

# **MODERN WORK FORMS – FROM TELEWORK TO SMART WORK**

## **ANALYSIS**

**ESTONIAN ADVICE CENTRE  
2012**

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## **Introduction**

The current analysis entitled “Modern work forms – from telework to smart work” has been developed by NGO Estonian Advice Centres (MTÜ Eesti Abikeskused) in the framework of the project “MICROPOL - Smart Work Centres in Non-Metropolitan Areas”. The project is co-financed by the Interregional Cooperation Programme INTERREG IVC, which forms a part of the European Union’s Regional Development Fund.

NGO Estonian Advice Centres is the Estonian partner of the Micropol project. It was established in 1998 with the mission to be the leading provider of advice services and a competence centre in the fields of health care, labour market and social care in Estonia. The analysis is thus based on more than 10 years of experience in the field, but also on the discussions and exchange of ideas we have had during the Micropol project with experts from different countries. We would like to thank them all.

Rural areas in Europe are being depopulated; young people and graduates are often the first to leave. At the same time technology is developing so rapidly and is making it possible to work anywhere at anytime. An important question that the Micropol project is seeking to answer is why so few businesses have and people exploited the technology and chosen to work at teleworking facilities?

The Micropol project, through a series of study visits, seminars, workshops and studies aims to help each partner to learn from each other’s experience, transfer and adapt good practice and develop a series of regional/local implementation plans that will help ensure that more and better Smart Work Centres will be set up and operating, bringing social, economic and environmental benefits to all participating regions. The project will also produce a White Paper to support policy makers and implementers across Europe in developing strategies at all levels to ensure that Smart Work Centres become a vibrant and permanent feature of the economy of rural Europe.

The analysis will study the necessary preconditions that had to be present for telework to emerge; analyse telework in relation to different policy fields; highlight lessons learnt; and investigate the situation with a focus on Estonia.

# 1. Preconditions for telework and a short historical overview

Today the understanding of the conception of the term “work-place” as a distinct physical “place” has been considerably beclouded, as the “place” where working is done could be located anywhere, provided the nature of work does not limit it. This phenomenon was academically first noticed by Jack Nilles (currently known as “the father of teleworking”) in 1973 when he proposed a simple question: why one has to move physically, while the essence of the job is to move information?

This statement embraces two important aspects that historically occurred almost simultaneously. Neither Nilles nor the majority of analyses on teleworking pay adequate attention to their parallel occurrence, but we think that it vital to analyse them from such point of view. These aspects can be called the two key enablers of teleworking:

- Development of information technology / computers
- Paradigmatic shift in the philosophy of management

Roughly speaking, both of these enablers started to form in the 1940s. Their emergence could be linked to World War II, as there was suddenly a need to solve problems mankind never had to face, even if only military problems were concerned. The problems highlighted from different angles the issue of management: from managing large masses of people to managing information.

For the latter, first computers were developed in the 1940s to process and analyse information and to make decisions based on the analysis. Although mostly seen as something peculiar to war-time and thus becoming obsolete or not necessary after the war has ended (“I think there is a world market for maybe five computers” was famously noticed by Thomas Watson, president of IBM corporation in 1943), the scientific minds saw the situation from a different perspective. In the 1950s and 1960s means to process and analyse information (known as “computers”) were actively in use in government agencies, large companies and universities. This was achieved through rapid technical and technological developments of that era (transistors, microchips, operating systems etc). By the 1970s the technological developments had caused the price of a computer to fall to a level, where it had become affordable and available to the average consumer, to the “man on the street”. Thus such

a chain of changes and technological developments had to be present for Jack Nilles to make his statement.

For the former, changes in management theories started to emerge in the 1930s. Until then, the management was seen solely from the point of view of managing a large industrial enterprise with all its peculiarities: centralization, standardization, fixed processes, uniformity and strict control. These ideas date back to the times of Henry Ford, Henri Fayol, Fredrick Winslow Taylor and Charles Baedaux, who focused on rationalization and making processes more effective through mechanisation. After the World War II it had become obvious, that such an approach does not correspond to the actual economic situation and the recommendations advocated do not help the companies to achieve their objectives, but rather hinder it. The new emergent theories emphasized networks and networking, co-operation, flexibility and trust instead. Thus the change in the philosophy of management had to be present for Jack Nilles to make his statement.

After Nilles had coined the term “telework” in 1973, the conception was quickly picked up by both theoreticians and practitioners in the field. The initial definition was developed and fine-tuned, as well as different aspects of the core conception were introduced and highlighted during the next decades. The common feature that remained an integral part was concentration on the technological component. Technological developments were (and are still) seen as the primary focus for enabling and promoting telework, while the managerial enabler (see above) was only considered as a by-issue. Technology enabling telework has, indeed, greatly developed from broadband Internet access to Wi-Fi, from laptops to smartphones, from groupware to cloud computing etc. The technological enabler is the primary focus of the majority of studies and analyses related to teleworking. The computers and other contemporary means of communication form the essence of teleworking, as their use enables to work without being physically present, through telepresence. In the context of telework, the managerial enabler is paid relevantly little attention to. It has become more important in the context of smart work (see below).

To sum it up, the conception of telework developed in the 1970s and from since on, is continuously of relevance. The new technological solutions and developments widen the possibilities for telework, telework is comfortable for the employee (no / less commuting), telework is cheaper for the employer (no / less office and related costs) and telework is thus primarily seen in the context of employer-employee relationship context.

## **2. From telework to smart work – a shift in focus**

During the last decade the initial conception of telework has been developed into that of smart work. The technological developments of telework changed the form of work (just like introduction of cars instead of carriages changed the form of work), but the content of work remained the same. In smart work it is the content of work that has changed, from work cultures to communication and from organizational structures to premises. The relationship between the employer and employee has changed to subordination and opposition to that of collaboration and co-operation, with both sides having a larger degree of liberty but of responsibility as well. They act as partners in entrepreneurship. This change in conception has led to the following results:

- ICT is seen only as means for achieving change in a wider context
- Smart work is no longer a narrow relationship between the two sides of the labour market, but has direct impact to different policies

In other words, the conception of smart work is far wider and more holistic than that of telework. Telework continues to be a part of smart work as well as its technological cornerstone (new emergent technologies create new possibilities and new fields of telework which, in turn, cause to reshape and redefine smart work). Telework serves as means for smart work's ends: increased productivity and competitiveness, improved economic situation of the company, increased satisfaction of the employers, employees and clients etc.

Smart work is an integral part of different national / regional /local policies. It can be said, that there hardly exists a field of policy not influenced and affected by smart work, but the following lists the most important of them in the context of the project:

- Labour market / educational policy
- Entrepreneurial / industrial policy
- Innovation policy
- Regional policy
- Social policy

## **2.1. Smart work and labour market / educational policy**

Labour market policy has been greatly affected already since the emergence of teleworking. Smart work has had even a more profound impact.

Smart work has increased the employment possibilities. As described above, ICT has enabled the creation of telepresence, or in other words “work is what we do, not where we go”. This has helped remote areas and regions threatened by migration of labour force due to lack of jobs to sustain the level of population (the regional policy aspects will be discussed below).

This possibility presupposes the existence and availability of qualified labour force in any particular area. Firstly, the labour force must have “basic” ICT-skills. The term “basic” naturally varies in time, but it can be defined at any time as “adequate and capable handling of the most commonly used ICT solutions”. Secondly, the labour force must have the will to learn “specific” skills on the basis of the “basic” skills that enable them to carry out a specific task. Thirdly, the labour force must have (or should be willing to acquire) skills that were not traditionally considered to be important for “an employee”. Such skills embrace communication skills, negotiations skills, independent problem solving skills, entrepreneurial skills etc. Fourthly, good skills in foreign languages could be a specific asset and of special value, as telework or smart-work has virtually no borders.

The problem is that people with such skills as described above are wanted by the employers “at once” and if the labour market cannot provide them, the entrepreneur will most likely opt for another region where the labour force does exist. Thus the solution is to include teaching such skills as much as possible into the obligatory curricula in elementary and secondary schools, promote lifelong learning and to leave acquiring only the special skills for concrete cases.

Smart work also increases the employment possibility of the risk-groups on the labour market, such as the disabled, elderly, mothers with young children, minorities etc. Traditionally there have been several obstacles why these risk-groups have problems with finding a job, the most likely being inability to work full-time or lack of local language skills. Smart work conception enables to combine the efforts of more than one part-time worker with considerably less effort than compared to traditional industries. The poor skills in the local language could, in turn, prove to be valuable for working for companies abroad.

To sum it up, smart work can be one possible solution for restructuring the overall economic structure of a given region. There have been several successful examples of how a traditional agrarian or industrial region has been turned into a successful area with contemporary economic structure using telework and smart work possibilities. The process can last up to two decades, but with perseverance and continuous diligence this could be achieved. The additional benefit achieved from the economic restructuring will be additionally beneficial, as the four prerequisites of smart work depend only to a minimum extent of technological developments.

## **2.2. Smart work and entrepreneurial / industrial policy**

The changes in the size and amount of enterprises have been considerably brought along by the same changes that caused the emergence of telework and smart work.

The success of traditional enterprises (especially industrial companies) was usually based on scale effect, i.e. ability to produce a greater number of standardized goods with a smaller allocation of resources. As described above, this was manifested in the managerial principles of the industries as well. Even if an innovation was made (a new product brought to the market), the industrialized production of the innovative product followed the same pattern. The investment necessary for setting up an enterprise was therefore huge – the machinery, raw materials, wages etc amounted literally to a fortune, which helped to accumulate wealth to already the wealthy: only the rich could afford investments. Those who were not well-off at a given time had little possibilities for becoming an entrepreneur or employer (leaving aside the traditional cases of “from a newspaper boy to a millionaire”) and had to content themselves with the permanent status of employee.

The situation in current economy has changed. The percentage of agrarian and industrial sectors of the overall economy is decreasing steadily. Likewise the shift in the value different capitals plays in an enterprise has taken place. While in 1930s 80% of the value of a company was made up of real estate and machinery, then today the situation is vice versa: 80% of the value consists of immaterial and intellectual capital and 20% of the rest. In smart work sectors, the share is even close to 90% and 10%.

The keyword for current and future economy has become service economy, which here does not denote traditional service provision facilities (such as hairdresser), but provision of different services from devising mobile applications to data mining, using ICT (telework) as means. Such services

depend, as mentioned above, mainly on the intellectual capital of the service providers and only to a small amount of material capital. This means that the ability to make the necessary investments for setting up a service provision enterprise is affordable to the majority.

Thus entrepreneurial policy plays an important role in the context of smart work. From one side, smart work increases the demand for the creation of new enterprises. On the other side, the actual creation of new enterprises depends on the regulations, such as how easy it is to register an enterprise; can it be done using Internet; how much does it cost etc – but also on the overall taxation of established enterprises, i.e. is it economically viable to run a start-up small company. Setting up and maintaining an enterprise also involves special skills and knowledge (accounting, reporting etc).

To sum it up, the easier it is to set up and register a company and the more entrepreneurship is encouraged, the more smart work oriented new enterprises will be formed in a particular region / country.

### **2.3. Smart work and innovation policy**

Each new enterprise has to be somehow innovative in order to survive. Innovation has been studied and analysed from different perspectives, but for the current analysis it suffice to define innovation in the broadest possible term “doing something new or doing something traditional in a new way”. In smart work the innovation issues are (not solely, but largely) concentrated to “doing something new”, leaving “doing something traditional in a new way” to traditional industrial sectors.

We have analysed the relation of smart work and entrepreneurial policy above and concluded that smart work encourages entrepreneurship, while entrepreneur-friendly environment is necessary for smart work enterprises to be created. We have also argued that smart work enterprises need relatively little investments to be launched. Thus, in contrast to traditional industries, the number of smart work enterprises to emerge at a given time and place is larger. Most likely the process has the following steps: a) innovative idea with a new enterprise / service entering the market; b) “copycats” and incremental innovators entering the market; c) saturation and stabilization of the market with new ideas and innovations taking place. This means that the competition among different smart work enterprises is also bigger than that in traditional industries.

Competition is, naturally, a necessary and useful phenomenon, which helps the clients to obtain what they really need / want with a reasonable price and acceptable quality. But tough competition also brings along wasting the scanty resources to extensive marketing and promotion and to developing irrelevant developments just to differ from the competitor. It would be much more profitable to the businesses involved if competition and co-operation which enables to maximise the strengths of the individual enterprises and minimize related risks.

Co-operation also helps to overcome the problem of “overlapping neighbourhoods”, i.e. the situation where there is actually the need for a wholesome approach or service in the market, but the service provision is scattered among different small service providers, who lack both capacity and information for completing the need for the wholesome approach. Thus two or more enterprises should merge their skills and exchange information, but without losing their own identity or officially merging into a single company.

Such an approach dates back already to the times of Adam Smith, but has only been recently become a widely accepted policy, resulting in setting up business incubators and enabling the creation of clusters. In both cases enterprises with similar (but not same!) objectives and aims join on a voluntary basis to foster each one’s business through combining jointly the resources available.

To sum it up, creating the necessary preconditions for business incubators and / or financial support to set them up from state or regional government, helps smart work enterprises in the area to develop faster than without such measures. Combined with favourable entrepreneurial environment, it will boost smart economy in the region.

#### **2.4. Smart work and regional policy**

As described above, the means for smart work (ICT) enables to create telepresence and allows to work from any place, if the nature of the work allows it. It would be tempting to conclude that thus ICT and telework has in theory solved all problems related to regional development and only to wonder, why the regional discrepancies still remain and why numerous projects are currently running and will continue to run for improving the situation.

The reality is much more complicated. In principle, the necessary technical and technological preconditions needed for current type of smart work are available, affordable to a large share of

countries / regions in the world and the emerging markets are ready for the services. However, the other inevitable components to smart work such as better education, intellectual capital, knowledge, innovations and clusters tend to form in “centres”. The term “centre” is naturally ambiguous and could indicate almost any location on a certain scale. Tacitly the term is, on the other hand, quite well understood both by officials, politicians and the population as well. There are certain areas (typically referred to as catchment areas) that attract people, innovations, investments and there are areas that linger behind. Once a region has become a catchment area, it will start, as if by itself, to foster. The areas that have fallen to the spiral of decline will, in turn, and again, as if by itself sink deeper and deeper. The discrepancies are magnified quickly and on a large scale.

A solution to act against this process lies in the creation of new and *high-quality* workplaces. As described above, this process takes time, often several decades, but there are successful examples that could be followed (not copied!). Smart work and service economy are the forces that create high-quality jobs, which attract both young people and top-level specialists. Furthermore, in this context the conception of telepresence must be stressed.

To sum it up, as the economy itself is self-organising and self-regulating the forces balancing the uneven development of regions must have an impetus from outside. The only suitable actor is the public sector which should deliver good examples by establishing smart work based national and regional agencies in underdeveloped regions.

## **2.5. Smart work and social policy**

The use of ICT is not limited only to new forms of services. Also traditional services that do not necessarily involve physical contact can be offered as smart work activities. Some developments could and should replace in total some outdated ways of communicating, such as paper signatures or voting in stations. Some developments could ease the life of the population by offering them different socially oriented services not as contact counselling or contact advice, but rather through using ICT.

In previous parts of the analysis we have been deliberately vague, as to which kind of services could be provided for the clients by smart work entrepreneurs. However, while analysing smart work and social policy we can be fairly specific and concrete. The need for different types of counselling has increased considerably during the last decades, starting from social counselling to that of primary

medical counselling. As other analyses have proved, the majority of problems where counsel is sought for can be solved without eye-to-eye contact between the counsellor and the client.

The common practice has been to offer non-contact counselling in remote areas, where access to the specialist is cumbersome and costly. The counselling can be offered both by phone and by different ICT means. The most important aspect is the quality of counselling, which means that only certified professionals in the given field can do the work. The European Union has set a good example of establishing EU-wide phone numbers of social value (starting with 116...) that ought to be launched in each member state. However, as there is no obligatory timeframe for setting up the proposed services, only some of them have been launched in some countries.

To sum it up, launching all the smart work based social counselling services advocated by EU will have positive impact on the availability of different types of advice. It will also help to promote smart work, and, if, developed in the context of regional policy will help to reduce respective inequalities as well.

### **3. Lessons learnt and Estonian case-study**

1. The technological development that brought along the possibility of first telework and then smart work was self-driven. The primary focus was to improve the technical solution themselves (pure science) or the aim was to enhance the possibility of using ICT devices, especially in military matters (applied science). The civilian component was introduced to the use of ICT only gradually. The “working” component was not part of the agenda until 1970s.
2. Telework was an innovation in the 1970 and although transformed into smart work by today, is still a novel approach.
3. Although purportedly democratic and barrier-closing, telework has created new inequalities and uneven development. “The winner takes it all”, due to different habits in computer usage, differences in accepting telework, differences in Internet penetration, cultural differences etc.
4. The public sector should intervene, if there is a wish to overcome the new inequalities and balance development (this is not “a must” to do, but strongly recommended). This could be achieved, for example, by acting as an enabler for the transfer to smart work and service economy through initializing changes in education, through developing different support structures, through implementing a strong regional policy etc.
5. The private and non-governmental sectors will willingly participate in the implementation of the interventions from the public sector, until sufficient freedom is left for the enterprises and the self-driven interest of science and innovation.

The derived lessons will be weighed against a case-study based on setting up a tele / smart work centre in Southern Estonia in 2010-2011. The aim of the project is to set up (i.e. technically furnish) suitable premises for the centres located in Võru, Valga and Põlva (capitals of respective regions); to find interested employers and to train the work-force (15 for each centre) out of the local unemployed.

1. Was the region technically and technologically ready? Yes. Just like the rest of Estonia, Southern-Estonia has excellent Internet penetration.
2. Was the population aware of smart work, what was their reaction? The people were in general aware what smart work is. The overall impression was positive, mainly due to lack of high-quality jobs in the area and the unwillingness of the population to migrate from their home counties.

3. Were the possible employees qualified enough for smart work? The employees had the necessary basic ICT skills (the specialised skills had to be taught). The communication, negotiations etc soft skills were by and large adequate. Additional supplementary courses had to be organised. The most problematic issue was language skills, as the majority of the employees were fluent only in Estonian and had some knowledge of Russian and English / German which limited the spectre of possible jobs.
4. What was the overall socioeconomic situation in South Estonia? South Estonia is one of the regions in Estonia that constantly lags behind. The overall rate of unemployment is above Estonian average. The wish to leave the counties (although not voluntarily) was large. The prevalent economic sectors were mainly agrarian with some smallish industries. The service economy was mainly traditional.
5. Was there a national relevant policy for setting up the smart work centre? No. Smart work is on paper considered to be the key success factor for socioeconomic development, but in reality it falls in between all policy fields involved.



MICROPOOL

The logo features the word "MICROPOOL" in a bold, sans-serif font. The letter "O" is replaced by a blue location pin, and the second "O" is replaced by an orange location pin. Above the text is a simple grey arc representing a sun. The entire logo is set against a background of a colorful, abstract pattern of dots and lines.

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