Croatian management in teleworking environment

M. Musa, B.Sc.TE. and I. Brčić, B.Sc.EE.
PSE
SIEMENS d.d.
Heinzelova 70A, HR-10000 Zagreb, Croatia
Telephone: +385-1-610-5739, +385-1-610-5446 Fax: +385-1-610-5266
E-mail: mario.musa@siemens.hr, ivan.brcic@siemens.hr

H. Hladnik
Faculty of Transport and Traffic Engineering
University of Zagreb
Vukelićeva 4, HR-10000 Zagreb, Croatia
Telephone: +385-1-238-0-226 Fax: +385-1-231-4415 E-mail: hladnik@fpz.hr

Abstract: Definition of teleworking presumes that employees have constant and uninterrupted access to telecommunication and information systems of their company. For modern management characterised by innovation, competition, globalisation and flexibility the implementation of teleworking means: cost savings, increased flexibility, improvement of productivity, improvement of services offered, engaging and keeping highly qualified employees, increased motivation and satisfaction of employees and increased quality of work. A research has been made concerning the implementation of teleworking in Croatia from the aspect of management. The results show that the management's are poorly informed and uninterested in this new field of work despite the benefits of teleworking.

I. INTRODUCTION

The definition of teleworking or remote working is that the employees, wherever they are, have constant and undisturbed access to telecommunication and information systems of their company. Remote work is most suitable in case when it refers to human knowledge and resources whose use is of advantage outside the company headquarters.

Fast development of information and telecommunication technology, and especially of the Internet has introduced new views on the labour itself and on the management of business processes. Electronic transactions, electronic administration, transformation of other activities such as medicine and work to remote/distant activities, and the influence on culture and local community represent only some of the consequences of this development and offer new challenges and possibilities of organisation and management. For management the introduction and implementation of new technologies means:
- cost savings,
- increased flexibility,
- improvement of productivity (10%-20%),
- improvement of services offered,
- engaging and keeping highly qualified employees,
- increased motivation and satisfaction of employees,
- increased quality of work.

This new aspect of labour market is not relevant for all types of businesses. Teleworking is especially suitable for e.g. programmers, designers, consultants, physicians, commuters who have to travel a long way to their workplaces, persons of poor mobility and above all for managers constantly on the move and open to changes.

II. TELEWORKING - THE FUTURE OF BUSINESS ACTIVITIES

One of the main applications of the new information society is the telework, i.e. sudden opening of new vacancies. Thus, the possibility of telework is the direct consequence of the rapid development of information and communication technology (multimedia, computer networks), and real explosion of the Internet. This has opened up for many people worldwide a new working routine. The International Labour Organization (ILO) estimates that more than thirty million people in the world today start their workday at home, in front of their computers' screens. According to ILO, telework is defined as work performed at a location away from the company head office, plant or factory, where the employee has no contact with other colleagues, but can communicate with them by means of sophisticated technology. This kind of employee is called a teleworker (sometimes even a cyberworker).

Telework generally improves marketing, big companies decentralize successfully, they enter remote markets at relatively low costs, the quality of services in the public sector is improved, time zones are overcome, etc. Besides, some of the reasons for introducing telework are of strategic nature: the highly qualified personnel is offered new possibilities, new motivation (working at home), thus preventing employees from leaving to work for the competition [4]. Furthermore, telework is more flexible since it provides the employers with the possibility of selecting among a greater number of possible workers. The reason for introducing telework may also be in allowing the management, researchers and employees, who because of the nature of their work are often away on business trips, to work in real time with their (often international) associates at any time of day and from any location. Certainly, one should also keep in mind the significant savings regarding the increasing purchase or leasing and maintenance costs of business premises, as well as the costs of using public transport to go to work, etc. Telework satisfies thus in the united Europe one of the four basic freedoms, and that is labour mobility (along with free mobility of goods, capital and services), and the teleworker.
does not have to leave physically their residence. The more
developed can use in this way the knowledge of the less
developed, not influencing their infrastructure in any way. 

Fast development of this type of work has also indicated the problems that are not typical for the classical way of employment. The problem of the absence of social interaction with colleagues can have negative effect on the "work discipline", concentration, i.e. generally on immediate work motivation, and greater difficulties in organizing one's working day. Therefore, an important precondition for high-quality telework is the existence of adequate space. Apart from these problems related to the very employees and their environment, there is also the absence of legal regulations, especially at the international level, thus allowing various abuses. It seems a paradox that telework, as extremely democratic and participating activity can lead to marginalization of the teleworkers themselves. The reason lies in copying the old relationships into the new technological and communication environment. On the other hand, telework minimises the possibility of racial, gender, age or any other discrimination.

The indicators of the level of development of IT infrastructure play the key role in the development of new labour markets. These indicators show at the same time how much a certain country is investing into the development and application of new technologies. The Table I shows that Croatia is moving towards the "golden mean", which is not such a bad position taking into consideration all the relevant circumstances.

III. CHARACTERISTICS OF TELEWORKING

A. Forms of telework

Telework is an agreement between the employee and the management allowing the employee to work from home, a dislocated office or telecentre on certain defined workdays, i.e. to work at a location outside the usual head office, but connected by means of electronic communication devices [3]. Considering the employee's location and the nature of work, the following forms of telework can be distinguished:

- work from home
  a) the employee works exclusively at home
  b) alternating work - flexible division
- telework from the telecentre
  a) satellite offices
  b) dislocated offices
  c) field work
- mobile work on remote terminal

B. Introduction of telework

The process of introducing telework is a complex job requiring good preparation and planning, and consists of the following steps (Fig. 1):

a) planning and starting the project - informing of workers and management about the advantages and the drawbacks of the new operating method through workgroups, discussions, workshops, etc.

b) accepting of idea and new operating methods,

c) cost analysis,

d) selecting activities and workers - selecting potential types of jobs from the company's operating scope as well as selecting appropriate workers,

e) communication - insuring communication channels and facilities e.g. phone lines, E-mail, data transfer, videoconferencing, etc.,

f) management and control - managing and controlling work must be fully provided,

g) legal aspects of work, legal and social subjects need to be considered, work contract,

<table>
<thead>
<tr>
<th>For the year 2001</th>
<th>Number of inhabitants in millions</th>
<th>Number of telephone con. per 100 inhabitants</th>
<th>Number of mobile connections per 100 inhabitants</th>
<th>Number of Internet con. per 100 inhabitants</th>
<th>Number of PCs per 100 inhabitants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Croatia</td>
<td>4.3</td>
<td>40</td>
<td>38</td>
<td>11</td>
<td>17</td>
</tr>
<tr>
<td>Slovenia</td>
<td>2</td>
<td>39</td>
<td>41</td>
<td>21</td>
<td>25</td>
</tr>
<tr>
<td>Czech Rep.</td>
<td>10.3</td>
<td>38</td>
<td>42</td>
<td>21</td>
<td>24</td>
</tr>
<tr>
<td>Poland</td>
<td>38.7</td>
<td>28</td>
<td>31</td>
<td>8</td>
<td>14</td>
</tr>
<tr>
<td>Slovakia</td>
<td>5.4</td>
<td>31</td>
<td>32</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>Ukraine</td>
<td>50.7</td>
<td>22</td>
<td>19</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>Hungary</td>
<td>10.2</td>
<td>45</td>
<td>44</td>
<td>13</td>
<td>18</td>
</tr>
<tr>
<td>France</td>
<td>58.6</td>
<td>59</td>
<td>72</td>
<td>26</td>
<td>29</td>
</tr>
<tr>
<td>Germany</td>
<td>82.1</td>
<td>57</td>
<td>75</td>
<td>31</td>
<td>38</td>
</tr>
<tr>
<td>Italy</td>
<td>57.5</td>
<td>47</td>
<td>80</td>
<td>23</td>
<td>30</td>
</tr>
<tr>
<td>Switzerland</td>
<td>7.1</td>
<td>67</td>
<td>69</td>
<td>32</td>
<td>38</td>
</tr>
<tr>
<td>Great Britain</td>
<td>59</td>
<td>54</td>
<td>73</td>
<td>34</td>
<td>39</td>
</tr>
<tr>
<td>Austria</td>
<td>8.1</td>
<td>49</td>
<td>66</td>
<td>32</td>
<td>35</td>
</tr>
<tr>
<td>Portugal</td>
<td>10</td>
<td>40</td>
<td>59</td>
<td>10</td>
<td>16</td>
</tr>
<tr>
<td>Sweden</td>
<td>8.9</td>
<td>69</td>
<td>83</td>
<td>38</td>
<td>49</td>
</tr>
</tbody>
</table>
h) ergonomic aspects - overall working environment, working conditions, infrastructure, etc.,

i) realisation and technical issues - information-communication realisation of work based on the appropriate hardware and software, data transfer security, installation, maintenance, and in-service online support.

j) training and further steps in building the new method of working - in case of successful introduction and functioning of the system, this is further developed and improved: the workers who successfully use the new method of work and the management continue education, seminars and workshops of other workers. They use experience and new knowledge in order to improve the system and work.

C. Co-ordination and communication

Introducing telework means optimal planning of communications from the technical point of view. Communication channels are established in relations between workers and their superiors, among workers themselves as well as between workers and external partners. Good technical support to communication is a precondition for successful functioning of the working process. On the other hand, social aspect of work (exclusively at home) i.e. communication between workers when they are dislocated, represents an important factor in motivation and satisfaction, and also in integration of the workers in the production process. The workers achieve higher degree of autonomy and responsibility. Advantages of teleworking for worker, management and environment are shown on Fig.2.

Potential drawbacks of telework are:

a) possible social isolation,
b) limited possibilities of getting a promotion,
c) overlapping of the business and private life,
d) conflict with traditional and inflexible management,
e) greater demands for co-ordination.

D. The basics of technical realisation

Technical assumptions of establishing the connection assume the use of the following equipment: portable computers, desktop computers, printers, fax machines, cables, modems, and scanners. When purchasing the equipment, the following questions should be considered:

a) what goals are to be met by introducing teleworking?
b) what software optimally supports the set goal?
c) what hardware support is necessary for the selected software?

All these components have a significant influence on the quality and efficiency of work and they need to be specially considered.
E. Security aspects of teleworking

Remote workplaces as well as those at headquarters are subject to security measures and data security. Safe throughput of information and data between individual points in the system needs to be insured. Anti-virus programs are the basis of protection. Using passwords and issuing access permissions to individual system resources insures that the system is compact and that it provides smooth functioning. Regular "backup" of data is necessary and the data have to be safely stored at a regular basis. During data and information transfer, safe channels should be used as well as cryptographic methods of protection.

F. Legal issues of introducing telework

The introducing of telework raises the issue of legal regulation of such work. In principle, from the legal point of view, four areas may be distinguished:

a) labour relations,
b) labour relations when the worker works from home,
c) legal relations between employer - employee,
d) legal relations between employer - independent employee.

The law and legislation need to insure that the system is functioning properly and protection for all parties needs to be insured, as is currently the case with the present working system. Issues of insurance and taxes also belong to the domain of legal and financial regulations.

IV. MANAGEMENT OF THE NEW ERA

With the development of technology and the appearance of high, sophisticated technologies, the success of an organisation depends increasingly on people, and organisations are all sensitive to the lack of highly qualified, professional and maximally engaged staff. The economic performances depend more and more on the quality, service, continuous innovation and high flexibility of organisation. Since people form the dynamic component of the organisation, the source of organisation flexibility and adaptability to changes, it is only logical that there is an increasing trend in the orientation towards people and development of all forms and styles of management that insure high motivation, development and maximal engagement of the working and creative potentials of all the employed [2].

Managers today depend more and more on their professional co-workers, instead of decision-making they are becoming more and more those who co-ordinate and direct the decision-making process by gathering the right people around the right problems [1].

Modern managers must first of all know how to find the best co-workers, how to motivate them, co-ordinate and link these different individuals, i.e. allow co-workers freedom so that they can work in their own way, whether working in production or in services.

Modern manager is different from the classical manager by not focusing on the search for ideal organisation structures, but on the management in accordance with the variable environment and the requirements of the competition. Therefore, optimal combination of resources and the usage of these resources are one of the most difficult problems faced by the modern management in the variable or even turbulent environment.

Ideal organisation structure seems almost impossible to achieve, especially in propulsive branches of high technology companies that do business in conditions of not only complex but also extremely variable environment. The most significant that is required of the management in such conditions is to provide up-to-date response to the challenges of the environment.

Therefore, the overall orientation and behaviour of managers have to be in the function of motivation and loyalty of the employees to the organisation and its goals, insuring their permanent education and knowledge, removing all barriers of creativity, towards successful and fast performance of tasks.

A. Advanced Trends in Management

Advanced trends in management bring essential changes in organisation environment, culture, desires, expectations of the employed and their education, nature of dominant operating, business and development problems that are less and less structured, with all the more information needed for safe and unambiguous decisions which require creativity and intuition, that is entrepreneurial behaviour of everyone, increased uncertainty and turbulence of business transactions but also of the environment in which business is performed, etc.

Distinction between entrepreneurs and managers as persons of different roles, interests, activities and characteristics is today fairly present whereas modern businesses require more and more the integration of these activities and successful managers need to be in fact capable entrepreneurs [1]. The variable and turbulent environment of modern companies requires that the company managers think and act as entrepreneurs.

Such attitude to the necessity of entrepreneurial behaviour and action of the modern management does not remain only at the managerial top, but is considered necessary and a component of all the managerial levels so that the organisation as a whole would act as an entrepreneur. All managers should look for the possibilities and circumstances to improve the success of the organisation and to introduce new labour technologies such as teleworking.

B. Research: Croatian management and teleworking

European studies in the field of teleworking show constant growth in the number of those who implement such method of working. Out of the total number, almost 80% are male persons, highly educated, with marked characteristics of leaders. Also, teleworking was implemented by about 2/3 of European organisations and companies, and it is estimated that over 9 million persons are involved in teleworking system. Table II shows the number of persons who are involved in teleworking within the European Union. Several projects are being carried out within the EU, with the aim of studying the influence and the results of teleworking, the most important being: TELESKOP - a project of the Institute of the Economy in Cologne (Germany) and MIRTI (Models of Industrial Relations in Telework Innovation) - EU project.
<table>
<thead>
<tr>
<th>Country</th>
<th>Number of Persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td>355,000</td>
</tr>
<tr>
<td>Sweden</td>
<td>594,000</td>
</tr>
<tr>
<td>Netherlands</td>
<td>1,044,000</td>
</tr>
<tr>
<td>Denmark</td>
<td>280,000</td>
</tr>
<tr>
<td>Great Britain</td>
<td>2,027,000</td>
</tr>
<tr>
<td>Germany</td>
<td>2,132,000</td>
</tr>
<tr>
<td>Ireland</td>
<td>61,000</td>
</tr>
<tr>
<td>Italy</td>
<td>720,000</td>
</tr>
<tr>
<td>France</td>
<td>635,000</td>
</tr>
<tr>
<td>Spain</td>
<td>357,000</td>
</tr>
<tr>
<td>Austria</td>
<td>75,000</td>
</tr>
<tr>
<td>The rest of EU</td>
<td>804,000</td>
</tr>
</tbody>
</table>

In other parts of Europe, including transition countries, there are no major studies and thus no statistical data on the implementation of teleworking. Therefore, a small survey was carried out on a sample of about 200 managers from Croatia, according to the questionnaire (enclosed) for managers within the Teleskop project. A total of 104 managers (52%) responded, and the basic characteristics are presented on Fig.3 and Fig.4. Diagrams show the percentage of those managers who gave answers that are different to certain questions with reference to the ideal model.

It can be seen that the following questions and answers are “problematic” for Croatian managers:
- Question No. 1 - Do you think that you have been sufficiently informed about teleworking?
- Question No. 14 - Do you find constant control of results of your co-workers important?
- Question No. 17 - Do you require frequent and spontaneous dialogue with your co-workers?
- Question No. 25 - Do you find it important to gather your team quickly (to make the team members meet at the same location) when you want to present your new ideas?
- Question No. 28 - Can you be sure that teleworkers will have no negative consequences regarding promotion?

By comparing the ideal and survey obtained answers, one may conclude that almost 50% of our managers are insufficiently informed about teleworking. A contingency (situational) approach is felt with the majority of managers, that is, a wish to manage work and organisation but also people. Question No. 14 shows that the majority prefers softer autocratic style and constant control of co-workers, which might lead to reduced productivity. The last two questions point out at the general problems in introducing and implementing telework: possible social isolation, limited possibilities of promotion, overlapping of business and private life, conflict with traditional and inflexible management and greater demand for co-ordination.

Very important indicators are answers based on the criterion of management level while the management plays the key role for introduce and implementation of new labour market. Results show a great doubt of Croatian management towards telework.

V. CONCLUSION

Advanced management is characterised by innovation, competition, variability and adaptability, globalisation and flexibility. It is precisely teleworking that fulfils the above-mentioned requirements towards a new high-quality management, which means that the products and services, improved in quality after the work has been done, remain competitive on the international market.

No doubt, this is a good opportunity for certain regions, including Croatia, where numerous small-size companies and individuals who have great advantages from teleworking implementation already exist, with good prospects of many more to be established. Distance working (teleworking) means not only to be able to have home functioning as a workplace but also to have one's fatherland as a place of residence. The possibility provided by teleworking sector is to bring work to people and not people to work. The new profession of teleworking manager is getting formed all the time. These people will help in making those who have developed information technology become even more developed as opposed to those who are poor regarding information technology. The resources are available - they only need managers who will make visionary decisions.
LITERATURE