

ICT has a better image concerning the environment problems solving

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The communicational and information technologies are generally at having a better and better image concerning the environment problems solving. They are considered as a beginning in their solving, and the unfavorable collateral effects generated by the implementation of the new technologies are, at the first view, almost unimportant. We could say that the information technology has the key to solve many environment problems.

Key word: environment impact, informational and communicational technologies, telematics.

The Information Society involves everybody: the new information and communications technologies have been invented, they will fundamentally change the ways we live and work together and we cannot turn the clock back.

At the beginning of the 3rd millennium, we all attend a remarkable process by its proportion and profoundness – the creation of the information society. This one is the “postindustrial society” (as it is called by Daniel Bell, professor at Harvard University), or the “third wave society” (as it is called by Alvin Toffler), a society differentia by the “first wave” (relied on agriculture) and of that one of the second wave (relied on industry are the “smoke chimney epoch”). A publication of the European Union has defined three criteria on the basis of which we’ll know exactly when we make part from the information society.

“If we are using the e-mail, we are with the toes in the information society. If we navigate on the World Wide Web, we have a leg in the information society. If we work, learn and communicate with our colleagues by a network, we are in the information society”. Finely, we are in Informational society.

Internet network is the most important element of informational society. The Internet has already become a common tool now a day. Electronic commerce has the tendency to gain the place of the traditional trade. The advantages are quite important: removing space and time barriers,

grater competitiveness, paying less for certain products. Low network security could be soon a memory of the past, if IT and biometrics would enforce their efforts towards a joint success.

At the end of this century, many persons and organizations are using the Internet for easy, quick and cheap worldwide communication. Using the Internet network as a vehicle for transportation, the WEB and multimedia joint system could lead to a hypermedia network, opening the way for huge expression and communication possibilities. If these possibilities become the real truth, every businessman of the world will no longer dream about a solid national or international business, but make these dreams become reality.

The old activities are modifying due to the new information and communicational technologies, new and unknown activities appear and it is natural to be concerned in the impact upon the environment, about how we’ll protect it in the future, what opportunities are offered by the information society in protecting the environment and what threatening it brings.

The main cause of the pollution, in the towns, is the congestion of the big cities; think about how Bucharest is in the rush hours. The new information and communicational technologies could replace a part of the physical fluxes by electronically information fluxes and a large part of the traffic to be achieved by the computers networks. Already, instead of getting on

the car and going to the post office to send a letter to our parents or friend we use the e-mail, instead of getting on the bus to go

to the library, we access the Internet to gather the useful information, so we contribute a little to diminish the road traffic.

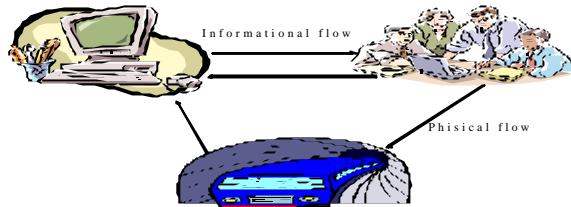


Fig. 1. Physical flows interchanged by informational flows

The theories and the researches in this field have defined some types of teleactivities specific to the information society: telework, e-learning, teleservices etc., therefore, the key elements of our existence will be the telework (the work at home using the computer), the telephone and the modem.

Let's see in some words what it is understood by the telework: the work is removed in another geographical zones (in the rural environment, far away zones), than the town, the development of the lucrative activity is removed from the office at the individual residence, the work is extended out of the country borders, in the countries where the work force is cheaper, the work having in this way an international character.

United Kingdom about 500 thousand of people are teleworkers and in France about 215 thousand.

The potential benefits upon the environment brought by the telework and by other teleservices (teleshopping, telebanking, and telemarketing) can be synthesized in the diminution of the daily shifting number, in the diminution of pollution and road crowding, in decreasing the transport cost and the energy consumption.

A study made in USA shows that by using the telework it should be eliminated 6 millions of daily shifting at work, 3 billions of shifting for shopping's in one year and 13 billions of shifting for business, yearly.

In order to reduce the daily transport, the services offered by the information society can facilitate a much more efficient management of the transport network. Besides telework, the information and communicational technology offers the systems of telematic transport. Those one are dominated by two main elements: the intelligent infrastructure (sensors and telematic networks on the roads which interact with the vehicles and control centers) and board telematic equipments, which are in fact the interface between the driver and the intelligent infrastructure.

The benefits of the telematic transport systems are numerous. One hopes that they will bring an efficiency of the transport network and the increasing of the traffic security. The potential impacts of those ones upon the utilization of the roads by introducing tax electronic systems, and as any tax needing to pay an extra tax will



Fig. 2. Telework removes spatial and temporal frontiers

The link between the telework and the environment protection is fund in the activity of the daily going to the work place. By working at home, will be eliminated those daily shifting at the work place, shifting which willingly – unwillingly are creating urban agglomeration and dedicated network, the home workers can contact in this way the need to travel. A study of the European Commission shows that in the

lead at a revision of the behavior concerning non useful traveling on the highways, at reducing the crowd at the rush fours and implicitly at the pollution. The feedback is

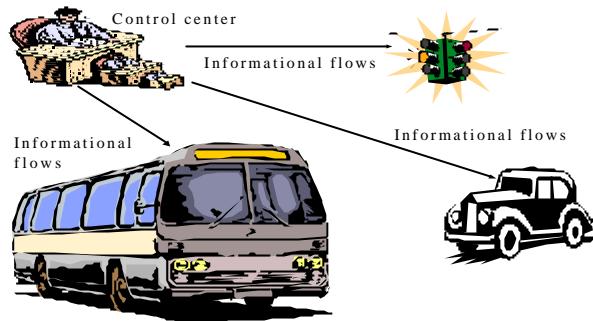


Fig. 3. The mechanism of telematic transport system

Such as any paradigm, the information society has its opponents, those ones arguing that the offered services lead in fact at an increasing of the physical fluxes and implicitly at the pollution. For example, the telematic transport systems could lead to an increasing of the attractiveness to travel

given by the fact that the intelligent infrastructure will be able to measure the pollution levels and will supply information in this way.

with one's own car on the highways. Having an alternative road detector, knowing exactly what it is on the highway, one can avoid the road jams, the crowds, one can choose the shortest way and then what reason you would have not to use yours own car in your daily traveling in the town.

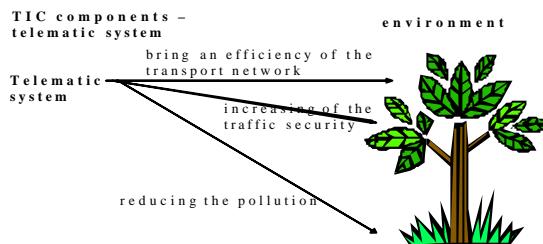


Fig. 4. The environment impact of ICT (telematic system)

The telework is seen as a solution at the road congestion and at the super agglomeration from the big towns, but the environment benefits gained by the dispersion of the lucrative activities in the rural environment or in the far away zones can be eliminated by longer travels which the citi-

zens of these far-off zones have to make. The dispersion of the economical activities will lead to an increasing of the land demand for building houses with gardens in the coterminous zones of the big towns and to an extension of the urban settlement.

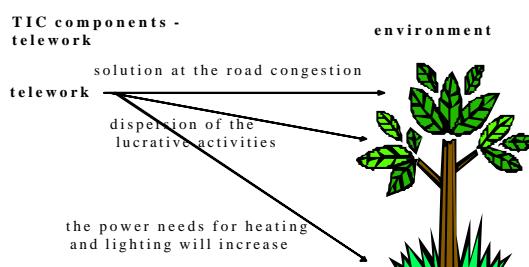


Fig. 5. The environment impact of ICT (telework)

Another disadvantage, with impact upon the environment, upon the telework is that the power needs for heating and lighting will increase. Besides by diminishing or even by eliminating the time losses for the commutation, the spare time will increase and the time stock so gained would be dedicated to other pleasures or trips which will lead to an increasing of the fuel consumption.

The impact of the information society upon the environment is far away of having only favorable aspects. One can obtain benefits, especially in the problems linked with the transport; the literature suggests that such solutions could generate even more environment problems. In order to convince oneself that it is like this, it must be achieved statistical exact and concluding analyses for each analyzed case.

Many European regional authorities develop actively development strategies of the telematic telework and transport, and the European Union continues to finance research programs, all of them having as an aim to bring infrastructure and environment protection.

For us too, the problem of the environment protection should be a current preoccupation.

References

Baloiu L.M., Angelescu A., Ponoran I. – Protectia mediului ambiant, Ed. ASE, Bucuresti, 1995

Ghilic-Micu B., Stoica M. – e-Activitatile în Societatea Informationala, Ed. Economică, Bucuresti, 2002

Gradinaru G. – Economia si mediul, o abordare emergenta, în Revista de Informatica Economica, nr. 2(22)/2002, Ed. InfoRec, Bucuresti

Gradinaru G. – Economia verde, o noua provocare pentru statisticieni, în Revista de Informatica Economica, nr. 1(21)/2002, Ed. InfoRec, Bucuresti

Gradinaru G. – Modele de ajustare a sistemului economic national în contextul dezvoltarii durabile, în volumul Economia Orizont 2002, Ed. UNI-SAST, Brasov 2002

Gradinaru G. – Perspective de protectie a mediului în societatea informationala, în Revista de Informatica Economica, nr. 4(15)/2000, Ed. InfoRec, Bucuresti

Mîndricelu C. – Analiza statistico-economica a protectiei mediului, Teza de Doctorat, ASE, 2001

Negrei C. – Instrumente si metode în managementul mediului, Ed. Economică, Bucuresti, 1999

Negrei C. – Operatori, politici si comunicare în managementul mediului, Ed. Pro Transilvania, Bucuresti, 1997

“Impactul societatii informationale asupra planificarii teritoriale a zonelor defavorizate” - © ECSC – EC – EAEC, Brussels, Luxembourg, 1997

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www.ispo.cec.be

www.internetindicators.com

www.isi.gov.uk