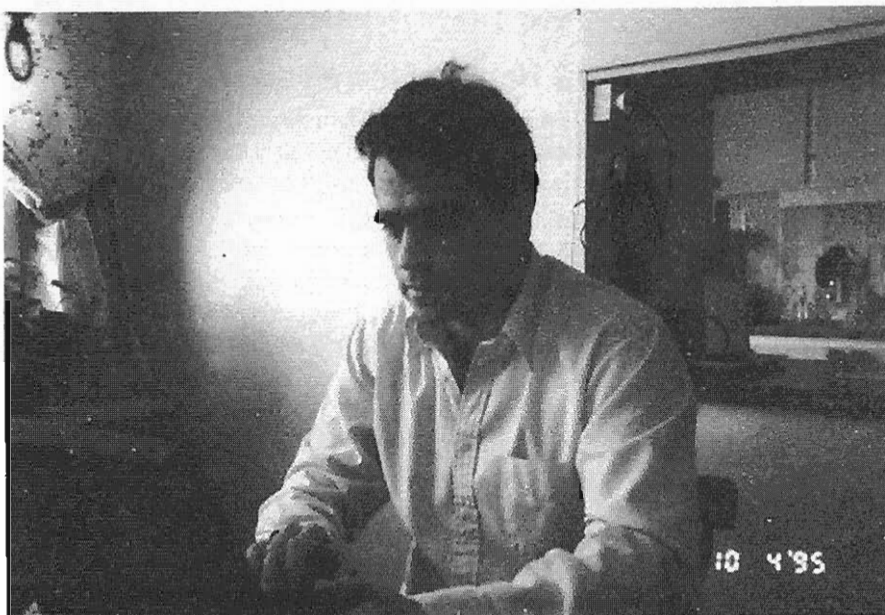
- I really felt I had no choice. Otherwise I would have preferred to take this step a few years later, since we have small children. But instead me and my colleagues started to adapt mentally to an entirely new way of working. Several questions came up in the process.

- First of all I thought about what it'd be like combining teleworking and family life. When this came up we already had Simon, who is now seven, and Fredrik, now two years old, was on his way.

- Another question we asked ourselves was of course if the technology would be adequate. We discussed what would happen to the spirit of community and what it would feel like to lose your own desk. We started a "home



office working group" for us who would "move home" where we could discuss anything from technology to social matters.



*Sten Nikolaev usually starts his working-day answering yesterday's collection of electronic mail and e-mail from the United States that has piled up during the night.*

### **Lower Overhead Costs and Increased Productivity**

Now that he knows how things turned out, Sten feels that on the whole it is better than expected. In the Solna office, the originally ten traditional office modules have been converted to four small booths or guest offices. Sten estimates that he has increased his productivity by at least 20 per cent now that he is able to work flexibly and use what used to be waste time, especially in connection with travel.

- Now, I never have to answer questions outside my field of work. The switchboard operators are better at selecting incoming phone calls than they used to be, and all routine matters are referred to co-workers at the office.

- The social dimension is functioning well today. I go to the office on an average twice a week, partly to administer large mailings, which we still have to do, and partly to load large files containing basic data and material. In theory I could do it from home through my modem, but that is impractical. Sometimes it would take hours. In six months we will get an ISDN link and then things will change.

- It is important to me to meet my co-workers regularly, both my teleworking colleagues and the staff permanently at the office.

- Showing off what you have achieved is one of the reasons for visiting the office. Initially we would sometimes get snide remarks or envious sneers from

the colleagues in the office. That has disappeared completely. But I can imagine that we would have had to deal with more of that if we never turned up at the office and if we had nothing to show for our work.

## **No Time to Be Cosy in the Evenings**

- Concerning the most important thing of all, my family, on the whole it's all right. It depends on what you compare with. Sure, I work more than I used to do, but if the alternative had been to work as much as I do, 50-60 hours a week, from an office, it is much better to work from home.

- But watching TV and being cosy together in the living-room sofa is hardly ever possible, except on Friday and Saturday nights which are "sacred" to us. We also try to refrain from working between six and nine o'clock in the evenings and really be together. On the other hand I often have to put in a few late hours of work to prepare for the coming days.

- It does have its advantages to work for a multi-national company with business and employees all over the world, Sten laughs. If I would get stuck or run into problems there is always somebody I could contact 24 hours a day.

Sten's wife jokingly admonishes him not to neglect his work if he sits for too long in the living-room sofa. Often there are two desk lamps glowing in the night in the yellow terraced house north of Stockholm.

- My wife Ginger, who works for a pharmaceutical company, now has a portable computer the same as mine. So we sit at night and work in different rooms.

- Sometimes, when I am in a philosophical mood, I ask myself if this really is the meaning of life. But I do think I could work this way all my life.

- The most important thing is being able to "turn off". In my job there is no limit to how much you could work and you have to know from the beginning what you have to do a certain week or month. In fact, I think experiences from my study years are useful to me. Then, you had to learn a certain amount for an exam. It didn't matter if you did it in the day or at night, on weekdays or on weekends.

- It is possible to work at home even if you have a sick child that has to stay home from the kindergarten, even if you naturally can't concentrate in the same way. Myself, I tore my Achilles tendon a while ago. If I had still worked in the office I would have been on the sick-list for weeks, but now I was only on sick-leave for two days. During the rest of my convalescence I was only on part-time sick-leave. Walking on crutches I got about as much done as usual at home.

## **Starts with E-Mail in the Morning**

Sten's working-day as a rule starts with a few hours reading and responding to yesterday's collection of electronic mail, as well as e-mail from the United States that has piled up during the night. It is usually around 30 letters, generally demanding a reply or some kind of action. Some letters are replied to by fax or telephone, but increasingly Sten uses e-mail.

Polishing demonstrations and preparing visits to customers is also morning work. His basic material is inside the computer and can be varied endlessly. For the visits to customers Sten uses an overhead display as a technical aid for his presentations. Even if the technical devices almost always are in place and working, Sten has a few overhead transparencies in his working-bag for emergencies.

Sten has a study in the basement, but he usually works at the kitchen table.

- In the mornings, when the worst traffic congestion is over, I schedule my visits to customers, one or more a day. My prime tool is my Think Pad, which I use for demonstrations. In it I have all the documentation I could possibly need, regardless of if it is technical specifications or information about suppliers and customers, addresses or phone numbers.

### **Improductive Administration**

- I sometimes schedule one of my weekly visits to the Solna office, a couple of kilometres outside central Stockholm in connection with visits to customers.

To visit the Solna office is an absolute must, not only to meet co-workers and colleagues, but also to administer Sten's work.

- I have my boss and my administrative assistance in London. Still, I have to administer mailing of presentation material to customers. It's the only part of my job that is a bit dull and dreary, and it isn't very productive either. Usually I mail about 20 customers myself. I estimate it takes me half a day every week. It doesn't seem very rational or cost-effective. It would be better if I could spend all my working-hours doing what I am good at and what I am hired for.

## The Insurance Clerk Who Stayed at Home

On the late March Monday when the author visits Lena Skogsund, most people would probably want to be home-based teleworkers. Lena lives in Skoghall in Hammarö ten kilometres south of Karlstad, which is located close to 300 kilometres west of Stockholm. The worst snowstorm of the year has struck; the E18 road is partially closed and cars that have slipped off the road are strewn along the roadside. Close to Karlstad the sun finally appears.

Lena is also radiant like the sun when she receives me in the spacious brick villa in Skoghall. She is bursting with energy and vitality. It is revealed only towards the end of the interview that she is soon due to have her second child. The delivery is expected two days later!

### The Karlstad Office Was Shut Down

Lena works as an insurance clerk with SPP Insurance Region Stockholm since December 1993. She used to work at the Trygg Hansa SPP office in Karlstad, another insurance company, but that office was shut down, and Lena accepted a job at the SPP main office in Karlstad. But she was soon given notice that this office was to be shut down, too. The employees were offered work at the Stockholm office. In Lena's case she hardly had an option.

She used to commute weekly between Skoghall and Stockholm. The company provided her with apartment accommodation in central Stockholm as well as the expenses for travel home every weekend.

At this time Lena's work involved rather frequent and close contacts with the clients, i.e. companies affiliated to SPP. Her sojourn in Stockholm lasted for about a year.

Lena works from home since December 1994 and is in charge of correspondence with the affiliated companies, from the first letter confirming that they have been affiliated, to the first invoice. She does not have any direct customer contacts anymore. Most of her working-day she spends connected through a

#### Fact Box Lena Skogsund

*Age:* 35 years old

*Family:* Married to Henrik, the children Fredrik, 5, and Carl, 6 months old

*Place of residence:* Skoghall in Hammarö Municipality south of Karlstad

*Occupation:* Insurance clerk (correspondence with new clients) at SPP Insurance

*Type of business:* Offering occupational pension to employees in private and public service

*Total number of employees:* Approximately 500

– at the section concerned (Region Stockholm): 50

*Organisation situated in:* Stockholm

*Number of teleworkers in the organisation:* 2

*Equipment used in the home by the teleworking employees:*

*Computer:* A 486

*Modem:* 28,800 bps

*Fax:* No

*Telephone:* Yes

*Printer:* Yes

*Copying machine:* No

*Cost of equipment package, including furniture:* About SEK 30,000

020 telephone number (i.e. the person dialling is only charged for one metre charge unit) to the company's mainframe computer in Stockholm. That is how she gets most of her information, both regarding customer-specific questions and regarding general information on company policy and new laws, regulations, and contracts.

Through the e-mail system called Memo she can ask questions via her computer. Lena communicates with the world around her through the Memo system to which all SPP companies are affiliated.

Moreover, Lena receives material, sends letters of confirmation and other material by mail.

### **Lonely But Effective**

Every Wednesday morning at twenty past six Lena seats herself on the X2000 train (a rapid train) to Stockholm. She then spends all day in meetings and discussions with superiors and co-workers. It is eight o'clock in the evening before she gets home.

- Besides all the information I get, it is a "safety-valve", which I couldn't do without.

- Even if I like my job, I miss seeing my colleagues. It gets a little dull and boring sitting here at home in a residential district, Lena says. It's in sharp contrast to the action at the office.

- Then there are some information problems. You can't get away from that. A lot of the information consists of discussing news with your co-workers.

- But my employer must have hit the jackpot. I'm incredibly much more effective today. Before, when I worked at the Stockholm office, half my working time was wasted on interruptions. Sometimes there were of course important meetings and useful information of various kinds. But there was also a great deal of talk about this and that, which had precious little to do with work.

### **You Get to Sit Undisturbed**

- Today I feel strongly the demands on me have increased. I have a definite feeling that my employer demands more of me now. I think I accomplish at least 20 per cent more today, compared to how I used to work.

- You get to sit undisturbed. Moreover, what I write is correct. I make fewer mistakes, despite working eight hours as usual. I am strict with that.

- I start working between eight and half past eight and try to keep fixed hours for lunch and coffee breaks.



*Effective, but a bit lonely, is what Lena Skogsund feels about sitting at her computer at home four days a week.*

- Even though my employers don't necessarily expect me to be accessible during office hours, I don't flex very often.

- There are times when I pick Anders up at his kindergarten an hour or so early, or when I run some small errand in the middle of the day, but otherwise I work "normal office hours."

- Even if it is a little dull to sit alone at home in the daytime, I try to make up for it in my free time. I don't want to be sitting at my computer when my husband has come home from work.

## **"Deal" with Husband**

How is it then to combine working from home with responsibility for home and children?

- Luckily I have a "modern" husband, Lena laughs. We did talk this through very thoroughly before I began working at home. An intrinsic part of our "deal" is that I am not a housewife who takes care of my work on the side. We both help out with cleaning, cooking and so on, and that has actually worked out very well.

- It does happen however that one or another of our friends questions how it can possibly work. After all, nobody else around here works from home. And there are many who have made comments. They seem to think that it is a newfangled modernity. But I think it is above all the "technical" aspect that is difficult for them to understand, and how it could work.

## A Favour

For Lena, working from home is a temporary arrangement until the birth of her child. What happens at the end of the year when the time comes to go back to her job again is something she knows very little about.

– I wouldn't mind continuing to work like this; but I am very unsure as to what my employer thinks.

– They have let me know in no uncertain terms that it is a privilege, a favour, to let me work at home, says Lena. This arrangement is something completely new for the company, and is somehow not quite legitimate yet. I think that I received this "offer" because I worked hard and commuted with all that means.

– Of course my job will be there for me when my parental leave is finished. But considering that I already found it cumbersome earlier with one child, Anders, who is now five, imagine what it will be like with two children!

Lena, who is 35 years old, did a three and a half year program in public administration at the college in Karlstad.

– From then on my career has taken a rather winding path. Among other things I have worked at the social insurance office and as a career counsellor. Even though I feel that I have a broad range of skills, I still worry about work in the future.

– There are very few jobs in the Karlstad area that suit my background and that I would enjoy. Both the municipal and regional authorities are "tightening their belts."

## Employer's Initiative

– It was in fact my employer who took the initiative to my working from home. My first reaction was decidedly positive. I thought it would be very pleasant and convenient. But later I began to have second thoughts. In part it was the contact with my colleagues that I realised I would miss. And I also thought quite a bit about my continued development at work. Perhaps I would be forgotten if I sat isolated at home and worked?

– The ideal for me would be to work from home about half the week. The other half of the week I would "be among people." If there were for example a neighbourhood office in Karlstad, that would be great.

## No Formal Agreement

Lena has no formal agreement with her employer that regulates her homework. Her company has financed the equipment, a 486 model with a modem and a printer as well as, of course, the telephone charges. As for the necessary furniture, Lena has provided that herself. Neither does she receive compensation for the office room in her home.

– Even though we have an office at home that my husband only uses in the evenings, I still think that the employer could have provided some compensation.

– That the employer also has a responsibility for the working environment in the home is clearly something that neither Lena nor her local union branch has understood clearly. On the contrary, Lena has heard from her union representative the opposite instructions: that she herself is responsible.

When it comes to insurance coverage, Lena is not quite sure how that works.

## Misses ISDN

– When it comes to equipment I miss above all a fax and a photocopier. They would facilitate my work. It's also a bit of a pain to continually need to switch between the telephone and the modem. I would have a lot of use for an ISDN-connection. Then I would be able to work with the mainframe computer and talk with a customer or a colleague at the same time.

– But on the whole naturally it is a little cheaper to sit at home and work, compared with the previous double household. Even though my employer covered the costs of travel Karlstad-Stockholm and of my apartment in Stockholm, I had to pay taxes for the benefit.

– In addition I am not particularly "expensive to maintain" now that I am sitting at home. Food costs are lower, and I can walk around in an old pair of jeans. Neither is there any shopping during lunch breaks as things are now.

From the company's side there are now plans to allow other staff members to work from home. That would be for example some employees, salespeople and so-called ITP consultants, in Karlstad. In addition the same situation will arise in connection with the closing of one of SPP's regional offices in southern Sweden. Lena believes that during her short time as a teleworker she has accumulated experiences that her company could benefit from.

– Think the decision through very carefully first. And have a thorough discussion with your spouse.

That is Lena's advice.



## The Accounting Firm that Moved Home

The accounting firm called "Redovisningshuset AB" (The Accounting House Ltd) in Sigtuna, 35 kilometres northeast of Stockholm, is in many ways a typical Greater Stockholm company. It is a service company that has a certain concentration of clients in the vicinity, but that also has clients in the entire region. It is a small company with a staff of five who live shorter or longer distances from their work. Last but not least it is a company with fairly normal margins, where each expense and cost has to be considered carefully. And where changes in the organisation of work or in the way of working can have a quick and tangible effect on the enterprise.

Sometimes the new way of working can mean that the boss as well as the employees move home, that the job moves home for both parts. That was what happened in the summer of 1994 at Redovisningshuset AB, when

both the employed accounting consultants, Vivi Puustinen and her two colleagues, and the director, Hans Henrik Nyman, moved their jobs to their respective homes. For the company the change meant a considerably better economic situation. But for Vivi Puustinen it meant above all the end of a nuisance, that had grown to bigger and increasingly negative dimensions.

### Near a Breakdown from Commuting

– The daily commuting between our home in Tyresö, south of Stockholm, and work in Sigtuna became year by year increasingly strenuous and difficult. Towards the end I was near a breakdown because of it.

This is the sentiment of Vivi Puustinen, a faithful long-time employee of the company.

– I never did get accustomed to the heavy urban traffic. At night I would go through a small trauma, especially after the autumn months began and I would have to watch the weather reports extra carefully. Winters were especially "exciting," Vivi says with her own brand of irony.

#### Fact Box Vivi Puustinen

*Age:* 53 years old

*Family:* Married to Raimo, one adult son

*Place of residence:* Tyresö, south of Stockholm

*Occupation:* Accounting Consultant at Redovisningshuset AB, Sigtuna

*Type of business:* Accounting, bookkeeping, salary-managing

*Total number of employees:* 6

*Company situated in:* Sigtuna

*Number of teleworkers in the organisation:* 4, including director

*Equipment used in the home by teleworking employees:*

*Computer:* a 286

*Modem:* 14,400 bps

*Fax:* Yes, with built-in answering machine and photocopier

*Telephone:* Yes

*Printer:* Yes

*Copying machine:* No

*Cost of equipment package, including furniture:* Around SEK 20,000

– When you get to an age where you stop counting the years anymore, you sense the boundaries for what you can manage physically and mentally, says Vivi, now 53.

The company previously had an office in central Stockholm as well. When it was closed in 1990 Vivi chose to stay with the company, and ended up with more than double the distance for her daily commute.

## **The Fate of Many Urban Dwellers**

One alternative would have been to move. For Vivi a suburb north of Stockholm would have been attractive. Vivi and her husband Raimo discussed the possibility long and hard. Raimo, on the verge of an early retirement, was, however, loath to leave the security they had built up in idyllic Tyresö.

Vivi shared what is the lot of many an urban dweller: long and tiring - sometimes even dangerous—trips. And long days away from home. Arriving home so late that there was almost nothing left of the day.

– I travelled for two and a half hours every day. In addition I often left extra early, often already before 7, so that I could pass through the city before the worst of the traffic. In other words, I arrived in Sigtuna earlier than on time.

– On the other hand, that was probably a necessity. I had to park the car and smoke a cigarette or take a short walk. What I really needed was to calm myself down before starting work. When I finished work for the day I would stay in Sigtuna a while, going into stores and shopping a little, in order to pass the time until the traffic calmed down.

## **Health on the Line**

65 kilometres twice a day in heavy and often tough big-city traffic became more and more of a strain for Vivi. Finally both body and soul had had enough. Vivi was granted one month's sick leave. The diagnosis was overexertion and stress, but the overriding cause was, according to Vivi herself, the long daily commutes.

A solution was however in sight—unexpected and in a way that Vivi had hardly imagined. Hans Henrik Nyman, the boss, had had an idea in the back of his mind that in the beginning of 1994 he wanted to try to realise. He would move the company to his house in Sigtuna.

## **"The Girls" Invited to Move Home**

Despite renovations and extensions to his house there would still be a problem with space. Vivi and the two other accounting consultants, or "the girls" as Vivi says, were asked whether they would be prepared to work from home instead.

For Vivi the first reaction was very positive. But there was naturally still cause for reflection and perhaps some doubt.

A first problem was that there was no one to consult or discuss with before taking the plunge into something new and unknown. Vivi's first thought was to

investigate whether it was possible to rent office space just for herself at one of the small companies in Tyresö. That didn't turn out to be a suitable alternative. The costs would be too high even if there did happen to be good premises to rent.

Then came the practical questions. What about equipment at home? What about if something broke or got messed up in some way?

Arranging a working space was not a problem. Vivi's son had moved out a few years earlier and there was an office room in the basement of the villa.

– With a view of the street, adds Vivi, that is important.

## Reflection and Discussion

Hans Henrik's initiative generated a process:

– Hans Henrik began by speaking with each one of us. Then we were given time to reflect on our own.

– Above all we had discussions together—about big things and small. The subjects discussed were everything from the risks of isolating ourselves socially to the very practical and down to earth details: computers, faxes, and telephones. Our discussions lasted for half a year, Vivi says. There wasn't only enthusiasm.

– Nonetheless we decided that it was a good solution. The benefits outweighed.

The first of July they took the big step. Three women accountants "moved home."

## "No Need To Be Afraid"

Now, after soon a year of experience, Vivi can sum up:

– There is no need to be afraid to start. I had big expectations and they have actually been realised.

– I sleep longer in the mornings and I take time to read the newspaper - something that I never had time for before. Then I go out with the dog, Trixi, for a while before I sit down at my desk. After work, at around 5, I often take a long walk with the dog.

– There are quite a few people in the area in the daytime, both older people, mothers of small children, and part-time workers. It isn't at all as lifeless and empty as I had thought.

Vivi has begun a healthier life. Her last cigarette has been stubbed out and now it is long walks that give her the energy and will to work.

## Mostly Computer Work

So what does an average working week look like?

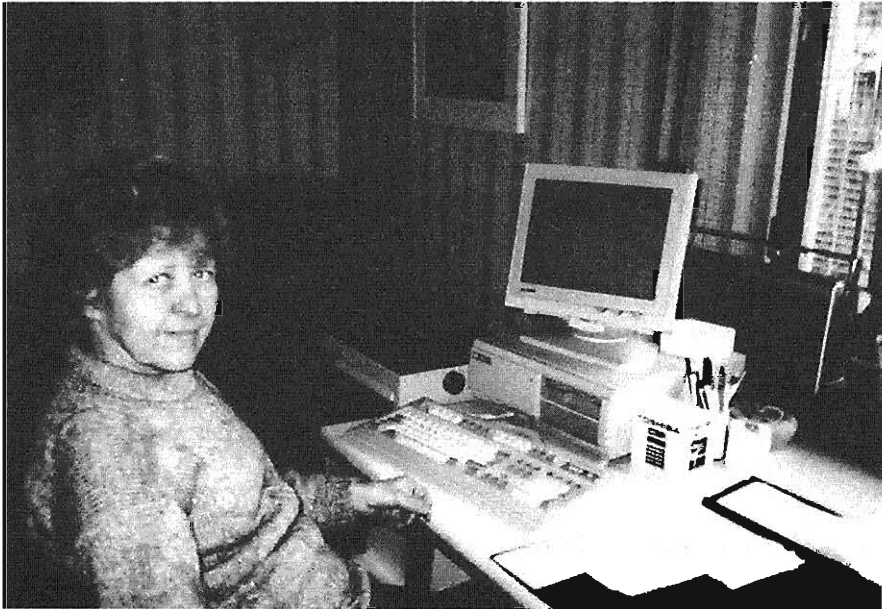
– I have about 30 companies that I help with mostly bookkeeping, VAT payments, pension and tax accounting, contacts with authorities and so forth. It is above all with these companies that I have daily contact.

- I sit at the computer up to 6 hours each day. In general I "transmit" material to Sigtuna once a day. Receiving material directly into my computer is less common.

- I guess I send a few faxes every day mainly to the companies I work with. But most contact, both with clients and with the office, I do by phone.

- Every two weeks we all meet at the office in Sigtuna. We start with lunch and then have a meeting for the rest of the day. In addition, I spend a full day at the office in Sigtuna each month when the salaries are sent out.

- I also make regular visits to some of my client companies. I pick up material at 5 or 6 companies each month, sometimes even more often.



*Teleworking became the beginning of a new, better, more fun, but also more effective life, says Vivi Puustinen.*

## **Increase in Productivity**

Vivi does not feel isolated with her new situation working at home. But even though she considers herself a bit of a "lone wolf" she misses the spontaneous chats. Of course, there are telephone conversations with colleagues, but not "like before."

- There is of course another side to the story. Vivi estimates that she has increased her personal productivity by 25 per cent since she began working from home.

How is that possible?

- Today I can work much more effectively. First of all I'm stronger and more energetic. In addition I win time by having complete control over the

organisation of my work. I can set my own pace. If I get tired I can lie down for a while. That is much more effective than all the coffee and other breaks that are more steered by the clock than by the work burden, she says.

Vivi's job is, in addition, very much a "seasonal" one. There are peaks at for example the yearly and periodical financial reports, in connection with VAT payments, and at the time of salary payments. Then both evenings and weekends can be used for work. But during "low season" Vivi can informally compensate her overtime. It is enough that she informs her employer where and when she can be reached.

## A New Freedom

Vivi has no written agreement in the real sense of the word with her employer. In addition to an oral contract there are rules regarding the compensation the homeworkers receive, about SEK 350 a month for the office space, and SEK 100 a month for the telephone.

When the operation moved into Hans Henrik Nyman's private home, the old equipment as well some of the furniture was divided between the workers who were going to be working at home. Of course, some new items needed to be bought.

The equipment that Vivi has put into her office is not particularly special; a personal computer with a printer, a telephone, and a fax. For Vivi, however, this has meant a new freedom to shorten her working day from 11 hours, including travel, to 8 hours.

– Teleworking has become the beginning of a new, better and more fun, but also more effective life, says Vivi.

## Hans Henrik Gets an Idea

Even for the boss, Hans Henrik Nyman, the new way of working has meant a new way of life though the adjustment has not been as dramatic as for Vivi.

When the author met Hans Henrik Nyman on the first real day of spring in March 1995, the sun was already high over the Sigtuna bay. On the embankment a young mother stops with her baby carriage and sits down carefully on a park bench. Hans Henrik looks up at the beautiful villa that has been his family's since 1982, and now since 1994 also his workplace and office. From the lake-side and from the street it hardly differs from the surrounding houses. You have to go almost to the building itself in order to discover the discrete company sign on the corner of the house.

– The company previously rented space in Sigtuna a short distance from Hans Henrik's residence. However, Hans Henrik felt that there were a number of problems in the operations that needed a solution. An idea struck him, then got clearer and clearer contours. In 1994 the idea matured that they could resettle the company into his own spacious villa and let some of the staff work from home.

– I have always enjoyed trying out new things, says Hans Henrik. Then I thought also that we could "kill two birds with one stone."

## Previous Premises Inefficiently Utilised

– First of all I felt that the previous premises were insufficiently utilised, says Hans Henrik. And then I saw the chance to cut some costs. But part of the rationale was also that some of my employees lived far, in some cases very far, from their work.

Another part of the picture was the opportunity for the 3 employees, who work with accounting, to become self-employed and make a collaboration contract with Redovisningshuset. One of the employees, Britt, decided to accept that option after some thinking.

Now the company under its new working forms has been operational for almost a year. What are the lessons learnt? How is the social contact and sense of solidarity? Are the staff satisfied with the new way of working? What do the clients think, and what does Hans Henrik himself think?

## Better than Expected

– When we recently had an evaluation session we came to the conclusion that all in all things had worked out even better than expected. Even Pia, who had been reluctant at the beginning, agreed. Her worries were for natural reasons that she would be isolated. That is understandable considering that she also lives in an isolated place. We have tried to compensate for the hesitation she felt by giving her a large part of the direct contacts with our clients in terms of pick-up and leaving of material.

Also the economics of the new way of working has lived up to expectations both in terms of savings in the cost of the premises, as well as write-offs for the new equipment bought for the teleworkers.

## Break-Even after a Year and a Half

– We used to pay up to SEK 150,000 a year for rent of office space. Now those costs, that is the cost of these premises in my house, are just SEK 40,000 a year, mind you, not including electricity and heating. Considering that renovation and additions cost about SEK 120-130,000, and that we bought new modems, faxes, and so forth for about 60-70,000 crowns, it was already a good deal, looking at the directly measurable components.

– The break-even point cost-wise will be after about 1 ½ years.

## Increased Productivity and Quality

Hans Henrik agrees with Vivi's assessment that the home-workers have become more productive as a result of teleworking. But he wants to be more precise:

– About half of this productivity increase can be interpreted in terms of better work performance in relation to time put in. This means translated to money about 15,000 crowns a month for the company as a whole.

– The other half, which is just as important, is an increase in quality, better precision, fewer mistakes and better reports in the work that is done.

– Then again, my own efficiency and productivity have gone down a bit. And that is simply because I no longer have access to documents here as I had before. The material is at home with the accountants and often it is not just some little detail that needs to be checked, rather I need to have access to the entire dossier in case a client calls and wants to discuss something.

### **Unplugs the Phone at 5**

– I try as much as I can, even though I am self-employed, to keep work and leisure separate. I maintain my lunch and coffeebreaks. And our two dogs ensure that there are regular walks.

– On one point I am actually even more consistent. Before, when I was at the office and working in the evenings, I let the telephone stay open until I went home. Now I always switch it off at 5 o'clock and on again in the morning. In fact our clients show more consideration to my private life now. It used to happen quite often that they would call me at home. Now that almost never happens.

– In terms of management there has actually been no change at all. My staff kept a tight control over me already before, laughs Hans Henrik.

### **Compulsory Staff Meetings**

– Joking aside I have the privilege of having experienced and "mature" colleagues, who have a lot of experience and who know their jobs, who know the clients, and who are able to take care of themselves. But I try to make at least one daily telephone call to my homeworking colleagues—regardless of whether it is necessary or not.

– In addition I am sure that we are very effective the Wednesday afternoons each second week when we do all meet—at the same time as having a good time. These meetings are compulsory. "Your own funeral is the only exception" as we usually joke.

– But there is a perhaps even more important factor: we are a closely knit team who have worked together for 5-6 years. If the time should come when we would have to hire someone new we might have a problem. Then a period of acclimatisation here at the office would be necessary.

### **Has Worked Well Technically**

As has been indicated in the discussions, there had been a lot of apprehension before they took the step of working from their homes, that the technical side could cause problems. But even those apprehensions did not turn out to be justified.

– I guess we have had a few small technical problems but as a rule we have solved these with a telephone call to my eldest son, a.k.a "the computer expert." The only bigger problem we have had can be attributed to our accounting software that probably was not designed for teleworking, but we are currently replacing it. The AXE digital telephone system has been installed both here in

Sigtuna and in the areas where the staff live, and we have had no telecommunications problems.

From the clients' side as well there have only been positive comments.

– Sure, at the beginning we got questions about where they should leave the material, but the answer to that question was simple: here at the office, just like before. But the clients feel, as we do, that it is exciting to try something new.

– Now a couple of months into the year we have a lot of account closings ready and can look back, and we can definitely say that it has worked very well. That is a reaction that we also get from our clients.

### Curious Colleagues Call

– In addition I've also had calls from a number of colleagues who have been extremely curious as to how things are going. Accounting is of course an activity that is well suited for teleworking. Homework has also been a fairly common phenomenon in the branch long before access to today's computers and telecommunications.



*Sigtuna Bay so close makes for nice long walks during the breaks.*

– One piece of advice that I usually give is not to stare yourself blind at the technical side nor to fall prey to energetic salespersons and buy up equipment with a performance beyond your needs. The most important thing is that the equipment be simple, and of course that it works.

– We have a server here at the office, a 486 with a 4 Mb internal memory and 420 Mb disc drive. We also have three 386's and three 286's that we will soon replace. We will, as I said, also be replacing our software. Otherwise we will manage for quite a while with the equipment we have.

Says Hans Henrik, as the dogs crowd themselves into the office and demand attention. It is time for a long walk this first day of spring.



## Teleworking as Personnel Policy

One Friday during the early summer last year, when we were on our way to our summer cottage, I saw a sign with the question: "are you interested in telecommuting?" If interested you were asked to call a certain telephone number.

– My first thought was that it was about car pooling for people living in the southern part of the county into Stockholm. I thought that it seemed interesting considering that a number of our staff at Siemens Nixdorf live in the area.

### A Sign by a Country Road Raises Thoughts

– The first thing I did when I got to work was to call that number. I didn't at all get the information I had expected, instead it became an experience that would change the whole operation at Siemens Nixdorf. I had dialled a teleworking project that had recently started in Nynäshamn, about 30 kilometres south of Stockholm, explains Per Erik Andersson, product manager of the PC section with responsibility for marketing, training, and sales at the company Siemens Nixdorf.

–When I realised what the possibilities could be in having work done from the homes, many pieces of the puzzle fell into place. The 200 employees at our head office in Solna live spread out in all directions of Greater Stockholm, about evenly divided between the northern and southern parts.

– This has of course not been unproblematic, especially for those who had to commute "crosswise." But the real problem we saw was ahead of us, when

#### Fact Box Per Erik Andersson

*Age:* 47

*Family:* Married with Carina, children Ninnie 11 and Peder 13

*Place of residence:* Johanneshov, Stockholm

*Occupation:* Product manager of personal computers at the Swedish Branch of Siemens Nixdorf

*Type of business:* Sales, consultations, and development of IT- equipment and services

*Total number of employees in the Swedish branch:* 200—at the section concerned: 10

*Number of teleworkers:* about 70

*Organisation situated in:* Solna, but the company moves to Upplands Väsby outside Stockholm in 1995

*Equipment used in the home by teleworking employees:*

*Computers:*

(1) A fixed 486.

(2) A portable 586 (Pentium)

*Modem:* 14,400 and 28,800 bps respectively

*Fax:* No

*Telephone:* ISDN

*Printer:* Yes

*Copying machine:* No

*Cost of equipment package, including furniture:* Approximately SEK 65,000

we would make the move to Upplands Väsby, somewhat to the north of Stockholm, in the summer.

## Unpopular Move to Upplands Väsby

– It was our parent company in Germany that at the end of the 80's bought property in the so called Arlanda airport corridor. The parent company subsequently decided that the Swedish Branch of Siemens Nixdorf should relocate there. Partly for security reasons, but mainly in order to cut costs.

– It was most definitely not a popular decision. If for example one of our Nynäshamn guys wanted to take public transit to the new office in Upplands Väsby, it would take up to three hours—one way!

– If we could start from scratch, there is no doubt that we would invest in a slimmed flexible office in the city.

– A sign by a country road and an impulse of Per Erik's thus became the origin of one of the most comprehensive teleworking projects in the country. While at his cottage his thoughts took more concrete forms. On the first working day after the summer holidays, Per Erik went in to the Managing Director, Jan B. Andersson, with a map of Stockholm in his hand with the homes of the employees marked on it. His boss quickly took the message to heart. He also made the connection to the almost 100 staff out at the company's approximately 25 "service offices" throughout the country, who had long been working with their homes as a base. There had in fact been a tradition of teleworking from home within the company even though nobody had called it by this name.

## Five Main Motives

Per Erik together with the managing director Jan B Andersson formulated five important goals that they felt could be carried out by letting the staff who were interested in the idea telework:

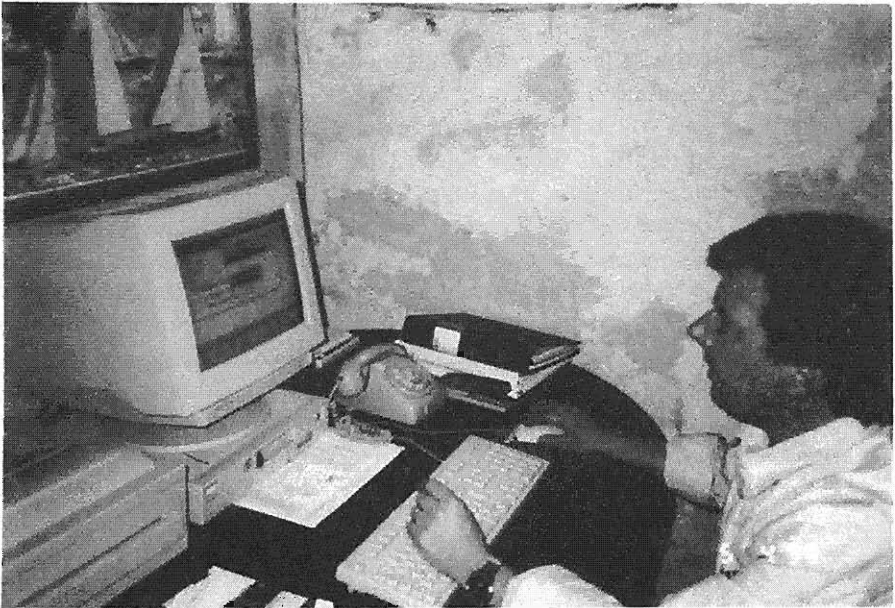
- It would be possible to keep qualified personnel, the companies singlemost important resource.
- The company would—from a larger geographical basis—find it easier to recruit new, qualified staff.
- The staff should in a very concrete and natural situation be able to learn the company's products better.
- The commitment to teleworking would reinforce the company's image as a "modern" IT company.
- The cost of office spaces could be greatly cut.

From the beginning voluntarism was a principle: no one should be "forced home." Traditional offices would be offered to all those who so desired.

## The Trade Union Says "Never"

The proposal was very well received by the staff. But the first reaction of the trade union was No, and they raised strong objections. Many discussions followed, both with the local and the national trade unions.

– After having taken a more positive view on teleworking at the annual meeting of the national trade union in the fall of 1994, we noticed a clear change of opinion. Apparently this was a result of parallel discussions of teleworking at different workplaces in many parts of the country, according to Per Erik.



*Per Erik Andersson, one of the initiators of teleworking at Siemens Nixdorf, at home in his basement office.*

Shortly afterwards it was decided to start a test project that initially, from August, 1994, involved five employees from different departments. Soon thereafter the executive director and five other employees joined the project. The evaluation was based on the teleworkers' weekly reports on a wide range of issues, from technical to social, changes in travelling, and access to information.

## Rapidly Growing Interest

The preliminary evaluation during the fall and the pressure from the employees resulted in a continuation. Today around 15 per cent of the 200 employees at the head office—service technicians excluded—work from home part-time. In the spring of 1995 a large health care project involving around 40 persons will move. But everybody will not be able to telework.

– When we move out to Upplands Väsby after the summer holidays some functions will not be suited for teleworking. The personnel manager or the switchboard for example.

I also estimate that around 50 per cent of those who could telework will choose not to do so.

– Those who could work from home, but do not want to, have different motives. One of the main reasons is a fear of social isolation that of course has to be taken seriously. Other reasons are too small apartments, or having young children at home.

– Those are the kinds of answers received in our interviews. Behind the answers, though, there might sometimes be other factors such as uncertainty of their own work input and in some case even fear of alcohol problems.

## Office Reconstruction

– We are reconstructing the offices to get good working space for all categories of employees. Those who will work on a stationary basis in Upplands Väsby will get the traditional office space, i.e. their own room. Those who work a couple of days a week from home will get space in the new flexible work areas with the possibility to sit together in the current work project. Finally for those who only come to the office once in a while, there will be "docking stations" available.

## Request for a Teleworker Agreement

Both the company and the trade union found a need for an agreement to regulate the conditions for teleworking. With the assistance from other companies with longer experience of teleworking and from the union, an agreement was drafted to serve as a model or outline for the individual agreement that is signed with each teleworking employee.

In a preamble the reasons and intents are described. Firstly, the voluntary nature of the agreement as the basic principle as well as the effort of making *individual adaptations to fit the work description and the needs of the employee*. Secondly, the conditions of teleworking are defined, responsibility for the equipment, working hours, as well as compensation for the equipment and insurance.

In the preamble there is also a paragraph on a "way out," i.e. giving reasonable notice if either party should wish to return to the traditional way of working. Last, but not least, it is stated that the conditions of teleworking should not be such as to harm the employee's social contacts with colleagues, career, and advancements.

Each individual agreement regulates the duration of the agreement, the work description, demands on availability, security and safety regulations as well as detailed conditions on equipment, insurance, and work space.

The employer defrays the costs for all equipment, including furniture, insurance, and telephone, but does not give compensation for office space.

The working equipment varies but usually consists of a computer with modem, a printer, a stationary and a mobile telephone. The equipment provided by the employer may only be used for work. The company on the other hand gives the employees a good discount on equipment for private use.

### **"Keep It Simple"**

In principle, the company prefers that the employees use stationary equipment. Per Erik refers with horror to laptops filled with company information left behind and forgotten. The salesmen, however, need portable equipment with docking stations but most of the employees use rather ordinary, stationary PCs with varying size of screen, depending on the work.

"Keep it simple" is another important criterion when choosing the equipment. This criterion is not only based on cutting costs but also a marketing argument vis-à-vis the customer, showing that teleworking is possible with rather simple technique and at a reasonable cost. An ordinary equipment package costs around SEK 20,000.

### **Teleworking or Closing-Down**

What are the experiences nine months after the big change?

- We will succeed in our most important goal, that of keeping our qualified personnel. After reducing the staff during the 1990's the company is only left with a core of very qualified employees. To lose 5 per cent of them would be very bad for the company.

- If as many as 20 per cent left the company—something that was indicated by the interviews made when announcing the move to Upplands Väsby—that would have been disastrous. Then we might as well have closed down. As an example, Per Erik mentions that one teleworker in Nynäshamn "pulls in" SEK 2 million net for the company.

### **The Young Hard to Convince**

- But we were mistaken on one point. We thought that the possibility of teleworking would be an active instrument of employing new personnel. Now we know we were wrong. The new employees we need usually come directly from university and they have already been studying alone for many years. When they join the work force they would like to meet people, make new contacts, both professionally and socially.

- That they also wanted large office space, a mahogany desk, and a secretary came as a surprise to those of us born in the 40's, Per Erik comments with a laugh.

No doubt—to get back to one of the goals on the list—teleworking has also contributed to reenforcing the company image. Per-Erik—as well as several of his colleagues—often participates in seminars and conferences and there gets the opportunity to do PR for the company.

– Our product knowledge has become considerably better. We can often answer the customer directly without consulting manuals or contacting the head office first.

### **Great Gains for the Company**

– The fifth goal, to cut costs, will be reached in full. Our housing cost is today around SEK 170-180,000 per year and employee. This cost, that apart from office space also includes administration, central computer support, etc, can be halved.

Instead of using two floors we will use one and a half. An area that used to seat five employees will now seat eight persons. And at the same time we will get an office that is tailor-made to our needs. If you only look at the overhead costs we will save around SEK 3.5 million a year. If you translate that to the corresponding gross sales of SEK 50 million a year we'd have to make to cover that, it's not bad. The total gross sales figure for the market segment in question is around SEK 600 million a year.

–And of course, the increased productivity should be added, that I estimate to at least 30 per cent. We get rid of the "nuisance noise," meaning that when sitting at home working we don't get interrupted as often. The questions we get from our colleagues are very much more structured and well formulated. To those of us who work part-time at home it seems as we are spared some 50 per cent of all "silly" or unnecessary questions, not to mention all the meaningless interruptions in a traditional office environment.

### **The Electronic Mail Hysteria**

But from the Andersson family's point of view it was not self-evident that Per Erik should work from home.

– Oh no, Dad, was the spontaneous reaction of his 11-year old daughter Ninnie when after the summer Per Erik announced that from now on he would stay home to work a couple of days a week.

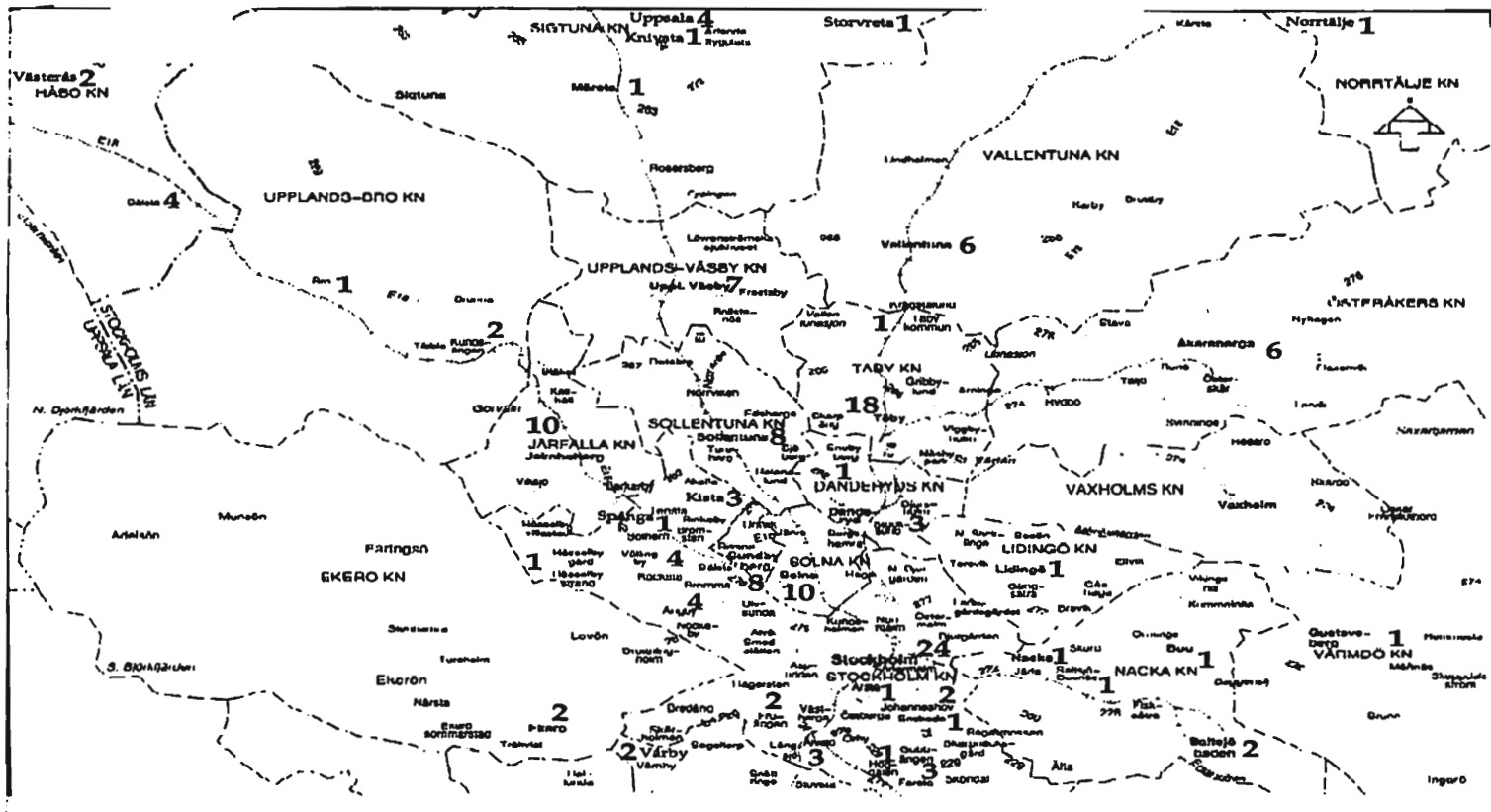




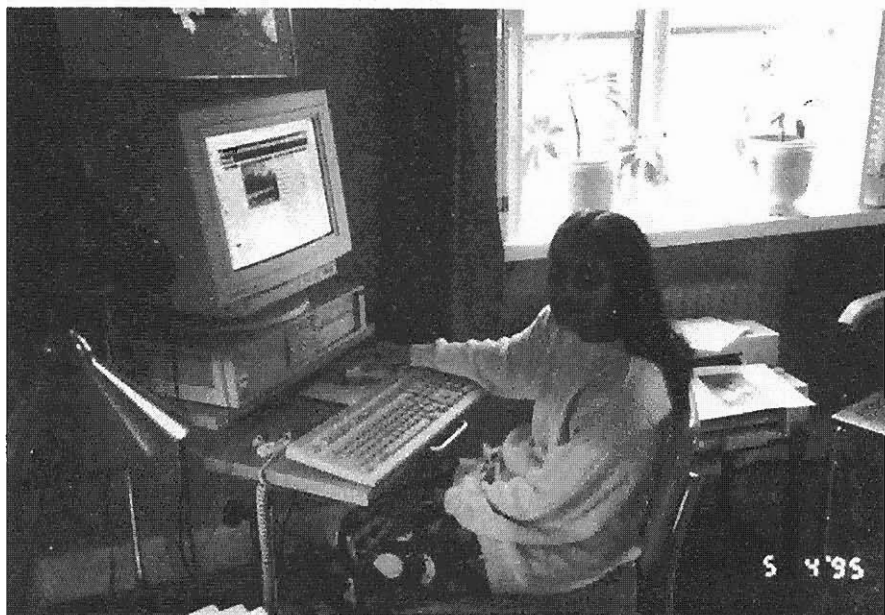
Figure 3 The employees at Siemens Nixdorf live spread out over basically all of Greater Stockholm.



But the apprehension is gone. The families of Per Erik and his colleagues are getting used to them working from home. The expected problems have been dealt with, those of a technical nature were rather easy to solve, but new problems have been added.

– The e-mail hysteria, for example. Per Erik tells about a colleague who was about to make a longer trip and for that reason sent a couple of e-mails at one a.m. a Friday night. To his great surprise he immediately received an answer. And that from a colleague who had no possible reason to be on standby or work so late.

– Being only 20 seconds away from work, it's tempting to log in at all kinds of odd hours to see if anything exciting has arrived.



*The Andersson family home is well equipped with computers. Here 11-year-old Ninnie takes help from a CD-ROM in her homework.*

Behind this tragicomical example there is a more serious background.

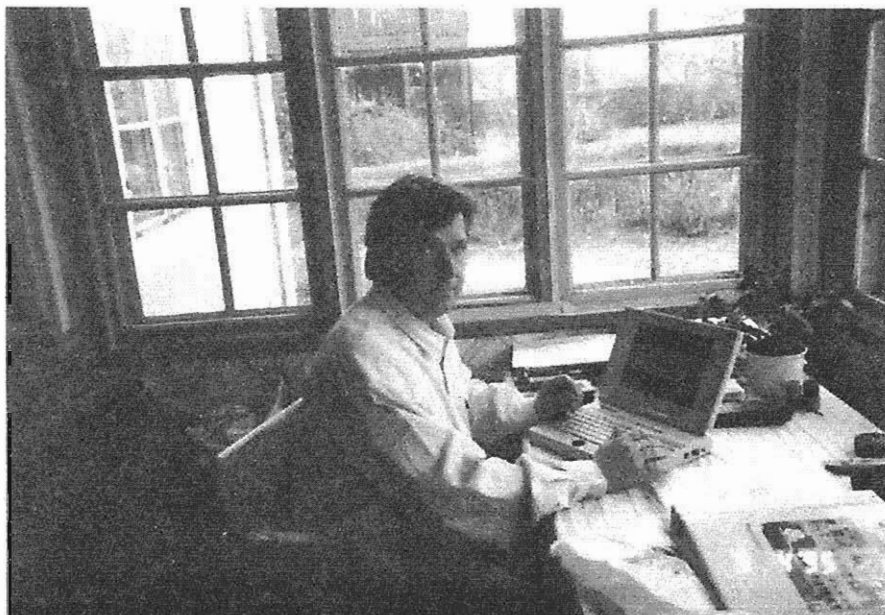
– An e-mail was sent on the weekend before an important meeting held on a Monday morning dealing with a reorganisation question. In other words those who had read the material came so much more prepared and were better able to judge the personal consequences of the reorganisation than their colleagues who arrived at the meeting unprepared.

But the lesson has been learnt. An "electronic ethics" is being established based on the necessity to differentiate between work and leisure time and not unnecessarily put a premium on working at odd hours.

The experience based on the weekly reports otherwise shows that the teleworkers work as many hours now as they did before. For Per Erik this means from 50 to 75 hours a week.

## Problems Ahead

The positive experiences, however, are in the majority. Towards the end of 1995 about half of the head office staff will be teleworking a couple of days a week. In the fall, the employees in Nynäshamn will also rent space in a neighbourhood office that has been established there in collaboration with among others the local authorities and Telia, the leading Swedish telephone company.



*When the first spring sunshine appears, Per Erik moves to this "summer office," a glassed-in porch with a view towards the garden.*

At the same time Per Erik can see other problems coming. Problems that hardly anyone today has any experience to deal with.

– We are going to see how the organisation will be less hierarchical and how some in the management will become superfluous.

– As the employer, we are also forced to cancel a couple of teleworking agreements. There are employees who get very little done with this new way of working. If they themselves do not realise this, we in the management have to deal with it. To be able to live up to our responsibility as an employer, we also have to make home visits to see what the working environment looks like.

## Two Teleworkplaces

Per Erik practises what he preaches. The old house built in the 20's in Johanneshov, Stockholm, is very well equipped when it comes to computers. His wife Carina who

works in a private school in Stockholm takes turns with their daughter Ninnie using the "family computer" in the living-room. Ninnie prepares her homework with colour copies from a CD-ROM. Per Erik himself who works from home two days a week, usually uses his basement office. But in May he moves up to his "summer office," a glassed-in porch with a view towards the garden.

## The Union Boss Who Travels to Gotland to Work

To live in Nacka, a suburb of Stockholm, have the office downtown on the island of Stora Essingen, but carry out the work from the summer house at Lummelunda, Gotland, the Swedish island in the Baltic Sea. It may sound like a dream. But it is reality to PG Svensson, who works with strategic planning and analysis at Sparbanken Sweden. PG used to work for Spadab, Sparbanken's research company in the IT-area.

PG also has another role. He is a board member of the bank union, Finansförbundet. In the late 80's he was chairing the investigation into the union's view of flexible work and teleworking, carried out by TCO, Sweden's largest white-collar union with around 1.4 million members. He is himself an example of the union's new, positive view to teleworking.

### Fact Box PG Svensson

*Age:* 50

*Family:* Married to Kerstin, 2 grown-up children

*Place of residence:* Nacka, Stockholm

*Occupation:* IT-strategist (strategic planning and analysis) at Sparbanken Sweden.

*Type of business:* Financial services

*Total number of employees:* 9,500

of which at the unit in question: 5

*Office situated in:* Stora Essingen, downtown Stockholm

*Number of teleworkers in the organisation:* Not known

*Equipment used in the home by teleworking employees:*

*Computer:* Portable 486

*Modem:* 14.400 bps

*Fax:* Yes

*Telephone:* Yes

*Printer:* Yes

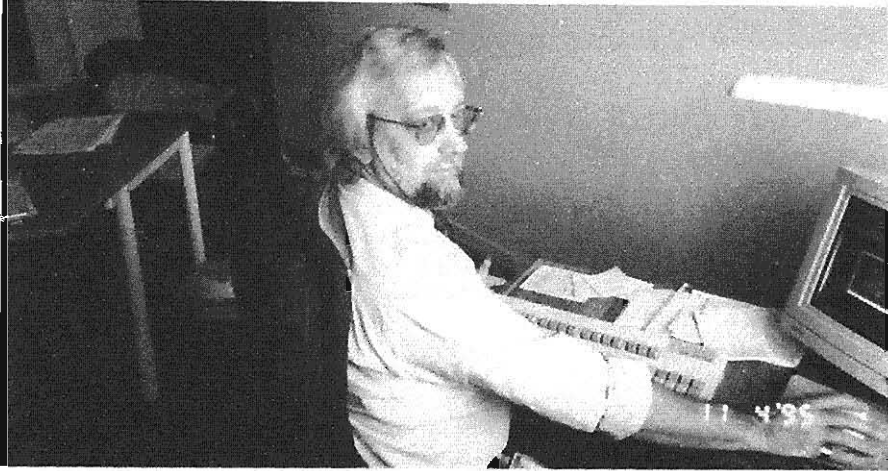
*Copying machine:* No

*Cost of equipment package, including furniture:* SEK 60,000

### Works Best in his Gotland House

PG Svensson works around 5 days a month, year-round, from the summer house at Lummelunda, situated some 20 kilometres outside Visby, the main town of the Baltic island of Gotland. PG tries to stay at least two extended weekends per month in the house that he and his wife Kerstin built in 1982. PG has worked in this way for about 10 years and plans on more working days in Lummelunda. Both PG and his wife would like to move here permanently and work 2-3 days a week from Gotland. It is not yet possible due to meetings where PG needs to be present. The first step will probably be to make Lummelunda the home base and commute weekly.

– It's most of all the chance to work in peace and quiet, to really be creative, that makes me try to work as often as I can from Gotland. I try to plan the Gotland trips at least a month ahead. That way it's possible to find rebated flight departures and thus cut the costs.



*It's important to pay attention to both the pros and cons of teleworking, says PG Svensson, IT-strategist for Sparbanken Sweden and also board member of the bank trade union.*

– If we take the ferry over to Gotland I start reading reports and background material already on the boat. When arriving at the summer house I continue to work. But most of the time I write my reports, prepare the analyses and presentations for the meetings in the coming week.

### **Concentration and Availability**

The big advantage is that PG has the possibility of greater concentration—and availability. With this new freedom follows a harder self-discipline. Making your own schedule you see to it that you always can be reached at certain times. This is not always the case in traditional offices where many are "on the run."

– I don't work as many hours when I'm in Lummelunda, but they are much more productive both in quantity and quality. Out of my 45 working hours a week, those in the summer house are by far more productive.

– It's not so much due to the technique that I have chosen to work in this way. The technique just makes it so much easier and more rational. I have a rather powerful Think Pad that I can load with what I need before I leave. And, of course, I also use the possibility of logging in to take part of and answer the e-mail.

– But I cannot say that the technique works without problems. The lines to Lummelunda are poor and we will not get the digital telephone system (AXE) until 1997. It's probably the connection between Lummelunda and Visby that causes problems since we have two telephone subscriptions but only one line.

### **No Enthusiasm from the Management**

It all started as a test project with a few persons initiated by PG, who early had seen the advantages in making one's own work schedule. But the test was not received with any enthusiasm by the management. The bank policy stated that teleworking "could be accepted in exceptional cases" and then only for "established personnel." The personnel department wanted to make an individual review of every presumptive teleworker.

PG feels that the management attitude is somewhat contradictory.

– They stress the importance of being present and available. But that's just what you are, available, when you work from home. It's a lot easier to reach me when I'm working in Gotland than when I'm in the office.

– In my work for the trade union, I have noticed that the Swedes are quite well ahead when it comes to work results rather than managerial control and supervision, i.e. the result is what counts, not that the boss controls how it was reached.

– Yet I don't think that Swedish managers are fully keeping up with development. They are stuck in old patterns. Many of today's managers cannot deal with leading a business that is solely result-oriented.

– On the other hand, problems may arise when the managers themselves sit at home working during office hours. That's my own experience when I was heading a department in the company. Some staff members had a need to have just about daily contact to discuss certain things personally.

## **Tacit Understanding**

PG has a tacit understanding with his employer to work outside the office according to his own judgement. Several managers also work from home, but then only evenings and weekends.

The company also has paid for most of the equipment that PG uses, a portable IBM Think Pad 486 with built-in modem as well as a stationary PC that can be used for e-mail in the summer house, a fax, a printer, and a telephone. The package price: SEK 60,000. PG himself bought the equipment used in his permanent home in Nacka; computer, printer, and fax. This equipment is primarily for personal use. Compensation for the telephone line is hardly needed since PG uses a toll-free number for communication with the office from Gotland.

## **Old Facts Reviewed**

In 1985, the bank trade union, where PG is a board member, motioned at the national confederation's annual meeting to give its view on teleworking. PG came to head the resulting work committee.

– In the beginning I was almost alone in my positive view to teleworking. But during the course of our work we met quite a few homeworkers as well as visited a number of teleworking centres, and they did not at all live up to the "frightful image" that had been painted, especially by our trade union colleagues out in Europe. What they often described were mothers of small children who were forced to work from home for lack of child care. I think this for a long time contributed to the union's very negative view of teleworking.

Already in the preface of the committee's report a new union view of teleworking was apparent:

"During the course of our work, we have been forced to amend our views. We have seen fascinating work places that we ourselves would like to work in, met fascinating people that we ourselves would like to see as colleagues, and learnt that what has been described as boring routine work can be both varied and give ground for development. If you investigate the facts."

## At Just the Right Distance

– After our report entitled "At Just the Right Distance" was published the debate about teleworking as something altogether negative died—at least in the white-collar section of TCO. We have got a less rigid and more constructive debate. From the union we can point out the risks in matters of social isolation or burn-out. We can also point out certain problems and pitfalls that can be avoided. In the report we also highlight the legal aspects of teleworking, mainly labour legislation.

– We have not gone from an altogether negative view to an uncritical positive view. But we have tried to show the advantages of teleworking for the employees when it comes to not having to commute long distances, to get a greater stimulation and motivation in their work, etc.

## There are Limits

So what's the view today, eight years after the report was published?

– If you listen to those who now join the work force, it is clear that a major mental change has taken place. The "9 to 5-thinking" that our generation got used to has disappeared among today's young people. They gladly work at any time, day or night. And they value this mobility and flexibility. I think that this also will lead to a steady increase of teleworking.

– I also think that it will lead to major changes at our workplaces and in the work organisation in general. We are using very expensive office space only part of the week. In the future we are more likely to see a smaller, more flexible office that will become a forum for meeting, discussing and exchanging ideas, rather than a place where everybody works in their own room.

– There is a limit that I believe goes at about half the work week when the advantages of working from home outweigh the disadvantages. If you work from home nearly five days a week you lose your social contacts which leads to negative consequences both for the ability to cooperate and for union activities. The common references, conditions, and experiences will get lost and they are in many ways the foundation for union activities.

– On the other hand, I don't think it's necessary to exaggerate the risk for "workaholism," where you cannot differentiate work and leisure, related to home-based teleworking. It does happen that people work far too much but then it is rather due to the overall work situation and not the fact that you work from home.

## When the Employed Become Self-Employed

– There is another risk, however, that should be pointed out. The professional community might get lost since it is often through discussions and in exchanging ideas with the colleagues that we learn and increase our competence.

– The union is also faced with new challenges with an increasing amount of teleworking. You can hardly carry out union work over the telephone or Internet. I think that would lead to a general superficiality.

– The challenge for the trade unions in the future is a situation where you have to go out and engage also those who are no longer employed in the traditional sense. So far

the white-collar unions have not wanted to organise the self-employed even though their professional work well fits in under a union branch area. I believe that it will be necessary to change this view if the trade unions want to continue to play a role in the working and community life.



## To Analyse Medical Products from Home

Anders Broström, since 1991 administrative director at the Medical Products Agency in Uppsala, the university town about 70 km north of Stockholm, has earlier worked for The National Institute for Working Life. Maybe that partly explains the initiatives he has taken to form a new, flexible office. But only partly. Medical Product Agency is a government office with highly educated personnel. Out of 200 employees 150 have university degrees and of those about 60 have a doctor's degree. They are all specialists in their respective fields, something that creates special conditions both for organisation and management.

— In other words, the work input is very individual with many external, often international, contacts. Special requirements are thus put on the management. "Management by vision" rather than "management by view" it might be called. This view has been adopted throughout the office, says Anders, who himself has adapted to this new way of working. 1-2 days a week he works from his house in a suburb of Stockholm.

### Fact Box

#### Anders Broström

*Age:* 48

*Family:* Married to Gunilla, daughters Therèse, 20, Anna, 11, Lovisa, 10, Signe, 8, and son Gustav, 4.

*Place of residence:* Stora Mossen, Stockholm

*Occupation:* Administrative director responsible for personnel, organisation and IT with the Medical Products Agency.

*Type of Business:* Analyse, control and evaluate medical products.

*Total number of employees:* 200  
of which at the unit in question: 30

*Organisation situated in:* Uppsala

*Number of teleworkers in the organisation:* around 60

*Equipment used in the home by teleworking employees:*

*Computers:* (1) A stationary 486

(2) A portable 486

*Modems:* 28,800 and 60,000 bps, resp.

*Fax:* Yes

*Telephone:* Yes

*Cellular telephone:* Yes

*Printer:* Yes

*Copying machine:* No

*Cost of equipment package, including furniture:* SEK 100,000

## A Spontaneous Trend towards Teleworking

— The flexible way of working has spontaneously grown out of the requirements needed for travels, co-operation in projects, analysis and writing, and of course from the ongoing and massive competence improvements.

— The average work week follows a rather determined pattern where one day a week is spent on internal project meetings—usually at the office. On an average one day is spent on travelling to and from a seminar or a conference, an absolute must for capacity development. The actual work, i.e. to analyse, evaluate and conclude in report form usually takes two days of the work week. It is here that many, around 60, prefer to work from home.

## What Counts is the Result

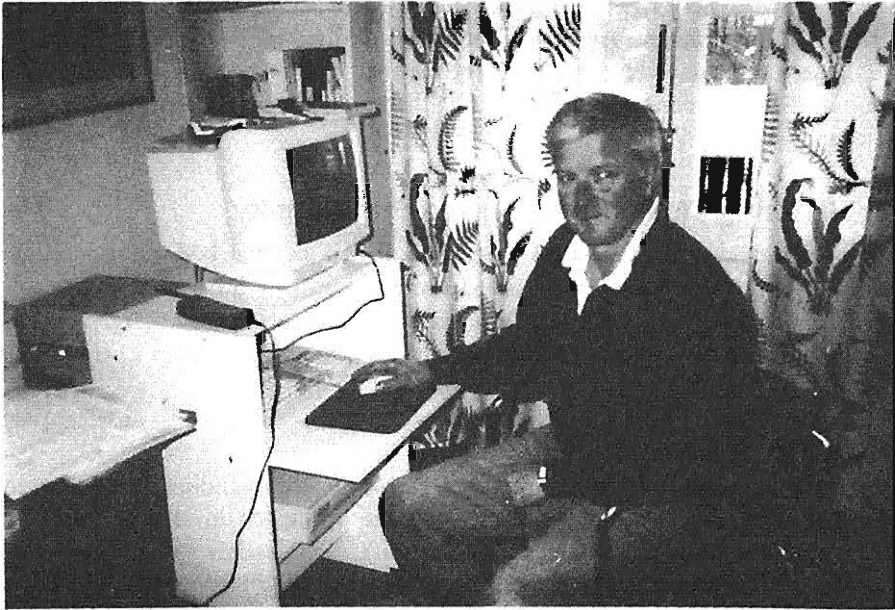
No doubt, the main and most important factor of production at the Medical Products Agency are the employees. The personnel can also successfully request to plan their work and time themselves.

– Management has no possibility to control through "viewing." What counts are the results.

Most of the 60 employees who frequently work from home live outside Uppsala. Around 10, like Anders, live in or around Stockholm. Others live in Gothenburg, Malmö, or Lund, i.e. nearly 600 kilometres from Uppsala.

## The Servers Run Hot

Anders Broström says that 100 per cent of the job to approve new medical products is "paper work," but doesn't really mean it.



*About 60 of our staff frequently work from home a couple of days a week, says Anders Broström, administrative director at Medical Products Agency.*

– We use less and less paper in the internal work. The electronic communication has developed rapidly.

– The servers have literally run hot. They were soon used to capacity and we have constantly needed to upgrade them. Today we have 8 different servers—each with its special task or function. The most common equipment at home is a portable PC, a mobile telephone and a beeper. The requirements on the portable computers are growing steadily.

– The demand for powerful laptops is enormous.

The view of the management is that the staff, the foremost resource, should have the equipment they need. A normal home equipment package paid for by the Medical Products Agency, costs around SEK 40,000. But there is room for more advanced equipment if the employees require it.

Within the Medical Products Agency there is also a great interest in organisational and productivity development with the help of IT. Not only by way of programs and plans. "In the field" which in reality means the home, tests are made to have ISDN and minicall lines in text directly to the computer.

## **IT—One Step in a Massive Competence Development**

IT is part of a planned "reengineering" of the work process at the Medical Products Agency. Among others, Cambridge Technology Partners have helped in sharpening the organisation. In the strategy of competence development that the Medical Products Agency finds of utmost importance in order to live up to the customers' requirements, the broad base is stressed.

– The demands and the right to receive competence development concerns all of the staff at the Medical Products Agency. There is an individual development plan for everyone. Where everyone really means everyone that might result in a cleaning lady becoming a secretary, of course after a retraining that among many other things includes IT knowledge.

## **Shorter Handling Time and Increased Productivity**

To measure productivity results in a governmental office is awkward—as anyone knows who has spent any effort trying. One productivity measure is however the handling time—given a constant number of staff. During a three-year period the average handling time for a commission at Medical Products Agency has been lowered from 21 months to 7.

– That would not have been possible without a strong "IT-consciousness" throughout the whole organisation.

It can only be speculated what importance this shorter handling time has for accomplishing spirals of increased productivity even in the chain that the Medical Products Agency serves: pharmaceutical companies, wholesalers, pharmacies and foremost of all, the consumers of medicine.

## **Public Access to Official Records**

The demands on accessibility are great in all government offices. The citizens, i.e. the taxpayers, have indeed the right to be able to reach those responsible for a business they have decided on and that they finance. The Medical Products Agency works for the greater part on long-ranging questions, analyses and evaluation of pharmaceuticals. But the demand on accessibility is still there.

– Even if the citizens in reality form a very small part of the Agency's external contacts, there are routines for both registration of incoming e-mail, and a standby service.

– Abiding by the principle of public access to official records, there is an internal registration routine for e-mail from the pharmaceutical companies, the most dominant contact base. E-mail going directly to the staff on their personal e-mail addresses is consequently regarded as "personal" and according to law regarded as working material that is not considered public material.

– The standby service fills a primary function as part of an international alarm system where alarm reports about, e.g. suspected side-effects from pharmaceuticals should receive prompt attention. During off-hours of the Medical Products Agency, the standby service is handled from a pharmacy in Stockholm. They have a list of those on standby duty and see to the immediate handling of an alarm.

## Teleworking Agreement Regulations

The flexible work based on IT has grown spontaneously as a result of the employees' judgement of where, how and when different work duties should be carried out. But discussions have started around regulations or formalisation of some sort.

– It started with a mother of three who wanted to work one day a week from home and wanted our acceptance "on paper." Initiatives in the form of a formal request has also been brought up by the union. And it will be treated constructively by the management.

– We are going to take up unbiased discussions, well aware that the flexible work is to the benefit of both parties and that it is going to grow.

One of the main objections from the unions has traditionally been the risks of social isolation and lack of working community. But these objections are not valid at the Medical Products Agency where the social networks are extensive.

– The part-time home-based teleworkers get a large amount of intellectual nourishment and social stimuli both from the extensive work in projects, and in the broad and frequent external contacts.

## The Inner Walls Disappear

Partly as a consequence of the frequency of working from home Medical Products Agency has decided to tear down inner walls in the Uppsala office and build a new, flexible office, not requiring as much space. Another reason is also that the agency has had to expand, employ more personnel and at the same time did not want to move from the present offices where every inch is used, i.e. with today's module office. In the administration, the 30 persons have access to around 50 square metres each. Anders Broström, together with his superior, the director general, can use a total of 150 square metres. Since it is used only 50 per cent of normal office hours, the cost per hour is very high.

The rent is today SEK 1,200/m<sup>2</sup>/year. They also rent two barracks at a cost of SEK 1,800/m<sup>2</sup>/year. Tearing down the walls there will be room for another ten persons in the 700 m<sup>2</sup> total.

## **Lower Rent Not the Most Important**

The direct savings are not in themselves of crucial importance to Medical Products Agency and can be estimated to up to SEK 300,000 a year to be compared to the renovation cost of around 3 million.

– But the very large positive effects in a predominantly knowledge oriented business with high improvement worth per capita lie instead in the increased productivity, in the shorter and shorter handling times, better service, and more and more qualified products, analyses, evaluations and reports.

If the Medical Products Agency, which is financed 100 per cent by commission, had been a private business on the stock exchange, it could have been registered in a positive and dramatic difference between value of material assets and market value, where the competence and experience of the personnel signify the difference. With this basis even moderate productivity increases produce very large result improvements for the business.

## Local Authority and Teleworking—Gotland's Municipal Architects Move Home

Many Swedish municipalities are currently discussing and planning to let their employees "go home." One of the reasons why the municipalities hardly had seriously considered the possibilities earlier, are the problems that can be summed up in "public access to all official documents" and "citizens' democracy." Another problem are the "mental barriers."

And coming to terms with the mental blockages is precisely what has played a major part in the process that has been going for two and a half years at the Municipal Architect Office in Baltic island of Gotland. The process resulted in that twelve staff members— planning architects and planning engineers etc.—"moved home," together with the chief of planning.

There is a tradition of a developed IT-consciousness in the municipality. Based on an IT-policy drawn up in general terms, the different operations have developed their own specific IT-applications.

As in many other municipalities, everything started with GIS, the Geographic Information System. But when it comes to teleworking in a more systematic form, the Municipal Architect Office in Gotland, located in a 16th century building in Visby, was the first in all of municipal Sweden.

### Thorough Analysis of the Potential...

Ulf Johansson, head of the Municipal Architect Office, has invested in an ambitious dialogue prior to making the decision to allow the employees to work from their homes. The decision has grown out of two parallel processes. On the one hand a consciousness about the opportunities to telework that today's telecommunications create has been developed. This has been done by intensive reading and studies of specialist literature, computer- and management magazines—which hardly are among the everyday literature at the municipal architect offices—as well as discussions.

#### Fact Box Ulf Johansson

*Age:* 40

*Family:* Married, two children

*Place of residence:* Visby, Gotland

*Occupation:* Head of the Municipal Architect Office in Gotland Municipality

*Type of business:* Local authority, map- and measuring activities, planning

*Total number of employees:* 6,500

of which at the unit in question: 42

*Organisation situated in:* Gotland

*Number of teleworkers in the organisation:* 12 (Spring 1995)

*Equipment used in the home by teleworking employees:*

*Computers:* Laptops, alternatively desktop PC's with portable hard disks, 486 processor or higher

*Modem:* 9,600 bps or faster (currently modem pool)

*Fax:* Yes

*Telephone:* Yes

*Printer:* Yes

*Copying machine:* The fax is used as copying machine

*Cost of equipment package, including furniture:* Around SEK 55,000

– Today a fair amount of computer resources are devoted to checking that the employees are in their working places. Just imagine if you could use as much resources to check what they're actually doing in their work, Ulf laughs.

### **...and Tough Demands to Cut Costs**

On the other hand, external environment analyses have indicated that there will be continued demands to cut costs at the municipal architect office, where the main alternatives have been to either lay off a number of employees or to keep and develop the existing competence by saving on office costs. These were the two main alternatives that were quickly brought up when the idea to start teleworking was seriously starting to be discussed in the fall of 1993. Working space savings of 30 per cent are equivalent to SEK 400,000 or 1 ½ full-time positions in the municipal architect office's budget.

To all appearances, there will also be savings in the office space budget in the long run. But there will not be a "hot desking office" in the real sense of the word. There will not be any knocking out of walls in the medieval building, but two or three teleworkers will probably be able to share the same space when they are at the office working.

When the idea of teleworking was first brought up, it was met with strong opposition. There is something almost sacred about having your own room at work. But after just a few months attitudes have changed radically. "Sure, we can consider sharing an office," several of the teleworkers are saying now. Partly because of teleworking, some office space is already being freed at the municipal architect office and negotiations are in progress about letting space to external tenants.

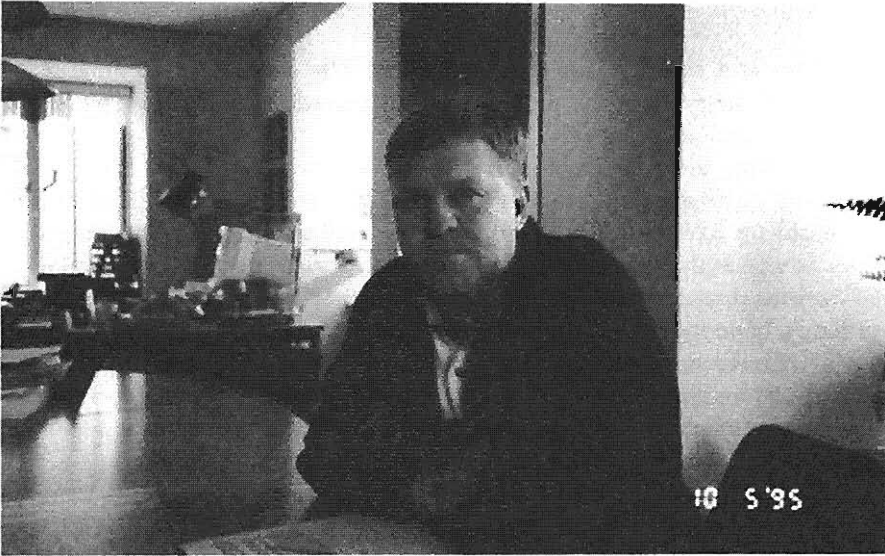
### **Like Teen-Age Sex**

– It's with teleworking like with teen-age sex, Ulf says. Everybody's talking about it, but few have tried it. In the fall of 1993, when the idea was first brought up, we were clearly too early, he continues. In addition, there weren't any experiences from other organisations that we could take to heart.

– We decided to start from ourselves, our own reality and the demands that're made on us. And gradually the will grew strong among the twelve employees who have now decided to work part time from their homes. This is partly due to that it'd fit their individual needs and wishes, but also because the Office wanted to invest in keeping and developing competence, rather than in furniture and office space.

### **Detailed Performance Measurement**

In the process leading up to the decision to let close to a third of the municipal architect office's employees work from their homes, it was early on



*Participation and security have been the starting-points of the process from the very first idea to the realisation of teleworking, summarises Ulf Johansson, head of the Municipal Architect Office in Visby.*

recognised that there was a need to be able to measure the results and document the consequences of the new way of working. A system for measuring employee performance was started being developed. The performance measurements that had been made since 1992 were conceived to be the benchmark for comparing subsequent developments in productivity.

– But one problem was that the value had been "deflated" as the time required to handle a case was considerably reduced over the following two years, Ulf recounts. It is now necessary to intensify work with follow-ups. The time being spent by employees on travel to and from work and how much they cost are among the things being surveyed. Business trips are mapped out in the same manner, as well as increases in efficiency. The office utilisation level is measured and office attendance is "ticked off."

## **Theory and Practice**

– The process of maturing is incredibly important, Ulf Johansson stresses. And it must contain both theory and practice. Studying for example Michael Hammer and James Champy's "Reengineering the Corporation" belonged to the theoretical part, along with a number of journals in the management and organisational development areas. External environment analysis and scenario techniques have also been important features of the analysis.

Practical elements have of course included letting a few of the employees test the concept. Employees who at the outset had been sceptical were turned into "pilots." They returned enthusiastic after having teleworked for a shorter period of time.



"Participation and security" are the words that Ulf chooses to summarise the starting-points and the goals of the process that has preceded the decision to practice telework in a municipal environment.

Careful planning and an ambitiously conceived process, where everybody's participation and involvement has been the guiding light, has also been fruitful. Running-in problems have been few. Everybody was well aware of the advantages and disadvantages as well as the risks that might be associated with telework before adopting it. The spontaneous reactions have had the quality of *déjà-vu* rather than surprise.

The union early on took a quite positive stance toward the project. But not even the trade union's organisation could produce answers to all the problems in connection with, e.g. fiscal- and insurance law, that had to be faced and somehow ironed out.

– What about the right to deductions for travel to work, to take an example? Can I make deductions if I choose to take my work with me to the beach on a beautiful summer's day? And have I sustained a work injury if I fall out of my hammock, Ulf laughs.

But behind these somewhat extreme examples a plethora of problems that the Municipal Architect Office has been forced to spend a considerable amount of time to solve, lie hidden. But this effort is now paying off once teleworking activity has started.

### **The Goal is a Ten Per Cent Increase in Productivity**

The goals have been set on the basis of discussions among the staff. Ulf judges that productivity can be increased by ten per cent. He founds this on, among other things, the performance measurements that have been made.

– I have decided to put myself on a conservative level compared to the values found in the international literature, Ulf says.

– Other goals we've set up are increased work satisfaction, which comprises increased responsibility, as well as a decreased need for office space. This in its turn will lead to lower costs, more flexibility and new competence.

In a corresponding manner the employees – singly and in groups – have had the opportunity to specify their expectations.

The Municipal Architect Office in Visby has many of people watching it closely. To begin with, the investments in teleworking are part of a project being supported by, among others, the Department of Labour. Secondly, the Municipal Architect Office is a "pilot" in an effort that to all appearances also will include other groups of employees in Gotland Municipality. The first evaluation is scheduled for September, 1995.

### **Drawings are Delivered Home at Night**

There are several technical solutions being tried out.

– The way it looks today, a lot of people manage with fairly simple methods, Ulf says. The person who's going to work with certain drawings can "order" them the day before. Then the copper cables have got the night to make the transfer.

The employer sponsors all costs for equipment, but not the working space itself.

– The employees gain so much by working from home anyway, Ulf says. As an example, he brings up the case of an employee living south of Hemse, about sixty

kilometres from Visby, who will now be teleworking on the average three days a week. His yearly savings are SEK 24,000 in net income!

This represents the possible or likely pay raises of a number of years. The employees have also without exception accepted that they themselves have to put up the cost for working space in their homes during the first trial year.

The equipment packages; computer, telephone, fax and printer cost SEK 55,000. The equipment itself has worked excellently, but other problems have been encountered, such as that the modem solutions were delayed one month. Further, it turned out that that laser printers had to have earthed wires, which no one had bothered to point out, and that delayed the start somewhat.

Originally, there was also the ambition to try ISDN. These plans have because of the cost and other reasons now been shelved, with the exception of a work cottage in a small community some forty kilometres from Visby. Another problem is that the digital switchboarding system AXE not yet is fully implemented in Gotland. The teleworker who receives a telephone call in his or her home will thus not be able to transfer the call to somebody at the Office in Visby.

### **Satellite Office as a Complement**

Some of the staff lack adequate working space in their homes. It is not necessarily the most crowded for space who have encountered this problem. For instance, one of the teleworking planning technicians, Margitta Andersson, lives in a small one-room flat in Visby. But she has nevertheless chosen to work from home and furnished a corner in the little pad where she can work.

However, some of the teleworkers have for other reasons not been able to work from home. The solution has then been a "satellite office" in Hemse, about fifty kilometres from Visby. If everything goes according to plan, the satellite office may also come to have other, broadened, assignments and responsibilities. A sort of embryo to a so-called "electronic citizens' office," in other words.

A special workroom at home is hence not a prerequisite.

– But we're not lowering standards for the working environment, Ulf says. When it comes to furnishing the teleworkplaces, we have assembled desks, pedestals, filing cabinets, etc. from the municipality's store of old furniture. But we have bought new chairs. We have been careful to let everyone choose the workchair that fits best.

And Ulf has studied the Working Environment Law's regulations. Soon the workplaces will be inspected by the work supervisors.

### **Joint Weekly Meetings**

As was mentioned earlier, the social perspective played an important part in the preparation work. It was attempted to build in safeguards against the loss of a sense of working community.

Every Wednesday afternoon everybody gathers at the office in Visby for a joint meeting. The meeting is often followed by later, communal activities such as having a bit to eat together.

The teleworkers usually spend two to three days total per week at the office.

In the so-called "black book," the logbook that everybody keeps, and which will form the basis of later evaluations, not only experiences with technology, equipment and communication minutely are recorded, but also if and how the relationships with workmates and supervisors change.

## Public Documents Are Stored at Home

Just like its counterparts in other municipalities, the Municipal Architect Office in Gotland has certain functions that involve the exercising of authority. How are the problems pertaining to public law handled, such as the regulations concerning the registration of and public access to all official documents?

– First of all, we've kept the rule that all original documents must pass into operations through the Office in Visby. They must naturally be entered into our journal. We issued a policy document concerning that matter very early on. Then again, it's a different matter entirely that they don't have to be kept here at the Office. They can just as well be kept in the employees' homes.

– When we have begun using e-mail in earnest, every employee is required to have a "copy" sent to the registrar for entering it into our journal.

From a citizen's perspective, it is of course of the utmost importance that the municipal employees can be reached to answer questions or listen to the views of the public.

– This belongs to the type of questions that we've regulated in the individual teleworking agreements into which we've entered with each of the "homeworkers," as well as in the discussion that we've had with their respective unions, Ulf says.

– But this doesn't necessarily mean that everyone should be available at the same time. On the contrary, it is of great value that parents with small children can be logged in from 8 a.m. to 3 p.m. and then be free for a couple of hours, and "punch in" again for two hours starting at 7 p.m.

## Unlimited Flexibility

– In fact, we've chosen not to put any demands at all on availability either during normal working hours or during other hours. Those who want to can work sixteen hours one day and the next lie on the beach or go fishing. The only thing we demand is to know where and when our staff can be reached.

"The distribution of working hours during day and night and the allocation of these hours between the office and the place of telework shall be a matter of personal agreement between the employee and his or her closest supervisor." Thus reads the agreement, but in reality it means an unlimited freedom for the employees to allocate their work not only over day and night, but also over the week and the month.

– In the beginning there were some people who were a little bit taken aback when we announced this, sure. But as a matter of fact I hold the belief that we can also give the public better service in this way, Ulf explains. Before, we actually had more trouble keeping tabs on our staff than we do today. "He's probably in a meeting" wasn't an unusual answer.

– On the other hand, there are more demands put on the Customer Reception Desk. Our receptionist, Miriam Oscarsson, has always been the most important staff member at the Office. She's represented us on the barricades and is the one who should be able to give "first aid." But today, her job is more important than ever. She's the only one who knows where we are, and when, where and how we can be reached.



*Telework often means new and heavier demands on the "remaining." Miriam Oscarsson's role at the Municipal Architect Office's Customer Reception Desk is more important than ever today.*

### **The Problems of the "Remaining"**

In the second phase, to be implemented in the Spring of 1996, another fifteen employees may move home. All of those who are currently teleworking volunteered to do it. But in addition to these, there were a few staff members who received the offer, but did not want to, did not dare to, or thought themselves unable to manage it. Among these, there are now half a dozen people who regret not having jumped on the bandwagon. People are full of enthusiasm and many do not want to wait for the experiences from phase 1 to be evaluated.

– We must devote a great deal of attention to the "remaining," e.g. the journal and the reception, Ulf says. In the follow-up talks we've had, they asked why they should have to "punch in" in a traditional manner, when the teleworkers are let off that because they have their own logbook. But this discussion has now abated.

## **Middle Management Doubtful**

– The reactions from politicians and the public have also been on the whole positive. The same is true for my colleagues, managers in other municipal administrations, who're watching us with great, but at the same time positive, interest, Ulf says, because their administrations may very well be next in line.

– But when it comes to middle management in our different administrations, the picture is less clear. I think there is a concern that their jobs will disappear, quite simply. In the long run we won't be needing at all as many managers. The very job of selecting and distributing information will to a large extent vanish. Managers who can't imagine or learn to delegate responsibility will probably have a hard time justifying their own existence, Ulf believes.

## **The Gotlandian Who Moved Home Twice**

Monica Tingström is one of the employees at the Municipal Architect Office's Planning Department who started teleworking in April 1994. A native Gotlandian, she moved back to the small village of Lummelunda in 1979, after having previously lived in Västerås on the mainland for a longer period of time.

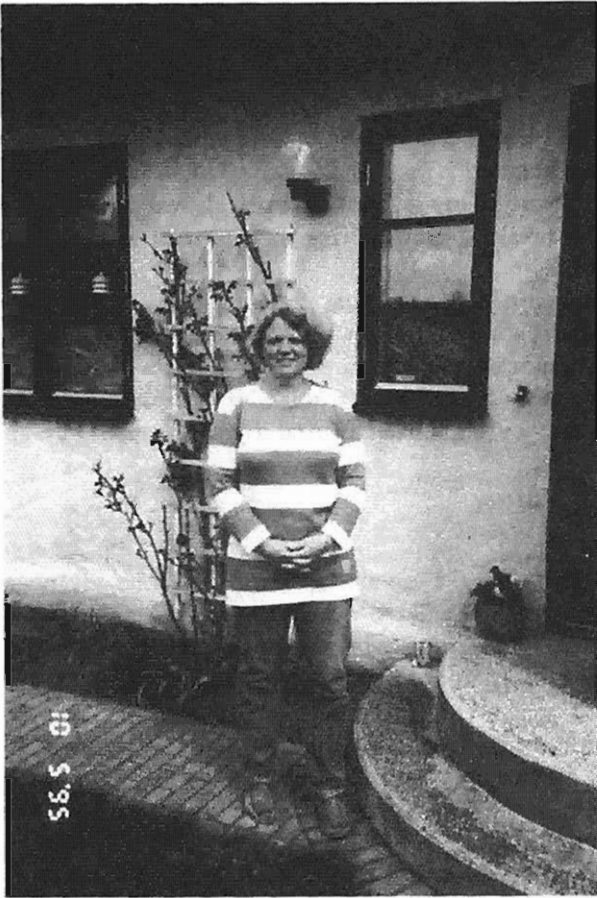
– We moved back to Gotland above all because of our children, Monica says. Today our girls, Linda and Sara, are 21 and 17 years old, respectively. Both are still living at home. Now, when I started working from home, it feels like moving back home again. It's the same wonderful feeling.

– Just imagine if I'd had this opportunity to work from home a couple of days a week when the children were in middle-school! It would have been just great. But now I instead have time to spend some time with our setter Nellie, who earlier had to be at a "dogsitter" at the neighbour's during weekdays.

– Apart from that my first spontaneous thoughts were a little mixed-up. On the one hand I saw the opportunity to be left in peace with my job. I often work with planning matters that require you to be able to concentrate for a couple of hours if you're to get anything done.

– But on the other hand I imagined a lonely woman sitting in front of her computer.

– Another of my first reactions was that this couldn't be possible with regards to our exercising the authority that's part of the job. But those problems were ironed out during our discussions before we began the new way of working.



*Just imagine if I would have had this opportunity when the kids went to middle-school, says Monica Tingström, planning architect at the Gotland Municipal Architect Office.*

### **"It Feels Sinful"**

Thus Monica, like her teleworking colleagues, has full freedom to use the working week the way she sees fit. There are no demands on her being accessible after office hours. How does Monica experience this freedom?

– Well, it certainly feels strange, almost as if you were doing something forbidden or sinful. So far I haven't flexed terribly much, except for taking longer lunches and then taking a walk down to the beach with Nellie. But come summer I'll probably use it a little bit more.

## No Coffee Breaks

– At the moment I'm working on an extensive and sensitive matter, the new public bath in Visby. And then there's been some work during weekends, and it's easier to go up and work a while evenings.

– The border between work and leisure becomes more fluid. Instead of taking out my knitting I go sit in front of the computer!

– Most of the working time I record in my logbook, but sure, I treat the employer to some time. I seldom take coffee breaks. I mostly bring the cup with me up to the workroom.

Monica judges herself being more productive working at home.

– Firstly, there aren't any interruptions. You can really concentrate. Secondly, I really feel happy in this house, Monica says and gestures towards the white-plastered Gotlandian house. I like the environment around here, at this time of year being able to see the bushes shifting colour not only during weekends. And if you're happy, you also work better.

## A New Way of Thinking

Teleworking means another way of thinking. I can already see some of the advantages pretty clearly, particularly the new freedom, and the risks, such as working too much and losing touch with your workmates. In retrospect I realise how important it was that we took our time discussing how to handle different situations before we started teleworking.

Monica also thinks that work management will undergo some fairly dramatic changes. Independence has already become noticeably larger.

– Now we're forced to solve problems on our own that we used to ask the boss about before.

At the same time Monica sees some risks with regards to internal information at work. It is especially the spontaneous and sometimes unplanned and unstructured information — which can be important enough — that can be lost.

– That very common situation when you bump into someone in the corridor: "Hey, I was just thinking about something." You would hardly sit down and write an e-mail containing the same information.

## Leisure Time Changes

– To me it feels just enough to work from home two or three days a week, not more than that. Besides, our Monday meetings are indispensable, both for enabling us to perform our jobs and for maintaining our feeling of community. And it seems to me that there is more after-hours socialisation now that we don't see each other every day. For instance, after our Monday meetings we're a couple of people who go out for a jog. And that feels really good.

– I also think that you tend to use your leisure time a little bit differently when you're sitting at home working. That makes you want to do something in the evening, simply get out of the house. You also get a greater need for just getting up and moving around. When I'm at the office I don't spend much time sitting quietly. But when I

work at home, I sit in front of the computer the entire day. I water the flowers like never before and do a lot of other things like that just to get to move around.

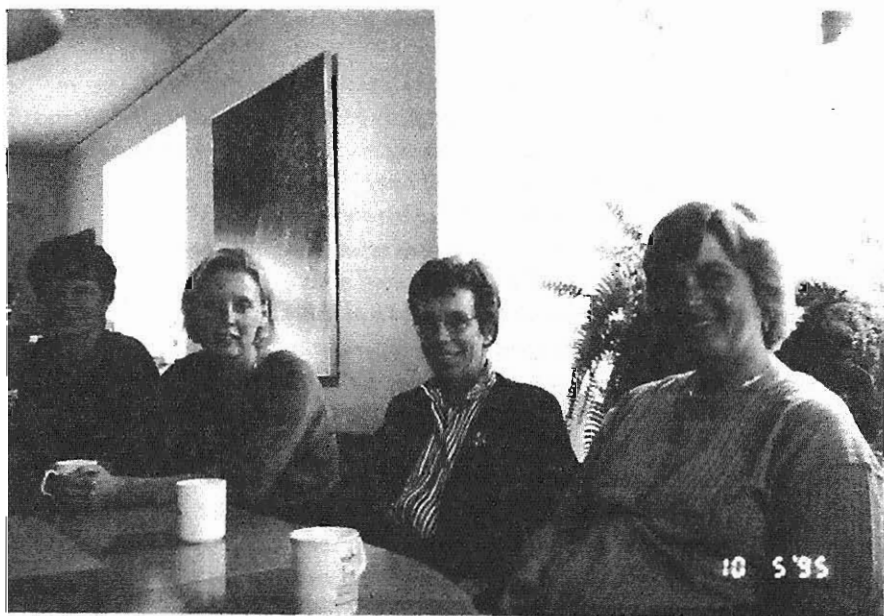
Those around her have generally reacted positively to Monica's working at home. The neighbours think it is good that there are people at home. People in Visby who have read about the "curious goings-on at the Municipal Architect Office" have contacted Monica to say that it sounds exciting.

Not least Monica's husband Anders has been positive, as well as her daughters Linda and Sara.

– Well, if what they're imagining is better ground service—we'll just have to see about that, Monica says, laughing.

### Some Spontaneous Reflections

On a normal working day, i.e. disregarding Monday afternoon, four or five of the teleworking staff are at the office. The author had the opportunity to listen to some spontaneous reactions over a cup of coffee a Wednesday afternoon in mid-May, i.e. when the teleworking experiment had been going on for slightly more than a month.



*"We get a lot more done now," agree Lillian Öman, Lena Jonsson, Margitta Andersson and Yvonne Mårtensson, four of the teleworkers at the Municipal Architect Office.*

It is striking how concordant the four voices of Lillian Öman, Lena Jonsson, Margitta Andersson and Yvonne Mårtensson are. Not because they have agreed on what to say beforehand—the meeting was completely improvised. No, it is probably just because they before becoming teleworkers attempted to thoroughly predict, structure and analyse the kind of situations and events that would occur.



Here is a small selection of all the experiences and views that we talked about at the coffee table:

- *It almost feels a little bit forbidden, or sinful, to sit at home working.*
- *It feels as if you feel rather too good when you're working from home.*
- *We're easier to reach now that we're working at home.*
- *We get a lot more done now.*
- *You don't get interrupted when you're sitting at home.*
- *There is probably a risk of working more than you should.*
- *You easily sit down and work a while in the evening.*
- *You think of stuff and write it down regardless of the hour.*
- *I feel more stressed working from home.*
- *Breaks are of poorer quality when we're working at home—it's just down to the fridge and back.*
- *You'd rather not leave the phone.*
- *You don't dare leave the house on the days you're working at home.*
- *Your body becomes your working clock.*
- *There's a lot of dragging files back and forth between home and work.*
- *You treat the employer to some time now and then—you don't feel that half an hour is worth recording in the logbook.*
- *It requires a mental readjustment to be able to take a working day "off," but we're getting there. This summer, for example, we're certainly going to take a day off now and then when the sun is shining, and make up for it in the evenings or on a rainy Sunday.*
- *Maybe it's mostly we girls who have this "sense of duty."*
- *When we started discussing telework at the Office hardly anybody was interested, but that soon changed when people realised what it was all about.*
- *It was good that we prepared to carefully—that pays off now.*
- *It was good that we took our time—that the thought had time to ripen.*
- *All the literature we've read on management and organisational development before taking this step has broadened our minds. But most of what's been written is on private companies, so we've had to figure out things mostly ourselves.*
- *We thought that we could get some external help, and hired a consultant agency. But they knew less about these issues than we did ourselves. We had to teach them...*
- *Now we fit all "interruptions" into the days the we're in the office...*
- *We're not more accessible when we're here at the office than when we're at home.*
- *The thing about having your own room at work doesn't feel as important anymore.*
- *Even if you don't gain too much in travelling time, it still takes some time before you manage to get out of the door.*
- *We've more private contact now, we meet more often and call each other more often.*
- *The citizens don't mind waiting another day for a document.*
- *Many neighbours are curious and think it sounds exciting.*
- *Of course, we've been giped at a couple of times as well.*
- *The people who're still working permanently at the office were a bit jealous and unsympathetic in the beginning, but not any more.*

*– One thing we've been thinking quite a lot about is how to handle new employees—we can't just send them home.*

### **Things Other Municipalities Can Learn From**

Thus the municipal architects in Visby appear to be the first in Sweden's municipalities to start systematically implementing telework from private homes, albeit as an experimental activity. But they will have several imitators, both in their own municipality and in the rest of Sweden's municipalities.

Of the things that municipal employees can have reason to bring home with them, there is one that may be more important than all the rest: to take great pains with the process, the discussions, the thinking and the listening that precedes the start of teleworking. Because there are probably no short cuts to the simultaneous starting points and goal that Ulf Johansson formulated at the inception: participation and security.

## 4 Teleworking — Potential and Extent

### An Ambitious European Survey

In the TELDET-project, which is carried out through the support of the European Union, DG XIII (*Telework Developments and Trends – a Compilation of Information of Telework – Case Studies and Trend Analysis*), an assessment of the extent and the rate of increase of teleworking is made in five EU countries.

In the project, telework is defined as work being performed a minimum of one day per week in a workplace other than the "main workplace." Telecommunication is used between the employee and the employer or client to give instructions, discuss assignments, report on work results, etc.

The survey comprises interviews with between 5,000 and 6,000 employees and 2,500 decision makers in companies and organisations in Germany, France, Great Britain, Italy and Spain.

### Knowledge Increases at a Rapid Rate...

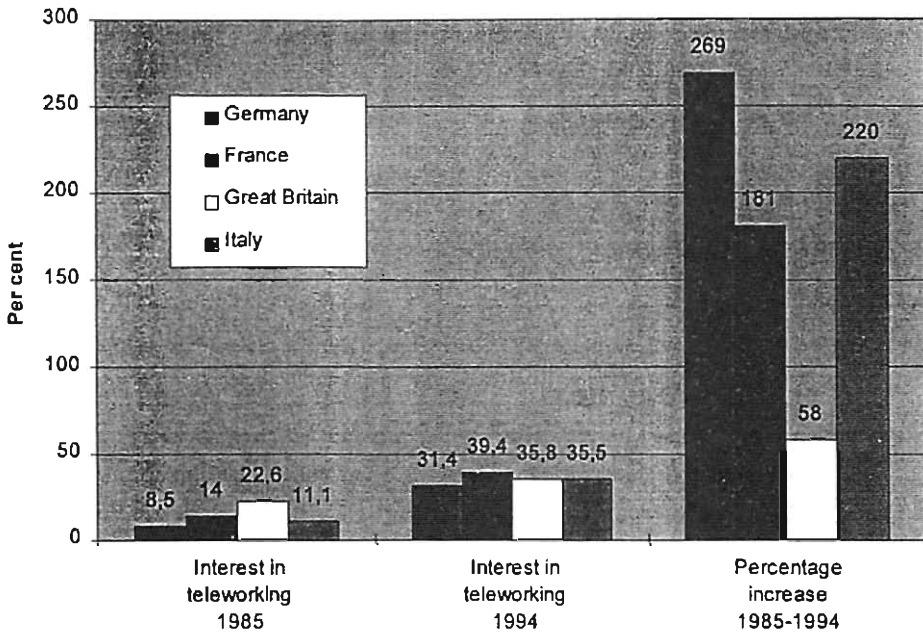
The survey begins by analysing how widespread *the knowledge about telework* is in the five countries in question. The results point to quite large differences, where in France close to 60 per cent of the employees have some knowledge about telework, in Great Britain around 56 per cent, in Germany and Italy about 35 per cent, and in Spain barely 23 per cent. The knowledge about telework is in other words more than twice as widely spread in France and Great Britain than in Spain.

In Sweden, the leading domestic telecom company Telia and the opinion research institute TEMO carried out a study which indicates that the knowledge about telework in Sweden is on a par with that in Europe. 50 per cent of the respondents said that they were very familiar (13 per cent) or quite familiar (37 per cent) with the concept of telework.

### ...As Does Interest

A corresponding study which was carried out for four of the countries above in 1985 is presented in figure 4. It also sheds some light on how *the interest in teleworking among the employees* has developed over a ten-year period.

Judging by the results, there is no question that the interest in teleworking has increased tremendously during the last ten years. It is also striking that the interest among the employees in all the four EU states *today* is at about the same level. Ten years ago, the interest was far more widespread in Great Britain than in the other three countries. These differences have been erased during the last decade.



Source: The TELDET-project

Figure 4 The employees' interest in teleworking 1985 and 1994.

The above-mentioned Swedish study made by TEMO and Telia does not allow direct comparisons with the European study. However, if the white-collar workers that telework today and the ones that do not telework today, but would like to are added together, the interest in teleworking in Sweden could be estimated to approximately 60 per cent of white-collar workers, equivalent to between 30 and 35 per cent of the total Swedish labour force.

Naturally, you get a clearer picture of the interest in teleworking in Sweden if you put the question directly to those who are actually commuting to work today. An extensive survey made among long-distance commuters from typical remote suburbs 70 to 80 kilometres south of Stockholm, see table 1, furnishes us with some information.

As the table shows, about 35 per cent of these long-distance commuters would work from their homes at least one day per week. According to the same survey, the proportion of the group which today actually uses the opportunity to work in their homes at least one day per week is between three per cent (Vagnhäräd) and seven per cent (Trosa).

| Want to work at home        | Trosa | Gnesta | Vagnhäräd |
|-----------------------------|-------|--------|-----------|
| 1 day                       | 12    | 8      | 5         |
| 2 days                      | 10    | 15     | 17        |
| 3 days                      | 8     | 8      | 6         |
| 4 days                      | 1     | 5      | 0         |
| 5 days                      | 3     | 5      | 10        |
| More seldom or infrequently | 65    | 64     | 62        |
| Total (%)                   | 100   | 100    | 100       |
| Respondents                 | 793   | 1,172  | 964       |

Source: Statistics Sweden. Commuting Survey in Trosa and Gnesta municipalities.

Table 1 Telework in three remote suburbs of Stockholm.

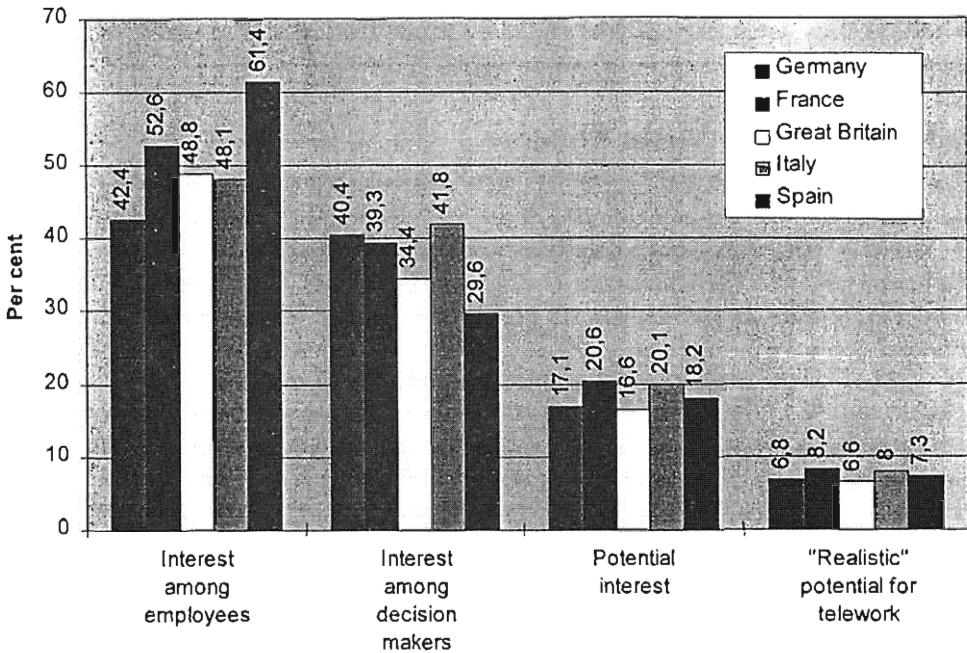
## Theory and Practice

The above-mentioned TELDET-study has also attempted to map out the interest *decisions makers* are taking in telework. As figure 5 shows, a theoretical value of the *potential* can be computed by multiplying the proportion of the employees in each country who are interested in telework with the proportion of decision makers who are interested.

The potential interest, which represents the interest in telework among the employees, i.e. the "supply," multiplied with the interest among managers, i.e. the "demand," should be interpreted as a theoretical measure or a conceivable upper limit of telework in Western Europe in the mid-nineties.

## A Potential of Between 7 and 15 Per Cent

However, according to the TELDET-project, a more realistic estimate of the potential for telework will be found at a significantly lower level, as also can be seen in figure 5. The basis of the estimate is simply that the theoretical potential has been down-weighted, based on the will of the respective employees and managers when it comes to teleworking, coupled with the knowledge of how large a share of the total number of occupations that involve extensive handling of data, information or knowledge.



Source: The TELDET-project.

Figure 5 The potential for telework in 1994. Proportion of total labour force. N.B.: The figures pertain not only to home-based telework, but also to working from satellite offices and neighbourhood offices.

In this respect, project management has used both calculations made by the OECD during the seventies, as well as German analyses made in the eighties. These studies indicate that approximately 40 per cent of all jobs can be performed partly or completely with computer and telecommunications support. Similar calculations made in 1995 would probably show that the proportion is higher. According to American analyses, the figure for the telecommutable share of the labour market could be as high as more than 50 per cent.

But those in charge of the TELDET-project have chosen to be even more conservative in their estimates. Across the board, they have calculated that only a third of all jobs are possible to perform by telework.

But with a somewhat less cautious starting-point—and supported by, e.g. the previously mentioned American studies—a realistic assessment of the actual potential for telework might be somewhat higher today. If we add the fairly large differences between the countries as to interest among employees and managers, one might be able to make an estimate of the potential for telework *today* as lying somewhere between 7 and 15 per cent of the total labour market.

Everything indicates that the corresponding potential in Sweden also lies within this bracket. Hence, a proportion of the employees as large as that can be estimated to *be able*

*to immediately start, be permitted to, and want to telework.* By virtue of the results of, e.g. TEMO/Telia's study, the conclusions can be drawn that an overwhelming majority of these potential teleworkers prefer to work based in their homes.

### **Most Prevalent in Great Britain**

Looking at how many companies in fact were practising telework in their own organisations—with the definition mentioned in the first chapter of this report and a minimum of one day per week—quite significant differences are apparent between different European countries. In France and Great Britain, telework is practised in 7.0–7.5 per cent of companies, in Germany in 4.8 per cent, in Spain in 3.6 percent and in Italy in a mere 2.2 percent of companies.

Looking at the absolute number of teleworkers today, Great Britain dominates with 560,000, followed by France with 215,000. Italy with barely 100,000, Spain with just over 100,000 and Germany with just under 150,000 teleworkers are apparently in an earlier phase in the diffusion process of telework. If the surveys of the five most densely populated EU states were extrapolated to all twelve members of the European Union, the number of teleworkers in the EU would have approached 1.25 million in 1994.

### **North American Estimates**

For the sake of completeness, but also with heavy reservations against any generalisability, a comparison can be made with the North American labour market. In 1988, the market research company Link Research estimated the number of home-based teleworkers to 2.2 million, in 1991 to 5.5 million and in 1993 to 7.6 million. In a forecast for the year 2000, 12 million American salaried employees are thought to be teleworking full-time or part-time, according to the same source. To this number can be added the 15–20 million home-based self-employed Americans.

The American Department of Transportation makes a different and somewhat more balanced assessment. Of the total labour force, close to 30 per cent or 38 million people are working in some fashion or another from their homes. In this group are thus included not only the group salaried employees, which is a minority, but also self-employed, "moonlighters," etc.

Looking at the group salaried employees, the Department of Transportation describes quite a dramatic increase, even if the assessments are hedged in by a number of reservations, see table 2.

| Year                            | 1992 | 1997    | 2002     |
|---------------------------------|------|---------|----------|
| Number of teleworkers (mill.)   | 2    | 3.1–6.2 | 7.5–15.0 |
| Share of labour force (%)       | 1.6  | 2.3–4.6 | 5.2–10.4 |
| Share working from the home (%) | 99   | 74.3    | 49.7     |
| Share from telework centre (%)  | 1.0  | 25.7    | 50.3     |
| Number of days per week         | 1–2  | 2–3     | 3–4      |

Source: Transport Implications of Telecommuting, Department of Transportation, April 1993.

*Table 2 Employed teleworkers in the United States, 1992–2002.*

## The Extent in Sweden

Again, it is not possible to make any real comparisons with the rest of Europe concerning the actual number of teleworkers in Sweden. This is due to differences in the way the TELDET-project and the TEMO/Telia survey are organised. In the latter survey it was found that close to 25 per cent or about 500,000 Swedish white-collar workers are teleworking either from their homes or from some "office" other than the main workplace. Of this number, only half, or 250,000, telework more than eight hours per week. If we also venture to roughly correct for the proportion of work that is made up of overtime work, the number dwindles to just over 150,000 who telework more than eight hours per week. This corresponds to around seven per cent of white-collar workers and four per cent of the total labour force. Regrettably, the study does not make clear to what extent telecommunication are required for the home-based work. Direct comparisons with the rest of Europe are thus not possible.

Average working time in the home is according to the same study 11.5 hours, of which an average of 2.5 hours comprise overtime work. Of the white-collar workers who are not teleworking today, 43 per cent would like to, on average 14 hours per week. The TEMO/Telia survey is based on a slightly meagre sample of about 1,000 out of a population of more than 2 million. Also the TELDET-project is based on a relatively small sample, which again limits the possibilities of making comparisons. But some support is given for the supposition that telework penetration in Sweden has been more rapid than in other parts of Europe.

Some additional support for such an assumption is the survey that the Swedish Central Organisation of Salaried Employees (TCO) carried out at the turn of the year 1994/95 in co-operation with Statistics Sweden. According to this survey, 6 per cent of the total Swedish labour force of about 3.5 million, that is, slightly more than 200,000 employees, are working regularly from their homes, and an additional 23 per cent do so occasionally. But also the TCO report is quite limited concerning, e.g. the extent to which telecommunication is required for the home-based work and thus the way it can



be compared with other countries. Of the group that states that they work from their homes the entire working week, in total 45,000 people, 65 per cent are child minders, who hardly can be called "teleworkers."

If this group is excluded and we at the same time add groups that work from their homes from time to time, the TCO survey indicates that 150,000–200,000 white-collar workers work at home more than one day a week. But again with strong reservations against the validity of the statistics, the number of teleworkers in Sweden, with the definition adopted previously, be in the neighbourhood of at most 150,000–200,000 employees, corresponding to 6–9 per cent of white-collar workers and 4–6 per cent of the total number of employees. The proportion of these who use telecommunication in their work to any significant degree, must realistically be assumed to be much smaller.

## 5 A New Way of Living, Working and Thinking

Chapter 4 was devoted to analysing the potential and extent, i.e. essentially the external conditions, of teleworking, based primarily on recent Swedish and European studies. But to telework or not is ultimately an individual decision which is influenced by age and life-cycle perspective, family affairs, and naturally basic values, personal traits, aptitude and judgement as well.

The new way of working that telework stands for, represents a challenge both for workers and management, a step into something untried and unsafe. It is then in the nature of things that both possible gains and losses become very large.

The at times very slight difference between success and failure, dream or nightmare, lies mainly in the way both parties are able to cope with the social perspectives that beckon. For example, how the employees are able to set up performance goals for themselves and put up their own rules and routines for everyday work, and how they succeed in drawing the line between work and leisure.

For management, the challenge consists of how work organisation can be changed from control and detailed management, to an orientation towards the long-term perspective, a focus on results, and management by objectives. How will "management by view" be able to become "management by vision" in a practical reality?

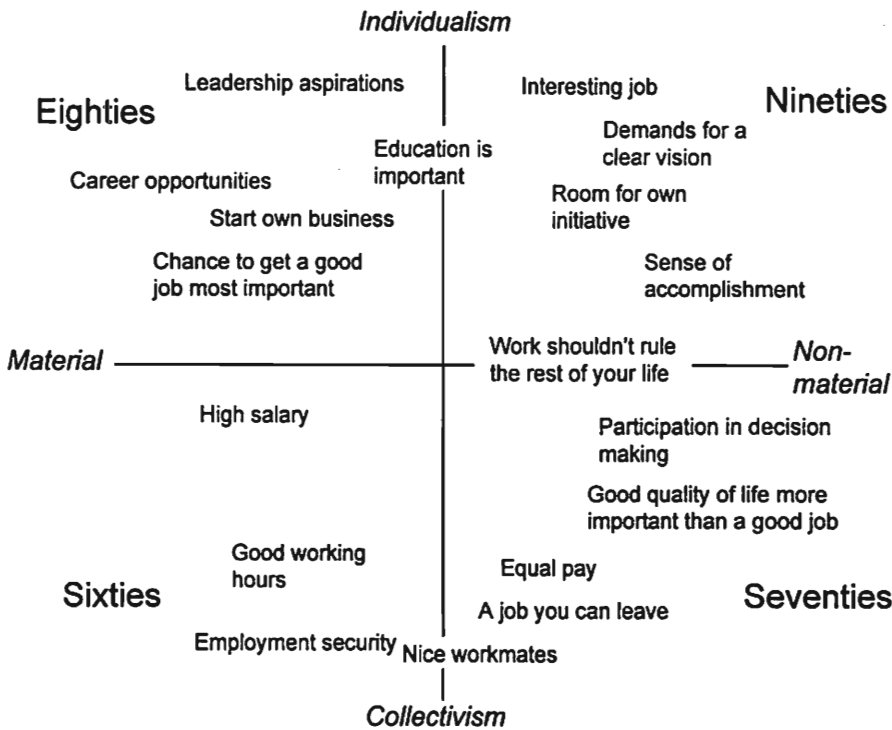
### Life as a Teleworker

From the employees' perspective, let us first of all discuss the issue whether *everyone*, whose tasks and employer permit it, *can or should telework*. Put in another way: is telework more or less suitable or likely for certain groups or in certain stages of life?

### Telework and Age

Starting with looking at age, a good deal can appear to point towards young people representing the greatest potential for future teleworkers. The main reasons for this supposition are twofold. The younger generation has a far more widely spread acceptance of IT than the older generations. Computers, databases and networks are a part of everyday life in a completely different way than for the "forty-plussers."

A second factor is related to the distinct differences in basic values that have been shown to exist between those who were young during the sixties, seventies and eighties, and today's young people. Resorting to stereotypes—and based on the studies on shifting values that have a long history in Sweden—the predominant concern among the sixties' youth was material security: a well-paid job, good working hours, and above all job security, i.e. an amalgam of materialism and collectivism.



Source: Lindgren (1994).

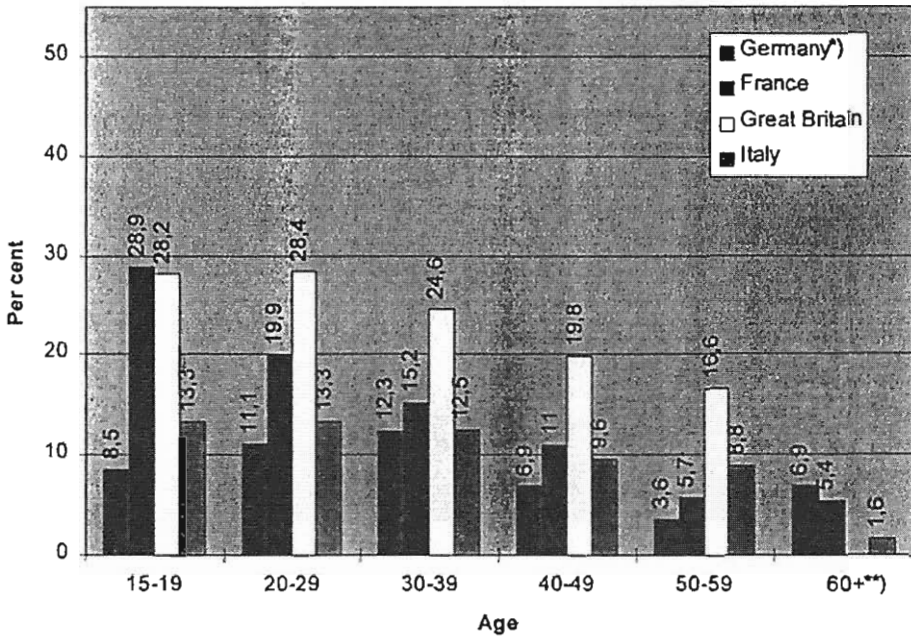
Figure 6 Value shifts among Swedish youth from the 60's until today.

Among the seventies' youth, we can observe a shift towards the non-material, while retaining a basic collectivist attitude. The "hippie" stresses the good quality of life rather than a good job. Participation in decision making and equal pay become important, as well as comradeship in the workplace.

The "yuppie" of the eighties leaves the collectivist view of life behind. The personal, again strongly material, self-fulfilment becomes the new guiding light, with goals such as the career, leadership aspirations and the ambition to become self-employed.

During the nineties we again see a shift towards the non-material, while the individualistic stance is maintained. Having an interesting job becomes more important than it being well-paid. The room for own initiative and the sense of accomplishing something have become essential attitudes among today's youth. It is primarily the freedom, flexibility and mobility, that are being emphasised. Being able to work with the new freedom in time and space as a starting point thus fits quite well with the prevailing attitudes among today's young people.

There is also empirical support for the assumption that the interest in telework has a negative relationship to age, i.e. that the greatest interest can be found among the young. This is evident from figure 7, which depicts the results of a European survey carried out by the French organisation CATRAL on behalf of the EU-project TELEURBA 1994.



\*) Only the former Federal Republic.

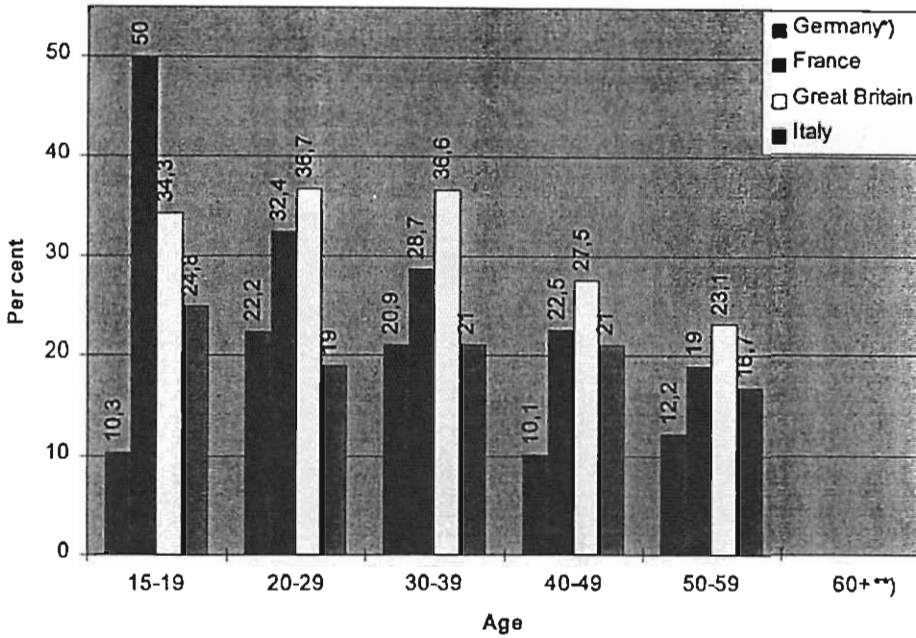
\*\*\*) Great Britain – insufficient data.

Source: The EU-project TELEURBA 1994.

Figure 7 The interest in teleworking in the working population by age.

It seems—albeit less clearly in Great Britain—to be a watershed around forty years of age. The interest in teleworking is most palpable among the very young, up to twenty years of age. In the British Isles the differences are less marked. This also corresponds well with what we established earlier, namely that the interest in teleworking is significantly more prevalent in Great Britain than in the rest of Western Europe.

The TELEURBA study also gives us an opportunity to make a more detailed analysis of the impact that the acquaintance with computers has on teleworking interest, see figure 8. Acquaintance with computers can be presumed to be much more common in the younger age groups.



\*) Only the former Federal Republic.

\*\*) Insufficient data.

Source: The EU-project TELEURBA 1994.

Figure 8 The interest in teleworking among computer users by age.

Two things are evident from the figure. The first is that the interest in teleworking is, not surprisingly, much larger among the computer users than among the working population in general.

Of even greater interest is the observation that the differences between age groups in the interest in teleworking become much less marked when we analyse the group computer users separately.

Thus it seems likely that the more widespread interest in teleworking in the younger age groups to a large extent can be explained by personal, practical experiences of computer use in these age groups.

The previously quoted study carried out by TEMO on behalf of Telia makes it possible to make some comparisons with Sweden.

Looking at white-collar workers who are not teleworking today and are under 35 years of age, a larger share, around 55 per cent, would like to try teleworking than in the older age groups. In the group over 45 years of age, only slightly more than 35 per cent would like to try teleworking. But if we instead scrutinise those white-collar workers who are in fact teleworking today, the age-related differences are less apparent. Teleworking is most common in the group 35 to 45-year-olds, 27 per cent, followed by the group 45-plus, 22 per cent, and the group aged under 35 years, 20 per cent.

The survey carried out by TCO at the turn of the year 1994/95 shows that working from the home is about equally common in all age groups, though with a slight predominance in the 35 to 54-year-old group.

Hence, a larger familiarity with, and interest in the way of working as such, coupled with a life-style which values personal freedom, freedom of choice and flexibility speak *in favour* of telework in younger age groups. In addition, they have through their studies a fairly recent experience of working on their own and "by the piece."

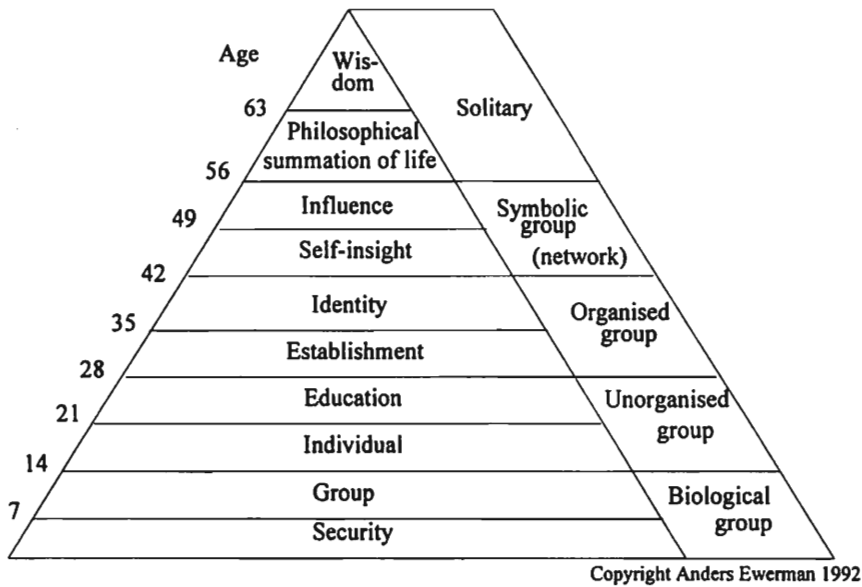
But there are also a number of factors which speak against telework as an interesting mode of working for young people. The very fact that the young have the most recent—and probably not altogether positive—experience of spending days and perhaps nights in their rooms studying, will very likely lead to that many will want to try something radically different.

It is during one's youth, or to put it in more professional terms, during the most intensive period of socialisation, that relations are established. The perspective on the world around one is broadened, experiences are developed and a profession has to be learned. And most importantly: the own self has to be developed, and one's own identity formed! And this identity, in its turn, is determined in relation to the surrounding reality, to other people. This, to all appearances, puts a restriction on young people's teleworking. It is also consistent with the experiences from Siemens Nixdorf, which pointed to the difficulties in recruiting recent graduates, using teleworking as an argument.

## The Life-Cycle Perspective

In his book "Intelligent Houses" (1992), the Swedish researcher and author Anders Ewerman, to some degree inspired by Maslow's theory of needs, groups the life-cycle into a number of mental development phases, which are characterised by different characteristics relating to feelings of group community and group dependency.

In our early teens we leave the "biological group," the circle of family, as a fundamental basis for mental security, to enter what Ewerman calls the "unorganised group," usually one's circle of friends, which then becomes the model for our norms and the primary reference object. In our late twenties, after having finished studying, we enter the "organised group," i.e. a hierarchically arranged organisation with a structure that is given and common external objectives. It is work and family that come to dominate everyday life.



Source: Ewerman (1992).

Figure 9 Man's mental phases of development.

In our early forties we then enter the "symbolic group," where the formal order of precedence increasingly gives in to an informal organisation and where individual networks gradually replace the formal organisation as the foundation of identity and mental security. Finally, around 55 years of age we enter the "solitary phase," where the individual is identified by the environment by his own name, rather than by organisational or institutional labels.

If we adopt such a perspective, we should, beginning in our early forties, have a gradually lower demand for self-affirmation by an affiliation to a fixed work organisation. In other words, we should have an increasing incentive to strive to liberate ourselves from a working place community that means relatively less and less. As "solitaries" we should have strong reasons to seek seclusion to try to sum up our experiences and try to share these with other people.

If this hypothesis is correct, the interest in telework should have a positive relationship with age. But the hypothesis cannot be tested, for one thing because today's "solitaries" to such a small extent have been able to assimilate the most basic and practical prerequisites for teleworking, i.e. have not acquired a sufficiently intimate knowledge of computers and electronic communication.

### Teleworking Parent of Small Children: Heaven or Hell?

The opportunity to combine work and family life through telework, in particular when the children are small, is one of the more controversial and frequently discussed aspects

of flexible work. How can one and the same phenomenon then sometimes be described in terms of heaven and sometimes as hell?

The simplest explanation is of course that we are talking about different things. The advocate for "hell" paints a vivid picture of the mother who with the child in her lap has one hand resting on the keyboard while the other is tightly clutching the receiver to her ear. To put it simply, the combination teleworking and parenthood consists of *simultaneously working and raising or caring for one's children*.

In contrast, an example of the heavenly dimensions of the combination telework and small children at home, would be to be able to collect the children at the kindergarten after lunch and spend the hours left until bedtime with them a couple of afternoons a week, *without working at the same time*. As shown earlier, this is the experience of Mari Hellblom at ABB Generations.

That the teleworking parent as a consequence has to devote a few evenings to work, is a price that many are prepared to pay. You make the most of the freedom in time and space which computer- and telecommunications permit.

Also, maybe it is more important where one is *mentally*, rather than where one is *physically*. Feelings of insufficiency are certainly not uncommon among working parents of small children. For instance, this was what Kjell Prando at Rohm & Haas, who had recently become a father, was experiencing—to be thinking about and yearning to be with your children while at work. And vice versa—to be thinking about work when you are with your children. If that is a reasonable way of describing the dilemma, teleworking would after all create better opportunities to combine the roles of parent of small children and gainfully employed.

As was touched upon in an earlier chapter, Swedish society boasts a child-care system with an extent and quality the like of which hardly exists anywhere else in the world. In particular, it is the less well-off parents of small children in European countries who do not have at all the same opportunity to leave their children with confidence and security at a kindergarten during working hours, as Swedish parents do.

The negative consequences of having to divide one's attention between work and the children are well-documented. A study of 175 teleworkers in Great Britain with fairly repetitive tasks who were forced to combine work and child care, showed that this was the single most important source of both stress and depression.

It goes without saying that simultaneous work and child care have *negative consequences both for the children and for the work*. Keeping this in mind, it is also not surprising that employers, regardless of the supply of public or private child care, often require that their teleworkers arrange for someone to look after their children. Appendix 1 shows that, e.g. the Municipal Architect Office in Gotland has stipulations in their telework agreements concerning this issue.

But the matter is not as simple as choosing between heaven or hell. For example, when Mari Hellblom at ABB Generations lets her work telephone be open in spite of her being free and spending time with her children a Tuesday afternoon, this may not be an ideal situation. But you always have to ask yourself what the alternative is in a situation like this. What is the alternative if you—like in Mari's case—have to be accessible at all times, if your job's very function is to be able to answer questions or give advice at almost any hour? Well, it is of course to change jobs, or to be forced to



concede that you cannot face up to the demands that both you and your surroundings put on yourself.

In reality, you can apply an identical way of reasoning to the mothers of small children—because naturally, this usually concerns women—who must combine working from the home with caring for the children. We may dislike and condemn the homework–child-minding combination, but what advice should we then give to the British mother of small children, who does not have any child care to avail herself of, and who needs her job for her subsistence?

## Telework and Equality

Not the least from a trade union perspective, something that more than anything else has contributed to branding telework as something negative, are probably the attempts that have been made to depict it as something particularly suited for women. And also women, who have the responsibility for the children and the home, to use the traditional and unfortunately still today widely prevalent image.

Teleworking is of course then a part of a larger picture, where women are found in those professions and jobs with both the lowest competence requirements and the greatest insecurity. There are several factors which cause such gender-related differences, for example the lower level of education on average that women have, but above all the care for children and others, which may have consequences for extensive travelling in the job. The "market" in its turn will naturally take advantage of the potential which exists in low-qualified and immobile labour. Part-time work is another common attribute mentioned here.

In other words, there are both supply- and demand factors which more or less forcibly predestine predominantly low-educated women for home-based telework. But the root of the problem, which consists of a lack of equality and the risk of a divided labour market, naturally does not have its origins in teleworking. On the contrary, teleworking merely very plainly reflects the weaknesses and problems which already exist in our societies.

Telework neither solves nor creates problems which are constituted of a lack of equality. However, increased equality will lead to more people benefiting of the advantages of telework.

Consequently, the requirement of equality in telework is stressed also in the European Union's work to follow up and implement the White Paper, the political will of Jacques Delors. The equality aspects are in a similar manner given high priority in the instructions presented by the Swedish government to the IT Committee.

## The Principle of Voluntariness

There are some fundamentals of teleworking which may seem self-evident, and also have empirical support, but nonetheless deserve to be strongly emphasised. The first of these fundamentals is that both parties, employer and employee, should gain something by practising telework. And this "something" in its turn should represent a *lasting value for both parties*. This does not necessarily mean that teleworking should only have advantages, but the bottom line both for the individual employee and for management must be that the positive aspects outweigh the negative ones.

This leaves us with first "postulate of teleworking" namely *the principle of voluntariness*. And naturally, this voluntariness is not of a purely formal nature. A voluntariness which consists of the choice between teleworking or to accompany organisations that move, cannot be described as a real voluntariness. The voluntariness presupposes that there exists an alternative that the employee experiences as real. In the case studies presented in chapter 3, Siemens Nixdorf may be the company that most consequently and without compromising has lived up to this principle.

## **A "Way Out"**

Voluntariness in its turn presupposes a possibility to "jump ship" once teleworking has begun, for example to be able to return to the old way of working or the old organisation. Both parties should, when the new way of working is commenced, be agreed upon how such return to the previous way of working shall be made, considering when notices for change should be made, possible consequences with regards to tasks performed, etc. There must always be a clear and common picture of a way out.

It may be proper to stress that voluntariness cannot be motivated purely from a basic-value perspective, e.g. the right to a meaningful job that develops one's mind. The gains from adopting teleworking, and especially the long-term gains, have a very strong relationship to work motivation.

Compulsion is rarely compatible with motivation—if it is not very short term or under very particular circumstances. It is probably possible to temporarily record increased productivity if teleworking is forced on the employees. From a long-term perspective its success appears extremely dubious.

## **Not An Either – Or Situation**

But there is yet another "postulate," which derives its meaning from the perspective of long-term and lasting advantages for both parties.

Man is a social animal. For our development and mental health, we are dependent on belonging to a group—whether it be more or less firmly organised. The working place community is for most of us of fundamental importance for our self-identification as well as for getting feedback on our performance. If teleworking leads to isolation and a sense of not belonging, motivation will most likely become lower, work performance worse and the worker more likely to deviate from work goals set up.



*Telecommunication cannot replace the need for social community and interaction when teleworking. Lilian Öhman, Lena Jonsson, Margitta Andersson and Yvonne Mårtensson at the Municipal Architect Office in Gotland discussing over a cup of coffee.*

Teleworking is not an either – or situation. Working from the home must be complemented with meetings with colleagues and management. Such meetings can be more or less regular or frequent. They may include all employees or only the own work unit. But they have to fulfil some very basic needs. Apart from the *social community* itself, they must leave room for the *comparing of notes* concerning both the particular area of work and the company's or organisation's general development. They must also create opportunities for informal information, spontaneous discussion as well as the broadening of knowledge. All of the companies and public organisations that were presented in chapter 3 have, despite varying conditions, had the ambition to endeavour to satisfy the need of social community and interaction.

The latitude in discussion becomes more important than the formal agenda if the aim is to stimulate creative work efforts from the employees. "The learning enterprise" can hardly substitute such physical meetings with video conferences or similar types of electronic communication.

But this "either – or" also has another dimension. The employees not only want to see their work mates regularly in meetings. To many, it is important that the alternative exists to be able to go to the office when they think that there is a need for it, or simply because they want to. The experiences conveyed by, e.g. Sten Nikolaev, Intel, and Kjell Prado, Rohm & Haas, are fairly explicit in this respect.

To make sure that such an alternative exists contributes to creating a sense of security. The starting point should be that no one but the employee knows best from where different tasks are best accomplished.

Of all the objections to and problems in conjunction with teleworking, it is doubtlessly the risk of isolation and loneliness that should be taken most seriously. In a short-term perspective it appears improbable that a renaissance of the family- and living community can replace the community experienced at the working place. On the contrary, studies of teleworking show that teleworkers who are highly involved in a social community, based on the family- and living community, felt just as isolated as the teleworkers who did not enjoy such social relationships where they lived.

## To Distinguish Between Work and Leisure

Besides the risk of social isolation and an impoverishment of the working community, the large difficulty in teleworking successfully and in a long-term perspective paradoxically lies close to the opposite problem: to be swallowed up by work and unable to keep work and leisure apart. This problem is documented—albeit in varying degrees—in almost all the interviews in this report.

And the dilemma is understandable. The teleworker cannot silence a bad conscience concerning work by the simple physical presence in a working place. He or she is instead judged solely by work performance and results. It is understandable that it then becomes tempting to work an hour or two extra a week, so that overtime becomes the rule rather than the exception.

But this is only one aspect of the problem. Another one consists of *never* being able to keep work and leisure apart. Of not being able to pass the computer without turning it on—if nothing else to see if there is any exciting new e-mail! On top of increased demands on performance, people put themselves on call practically twenty-four hours a day—albeit that this is a self-imposed behaviour. That there really are such dangers is occasionally evident in several of the cases presented earlier, but particularly so in the Siemens Nixdorf experiences.

If we extrapolate such behaviours in teleworking, we may of course get a glimmer of quite serious problems of both a medical and a social nature. "Burn out" has traditionally been associated with, e.g. the self-employed consultant or the top manager. Is there now a potential risk that more and more and broader groups in working life literally "work themselves to death?"

Such risks cannot be disregarded. The best thing to do is very likely to actually assume that the risks are there and see what preventive measures can be taken.

## Electronic Ethics

To begin with, the employer naturally has a responsibility. In the responsibility for the home working environment that the law shoulders the employer with, there is reasonably not only a responsibility for the physical environment, ergonomically designed chairs and desks, lighting, etc., but also a responsibility for the psycho-social environment.

Maybe one can talk about an *electronic ethics*, which, based on the experiences we are starting to get, is slowly taking shape. One part of such an ethics would be to avoid unnecessarily fostering too much overtime, or work on weekends and nights.

To send out e-mail during weekends taking for granted that the employees have read them before work on Monday, is for example very dubious, as it presupposes that the

employees work on weekends. The experiences from Siemens Nixdorf serve as telling and deterring examples.

At the same time, it is fair to say that it is primarily the individual employee who is responsible for keeping apart work and leisure. The employee must be able to close mental doors at home.

The key words are to many *rules and routines*. These rules and routines in their turn, can be interpreted in completely different ways by different people. To one person, it can mean that work is always stopped at set times during the day, for coffee breaks and lunch. For other people, it can mean that the working day or working week never can exceed a certain number of hours or that certain evenings or days are kept "sacred."

This in its turn presupposes planning—of both work and leisure. Flexibility is rarely the same as being able to stop work when one feels like it or when the sun comes out. On the contrary, for most people it presupposes that time has already been "made up" or at least that there is a clear and realistic plan for when the work is done.

Those who have their university studies in fairly fresh memory, probably find it easier to work by the piece, i.e. more goal oriented, and to be able to plan a working week or working month. But for many people it will become necessary to literally refocus one's mental perspective in order to learn a new one.

### "The Electronic Baby"

The problem of keeping work and leisure apart naturally becomes particularly obvious when the greater part of leisure time consists of family life. Pauline Hodson, psychologist and family therapist at venerable Tavistock Institute, draws an interesting parallel: when we marry, our environment benevolently assists us with good advice. Experiences are generously shared. When the time comes to have children, the maternal welfare volunteers advice, and subsequently the child welfare institutions step in.

But how well prepared are we, when one or both people in a relationship will start teleworking? When the "electronic baby," as Pauline expresses it, arrives, we seldom know what the consequences will be. There are no counsellors to ask, no experiences to employ. In practically all the interviews presented in chapter 3, examples of this "electronic baby" have been showcased: there was nobody to ask for advice at the start of one's teleworking!

And yet it is for many a revolutionising adaptation, especially so if only one person in the couple teleworks. Then the sound of the fax definitely can disrupt both romance and other things.

The complex of problems underscores the need for established rules and routines, preferably in the form of an "agreement" between the husband and the wife or the two cohabiting partners, as in the case of Lena Skogsund.

### "Workaholism"

*Realistic, concrete and with the employer common expectations* regarding performance and results, are probably the best guarantees of making it possible to keep work and leisure separated. As far as possible the common demands on performance should be measurable. This is of course easier said than done. In some cases goals and performance, e.g. the number of customer letters or customer contacts, relatively easily lend

themselves to quantification. In other cases a fair amount of creativity is necessary in order to formulate tangible goals for the individual performance.

"Workaholism" is not a new phenomenon, unique for teleworking. But as with other forms of habit-formation and abuse, "accessibility" is likely to play a part. Put a little incisively, to have 20 seconds to work can perhaps be compared to having 20 seconds to a liquor shop open 24 hours a day, all year round. For some people this will not be a problem at all. For others, it may be fatal.

## Personality and Teleworking

This leads us over to the question of personality and teleworking.

Are there personal characteristics which so to speak predestine teleworking to turn out well or not?

To all appearances, all who want to telework cannot manage it successfully. This may in its turn be related to a number of factors, for example a sudden personal crisis, or maybe a new role as parent of a small child. For Kjell Haas at Rohm & Haas, such factors probably to some degree affected his decision to no longer be "market based."

But teleworking also presupposes that the individual teleworker possesses certain fundamental characteristics.

One example is *a confidence* in one's work and in one's own self. It is a strength for the teleworker not to require that the worth of one's performance be acknowledged or confirmed immediately, time and time again. The completely legitimate need of receiving feedback can gain more of a long-term and systematic character if the teleworker is confident in his or her own self.

A second characteristic which is of great value to the teleworker and is related to inner confidence, is *a stability* when it comes to the central parts of the pattern of life, of which work is a part.

Jack Nilles, the foremost teleworking guru in the United States, stresses two other personal characteristics which are also related to the ones already mentioned; self-motivation and discipline.

*A high self-motivation* doubtlessly makes it easier to "get something done" when both the stick and the carrot are at a distance. That such characteristics also can be developed and strengthened—in particular with the support of management—is obvious, but it is certainly good for the teleworker to possess them from the outset.

*Self-discipline* can naturally also be developed if necessary. At the same time it is of great advantage to the teleworker to be used to being able to decide over working hours and control how they are to be utilised. It should immediately be stressed that self-discipline sometimes can mean to charge oneself with taking time off.

Flexibility and ability to innovate are other essential personal characteristics for the teleworker. Not the least since teleworking often means a journey in new and uncharted waters, there is often a need for a large measure of improvisation and creativity, where ability to think and act flexibly is of great importance.

## The Unproductive Module Office...

When work is increasingly done from afar, this also leads to changing demands on the office as working environment.

In a classic study done in the late 1980's, the British consultants Bruce Lloyds showed how uneconomical the traditional module office really is. If we take into consideration a five-day working week, vacations and public holidays and an eight-hour working day, the office space is used only about 20 per cent of the entire year.

But our offices are empty during other times as well. Thus, if we add illness, late arrivals, long lunches and above all "internal processing," our offices are used only 5 per cent of the theoretically possible time or only during 19 out of the year's 365 days.

Furthermore, an extensive European study shows that not even the days that we spend at the office are particularly productive. Imperfections and deficiencies in working environment and work organisation cause a large number of working days to be lost. Problems with ventilation, lighting and heating, but above all the unnecessary interruptions in work lead to that close to one-third of working time, 70 of the year's working days are lost.

Or to quote Marianne Östergren, consultant in relational techniques and author of the book "Skitsnack" ("Bullshit"): "between 25 – 30 per cent of working time goes up in smoke because of bullshitting, the percentage can rise to 70 per cent depending on the degree of problems experienced by an organisation." In truth a disheartening judgement of the office environment which, often at considerable cost, has been built or rented in order to stimulate productive work efforts. The interviews with, e.g. Lena Skogsund, SPP, Vivi Pustinen, Redovisningshuset as well as the staff at the Municipal Architect Office in Gotland, also testify to that a fair amount of time is lost in the traditional office environment.

### **...and the New, Flexible and Space Saving Office**

Hence, the traditional module office is not merely very costly in relation to the degree of utilisation. It is also very inefficient and unproductive as a working environment.

This becomes painfully obvious when the staff only use the office space one or a few days during the working week. The new, concurrently flexible and space saving office, hence becomes a natural extension and consequence of teleworking.

When community, exchange of experiences, creativity and discussion, rather than routine work are the focal points of visits to the office, there emerges a need for a new view of how the space should be used. We have established this in the case of, e.g. Siemens Nixdorf and—increasingly so—at the Municipal Architect Office in Visby.

The Tayloristic office with its cells and modules is not just unproductive. It is also very ill suited for communication. In the new, flexible and space saving office, it is the former subsidiary spaces, such as the meeting room or the coffee lounge, that are focused upon.

The English sociologist and architect Francis Duffy draws an interesting parallel when he sketches a picture of the office of the future: the British clubs, which came into existence when the formerly well-off aristocracy no longer could afford to keep private palaces, but instead chose to let them!

If we bring things a head, we can of course ask ourselves if organisations have a need for an office of their own at all. "Shared facilities," i.e. that several companies share an office and use common facilities, are growing in proportion. The motives are not only

to cut costs, but just as much the possibilities of producing a creative environment by cross-fertilisation and symbiosis of activities that are close in nature.

## **Alternatives to Telework from the Home**

For natural reasons, neighbourhood offices and satellite centres play an important role in the North American labour market. In the United States, and in particular in the great population centres on the East Coast and in California, traffic problems provide management with vastly greater incentives to create conditions for employees being able to telework in a, so to speak, organised manner.

To this we can add legislation and regulations at the federal, state and local levels, which force or encourage companies to introduce programs for telework.

As we have seen in earlier chapters, the U. S. Department of Transportation among others believe that it is particularly this form of teleworking which will grow in importance. This may be as doubtful from an American perspective, as it is for the European societies.

At the same time, these organised forms of teleworking may be of a certain interest also for the Swedish labour market.

From the individual employee's perspective, neighbourhood offices and satellite centres satisfy a couple of central needs. Firstly, it undeniably satisfies the need for social community. A second motive is the possibility to get support and advice regarding use of technology and communication. To the inexperienced computer user, such support gives a considerable feeling of security.

To this can be added the difficulties the teleworker may have to separate work and leisure. It will undeniably be easier to switch between work and leisure, if work is at least at some distance from home. In some of the cases that have been presented earlier in the report, for example Lena Skogsund, Kjell Prando and Vivi Puustinen, a strong interest was expressed for a solution à la neighbourhood office.

Maybe work in a satellite centre or a neighbourhood office for many serve as a first step towards starting to work from one's home. It can give experiences both regarding the technology and the social perspectives, which can form a valuable basis for later telework from the home.

## **Great Challenges for the Unions**

"The TCO must with great vigour counteract computer-aided work performed in the home." Those are the words of the action programme of the 1982 congress of the Swedish Central Organisation of Salaried Employees, which was in force 1983–85. A number of factors were the cause of this plainly negative attitude, for example a generally critical stance towards so-called single work, a concern for the working environment, working hours, working organisation and participation in decision making, and, presumably, also misgivings about being able to pursue any kind of union activities, recruit new members and being able to keep them within the fold.

But during the late eighties there was a shift in the union opinion. Of great importance was the report "På Lagom Distans" ("At Just the Right Distance"), which a working committee chaired by PG Svensson presented in 1987.



In spite of this, the trade unions are faced with great challenges by more extensive teleworking, both in the short run and in the longer term.

In the short run, there are naturally problems in connection with the home working environment as well as the risk that the teleworkers will lag behind in career opportunities, further education and wage increases.

As we have seen, the increased availability has a negative side to it as well. To always be at the beck and call of the company or management and running the risk of being "checked" at all hours of the day. This is of course another important issue to watch from the union point of view, as are issues relating to compensation and responsibility for equipment, insurance, etc.

## **Telework, Personal Development and the Career**

When the formerly centralised system of wage negotiations in Sweden is crumbling and being replaced by an increasingly decentralised system with a greater and greater degree of individual wage determination, new questions are raised in connection to teleworking. Should the teleworker be allowed have a share of the increased productivity and subsequent company profits that he or she has been contributing to? And how should this be calculated? The unions have barely started scratching at the surface of these questions.

And what about personal development in the job, further education and the career?

To quote Erling Tidelius, assistant head of negotiations at the Swedish Federation of Lawyers, Social Scientists and Economists (JUSEK): "Those who aren't at work that often easily find themselves 'offside'." It is obvious that the person who gets to eat lunch with the CEO every day is in a better position career-wise. And at the very top management level in the private sector one hardly dares to take a holiday at all...."

Flexible work is now spreading in new groups as well. It is not merely those who are the most qualified and equipped with resources in society who want to and can work based in their homes. It is now true also for employees working with data input, reservations, customer service and the like.

Judging by appearances, it is these groups which, more than any, need the unions' support not only in looking after their interests regarding working hours and insurance, but also in order to reserve a fair share for themselves of the productivity increases that will result from their work.

## **Unions Become Guilds?**

But maybe it is in the long run that the unions will face the really great challenges. The "glue," i.e. the working place community as a basis of union work, is naturally facing the risk of being weakened to the same extent that employee presence at the common working place becomes more rare.

Will it be the family and the living community, with more and more elements of home-based teleworking, that will become the new community of interests, rather than work?

And what happens when employees to an increasing extent work on commission? When the basis for acting collectively, the very foundation of the rise and development

of unions, becomes weakened? When instead both production, consumption and way of life emphasise the individual and unique rather than the common and similar?

Is it further education, consultant support and individual advice, rather than a common struggle for wages and employment conditions that will become the unions' main tasks?

The former chairman of the Swedish Central Organisation of Salaried Employees, Björn Rosengren, is not alien to such a development: "A very long time ago white-collar workers were very close to the employer and quite distanced from the blue-collar workers. Then white-collar workers were proletarianised and became almost indistinguishable from the blue-collar workers. Now we may be looking at a return to the age of guilds."

Maybe Rosengren's predictions will come true. To the old craft-guilds with its apprentice system, it was professional community and pride in one's profession coupled with learning—or in today's vocabulary development of competence—that were paramount and the very foundation of the organisation.

The parallels are many and striking, as well as the unanswered questions. But one thing is clear: the union movement, which in Sweden has played and maybe still plays a more important role than in any other country, will be facing a large number of questions, where it is hardly the traditional and rote answers that will lead to progress. One of these questions is, as PG Svensson noted, how the unions will act with regard to the new "commissioned workers."

And within the union sphere, Rosengren and PG Svensson are by no means alone in observing that the unions are forced to play an entirely new role. For example, the leading Italian union CGIL in early 1995 published a specific "Handbook for Teleworkers," which brings up technological as well as union and social issues that the teleworker may have reason to consider.

## **Telemanagement — the Art of Organising Work From a Distance**

To telework means a significant change not only for the employees, but just as much for management. "Telemanagement" without doubt also make heavier demands on the managers. The demands on successful organisation of work from a distance are in reality so great that far from everyone can cope with them. At the same time it is of course the "telemanagers'" attitudes and professionalism that are crucial for making teleworking a success.

### **To Organise Work by Watching...**

The traditional office organisation with cell-offices and fixed working hours has made for a leadership that has a tendency to equate physical presence at the working place with performance.

Maybe this delusion should not have to be refuted. Yet, the soon-to-become telemanager's first question is often: "How am I to know if my staff are really working?" Traditional management thus has a Tayloristic focus on control rather than performance and results.

But the way to question this attitude is naturally by asking: What does our Tayloristic manager know about what is going on at the office working place, in its modules, meeting rooms, corridors and coffee lounges? Is it a list of the members of the golf club that is developing in one of the work stations? Is it really weekend planning that requires 45 minutes on the telephone? The manager of course usually has not got the faintest idea about any of this. At best, he knows who are in their places, in the sense that they are within the four walls of the office.

"Management by view," i.e. believing oneself to be able to exercise leadership by watching the employees work, formed the basis of both Fordism and Taylorism. In the knowledge and information societies it is of course an entirely different type of management which is required, as well as vastly different leadership qualities.

### **...or By Indicating Visions**

"*Management by vision*" requires a radically new and different attitude toward the way to manage. Dag Ericsson, professor at Chalmers' Technical University, in his thought-provoking little booklet "Den informationsbaserade organisationen" ("The Information-Based Organisation") paints an interesting picture of the demands that are made on the "IT-manager." His starting-point is in the management thinking that developed during the 1980's, which stressed that the great task of leadership was to formulate a simultaneously attractive, challenging and uniting vision.

What was forgotten was that this vision also would make the individual employee capable of making decisions *on his or her own*. Or to quote Dag Ericsson: "To do the right thing...rather than...doing things the right way." And it is about this that telemanagement to a very great extent is all about.

Dag Ericsson likens the successful manager of the nineties, or the IT-manager, if you want, to a "maestro," who leads his symphony orchestra —a typical "knowledge organisation" with highly specialised employees—with one basis only: the common score. This master conductor has neither department managers nor staffs at his or her disposal.

### **The IT-manager Alias the Maestro**

There is hardly an abundance of "maestros" in today's companies or public organisations. Michael Hammer and James Champy, who in their book "Reengineering the Corporation" formulated the late 1980's foremost management gospel, were soon disappointed. It turned out to be very difficult to think in terms of processes rather than organisation. Management instead created new organisations as ends in themselves. They drew vinegar off into new elegant wine bottles.

The conclusions Hammer and Champy made from seeing the sluggishness with which structures were changed, were that management continued to think in terms of organisations rather than processes. These conclusions are summarised in the new book by the same authors, "Reengineering Management": "99.99 % of the managers' work is not work – it is waste. We can get rid of 75 % of middle management." That is the closing verdict of the authors!

One may not have to make as drastic a conclusion as Hammer and Champy, to realise that IT utterly changes the very conditions of management. The ability

employees have to work flexibly and think innovatively, as well as their sense of quality and service, become far more important than the machinery or organisation which was traditionally built for control and surveillance, or the division of stages in work into functions, departments and units. *And management from a distance brings all this to a head.*

The organisation of work from a distance has as its first requirement a *mutual trust* between employer and employee. In order to establish such a trust, both clear objectives, "the score," and unambiguous rules are required. The role of management in this is not least to safeguard clarity.

The question *what* should be done becomes infinitely more important than *how* something should be done. And this "what" should naturally be specified in an apprehensible and, if possible, measurable fashion. The expectations that are formulated in discussions between employer and employee should replace the traditional job descriptions. "To be responsible for customer contacts" or "to assist the financial manager" are examples of such job descriptions, which already in the traditional office organisation is of very limited use. In teleworking they become completely devoid of meaning.

## Communication with Quality

The communication between management and employees naturally plays an important role in all work organisation. In the traditional office organisation there is an abundance of opportunity for such communication – but what is the value and quality of it?

A positive effect of telework is that the majority of routine meetings disappear. The simple questions can be asked, and replies given, by telephone, fax or e-mail. The physical meetings must be devoted to issues that really need discussion and where everyone's ideas and creativity are important.

But in the same manner as for the employees, this makes more demands on management in planning the content of the half day or so a week or every two weeks, when everybody meets face-to-face. Quantity in communication must be replaced by quality.

An important part of communication is of course the feedback that management gives the employees. In the traditional office organisation, it can be construed as an acknowledgement that you are doing a good job when the boss gives you a smile and says "Good morning" when you meet him in the corridor. The teleworker has to get feedback in some other way. A simple telephone call from the boss a couple of times a week, without necessarily dealing with any important topic, can give the teleworker the acknowledgement that is so important socially and professionally. As we have seen, one such routine is being used by Hans Henrik Nyman at Redovisningshuset.

The manager naturally has a key role not least when telework is being prepared and implemented in an organisation. At such times, extraordinary demands are made on quality in communication, on everybody's participation, on openness and anchoring the idea within the organisation.

## To Get Rid of Oneself

As mentioned earlier, in the traditional, hierarchically structured office organisation, control, supervision and information-selection are essential parts. Such tasks, i.e. "day-to-day management," can even constitute middle management's primary tasks. Their *raison d'être* stems from being the link between goals and execution.

But if the goals can be communicated and execution followed up electronically, not many middle managers are needed. The picture of being superfluous becomes overly clear, when the middle manager is left practically alone in the office.

As stated earlier, when Hammer and Champy observe that 75 per cent of these middle managers straight off can be removed from the organisation, this may be a little bit too drastic. But above all the question is put wrongly.

The middle managers are hardly needed in their old capacities. But the information-based and continuously learning organisation needs other and new key figures. Some members of today's middle management can probably find a role also in the teleworking corporation. But in that case completely new roles: as project leaders, as "communication agents" and as knowledge brokers. In roles, where it will be more important to give support than to try to manage.

There are experiences which indicate that the fiercest resistance to teleworking will come from today's management. And this is of course understandable. The realisation that you run the risk of losing your job triggers strong reactions of self-preservation. If coupled with a fear of technology, the future may appear very gloomy indeed to some.

In reality, teleworking is only the tip of the iceberg called IT-management. Old dogs have to be taught new tricks. And we are not talking about superficial changes that can be accomplished by going to a management course for a few days. To be able to value initiative ahead of responsiveness and obedience, to put flexibility ahead of stability, and to give priority to change over established order requires a stupendous mental reorientation.

Judging by appearances, managers and employees are alike when it comes to the ability to work in a teleworking organisation. Some can do it. For others the adjustment becomes too difficult. They disappear from the organisation.

## 6 The Economics of Telework—Costs, Investments and Effects

Almost all studies that are carried out—either from the individual employee's, the employer's or society's perspective—show economic gains through telework. All parties concerned have something to gain from an economic viewpoint, but only if certain prerequisites are met—some of which have been touched upon in earlier chapters.

### How Are Profits to be Distributed?

But this question is in one sense a simplification. It employs a static and traditional way of looking at how profits that occur are distributed between the employees, the company and society. This distribution is of course not a once and for all given.

For example, if it would turn out that the economic advantages for the employed were to be very limited, while the company would gain by making large profits through, e.g. increased productivity and lower overhead costs, the improved productivity results could of course be allocated between the employees and the company. It is an accepted view in all labour markets in the Western world that the employees contribute to, and consequently are entitled to a share of the improved result regardless of whether the profits are distributed in central negotiations between the parties, or in company-specific agreements or even settlements on the individual level.

It is important that the productivity increases which can be achieved by teleworking are fairly distributed between the company and the employees. This fact is also emphasised regarding telework in an EU-report that follows up the White Book on growth, competitiveness and employment, and was laid down by the Council of Ministers in 1994.

In a corresponding manner, the question of whether the profits made by the implementation of telework can be answered in slightly different ways depending on what time frame is employed. The societal gains, energy savings and an improved environment, a more flexible labour market and a better regional balance, etc., have secondary, but slightly lagged, positive effects on employees as well as companies. For example, the state can reduce the tax burden while keeping societal commitments unchanged. Inversely, increased work satisfaction and quality of life mean that the societal organisation for preventive measures, medical care and health care need not be taxed as hard as before.

It is, however, beyond the scope of this study to speculate in what exact form a collective net gain could take.

## The Employees' Economic Motives

Let us instead look at the employees' economic motives for teleworking. There are primarily five types of motives:

- *The costs for commuting* can be curtailed. The extent of these savings naturally are a function of the length of the journey and method of transportation.
- *The time used* for commuting which can be freed when teleworking can obviously also be ascribed an economic value.
- *The increased freedom of choice of where to live and in what form of housing* that is made possible by teleworking, can in a corresponding way be ascribed an economic value.
- *Smaller savings* could also be made in the form of lower meal costs, work clothes, etc.
- In the international literature, *lower costs for child care* is brought forward as a strong motive for teleworking. If the saving is supposed to be generated by the teleworker taking care of his or her children while working, this is of course very doubtful. Let us for the time being only note that particularly in countries where any developed child-care system hardly exists, many parents do mind their children while working. Regardless of whether one sees this as a highly unsuitable combination both for the children and for the quality of work, it may be the only realistic solution for parents of small children with limited economic resources. An example that comes to mind is the United States.

But the savings may of course be smaller than expected even under Swedish conditions. This is true if one or both of the parents during a certain part of the working week collects the children from the kindergarten earlier than usual, spends a couple of hours with them while they are awake, and then attempts to make up for the lost working hours in the evening.

### Long-Distance Commuting on the Rise

Today long-distance commuting is rapidly becoming very common. This probably has several explanations, for example that more and more tasks demand severe specialisation, that perhaps cannot be obtained at close distance. Most importantly, better communications and means of transportation, e.g. highways and high-speed trains, mean that it becomes possible to travel *farther* in the same time that was earlier spent on commuting. Researchers even assert that the time we are prepared to allocate to travel is constant over time. In other words, with improved communications we are prepared to travel farther, both for business and for pleasure.

If long-distance commuting is defined as commuting which crosses either a municipal or county border, the pattern of development becomes clear. Between 1970 and 1980 the proportion of gainfully employed who commuted over municipal borders increased from 14 per cent to 24 per cent. But it is above all the commuting that crosses county borders that has increased considerably. During a ten-year period, 1980–1990, it has nearly doubled.

In concrete terms, this means that the local labour- and housing markets are enlarged or tied together. For more and more people, it becomes possible to work in, e.g. the

Greater Stockholm area, but live in Uppsala, Västerås, Eskilstuna or Nyköping, i.e. at a distance of close to 100 kilometres from work.

This is becoming an interesting alternative for more and more people. The reasons for this are many. Living costs become considerably lower and the middle-sized town can perhaps offer a safer environment for the children to grow up in. In other parts of Sweden, outside Stockholm, the freedom of choice between small town vs. community vs. genuine countryside might become a reality for an increasing number of people.

Looking at the studies made in the Stockholm-Lake Mälaren Valley area, more than 80 per cent of the long-distance commuters (commuting over county borders) are married or cohabiting. Long-distance commuters are underrepresented in the age group 45–54, while other age groups are underrepresented among the gainfully employed. The same indicates that one long-distance commuter out of five regularly works from his or her home, while another 20 per cent do so occasionally.

For natural reasons there is also a relationship between the distance the employee has to travel to work and the employer's attitude towards telework. If the distance is up to 70 kilometres, slightly more than 15 per cent of employers permit telework. If the distance is up to 150 kilometres, almost twice as many employers, or 28 per cent, have a positive attitude towards telework. When it comes to the real long-distance commuters, finally, who have to travel more than 150 kilometres, more than two thirds of all employers, or 68 per cent, are positive towards telework. The possibility to work regularly from the home is also used to a far greater extent by the commuters who travel more than 70 kilometres to work, 16 per cent, than those who have to travel only between 20 and 70 kilometres, 5 per cent.

## **Economics Force a New Wave of Migration?**

Housing cost considerations should not be underestimated as a motive for moving. In 1991, the average Swede used 23 per cent of his or her disposable income for housing. For those who are living in new housing (built or renovated 1986–1990) the corresponding share is 27 per cent. The relative costs of housing for households today are in all probability higher than when the study was made.

## **The Long-Distance Commuter's vs. the Migrant's Calculations**

Let us now take a closer look at the economic gains that the typical long-distance commuter can make by moving out from the big city, in the hypothetical example Stockholm, while teleworking a few days per week. We assume that the new residence is located 50 kilometres from the workplace, and that work is performed from the home on an average three days out of five working days per week.

The "migrant" will undeniably incur some additional expenses compared to his or her colleague who stays behind in the typical close suburb of Stockholm, with the workplace situated in central Stockholm. For the commuter who travels with public transportation the differences in direct travel costs are less, than for the one who uses a car for commuting.

The extra time that travelling entails is however not in proportion to the difference in the distance from residence to workplace. The marginal costs of crowding are significantly higher in the immediate vicinity of the centrally located workplace. The



close commuter spends most of the trip in the traffic environment that has the highest marginal costs of crowding, while the long-distance commuter only spends a small part of the total distance in this traffic environment.

Hence, it becomes interesting to analyse whether increased direct travel expenses and travelling time can be compensated for by lower housing costs. We can start by basing our calculations on, e.g. average house prices in Stockholm and the rest of Sweden. Thus we assume that the teleworker living in the remote suburb is living in a house which costs SEK 600,000 to buy, to be compared to prices in close Stockholm suburbs, which are twice as high, or around SEK 1,200,000. Further, we assume that that house is mortgaged at 50 per cent of its value, and that the interest rate is 12 per cent. This means that interest payments for the houses are SEK 36,000 and SEK 72,000 *per annum*, respectively. Taking into account tax deductions of 30 per cent, the difference in interest costs becomes SEK 50,400 - SEK 25,200 = SEK 25,200.

If the migrant would have commuted by car every day, the gain would soon vanish. We can estimate the gross costs for the car to be around SEK 3.30 per kilometre, having made a net SEK 2.00 tax deduction. This corresponds to about 12,500 kilometres per year in order to cancel out the lower housing costs.

The car travel expenses for one year will be SEK 40,000, based on 200 working days per year and a distance from home to workplace of 50 kilometres (200 days x (2 x 50) kilometres x SEK 2 = SEK 40,000). On the other hand, if travelling an average of three days per working week can be substituted by teleworking, this expense is reduced to SEK 16,000.

To this we can add that the person living in a close suburb naturally also has travel expenses. Let us for the sake of comparability assume that these are made by car 200 days x (2 x 10) kilometres x SEK 2 = SEK 8,000.

Based on the above example and looking strictly at the direct travel expenses, the migrant's calculations could be summarised as:

|   |                    |
|---|--------------------|
| Lower housing costs                                 | +SEK 25,200        |
| Increased travel expenses<br>(SEK 16,000 - 8,000 =) | - SEK 8,000        |
| <b>The migrant's gain</b>                           | <b>+SEK 17,200</b> |

But travelling time should have naturally have a price tag as well. Let us start by assuming a gross monthly salary of SEK 24,000, corresponding to an "hourly wage" of SEK 150. Assuming that the tax rate is 50 per cent, this leaves us with a net hourly pay of SEK 75.

We are using the hourly wage as a price for the trip to work because the migrant we are treating in this example often has the possibility of using available time to perform paid work. For other employees who have fixed working hours and a fixed monthly salary, and who cannot affect their income, the price of travelling time can be calculated rather differently, according to each person's individual estimate. Travelling time can be seen as a necessary evil in order to get to work and hence be considered not to have a price, or it can be seen in relation to leisure time and be afforded a price in relation to

the individual's alternative use of travelling time. In the example below, hourly wage after taxes is used as a proxy for the cost of commuting time.

Let us assume that the commuting time back and forth for the individual living in the close suburb is 1 ½ hours, and for the individual living in the remote suburb 2 ½ hours. This has the following net result:

|                                       |            |
|---------------------------------------|------------|
| The teleworking migrant               |            |
| 80 x 2.5 x SEK 75 =                   | SEK 15,000 |
| The orthodoxly working suburb dweller |            |
| 200 x 1.5 x SEK 75 =                  | SEK 22,500 |
| The migrant's gain                    | +SEK 7,500 |

The employee also has additional living expenses in the form of lunch, coffee, parking, etc., in connection with the orthodox way of working. Let us assume that these expenses are normally around SEK 50 per day, but that they are halved if teleworking.

This generates savings for the teleworker amounting to:

|                     |             |
|---------------------|-------------|
| 120 days x SEK 25 = | + SEK 3,000 |
|---------------------|-------------|

Some assumptions regarding compensation for equipment and working space should also be included in the estimate, as well as taxation. We thus assume that the employer covers all expenses for equipment and communication, but not those for office space, which we ascribe a "market value" of SEK 500 per month, i.e. SEK 6,000 a year. The starting point is that 10 per cent of the total living space is utilised as working space. The "market value" is thus assumed to be 10 per cent of interest costs, SEK 36,000, and 10 per cent of the running expenses for "operations," electricity, heating, water and plumbing, etc., that we estimate to SEK 24,000.

This means an additional expense for the migrant -SEK 6,000

However, in accordance with current practice we assume that the employee is granted a tax deduction amounting to SEK 3,000 for his workroom.

The increased net cost for the migrant becomes - SEK 3,000

This leaves us with the following estimate:

|  |                 |
|--|-----------------|
| Lower interest payments  | + 25,200        |
| Increased direct travel expenses   | - 8,000         |
| Shorter travelling time spread over the working year and converted to "salary" | + 7,500         |
| Savings in living expenses   | + 3,000         |
| "Market value" of working space  | - 6,000         |
| Tax deduction  | + 3,000         |
| <b>Grand total for migrant</b>   | <b>+ 24,700</b> |

Thus, based on the example above, our migrated teleworker makes close to SEK 25,000 more per working year after taxes than the orthodoxly working close suburb dweller.

Even the household that chooses to use the difference in housing costs to attain a higher housing quality and hence gets relatively higher housing costs, can make a net profit in monetary terms.

For the long-distance commuter who can replace car trips with telecommuting a few days a week, this is without any doubt an excellent bargain.

### The Suburb Dweller's Calculation

But also the orthodoxly working commuting suburb dweller who does not have very long trips to work will experience positive economic effects of teleworking three days a week.

Let us therefore look at an example of a person living in a close suburb of Stockholm, who either commutes by car to work five days a week, or works at home three days a week and commutes to work by car the remaining two days.

The travelling time from door to door is estimated at 1 ½ hours per day. This leaves us with the following estimate:

|   |                 |
|---|-----------------|
| Lower expenses for car trips to work<br>120 days x (2 x 10) kilometres x SEK 2  | + 4,800         |
| Shorter travelling time spread over the<br>working year converted to "salary"<br>120 days x 1 ½ hours x SEK 75  | + 13,500        |
| Lower living expenses<br>120 days x SEK 25  | + 3,000         |
| "Market value" of work space costs (doubled interest<br>payments but unchanged costs for operations, as in the<br>previous example:<br>10 % x SEK 72,000 + 10 % x SEK 24,000) | - 9,600         |
| Tax deduction for workroom in accordance<br>with current practice   | + 3,000         |
| <b>Total savings for the teleworker</b>   | <b>+ 14,700</b> |

Now, the suburb dweller may choose to normally use public transportation, e.g. buses, commuter trains or subways, to travel to work. Thus in general it could be assumed that travel with public transportation entails costs for single tickets and/or discount cards equivalent to 60 per cent of the earlier calculated cost, while keeping the extent of teleworking constant.

One objection that could be raised is that the reality of the fare structure in public transportation presupposes and encourages daily commuting rather than travelling only half of the working week. In other words, it does not take many trips per month to make the monthly discount pass profitable compared to single tickets.

The public transport traveller also has the opportunity to use the monthly- or season discount pass privately, which is another incentive to obtain one. Against this background, we assume that those who travel with public transportation do not make any real economic gain in the form of lower travelling expenses by teleworking a couple of days a week.

Thus we are left with the estimate in the table below.

|  |                |
|--|----------------|
| Expenses for travel to work  | ± 0            |
| Shorter travelling time spread<br>over the working year and converted to "salary"<br>120 days x 1 ½ hours x SEK 75 | + 13,500       |
| Lower living expenses<br>120 days x SEK 25   | + 3,000        |
| "Market value" of work space (the same as<br>in the case of commuting by car)                                      | - 9,600        |
| Tax deduction for workroom in accordance<br>with current practice  | + 3,000        |
| <b>Total savings for the teleworker</b>  | <b>+ 9,900</b> |

All of the estimates made above can naturally be stretched in both a more positive or negative direction, as well as varied *ad infinitum* depending on the individual circumstances.

If a workroom or work corner already exists in the residence, using the space does not entail any appreciable additional costs. In the estimate we also neglected to include the eventuality that the yearly absence due to illness may be reduced with a couple of days by teleworking. To work a day or two with a slight cold or with a sprained ankle will presumably appear easier if the work can be performed from the home rather than presupposing a trip to the office.

Among the factors that we have chosen not to quantify also belongs a diminished need for "work clothes." Lena Skogsund's case testifies that it may involve quite big savings to be able to replace the wardrobe that is after all necessary when working in the city centre.

Seen from the employees' perspective, and based on the previous examples, the yearly net gain can be estimated to between around SEK 10,000 and SEK 25,000, i.e. between SEK 1,000 and SEK 2,000 net per month depending on the choice of housing combined with choice of means of transportation to work.

Seen from a 90's perspective this should be equivalent to several years' pay raises in real terms.

## The Company Has Most to Gain

However, a lot speaks in favour of it being the company that can realise the largest gains. The gains can be related to the main motives that have been presented in an earlier chapter, and are primarily of three types: an increased productivity, savings in office space and other overhead costs, and lower costs for staff turnover, absence due to illness, etc. As we will establish, the payoff, i.e. the time when these "plusses" in our

calculations outweigh increased costs for equipment and computer- and telecommunications, etc., is fairly close.

## Increased Productivity

When it comes to increased productivity as a result of teleworking, there is substantial agreement between both Swedish and international experiences. This is also plain from the opening interviews in this report. Telework leads to relatively large increases in productivity. These can be derived from five main factors:

- The possibilities for increased concentration and more individual initiative and responsibility for the employees contribute to increased productivity. The same is true for the opportunity to work when one feels inspired and full of energy, and take a break or do something else when one feels like it, rather than at a given time. All the unnecessary interruptions and disturbances in the traditional office environment disappear or can at least be concentrated to the days one is present at the office.
- That staff members are spared long, tiring and sometimes stressful trips to work naturally contributes to increased vigour, both physically and mentally, in their work performance.
- Teleworking forces "management by vision" rather than "management by view," i.e. interest from management is shifted from when, where and in what form work is performed to *a result-oriented outlook*.
- The possibilities of *developing and renewing the business*, i.e. attempts to implement Business Process Reengineering, often become obvious in conjunction with the introduction of telework. A transition to teleworking is often consciously or unconsciously accompanied by a questioning of the earlier organisation, functions and processes. The result is frequently that it is found that formerly taken-for-granted organisational units, functions or positions become superfluous. The time spent on a project in different parts of the organisation can be made shorter, earlier specialist functions can be regrouped or combined, and above all be performed by a fewer number of generalists.
- A new and flatter organisation, where, e.g. the middle management level largely can be rationalised away, often is a natural consequence of such a process.

If we look at the international experience, productivity increases in the order of 60 per cent are not unusual. A British study of 250 larger companies indicates an average productivity increase of 45 per cent. Other more or less classic studies of productivity increases as the result of telework are for example New York Telephone – 43 per cent, Control Data Group – 12-20 per cent, U. S. West – 30-40 per cent, Pacific Bell – 20 per cent, University of Wisconsin Hospitals – 40-50 per cent, FI Group – 30 per cent, ICL – 60 per cent or Pohjola OY – 40 per cent.

Let us be cautious and in order to be in the safe side assume that productivity increases in our example are in the neighbourhood of 20 per cent.

From the start, the reservation should be made that, seen from the company's perspective, it is normally a *one-time gain*. And again, normally the productivity increase is not instantaneous. Rather, it will reach full scale after one or two years. However, for

the sake of simplicity, we assume that the increased productivity is fully realised year 1. The comparison closest at hand would be an equally large cut in salaries, combined with an unchanged work performance. This will increase production results in the same manner, seen in relation to labour costs.

## Savings in Office Space and Overhead Costs

The possibilities for *savings in office space* and other overhead costs are also significant. Several of this report's cases testify to that. The total office space can be limited and as a consequence also costs for heating, cleaning, electricity, etc.

As a consequence of teleworking *other overhead costs* can be limited. The administration of real estate reasonably has some sort of relation to the stock of real estate or the combined office space. The same probably holds true for a number of other service functions in the company.

As we have seen in the different cases presented in the report, the transition to telework often means that the teleworkers become their own secretaries and caretakers. This can, as we have observed, at least in a short term perspective cause some problems. At the same time it is undeniably a source of savings for the company.

The possibility of making office space savings of course depends on where the offices are situated. In the case of Stockholm, the average rents as of the first quarter 1995 vary between slightly more than SEK 2,000 in a location in the city centre, to SEK 1,300 in other areas in central Stockholm, and SEK 1,000 in suburban locations. For the rest of the Sweden rents for commercial property should lie between SEK 2,000 and SEK 500 per square metre. For the sake of lucidity we only present two typical scenarios in the examples below, those of SEK 2,000 and SEK 1,000 per square metre.

With our example as a starting point, i.e. teleworking three out five working days per week, the company's office costs could be halved. In practice, however, this seems unlikely. As was evident in an earlier chapter, the demand for common office space does not become less with the introduction of telework. In addition, every teleworker is presumed to need a certain work- and storage space in the working place. Let us therefore assume that the office space savings instead are close to 30 per cent. If the starting point is a typical office, including secondary space, comprising 30 m<sup>2</sup> per employee, the savings will depend on the price per square metre, which we can assume to be varying between SEK 2,000 per year in the city centre, and SEK 1,000 in a non-central urban environment.

## Lower Staff Turnover and Absence Due to Illness

Because teleworking among other things broadens the company's possible geographical recruitment area, gains of a personal administrative or staff policy-related nature are also created. Such ambitions explicitly entered the picture as a motive for teleworking in, e.g. the Medical Products Agency and Siemens Nixdorf. It becomes easier to recruit individual staff who may be unwilling to leave the place where their old work was located and where their homes are. Teleworking can sometimes be an incentive when recruiting new staff also in a local and more delimited labour market.

But above all telework can be an instrument to keep competent staff. It is very costly for the companies to recruit new employees. The total cost of recruiting a new

engineer is for example estimated at SEK 500,000. Thus we also assume that a direct result of the introduction of telework is that staff turnover can be reduced by half, from 10 per cent to 5 per cent.

Besides staff turnover, there are a number of things that speak in favour of—and studies that illustrate—that teleworking leads to fewer absences due to illness, something which has also been documented in some of the report's case studies.

The average number of days of illness per person and year—albeit with substantial regional and other variations—is estimated to around 20 days in Sweden. Let us be prudent and assume that the rate of absence due to illness can be reduced by 10 per cent, which equals two days per employee and year.

This happens to correspond exactly with the actual reduction in the rate of absence due to illness that Jack Nilles reports from a large-scale and longitudinal project on telework.

## **The Equipment Package**

And now for the additional, new expenses. As we have established from the case studies presented in the first part of the report, the equipment that the employer has procured—computer, fax, printer, furniture, etc.—costs anything from around SEK 20,000 to SEK 100,000. But let us assume that in the typical case a fully satisfactory equipment package including office chair, lighting, etc. entails a maximum expense of SEK 50,000, of which furniture account for SEK 10,000. The computer and telecom-equipment are written off during three years, while the furniture is written off during a ten-year period. By applying the annuity method and assuming a 10 per cent interest rate, this means an annual cost of about SEK 14,250.

## **Increased Costs for Telecommunication**

If we presuppose an extra telephone subscription which is installed in the residence for telephone, fax and computer, this corresponds to a one-time cost of SEK 2,500, in addition to the quarterly rental fee, about SEK 400, and charges for the telephone calls. But we should note that by no means are all variable costs additional costs. In principle it is only calls to the working place that represent excess costs. Let us assume that the total additional costs for telecommunication can be estimated to SEK 6,000 per year.

In parenthesis it is worth mentioning that this cost by all appearances will be drastically reduced. An EU-study assesses that the combination of increased competition, an altered phone-rate policy and dropping costs of operation will lower prices by 5 and 10 per cent a year.

## **Some Alternative Estimates**

Taking as a starting point the above reasoning, we can make some alternative calculations, depending on the company's expenses for office space and the employee's production worth, which we estimate to a corresponding salary and secondary salary expenses.

Let us for the sake of simplicity compare the "40,000-crown man," who is difficult to recruit and at the same time hard to replace, and the "20,000-crown woman" with



somewhat lower qualifications and with a considerably lower salary, because of the gender-related differences in wages Sweden has. In the following table, we relate these two careers to differences in costs for office-rent in the expensive city-centre location and the cheaper, less centrally located area.

| <b>SOME ALTERNATIVE COMPANY ESTIMATES (SEK)</b> |                            |                            |                             |                            |
|---|----------------------------|----------------------------|-----------------------------|----------------------------|
|   | <b>"40,000-crown man"</b>  |                            | <b>"20,000-crown woman"</b> |                            |
| <b>Rent</b>                                     | <b>2,000/m<sup>2</sup></b> | <b>1,000/m<sup>2</sup></b> | <b>2,000/m<sup>2</sup></b>  | <b>1,000/m<sup>2</sup></b> |
| Productivity increase 1)                        | 129,600                    | 129,600                    | 64,800                      | 64,800                     |
| Savings, office space 2)                        | 18,000                     | 9,000                      | 18,000                      | 9,000                      |
| Staff turnover 3)                               | 25,000                     | 25,000                     | 10,000                      | 10,000                     |
| Rate of absence due to illness 4)               | 5,900                      | 5,900                      | 2,950                       | 2,950                      |
| Equipment, computers/telecom, furniture 5)      | -14,250                    | -14,250                    | -14,250                     | -14,250                    |
| Computer- and telecom. 6)                       | - 6,000                    | - 6,000                    | - 6,000                     | - 6,000                    |
| <b>Total</b>                                    | <b>158,250</b>             | <b>149,250</b>             | <b>75,500</b>               | <b>66,500</b>              |

- 1) 40,000 and 20,000/month x 12 months + secondary salary expenses of 35 % x 20 % increased productivity
- 2) Savings 30 % of 30 m<sup>2</sup> x 2,000 and 1,000, respectively
- 3) Reduced staff turnover of 5 % based on recruitment cost of 500,000 and 200,000, respectively
- 4) 2 days out of 220 yearly working days applied on 40,000/month and 20,000/month x 12 months + secondary salary expenses 35 %
- 5) Computer- and telecom-equipment amounting to 40,000 is written off during 3 years, while office furniture, work chair, etc. amounting to 10,000 are written off during a period of 10 years. Applying the annuity method and an interest rate of 10 %, interest and depreciation correspond to 12,620 and 1,627, respectively: in all 14,247.
- 6) Comprises subscription, quarterly rental fees and the addition of computer- and telecomm-traffic, i.e. between the home and the regular working place.

Based on the assumptions made, telework becomes a phenomenally lucrative bargain from an employer perspective. And it is the increased productivity which is the primary contributing factor. Even in the case of a mere 5 per cent increase in productivity the

employer's profit will be substantial, both for the "40,000-crown man" and the "20,000-crown woman." The reader should note that the estimate does not treat costs entailed in the planning, discussion and implementation of the new way of working. But under the assumption that in total one working month is allocated for each teleworker-to-be for different preparations, corresponding to a similar reduction in production, the payoff still occurs during the first year after the introduction of teleworking.

## **The Knowledge Corporation the Big Winner**

The typical knowledge corporation, with a high value-added or production-value (equalling salary expenses) per employee will make the largest gains. The positive picture becomes even clearer if the company's street address is in a centrally located area of Stockholm city.

But even a company with a relatively speaking limited value-added per employee and with lower costs for office space can evidently count on significant profits. The issue concerning the distribution of the company's profits between employer and teleworkers which opened this chapter thus becomes highly interesting.

## **Theory and Practice**

A number of objections can be raised against all calculations of this sort. The implementation itself, the process, may not only require time for discussion and preparation, but sometimes also support from external consultants, i.e. an additional direct cost. Furthermore, telework will not become a success in each and every case.

On the other hand, the costs for, e.g. equipment, have been fairly liberally estimated. As is evident from the case studies in this report, the cost of an equipment package was sometimes not even half of our estimated SEK 50,000. According to the TCO-survey referred to earlier, in reality it is just as common that the employee him or herself has paid for the equipment as it is that the employer has defrayed the cost of it.

## **Input Values Determine the Result**

The office rents that the examples are based on are, as mentioned earlier, average rents. In other words they may be higher or lower in the individual case.

One can also compare the additional costs the company is burdened with for equipment in the home and the variable cost of computer- and telecommunication, a total of SEK 20,000 per year, with the conservatively estimated savings in office space. The result indicates that these costs are more or less interchangeable for the company located in the city centre. That is, even given the assumption of unchanged productivity, staff turnover and absence due to illness it is only marginally more expensive—and in some cases even then profitable—for the employer to allow the employees to work in their homes, than it is to carry on in a traditional manner.

Every company or organisation must naturally make their own calculation based on their respective input values, whether known or estimated. It can be wise to start at the other end. That is, how much must productivity on an average be increased and how great are the savings in office space required, etc., in order for teleworking to be

profitable. Or put differently, and based on the calculations above: is it possible to recover the SEK 20,000 per year and employee that teleworking is costing the company?

## 7 The Prospect of the Year 2000...

The step into a new millennium naturally makes it tempting to voice speculations and prophecies. What is waiting around the corner? Is it more of the same, or something radically and dramatically new and different that lies ahead?

From another starting point it really is about what we can imagine will happen during a five-year period, i.e. a planning horizon and a perspective for judgements which hardly appear foreign neither in economics, politics nor private life.

The purpose of this chapter is not to try to be prophetic, neither concerning IT-developments in general nor specifically about teleworking. My ambition is rather to showcase a number of factors which individually, but above all together, indicate that flexible work may appear increasingly appealing to more and more people.

For those who after all would like to indulge themselves in speculation or prophesising, the rear-view mirror perspective is always interesting. How far has telework come compared to ten years ago? Which were the biggest obstacles then and what are they today?

The European survey which was focused on teleworkers and managers that we referred to earlier, makes a comparison of the obstacles that were accounted for by management in the interview material from 1985 and 1994. In 1985 the greatest obstacle was the lack of pressure to make any changes in the work organisation. The second most important obstacle was high cost. Nine years later these explanatory factors have tumbled to fifth and fourth place, respectively. In 1994 the greatest obstacles are said to be inadequate knowledge of what telework really is, as well as difficulties in managing from a distance.

The structure of the problem has hence shifted from lack of interest combined with high costs to inadequate knowledge coupled with difficulties in telemanaging. In other words, companies are well aware that "it can be done" and are starting to seek information about *how* telework can be implemented. This also gives us a perspective on how the structure of the teleworking problem will continue to change over the next few years.

In other words: how strong are the forces that we can label as continuity and inertia, and change and dynamics, respectively?

Let us begin by listening to Sweden's Minister of Labour, on whose desk literally lies the task of creating a synthesis of these conflicting forces on the Swedish labour market.

### Views of a Teleworking Minister of Labour

Just like his fellow member of the cabinet, Minister of Culture Margot Wallström, Minister of Labour Anders Sundström teleworks part of the working week from his home town. In Anders Sundström's case it is on an average two days that he works from the offices that have been prepared in his home town of Piteå in Northern Sweden. This is the place from which Anders Sundström communicates by way of video meetings with his staff and others who want to discuss with the country's Minister of Labour.

The interview with the Minister of Labour is naturally made in a video meeting. Anders Sundström is sitting in his Piteå office, while the author is sitting in the special video room set up on the seventh floor in the Ministry's premises in Stockholm.

It is a deeply committed and inspiring Minister of Labour who is expressing his views on tomorrow's working life in general and teleworking in particular. The fairly widely held belief that today's problems with a continued record-high unemployment, high interest rates and an onerous national debt are stealing all political energy and mentally block every attempt at new thinking, is refuted. Anders Sundström has thought a good deal about tomorrow's working life—and he has firm opinions.

## Rapid Development

– There is no doubt that teleworking is going to increase dramatically over the next four or five years. I don't have a definite opinion as to the rate of increase, but it can probably be faster than anyone thinks. We can draw a parallel to the fax machine. Only after long discussions did we decide to get a fax when I worked in politics in Piteå, which we decided to place in the Office for Industry and Commerce. Nobody in the municipality even considered that we should get more than one fax. Today, not too many years later, I have four faxes, one at the Ministry, one at the flat in Stockholm where I stay overnight, one at my work station here in Piteå and one at my residence in Piteå.

## Large Gains for all Parties

– I see large gains to be made from teleworking for all parties concerned, regardless of whether it's performed from the home or in more organised forms, such as neighbourhood centres, telecottages or satellite offices, says Anders Sundström.

– For the individual employee it becomes possible to plan work and leisure time in a completely different way. Life undeniably becomes a little bit easier. As a social democrat, this is very important to me. It gives an entirely new dimension to the freedom that we want to be not only a formal right, but an everyday reality for as many people as possible.

– And as for the companies, they doubtlessly get quite a bit more out of their employees if they're teleworking. That is obvious and besides, every study of the topic that's been made shows the same thing. Productivity rises at the same time as costs for office space and other overhead costs can be kept down.

– As for society as a whole, there are huge gains to be made, of which we can only see the tip of the iceberg as yet. What is immediately apparent to us is of course that all the investments society has had to make in the industrialist society, such as roads, tracks and other transportation infrastructure, in order for us to have a functioning society at all – and a well-functioning society – won't be at all as motivated in the society we're about to enter. Add energy- and environmental aspects to that, and not to mention the possibilities of making the labour market more flexible. All in all, I can only see gains and advantages for society as a whole through the information society and the flexible working life we're entering in earnest.

## Migration – "a Bad Bargain"

– When industrial society was on the rise and we experienced large-scale migration from the rural areas to cities and larger communities, this was profitable both for employees, companies and society. Not only the husband in the family got a job, often with better earnings and more tolerable conditions in general, but so did the wife. Society also gained much by increased productivity and growth.

– Today, the situation is completely different. Today migration is a bad bargain both for the family and society. We're also a very "stationary" people, reluctant to move. For example, I remember from my time in Piteå how it could be totally impossible to recruit people to key positions—and that didn't have anything to do with pay or employment conditions. People simply didn't want to move because they had rooted themselves, the wife had a job, the children had their friends, etc.



*I see great gains to be made from teleworking for all parties concerned, says Minister of Labour Anders Sundström.*

## There are Risks

– At the same time one shouldn't neglect the drawbacks and risks for the individual. We've long been aware of the risks and problems working alone entails. Above all I see it as a tremendously important task for our policies, and for me as Minister of Labour, to try to stop people from dropping out of mainstream society at all costs, which is a risk we're running in the information society.

– The risk of a "two-thirds society," that we've been aware of for a long time and have been debating, becomes very obvious in the society that's taking form right now. Many people, like the new "free-lancers," become stronger, while those who don't have command of the new technology become weaker.

– In the mass production society there was an incentive even for the companies to see to it that employees got their share of pay raises in order to increase purchasing power and thus consumption also of the goods the company produced. If we look at the United States for instance, we can note that the gulfs in society actually became smaller during the post-war years and the early 60's. And this was not a consequence of any conscious policy of society. It was mass production in combination with mass consumption which laid the foundation of an increased prosperity among ordinary workers.

– It's not that simple today, since mass production and mass consumption are being replaced by customised products that electronic production has made possible, as well as a strongly individualised consumption.

– If one should try to assess flexible work and teleworking from a company point of view, the new employee freedom can be seen as a disadvantage—at least in a shorter term and narrow perspective. Employees become less committed to their employers and aren't bound to one single employer, at a given spot, as they are today. This naturally changes employers' planning horizons. On the other hand, we have the experience that in the long term it isn't a bad thing at all if the companies have to make a little bit of extra effort to keep their staff, for example by letting the employees take a little bit more responsibility, by training the staff, etc.

## Telework—A Boost for Economic Growth

– It's natural for me as Minister of Labour to recognise and encourage telework. I believe that it can mean a tremendous boost in growth for Sweden. Of course, we can always achieve a higher growth rate by working more hours, but that would be a step backwards, so I don't think that will happen. Instead we have to concentrate on trying to raise productivity. And then the way of working, from a distance and in other flexible forms, becomes the real boost. It can have effects in the service sector comparable to what electrification meant to industry 100 years ago.

– I believe that society can contribute to the new way of working in several ways. Education and the development of knowledge are probably most important. Certainly, this is an issue that concerns young people, but also the unemployed, whom we may have to educate for the working life of tomorrow, rather than for the jobs we have today.

– Another important task is of course to take responsibility for the construction of the new infrastructure. As far as we can see, we're not talking about as large an

investment as during the industrial society, but it's extremely important that we're at the forefront of development. This not least by being a sparsely populated country with high ambitions in our regional development policy. We're also a country located in the outskirts of the large markets in the more central parts of Western Europe. In fact, I believe that Sweden in many respects has more to gain from the transition to flexible work than most other countries.

### **Labour Market Legislation Has to be Reviewed**

– I also think that it's clear that we need a new perspective on, e.g. labour and working time legislation. And in this respect I'll be the first to admit that too little has been done so far. I believe that we now need to give legislation in these areas a quick overhaul.

– I would also like to see that the public sector leads the way, set an example. To this end, I'd like to support experiments with flexible work in the public administration. However, the state should not give permanent support to activities that are highly profitable for all parties involved.

### **Municipal IT-plans**

– At the same time I think that the big changes can and ought to be made at the municipal level. The municipalities can probably play a more important role than the state in this matter. I have long pleaded for that every municipality should work out an IT-plan or an IT-strategy which details what can be done based on local conditions, apart from the possibilities of creating a better society through teleworking: for example in the schools, when it comes to companies— particularly small and medium-sized—and communication with citizens, so-called citizens' offices, etc.

– One can draw a parallel between this situation and, e.g. the so-called "million programme" and its massive effort to build modern and cheap housing for all Swedes in the 1960's, or the investments in child care. It was the municipalities' own plans in these areas that made it possible to realise these huge development programmes. We ought to think in terms of networks rather than hierarchies. And with such an approach, the municipalities become incredibly important.

– My own experience is that some municipalities are working very ambitiously with information technology, while in other municipalities there is a newly awakened but positive interest. But unfortunately there is also a large number of municipalities that haven't done anything so far.

– If it becomes necessary, I'm not alien to the idea of obligating the municipalities to prepare special IT-plans where telework becomes one of several obvious parts. Again, I think that the plans for the child care system can serve as a good model.

### **Tax Legislation May Have to Be Changed**

– But the responsibility of the municipalities doesn't mean that the state hasn't an important part to play in teleworking, both from growth policy perspective and taking into consideration resource distribution policy. There is surely a lot to be done here, besides the overhaul of legislation in the area that's needed and the support of experimental activities.



– I myself have contributed to introducing migration subsidies as a labour policy measure, which might appear a bit contradictory. But I did it because this will enable us to force a bottleneck in the labour market. If it would turn out that tax legislation is a hindrance to an increased labour market mobility, e.g. concerning the possibilities for deductions for working space and equipment, I can consider pushing for changes there as well. If we can create a more flexible labour market without it having negative consequences for a reasonable wage level and employment security, this would be an enormous gain for society.

### **Efforts to Promote Teleworking in Development Areas**

– From the Ministry we have for the past five years given development subsidies to service companies that have located their activities in the development areas. The experiences are for the most part positive, but the forms of such contributions from society isn't a goal in itself. I could certainly consider society, i.e. the state, giving support to individually created jobs in a similar way, i.e. supporting individuals who want to telework from places in the development areas. That is also part of the directives I've given to the current Regional Policy Committee.

### **A Renaissance for the Living Community?**

– The quickly increasing rate of teleworking naturally raises ideological questions within the labour movement, both in the political and trade union branches, where the working place community to such a great extent has laid the foundation for the political discussion as well as the solutions put forward.

– Maybe it is the living community that'll experience a renaissance and become the new "glue," Anders Sundström says and draws a parallel between this and the farmer-and craftsman society, where the "village" was the natural community and the root of one's identity.

Anders Sundström also observes that it is necessary to try to continuously develop new instruments or tools for realising the political objectives.

– Like any other technology, information technology isn't inherently good or evil. Everything depends on how it's used and to what purpose.

– If we put the new technology to use in the right way and can come to terms with the risks of, e.g. increased gaps in society, there is a tremendous chance that IT, just like industrialism once did, can come to provide us with a dramatically improved standard of living. Teleworking, to be able to flex in both time and space, can give the concept of freedom a totally new dimension and meaning.

### **"A Virtual Alexandria?"**

In connection with this we start discussing an idea for a "Knowledge Centre for Flexible Work" that the author is working on.

This, the "virtual Alexandria of flexible work," is aiming to bring together the experience and the knowledge that is starting to be gathered in different disciplines both in Sweden and elsewhere in Europe. Such a centre could provide an overview and the collected knowledge of the area of telework based on the fragments of information that

are being gathered today in such diverse disciplines as technology, economics and business administration, labour market research, personnel administration, national planning, architecture and law, just to name a few. By basing the centre on electronics and databases, the costs of the organisation and its premises could be kept at a minimum. The centre could also be located anywhere.

Anders Sundström obviously becomes very enthusiastic about the idea. A virtual "Knowledge Centre for Flexible Work" fits well with the ideas Sweden's Minister of Labour has for making society recognise and stimulate the new way of working. Before the video cameras are turned off Anders Sundström declares that he will bring the matter up with Minister of Co-ordination Jan Nygren, who is the one primarily responsible for IT-issues in the Swedish government.

## The Second Generation of Teleworkers

Today's teleworkers often have to look for knowledge on their own. Experience, as far as it exists, is hardly systematised. And we have a long way to go before we have acquired a genuine knowledge about the prerequisites for, possibilities, and problems of flexible work.

Let us remember that it took a long time to make science out of Fordism and Taylorism. But with the growing presence of telework and other forms of flexible work, experience and knowledge are gradually being built up, both regarding the art of telemanagement and how to telework. In the long term we will also gradually be able to make out a skeleton of knowledge about the manner in which society, housing, transportation infrastructure, etc., will be changed.

It is in this sense we can catch a glimpse of a second generation of teleworkers, rather than a new generation of technologies. As in the case of, e.g. a second generation of immigrants, these people of the second teleworking generation have certain problems in common with the earlier generation. Other problems have been resolved or taken on considerably smaller proportions. But yet other problems will surely have taken their place, problems that we know little about today.

But one thing we can probably say with certainty, and that is that IT has entered people's awareness in earnest. And not primarily as something superficial, trendy or glitzy. It is not surfing on the Internet which represents the new and important element. It is rather the realisation in large segments of the population that we are definitely entering a new society.

"New technologies which develop our ability to create and understand information have always led to dramatic changes in our civilisation." Thus does Al Gore, then senator, begin an article in *Scientific American* 1991. And he draws a parallel with the printing press, which laid the foundation of modern society because the mass consumption of the printed word made it possible for all citizens to influence political decisions.

Three years later, in 1994, IT became a more widely accepted term in Sweden. Perhaps we can pinpoint the public insight that IT concerns all Swedes even more precisely to February 7, when then Prime Minister Carl Bildt in a speech at The Academy of Engineering Science announced the formation of an IT-Committee. And thus we avoid saying anything about cause and effect.

Hence, more than anything else it is the realisation *that information technology affects almost everything in our everyday lives* that has prompted, e.g. the leading Swedish newspapers to offer their readers special computer-, telecom- or IT-supplements.

## From a Possibility to a Sine Qua Non

What was once a technology that *could be used* more or less extensively is now quickly becoming a *sine qua non*.

As mentioned above, information technology has rapidly become a concept used in Swedish everyday life. And not just a term which everyone today loves to use but even more so a realisation that it really is a new society that we are entering with increasing speed.

We can hardly overestimate the importance of that many people simultaneously have come to this realisation. And it has a special significance also when estimating the rate of development of telework in Sweden over the next couple of years. "It can probably be faster than anyone thinks," as it was put by Sweden's Minister of Labour.

Because what we are now witnessing is a rapidly increasing *social acceptance* of information technology. It is apparent in many areas: tele-education, telemedicine, telebanking, teleshopping and of course teleworking.

The signs that we are in the middle of the great break-through are many. Not only the news sections of the newspapers, but also their classified ads speak for themselves. The market's expectations of IT-applications seem almost endless.

Companies like Telia and Canon are spending tens of millions of SEK on campaigns with slogans like "Work where you want" or similar with the same theme. The examples are too numerous to mention.

## To Renew and Manage the Change

As we observed in an earlier chapter, in at least one respect the younger generation has better qualifications for teleworking than the older do: they normally have a better command of the technology. But to have a command of the technology, computers and communication is not primarily a question of technical ability, to "know how to do it." It is mainly a question of social acceptance.

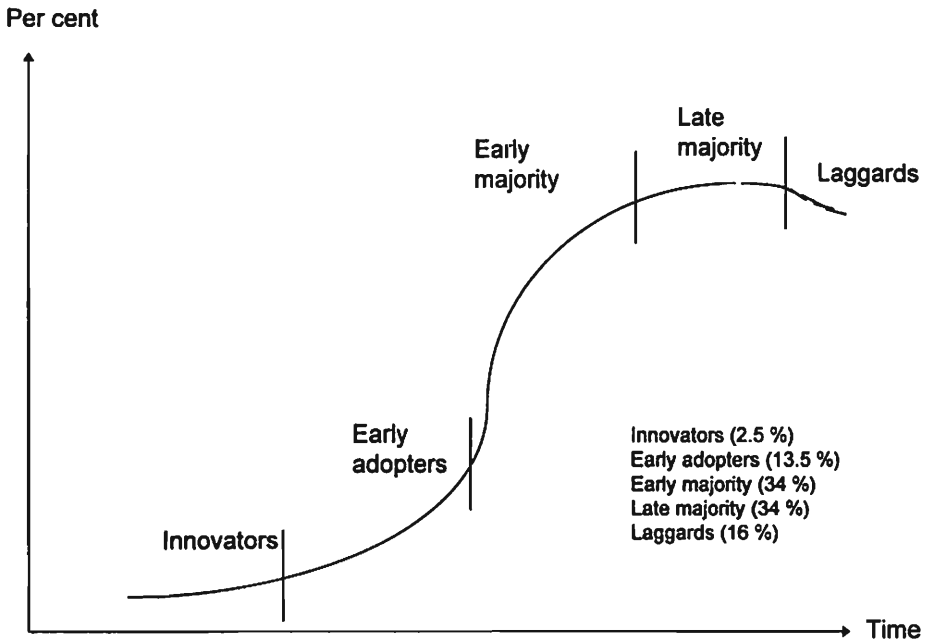
The classical S-curve of technical innovation and diffusion, or acceptance of technology, can be translated into five groups which can be applied also to teleworking, see figure 10.

To briefly describe the S-curve, it shows that diffusion during the initial phase, spearheaded by the "innovators," takes a relatively long time. The "early adoption" will then fairly soon be taken over by the "early majority."

In his book "Intelligent Houses" ("Intelligenta Hus"), Anders Ewerman sketches a similar picture, but more from a system perspective. The great majority, or according to Ewerman 90 per cent of the population, are among the "preservers" or the "inflicted." They also play the role of "preventers." At the head of development is a very small minority, or one per cent of the population, who are "changers," "visionaries" or "utopians." They are followed by nine per cent "implementers" or "entrepreneurs."

The diffusion pattern of teleworking hardly deviates from other innovations in economics and society. What we now in the mid-1990's are witnessing is how visionaries

or innovators have laid the foundation of early adoption, or in Ewerman's terms the "entrepreneurial phase."



Source: TELDOK Report 75, 1992.

Figure 10 Technical innovation and diffusion pattern.

## Technology, Economics and Practice

We could outline the S-curve again and apply it directly on teleworking: from having been a few per cent of the labour force, the teleworkers will soon be numbering in the hundreds of thousands. But it is still the "preventers" who are in a majority among the employees, in management as well as in the political assemblies! There are many diverse examples of such a development, but they have one thing in common:

The technical preconditions existed for a longer period of time. Thereafter the combination of knowledge, social acceptance, a refined technology and falling prices brought about a rapid diffusion pattern. This pattern characterised the fax, which would experience its commercial breakthrough 150 years after it was invented, as well as the mobile phone or the electronic calculator, which almost overnight devastated the market for the electromechanical calculators.

The T-Ford, a car for "the average American" and the DC-3, which quickly transformed passenger aviation into a mass industry, are other examples that can be characterised in a similar manner. One can object that the analogy with the fax and the mobile phone has its limitations. There is no critical mass in the form of faxes or mobile phones to communicate with in the case of teleworking. But that did not exist in the case of the T-Ford or the DC-3 either.

## **“The Infrastructure of Telework”**

The determining factor was instead that an infrastructure in the broadest sense of the word was created. For the breakthrough of motorism you could of course not confine yourself to constructing the roads on which to travel, but also needed to build petrol stations, restaurants and motels along the roads, as well as driving schools, etc. It is this the "infrastructure of telework" that is now being built. The foundation, a physical infrastructure has already been laid through electronic highways, equipment packages, mobile and portable communication tools, etc. What remains is to create a knowledge base for the new way of working as well as a legal and social infrastructure. Teleworking requires its own "traffic regulations" and there is a need for "resting-places" as well as "driving schools."

If social acceptance is seen as the decisive factor, development will probably be accelerated over the next few years due to a number of other factors.

## **Many Factors Speed Up Development**

- The relationship between performance and price will continue to shift in the consumers' favour in the order of 30 per cent a year. In Sweden the price of a fully equipped 486 DX2/50 fell from SEK 40,000 in 1992 to SEK 15,000 in 1994. The trend is clear also in mobile products. The price of mobile phones today is five per cent of what it was barely ten years ago.
- Concurrently with this development miniaturisation is continuing, i.e. computer power and communication capacity per gram is increasing. Memory or DRAM-capacity has historically quadrupled every third year. They have been developed from one million bits in 1986 to 16 megabits today. If we extrapolate this trend, in ten years' time the memory chip will contain upwards of four gigabits, or four billion bits. Translated into the world's most comprehensive encyclopaedia, Encyclopaedia Britannica, each chip could contain 30 pages in 1985, today 500 pages. In the year 2005, there will be room for every volume in one single chip. The development of microprocessors is following a similar trend.
- The mobile products, e.g. the lap-top, the mobile phone and the personal digital assistant (PDA), are following the same trend, i.e. becoming at the same time more powerful, cheaper and smaller.
- Product development is radical. New products are continuously released on the market. Sometimes thought cannot follow. We give names to the new products with the same lack of imagination as when we called the TV "picture radio" or the car "horseless carriage." The "picture telephone" is of course something just as qualitatively new which eventually will be given a new name.
- Computers are now making their serious entry into the home. Around 25 per cent of all Swedish households are estimated to have a personal computer in their residence. At the end of 1995 it is estimated that there will be about one million PC's in private homes, including companies operating from the home and computers borrowed from companies for use at home.
- Networks are rapidly being expanded and further developed with services and technologies such as ISDN and ATM, which can be surmised to grow quickly.

- The competition in Sweden, Europe's most deregulated telecommunications market, can be expected to become even more fierce, with new actors entering the market.
- Stiffening competition coupled with lower transmission costs speak in favour of that consumers can look forward to falling prices as well as rapid product development during the years to come.
- The European Union has made IT the "priority of priorities" both from an employment and growth perspective, and when it comes to striving to regain a role for Europe in relation to the United States and Japan. And at the top of the list of the so-called Bangemann-group's report on IT-applications that will get Europe back on its feet again we find "telework."
- In the Swedish reality the European efforts have the counterparts in the form of, e.g. the IT-Commission and the Foundation for Competence- and Knowledge Development, not to mention all the ambitious and broad efforts in municipalities, county councils and state regional organisations. They all share the purpose of aiming to stimulate a *use of IT*, where teleworking is one of its applications.
- Not least important, the schools are now the target of efforts from both the state and the municipalities.
- Electronic communication is supported ahead of physical transportation also because of a growing environmental consciousness, of which the harsh criticism of the new road system around and inside Stockholm is a prime example.

Let us then in concluding prophesise that the "second generation of teleworkers" or, if you will, the "early majority" will:

- be just as comfortable with computers and communication tools as the older generations were with the automobile and the telephone
- be able to use even more powerful and cheap tools in their telework
- benefit from the experience and knowledge about teleworking that is accumulated
- see to it that their values and life-styles are represented in the political assemblies, just like the representatives of industrialism once replaced the agrarian society's representatives along the entire political continuum.

## When Workers Become "Free-Lancers"

Employment is a form of "work packaging" that was born with industrialism. We have every reason to believe that it will also perish with industrialism, primarily because the "packaging" presupposes that work is performed on set times and in set places. But also because of its essential meaning: the overwhelming majority of the working population is supposed to perform work for one and the same employer.

In an economic-historical perspective the importance of *individual* ability, skill and competence describes a U-shaped curve. The individual skill played a decisive part during the period of craftsmanship. During industrialism, at Ford's assembly lines or in Taylor's office modules, it lost a great deal of its importance. The collective became more important than the individual. But in the post-industrial society, or, if you will, the knowledge society, it is yet again individual performance and ability, human- or knowledge capital, which is valued.

## **"The Contingency Workforce"**

Against this background, the possibility of teleworking will carry another matter to its extreme: why work only for one employer when one no longer is dependent on a permanent working place being put at one's disposal?

Let us begin by observing that in many respects the labour market has become increasingly mobile. Today the average European changes jobs every sixth year and the average American every third year. Everything points to that we will change jobs much more often in the future.

In the United States the "contingency workforce" has become a widely used term. The contingency workers are those belonging to the growing number of "employees" working on one-year or six-month contracts, often half-time, and with several jobs at the same time.

From the company's perspective this way of working represents a "just-in-time"-thinking, applied on its staff. Obviously, for the employee the more loose relation to the labour market often represents insecurity and uncertainty, but also the opportunity for flexibility and constantly new challenges as well as the great freedom so highly valued by the generation born in the seventies.

## **To Lease Labour**

Consequently, private employment agencies are growing rapidly in number in Sweden. In the United States, temporary employment agencies like Manpower, Viva Temps or Contemporary have expanded by 350 per cent during a ten-year period, or from more than 450,000 "employees" to upwards of 1.6 million. Labour market analysts in the United States assert that about half of the U.S. labour force will be offering their services on a free-lance basis by the turn of the century. If we look at the U.S. service sector excluding retailing and the hotel and restaurant business, more than 25 per cent of the new jobs created in 1994 were contingency jobs.

Sweden is of course not like the United States. But in spite of strong trade unions, employment security legislation and strong labour market structures, we can hardly isolate ourselves from the development going on in the world around us where our competitors exist.

In Sweden the temporary jobs, i.e. jobs with a duration of between three and twelve months, increased by more than 25 per cent between 1993 and 1994. At the same time companies specialising in the short-time leasing of staff expanded considerably. This is true both for native Swedish companies such as Proffice and Team Work as well as for international staff leasers such as Manpower with 750,000 employees on its payroll and the Swiss company Adia, which is also in the process of establishing itself on the Swedish market.

A 1994 TCO survey also shows that the leasing of so-called administrative personnel is increasing on the Swedish labour market. It is primarily in the bank- and insurance business that companies are leasing staff more frequently.

## **Downsizing and Outsourcing**

The development that is usually described in terms like "downsizing" or "outsourcing" simply means that the company concentrates on its core business. Services which are

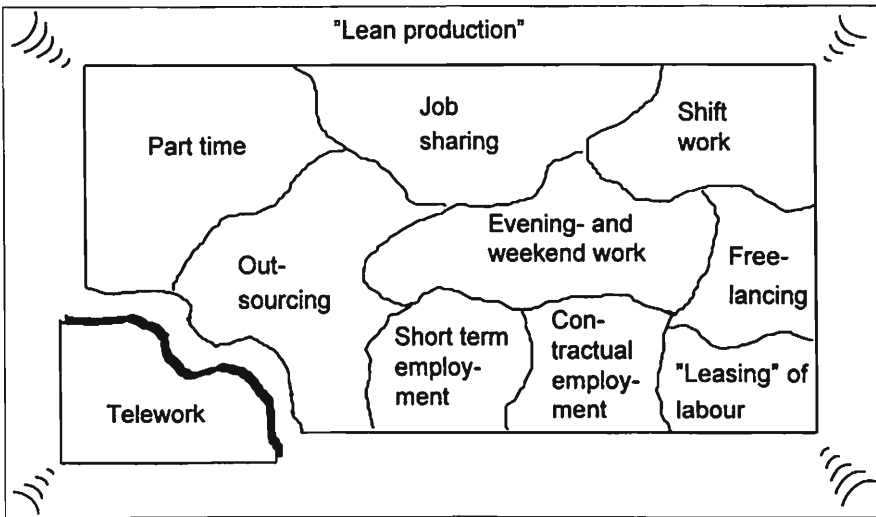
needed for the company to function as an organisation or workplace are purchased from other companies, which in their turn have specialised in this type of services. And we are talking about the whole continuum of services, from cleaning and maintenance to qualified consulting- and specialist services. Even managers are letting themselves be contracted *en masse*.

Naturally, in the extreme case no employees at all are needed. The Swedish hotel chain Welcome Card Hotel does not have a single employee, but instead lets cleaning firms, security companies, catering firms, secretarial agencies, etc., run the entire business.

### Lean Production and Telework

Many signs now point toward that the service sector is next in line for the implementation of lean production. Using the service concept of Toyota, which can be summarised as "as little unnecessary work as possible, in as little space as possible and preferably no defects or mistakes at all," it is close at hand to start to purchase the services needed from an external source, and let the employees who are left work from their homes.

At the same time as lean production makes its debut in the service sector, the labour market is "flexibilised." Alongside a growing proportion of short-time and contractual employment, part-time work, free-lance work, etc., telework is going to represent a significant part of an increasingly flexible labour market and new structures in Swedish working life.



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Figure 11 Telework in the perspective of flexible work and lean production. The figure is in part inspired by a preliminary presentation of the EU-project TELDET.



## Teleworking—Heralding a Brand New Labour Market?

In part, the development of the Swedish consultancy market obviously reflects the general business trend. But the explanation for increased billings for the large consultant firms of between 20 and 40 per cent during a single year, 1993, can probably be found also in structural factors.

Judging by appearances, to this increasingly flexible labour market also belong more and more temporary jobs, the leasing of temporary staff, as well as a larger number of self-employed.

This development in its turn is governed by a number of different forces. But the new freedom in time and space, and the possibility of teleworking is *a consequence of, and at the same time the precondition* for an increasingly flexible and less rigid labour market. Maybe one can view teleworking as a harbinger of something fundamentally new: a new way of working, a new labour market and in the end maybe a new view of what work is and what purpose it should serve.

# Appendix 1

## AGREEMENT FOR TELEWORK FROM THE HOME

*between*

the Municipal Architect Office in Visby

*and*

Björn Andersson

The collective agreements are in force for the issues not regulated in this agreement. The agreement concerns an experimental activity running from April 1, 1995 to March 31, 1996.

### Extent

The agreement concerns telework performed in the residence of Björn Andersson, or at another location as agreed upon by both parties. The teleworkplace is organisationally a part of the main workplace.

Both parties can independently revoke the agreement in writing, with a minimum of one month's notice.

### Working Time

Working time for telework is according to existing working time agreements. The agreements' regulations concerning overtime shall be applied. "Overtime" in connection with own planning projects will not be regarded as overtime, as Björn Andersson himself has drawn up guidelines for each project according to existing routines.

The distribution of working hours during day and night and the allocation of these hours between the office and the place of telework shall be a matter of personal agreement between the employee and his or her closest supervisor

### Accessibility

The employee undertakes to empty his electronic mailbox every working-day.

The Customer Reception Desk, the switchboard and the department shall be kept informed of the employee's whereabouts during office hours, by way of electronic mail or some other communicated routine.

Messages regarding absence (illness, child care, customer visits, etc.) shall be made according to existing routines.

### **Car Allowance**

On the days that telework is performed in the home or in some other place for telework, this will be regarded as the workplace. Car allowance will then be calculated from the teleworkplace, but for travel where the place of duty is closer to the main workplace than the teleworkplace, the car allowance will be calculated from the main workplace.

### **Child Care**

Telework is not a way of solving child care problems. It is assumed that child care is arranged during teleworking hours.

### **Equipment, Its Usage and Insurance**

The equipment that the employer places in the employee's residence is the property of the employer and shall be returned when telework is terminated.

The employer is responsible for that the equipment dispensed to the employee is adequate from a security point of view and that there are acceptable security devices and instructions for the equipment.

The equipment must be used solely by the employee and for work. It must not be modified for private use. All changes in equipment configuration shall be made by technicians designated by the employer.

The employer is responsible for the equipment placed in the teleworkplace. Insurance and any excess costs in the event of damage to the moveable estate will be paid by the employer.

The employee is responsible for any damage to the employer's property which is caused by obvious carelessness.

The employer is responsible for any damage the equipment may cause in the employee's residence.

### **Working Space**

The working space shall be designed and furnished in an appropriate way from a working environment point of view.

### **Security- and Protective Measures**

The employer is responsible for that adequate security measures are taken to ensure against damage. The employer shall follow existing regulations in the working

environment legislation and exercise appropriate caution in order to prevent illness and accidents.

The employer and a union representative from the Municipal Architect Office's joint action group shall have inspected the teleworkplace no later than October 1.

### **Evaluation**

The employee undertakes to participate in an evaluation of the telework experiment. The evaluation shall have been completed no later than March 1, 1996. Among other things, the evaluation shall contain:

- advantages and disadvantages for the individual and for the activity
- the social situation
- working environment and workload
- possibilities and problems
- to what extent the agreement has covered relevant aspects
- environment (commuting)

### **Contact With the Administration**

Teleworkers will be called to the administration's meetings and offered participation in educational and other activities.

### **Other**

During the experimental period a logbook shall be kept by the teleworker. "Regulations" for the logbook will be worked out in cooperation between employer and employee.

Visby, April 27, 1995

Ulf Johansson      Björn Andersson

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