Approaching the critical analysis of Telework in Argentina.

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Abstract

In the context of what has been known as the post-industrial society that has transformed the communication infrastructure, the nature of occupations and relationships among people, our study focuses on some of the complexities involved in these changes. That is why we describe aspects that are part of the critical history of modernity, technology,of the social, political and cultural frame in which we saw the rise of teleworking, particularly in Argentina. Finally we refer to the moment we decided to establish the Center for Telework and Teletraining and the actions or contributions to our society that were made and an emerging right: to work from the place one wishes to.

Keywords

Science and technology, telework, social inclusion, information society, knowledge, history of technology, university, labor and social relationships, job changes, Argentina, Telework and Teletraining Center, the new law, ubiquity.

A piece of history

Since the eighteenth century, a process of modernization of society fueled by scientific and technological discoveries of the Industrial Revolution began to appear. If we highlight the industrial movement that reflects the progress of this development, we see that the principle was the creation of the factory system: the factory. A place outside where the men lived outside their homes. The factory was where machines and tools were. New workers went to work there now, the same people that used to be artisans and peasants before.

The discovery of the steam engine, of the artificial energy to move the machines, allowed the transformation to take place in the nineteenth century. A period, moreover, of great tension and of great violence. After 200 years of varied experiences to increase productivity and production, the Ford automation – through the productive process on line and the streamlining of the entrepreneurial economy, accomplished this goal in the first half of the twentieth century.

The Microelectronics Revolution in the early years of the XXI century represented a substantial change. This is all about technique in design and production of electronic materials, high-speed small circuits. Its application to the work tools, change the composition of the productive forces, technifying them and reducing labor force.

In this process of advancement of technology, economic science is also changing but the contradiction between market and State still continues. And the vision of the ideologies that underpin the concept of biologization as the "natural law" of the social consequences of selected economies also remains.

A socio-historical view of the pendulum movement that characterized the development of productive forces, its contradictions and crises, shows us the technical, economical and social bases that led to Telework.

With a historical look at the interaction of the social movement with the advance of science and technology, we can appreciate for the first time that with the Microelectronics Industrial Revolution, the speed of process innovation is higher than the speed of product innovation, unbalancing the notion of value, affecting the entire production system, makes productivity and production increase, but restricting the use of labor and applying science to the productive forces.

Labour markets constituted in and by the industrial revolution cease to play their traditional role of providers of workers.

The abstraction work, expresses a specific activity of the production process of modernity and is not a historical or anthropological condition of existence. It is a functional space of the modern economy.

Computer technology, born under this microelectronics revolution, causes various human activities to become redundant and / or be replaced by robots.

National and / or regional economies strive hard to use microelectronics to foster development, to compete, and to avoid major economic imbalances, destabilizing movements that might compromise the institutions.

Depending on how the gigantic productive forces of microelectronics are used they can become free time and good life for everyone, but if used irrationally they will mean mass unemployment and collapse.

In this regard, it should be noted that the current production process is based on the society of work, in achieving full employment, higher productivity and production, and on the other side on competition, which requires modernizing and developing the productive forces using less labor.

What will happen if the production process no longer needs the use of workforce?

A perspective

A process expressing a movement of appropriation of these technological changes by part of the society could be foreseen in the future, a global movement aware of new technologies, the possibility for a more democratic use, of its value as tool for aid and solidarity .

It is very difficult to draw a program in theory, a specific plan of what to do, but that aspiration of the social use of new and unexpected microelectronic technologies may be accomplished through joint action by all stakeholders.

The concept of immaterial labor used in the information society in the fields of medicine, culture, education, consultancies, general services, envisions a process of great potential for development that may exceed the current modern system of production that this paper considers immaterial in terms of social costs or entrepreneurial costs.

The concept of immaterial labor amends the modern concept of work and also modifies all the relations of labor, materials and law.

Access to the Internet, to biotechnology, nanotechnology, sets the problem that science and technology can not exist alone, and cannot produce progress if isolated, this relationship will be successful in a context of socio-economic development that overcomes earlier stages. We begin to see that the production of wealth is decoupled from the use of labor, of the labor force. The logic of scientific and technological progress was expected.

Competition, the engine of development of the current mode of production, imposes the replacement of labor in the productive forces by robots, by automation, by remote management. What will happen if entire sectors of the construction, production, marketing, storage, distribution and even the management are excluded from work?

The process promoted by the application of new technologies (IT) changes the form and content of work. Just as the beginning of the Industrial Revolution it replaced animal and human energy for artificial energy and the use of machine tools, the Micro-electronics revolution, produced and continues to produce the replacement of certain brain functions by the computer.

This new tool, the computer, which constantly changes in speed and exceeds the most daring math calculations, can run almost all the economic, scientific, production, trade, banking, research, educational, military processes. It is really very difficult to determine the meaning and destiny of these inventions, of these creations of the human mind. What we can say is that it is not the work of a talent, a person, an original and unique act. It is the work of many scientists, thinkers from different fields, of social practice that has been achieved, the scientific and technological movement of society, of the maturity of the tasks of observation, analysis, modifications and changes taking place continuously in the manners to produce the material and cultural means of humanity.

The role of the society combines with the role of individuals and the intertwining of those actions creates, makes, moves history moves in one direction.

"Intelligent machines"? Computer technology: getting started

In the seventeenth century in France and Germany the mechanical device known as "La Pascaline" was invented, where data is represented by the positions of the gears.

In the nineteenth century, the mathematician C. Babbage designs a "Difference Machine". By means of mechanical devices repeated additions were made. Then the project is abandonned and under de influence of Jacard who gets involved in creating analytical machines programmed with punch cards. It was applied to the textile industry, in textile mills, for making drawings in carpets and bedspreads.

In 1944 machine called "Mark" is built, an electromechanical elements based machine called "relays."

In 1947, at the end of World War II, the Department of Defense of the U.S. sponsors and funds a project to create the first electronic computer, called ENIAC. It was huge. It consisted of 18,000 vacuum tubes, which consumed 200 KW of electricity. It could perform 5000 mathematical operations per second.

In 1949 engineer and Hungarian mathematician John Von Neumann joined the project. He is considered the "father of the computer" for his ideas and inputs. The EDVAC computer is designed with the idea of coexistence of data and instructions, in order to be programmed with a language.

We had to take into account two requirements:

1 .- The way the computer is built.

2 .- The way the person communicates with her.

The process continues with smaller devices, faster and with more memory.

Those are the objective and subjective conditions that give rise to Telework. It is not a fad, nor is it a casual invention. Teleworking is the product of the degree of development in science and technology applied to the mode of production. It is a new tool, replacing many complex functions of the human brain.

In some way, a cycle that begins with the first Industrial Revolution and culminates with the so-called Third Revolution is completed. In this manner in a period of almost 400 years, it created machines that replace the physical and intellectual work of man in many respects.

At first, the use of computers was restricted to the military field, as in the Second World War when it was used to solve encrypted messages and orders of the enemy.

The first steps of the Internet were also born at that time, and from that moment om it will be adopted as a tool for civilian, industrial, commercial, and computing use.

Thus, the computer is installed permanently in civil society when it is used for work, when it becomes a working machine-tool and in this way, with scientific-technological progress and dematerialization that work can be conducted outside the company´s premises. You can work remotely and at different times vis-à-vis the work in the factory or office, which is a place created during the first industrial revolution.

The term Telework was created by Jack Nilles, and conceptually means working with tools, computers and outside the business premises, i.e. at a distance. Nilles says: "telework (TT) means sending work to the worker instead of sending the employee to work" At the same time, Francisco Ortiz Chamorro explains that "telework (TT) means "replacing the labor movement by telecommunications. "

Knowledge. Telework

In 1999, Claudio Altisen, Professor of Philosophy and Educational Sciences, wrote: "the development of new communication technologies, together with the changes of all modes of production are bringing major changes that has to do with the use ... "" there are increasing amounts of wealth with more reduced volumes of work. "

It should be appreciated that the use of computers is becoming cheaper, while human labor costs are high and rising. The employment implications are obvious. Given the intensity and the increasing productive power of labor, working hours involved in production should be shorter, the person enjoying more free time.

In this context of change of magnitude, the Scientific-Technical Revolution, i.e. Microelectronics, requires knowledge as a strategic resource.

Since the early '80s the emerging technological paradigm reformulates the typical working conditions of the industrial revolution, imposing political and cultural definitions, which will pave the way of economic and social processes and also the fate of several nations.

The gap between manual and intellectual work will get sealed, and the minicomputer will be used in all services, while companies will manage and monitor automated tools, robots, databases, and training, study, research will result in comprehensive training.

Perhaps the reduction of working time and labor is the most compelling issue. It is assumed that the tasks demanded in the late 70s by the production system could now be conducted in 75% less time. This situation is changing the nature of civilization.

The concept of work known so far and borne with the industrial revolution has reached its historical limits. Education, information, and the ability to innovate are the new strategic resources that will define the role of the various countries and regions in the XXI century. In this context, the role of the university, articulated with the systems of

scientific-technical development becomes crucial in expanding the strategic resource of knowledge.

Education is critical to building a multicultural society, to telework, we must understand that modernity built its understanding of education for centuries. The school took possession of its contents and separated children to educate them in a disciplined and pedagogically controlled field, but now we face a new process, a new educational strategy that can respond to the development of new productive forces, the new way of working, to teleworking and to the new production development.

In September 2003, Tulio del Bono, secretary of science, technology and productive innovation wrote in Clarin newspaper: "... the decline of the model of industrial society was accentuated – which had capital and machines as the main factors of production - and instead a new knowledge society is emerging, characterized by the intensive application of knowledge in all spheres of life ... "

What happened and what is going on in Argentina?

Long before we read the statements of Tulio del Bono and Altisen in the year 1999 the computer was already being used in the academic field as an essential took in research, dissemination of knowledge and information.

In September 2006, ie., several years later, an article was published in the newspaper Página 12, signed by Diego Hurtado de Mendoza "What is knowledge for in Argentina" posing the following question: What should be done in Argentina so that the production of knowledge proves useful to social and economic development?, and the response was that "... the answers can be classified into two ideal limit cases ...." One of them inspired by American and Japanese models. Argentina´s scales could also be those of Finland, Ireland or Australia, as well as Chile and Brazil. The other response is to try to build diagnosis and forecasts based on history, sociology, anthropology, economics and political science applied to the study of the local scientific and technological activity, capable of redirecting the production profile and facilitate things for Argentina to join a technology-intensive production" And continued: " ...it should assume that this academic production is autonomous, generating conceptual categories, study cases, stories or alternative ethnographies to those made by the traditions of the developed countries. "

The project involving the establishment of the Telework and Teleinformation Centre by the end of the year 2000, approved by the Governing Board of the Faculty of Social Sciences of the University of Buenos Aires, finds its roots in the same sense, the idea of a multicultural society, freedom of criticism, and broad and free education.

The new microelectronic and information technologies come to our country since the mid-'70s and early '80s, transforming the quantity of employment, and implementing new ways of working and new occupational profiles. They have also changed the

organizational technologies, which resulted in the use of IT to new forms of work organization in both the traditional work place and in different locations.

The creation of new formats such as telework generates new jobs with new characteristics. It is worth recalling the objectives of MTEySS (Ministry of Work and Social Solidarity) in its report on the Information and Knowledge Society. : A) To promote, generate and monitor decent working conditions for teleworkers ... . b) to update their training on a permanent basis. c) To purchase the necessary equipment to do so. d) To promote high-tech companies with the SCTeIP, e) To engage SMEs in these innovation processes.

It should be clear that the Internet became widespread here since 1995. Joel Mokyr[1] explains that creativity and intellectual potential of society to create technically complicated mechanisms, produce differences and that these differences can be seen in their difficulty to transform them in economic growth or in its diffusion and generalized use. In other words, technological change, the appropriation made of it and the social use or application will set the course of social development in each country.

The CTT- Telework and Teleinformation Center (2000)

Although telework started to develop before, and the University was not the only center to do so nor the first one to speak about telework, the project presented at the Faculty of Social Sciences was a milestone in our country.

In the combination of: *IT (invention) + University (CTT - innovation) + Economic crisis (unemployment, emigration) + social appropriation (media)*, the CTT made the difference and provided the framework of institutional credibility and hope that society needed.

In the midst of a virulent economic crisis that had begun in 1995, and reached its climax with lootings and presidential destitution in 2001, resolution 2069 of the year 2000was approved by the Governing Board of the Faculty of Social Sciences of the University of Buenos Aires. At that time, unemployment was increasing and had led to a significant migration of students.

The events of the 2001 crisis and the support of the mass media helped us to establish a strong link with society and we took the *people's side.* This was characteristic of the **first stage** of the CTT in Argentina: the urgency of addressing unemployment and migration.

During the first years we were on the side of those seeking a different job opportunity. The context showed a complex network of players involving workers that were not conveniently trained, unions with little information, companies that did not want any change at all, rising unemployment, governments which had just discovered the Information Society and scholars who refused to see technological progress. This meant implementing various communication strategies and specific actions. The prestige of the University of Buenos Aires facilitated the task of approaching society.

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[1] *La Palanca de la Riqueza. Creatividad Tecnológica y Progreso Económico. Alianza. Madrid, 1993, 433 p.*

We had to fight tirelessly against dogmatism and sectarianism and eradicate prejudices and beliefs of unenforceable promises or even worse ... scam or frauds, which were being built around this new type of work. Ideological confrontation is still unsuccessful, where intolerance dominates relationships. No matter how good an innovation is, it would not develop if social support is missing. Prejudice destroys the urge to create and paralyzes us.

It was important to provide good information and go forward in the rapid incorporation of additional knowledge which might be instrumental to expand job opportunities. The society learned to organize, to seek support and get together.

The **second stage** in which the CTT devoted himself was to **involve governmental agencies**, both domestic and international: Ministries of Labor, ministries of foreign affairs and international organizations.

The CTT worked directly in the first phase of CMSI (THE World Summit of the Information Society), collaborated in the 2nd. phase with the Argentinean Ministry of Foreign Affairs, managed to involve the Ministry of Labor, got involved in the creation of Group 5 on Telework in the 2007 and 2010 E-LAC and then lost support. Group interests, hegemonic intentions, the struggle for positions of power took precedence over intellectual honesty and respect for diversified ideas. But still so, it achieved its objectives.

The loss of support caused the founders to take refuge in USUARIA[2] a non-profit making Association to continue its training activities with UNESCO (Quito), research with the IDRC (Canada), and the creation of a community that at present is an individual enterprise: the Telework Towers.

Therefore, we speak of a **third stage** in which we try to demonstrate to companies that telework may well accompany development and growth, giving priority to human resources. Telework is the result and the response that society gives at present. It exemplifies on the use of time and workspace. It raises the question of reformulation of the value of use and the value of change. It shows that knowledge has no exchange value. Telework is not a fashion, is a form of work that replaces earlier forms, that exceeds it. Therefore, teleworkers should be together and organized to ride the wave of development and work in the Information Society where the constant and continuous training is the premise.

This **3rd. Stage** is characterized by SEARCH OF RESULTS AND FOR WORK SEEKING LABOR INCLUSION.

This stage highlights the importance of work seeking cultural change that involves a new way of organizing activities. The challenge of selecting people, setting goals, agreeing the agenda of open meetings, conduct productive virtual meetings, establishing the means and frequency of communication and training in the use of new tools, are just some of the items to be carried forward.

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[2] Asociación Argentina de Usuarios de la informática y las comunicaciones, www.usuaria.org.ar

Thinking, reflecting, applying existing knowledge that are required to telework is not only the task of the State and / or employers, but it is the task of the whole society. It is the social responsibility of the entire community in the quest for equity and welfare for all.

Distance work breaks with the traditional supervision and requires managers and workers to establish mature relationships based on respect and mutual trust so that telework is useful for the benefit of all. And all this without ignoring the *problems* we face today:

- Education must accompany and prepare citizens to face the new development,
- State policies must establish trade, social, cultural, scientific and technological relations in agreement, mutual assistance, encouraging and legislating on the creation of new sources of decent work, preventing informal (underground) work, and the proliferation of non-documented workers.
- Absence of specialized organizations to gather and protect teleworkers.
- Flexibility as a learning and knowledge tool, and the possibility to telework in the broadest concept in this category. With the enjoyment of greater freedom, greater relaxation, increased leisure time. It may be the true stability for the future sustained in multiple working activities, the possibility for all citizens who wish to telework, eradicating unemployment and lack of safety.
- Latin America would no longer be the reservoir of cheap labor force,
- It would put an end to the trend towards declining wages as a result of obsolete labor relations, of labor without borders, of scientific and technological dependence and the payment of license fees to highly-developed powers.
- A generation of leaders who will soon be replaced by young people of the Y Generation, who no longer have the same career aspirations within the company. On the contrary, they will have another model of commitment and shall not be willing to sacrifice their personal lives for work. The labor society as we know it today is being questioned, because it causes our anguish and our uncertainties.
- Declining birthrate. Professional women who do not want to sacrifice their careers to devote their lives to their home and children. In the current labor society, feminization, by bringing more women into the productive process, immediately resulted in the contradiction between their work and motherhood.

Towards a new right: Working from the place where we want.

In the early industrial society, the country moved to the city. Large marginal areas were established in the suburbs close to the workplace. Yet paradoxically telework is called *distance work*, when in fact work was never so close.

The ubiquity that allows the use of information and knowledge technologies for work meant a change in the use of the productive space that had not been possible ever before: it spread work on a worldwide basis.

As we have seen, historically the worker who moved where he could find work, lured by expectations of better living conditions. That is why the country moved to the city and town began to receive people willing to live in suburban areas that avoided having to travel, shortening times and the cost to arrive to the workplace.

The slum called Villa 31 in the central Retiro area and in general the slums in the city of Buenos Aires, show the fastest growing rate and the most expensive to rent. One of the main reasons is because they are closer to labor suppliers. Latin America in general, has generated marginal areas considered, initially as a reserve labor force, but which ultimately proved that labor insertion was difficult.

The technological evolution that gives rise to the Information and Knowledge Society allows different uses of the workspace. Putting it closer to the worker who is available to perform his/her tasks, sometimes as close as in the living room of her own home.

Space is not just the office or factory, because now it can be built where the worker is, at the very point of convergence of knowledge and the IT, that finally results in ubiquity and at the same time universality.

We must learn to ask new questions before making our decisions: Why migrating? Why leave the city we love to go to another one in search of work? Why not rethink the space and make new proposals to our boss? Why not continue studying? Why not accompanying our son, who has migrated, without losing the job that we have? Why not accompanying our sick relative? Why not be with our children in the park, on a sunny Monday in the early afternoon?

Not considering ubiquity also has economic value. The staff which is scarce in a city, can be found elsewhere, but perhaps the employee does not want to leave their place of residence or his family. 40% of the seats can not be met, causing losses to companies for products that are not made or services not provided.

Some office spaces are usually empty 70% of the day and in some cases this represents around 20% and 30% of the value of the job.

A study on brain drain says:

"It is estimated that over the past 30 years some 50,000 Argentines with university degrees left the country, of which 20,000 are scientists. The average cost of a college education is estimated to be USD $ 25,000 so the total amount "sent" in the form of human capital would be between 1,000 and 2,500 million dollars. (M. ALBORNOZ, et. Al., 2002)".

Technological development can make unnecessary certain social and labor movements, either internal or external. But will ubiquity be eventually "a social value?

To think about the "ubiquitous society" like Japan, would be a long way and of investment in technology and of dimensions unattainable for Latin America and the Caribbean ... but what if we would only dare to think that the choice of where we wish to work becomes "a new right?

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