

# Work as Key to the Social Question

The Great Social and Economic Transformations and the Subjective Dimension of Work



## Economic, Ethical, and Psychological Analysis of the Effects of the Information and Communication Technologies on Human Work

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### ABSTRACT

The end of XX<sup>th</sup> Century and the beginning of XXI<sup>st</sup> Century are characterized by a big advance in Information and Communication Technologies (ICT). This is the result of the contribution that humankind has to do, as the encyclical *Laborem Exercens* recommends, in order to achieve a “...continuo progreso de las ciencias y la técnica [1]” (Cuadron, A. y Castillejo, M., 1995: 214) Nevertheless, the implementation of such Technologies has some non-desirable effects on the labor market.

In order to promote the use of these Technologies in the economic area, a very concrete professional profile is needed: a qualified, flexible, creative worker, as well as able to manage in an international environment along with a minimum working experience.

In fact, in some countries, their labor markets lack of this type of professional. In addition, these countries are in a problematic situation because of their unemployment rates

affect a very determined sector of their population.

The encyclical itself foresees in its first point how technical advance was going to alter the economic conditions and demands for a “reorganización y revisión de las estructuras [2]” that existed in that time (Cuadron, A. y Castillejo, M., 1995: 215) and how one of the more affected areas is, precisely, the labor market.

The use of the ICT can generate significant economic advances, but some inequalities as well: serious ethical problems and non-desirable psychological effects. Such situation can happen within a country or worldwide.

The authors are aware of the problems that can be carried out due to an indiscriminate implementation of the Information and Communication Technologies in economy, without considering the specific situation that can exist in every labor market, or the specific characteristics of the human beings of every country. Harmonization of mankind welfare with the work carried out (that is, “fundamental dimension of the existence of mankind on the Earth”), and technical advances, has to be a priority aim, for the human being itself. In addition, this aim has also to be important for the authorities, that have to be concerned in achieving a real social welfare in their economies.

This paper pretends to analyze how the Information and Communication Technologies (ICT) are having influence in the economic environment, focusing in the effects on the labor market; which problems can take place if these markets are not ready because they already have situations of imbalance (this analysis will focus mainly in the European situation); which solutions can be given to face the problems that can take place as a result of the divergence between business’ necessities generated by the implementation of ICT and the situation of the current labor markets; as well as how these measures can be implemented so technical evolution were not be incompatible with the basic principles that are associated to human work and general welfare of economy.

## **1. EVOLUTION OF THE ECONOMIC USE OF THE INFORMATION AND COMMUNICATION TECHNOLOGIES (ICT)**

### **1.1. Is it really so new the so-called “New Economy”?**

If the base of the “New Economy” is the use of the Information and Communication Technologies (ICT) to the development of economic activity, it is necessary to point out that a part of this technology has been being used for decades in the business environment. The reason of this use was to maximize its performance and improve the way companies worked. In fact, the use of the Information Technologies (computers and telecommunications) has been a common practice for companies to develop exchange

electronic data nets, both interbusiness and intrabusiness.

The first initiatives, regarding the use of Internet worldwide, dates from the end or the sixties decade. Therefore, it cannot be affirmed that the phenomena is recent. In fact, there are some clear backgrounds that have been being outperformed.

What is clear is that from 1993, when the World Wide Web (www) came up, there have been some alterations that have allowed a strong growth of the possible uses of Internet from an economic point of view.

1.- Thanks to the significant technological innovation [3] that has taken place worldwide in the nineties, there has been an improvement of the mechanisms to access to Internet. This fact has modified, somehow, the economic and social behavior of both consumers and companies.

2.- The liberalization process in the communications sector has been taken place in development countries and established a higher competence among companies in the industry. This fact has encouraged them to promote diversification in the possible uses of their services. In this sense, these companies have been the main interested ones in promoting development of internet, by giving it of more possibilities than it had before (creation of portals, searchers, etc.).

3.- Finally, there has been a change in the attitude of the economic authorities. In most of developed countries, economic authorities are showing a great interest in the economic possibilities that Information and Communication Technologies can bring, especially in the use of Internet as a mechanism of commercialization (what is commonly known as electronic commerce). This change of attitude is taking place, as well, in developing countries. Many countries are thinking of it as a new way of commercialization with great possibilities to open their markets and get a good position in the globalization process that is taking place. It is encouraging them to promote development of electronic commerce by giving subventions, formation courses, financing the creation of companies' incubators, etc.

As a result of all these factors, nowadays the Information and Communication Technologies can be used not only to establish economic relations among companies (B2B), but also to maintain direct relations among a company and its consumers (B2C), between a company and Administration [4] (B2A), among a company and its employees (B2E), among consumers (C2C [5]), etc.

Therefore, it can be said that thanks to the accelerating process of Information and Communication Technologies development, there has been a simplification and diversification of the possible economic relations among the diverse economic agents, whether public or private. However, it cannot be affirm that Information and Communication Technologies have provoked the coming up of any new relation, because

all of those relations have existed from a long time in economic history.

In fact, the phenomenon that has been taking place currently is a transformation of the way to carry out those relations. It is demanding a readjustment in the behavior of the economic agents, for example, a readjustment in the behavior of companies, what is usually known as e-business, that is, a new way of making business by using the Information and Communication Technologies.

Consequently, the use of the Information and Communication Technologies can produce many advantages, but also come problems, as it has happened in previous historical eras when there has been an technological alteration.

### **1.2. Expected evolution of the use of the Information and Communication Technologies in the economic field**

It is evident that in the last years there has been, at an international level, a great interest in the generalization of the use of the Information and Communication Technologies. It implies important consequences in the economic scope, although they are not so recent, and they have been being used in an economic field for some time ago.

If by the end of 1996 it was estimated that there were going to be around 45 million Internet [6] users worldwide, by March 2001 the amount of Internet users had reached more than 407,1 million users (see table 1).

**Table 1. Number of Internet users worldwide**

<b>Total Worldwide</b>	<b>407,10 million</b>
Africa	3,11 million
Asia-Pacific	104,88 million
Europe	113,14 million
Middle East	2,4 million
Canada and USA	167,12 million
Latin America	16,45 million

Source: Nua Internet Survey (<http://www.nua.ie>)

Evidently, this increase of the number of Internet users has generated a significant increase in the number of economic transactions carried out through Internet. In fact, as a

report by the OECD (OECD, 1999), in 1995 the total volume of electronic commerce was negligible; in 1997 it reached 25.000 million dollars, and for the period 2001-2002 it is expected to be near one billion dollars.

Taking this in account, several international consultants [7] are publishing some reports in which they assure a very favorable evolution electronic commerce worldwide. Consequently, followed up by a significant increase of e-business in the next years.

However, it is necessary to point out that this evolution does not have to affect all countries at the same level. Therefore, from an international economic field, it is needed to point out some facts in relation to this so “beautiful” future that the generalization of electronic commerce can bring. In this sense, the following questions have to be considered:

1.- Electronic commerce is not being developed at a same level in all the countries, because some of them have a clear advantage. Considering data provided by the Boston Consulting Group, United States of America controls 80% of worldwide electronic commerce: moreover, 20% of electronic commerce that take place in Europe (which is the second power worldwide in developing this type of commerce) is in hands of North American companies (Capdevilla, 2000:6).

2.- Electronic commerce especially affects very concrete sectors, such as telecommunications, finance or commercial distribution. All of these sectors account for about 30% of the GDP of the OECD countries. However, in other regions of the world they are hardly developed. In order to get electronic commerce to work properly, the first thing that has to be done is to promote these sectors, and later to develop this new way of commercialization.

3.- On the other hand, to achieve the maximum advantages that the use of the Information and Communication Technologies bring (both in a public and a private scope), it is necessary to be some minimum infrastructure means, a clear legislation in which the rights and obligations of the involving parts are clearly determined, a market liberalization, and a mentality adapted to the virtual characteristics of electronic commerce. If it does not take place, no matter how much is invested on this type of infrastructures, that development of electronic commerce and all the changes associated to it will be very slow.

If a country does not consider the necessity of establishing these complementary transformations, the cost that it can have for their economies the development of the so-called “New Economy” can be extremely high. The reason is that it does not have the sufficient internal benefits regarding investments that have to be made.

4.- Finally, after watching the initial benefits caused by electronic commerce has had on the unquestionable leader of this matter, United States of America, many countries are promoting its development. Moreover, in some cases (for instance, in some Latin American countries) there have been being tried to implement the American model without

considering the particular features that every region have. It is provoking a scarce profiting from the advantages that a proper implementation of electronic commerce can have.

As it can be observed, the economic advantages of the Information and Communication Technologies can be less clear than estimated initially. Consequently, it is necessary to analyze deeply the different factors that influence economic scope, especially the social ones, and differentiate the particular characteristics of every society before promoting the implementation of this type of technologies. Among the bad effects that can take place, in this paper we want to point out one of them: its effects on labor markets. The reason is that it has the most worrying consequences from a social point of view.

## **2. ECONOMIC CONSEQUENCIES OF THE USE OF THE INFORMATION AND COMMUNICATION TECHNOLOGIES ON LABOR MARKET**

### **2.1. Experience in the United States economy**

If the process of change generated by the “New Economy” in the United States of America, the most developed country in this area, it could be thought that development of e-commerce is ideal to eliminate some problems, such as unemployment, and to achieve a better future economic growth. This economic growth would be good to the employment level in the North American economy too.

In this country, for some time, some good effects have taken place. These effects have considered electronic commerce to be the salvation of the economic future for some countries (BusinessWeek, 2000).

1. In the United States, some research papers affirmed that technological development and its implementation in the development of electronic commerce had created more employment than it had destroyed. Development of the Information and Communication Technologies had generated new activities, some of them related to the services area, which allowed it to absorb workers from other productive sectors.

It addition, these technologies allowed development of new smaller companies, that are the ones that more employment can generate (see Internet Indicators in <http://www.nua.ie>). Consequently, not only an increase in productivity was achieved, thanks to the use of a better technology, but also a decrease in the unemployment level was achieved, without generating excessive inflationary levels (Alonso, 1999).

2. In addition, in United States of America, the use of these technologies has favored working at home, it had helped to lower prices of goods, it had allowed a higher speed in innovations spillovers, and it had outperform the international positions of the country.

It is true that at the beginning it was thought about all these advantages. However, in the last months some alterations in these questions have been observed. From last year there has been observed some imbalance between employment supply and demand among specialists in these technologies. This is one of the reasons that have helped to develop considerably e-recruiting (<http://www.idc.com>).

Moreover, in a recent research carried out by Boston College, it is shown that the distance working system developed in the initial phase of the incorporation of these technologies is showing some symptoms of decline, and a lot of North Americans are stopping using it. The reason is that it does not convince either the managers of companies, neither employees (<http://www.rhhmagazine.com>).

Finally, in the United States of America a lot of people are losing their jobs. It is affecting diverse sectors, but specially companies regarding New Economy. For example, in June 2001, it was estimated that in the US Telecommunications sector 27.446 people would have lost their position (<http://www.estrellaeconomica.com>).

As it can be observed, the favorable effects in Labor Market that were pointed out so often to justify implementation of the Information and Communication Technologies in the economic field, now seem to be questioned. It would make us consider even more the analysis used until now.

## **2.2. Consequences of the implementation the Information and Communication Technologies in the Labor Markets of developed countries**

Considering the initial economic results that have been observed in the United States of America, it is logical that from 1997 all of the OECD countries are investing huge quantities of money in the Information and Telecommunications Technologies (both in hardware and software, as well as in associated services). The reason is that they want to promote electronic commerce in their economies, and with that, to favor a bigger economic growth. Such economic growth, in addition, will allow them to maintain a certain status worldwide.

The idea that a country that do not keep up in the incorporation of these technologies in their economies can loose important economic opportunities in the future have been spread out in developed countries. That is the main reason why authorities want to consolidate the change towards a digital economy.

In fact, in year 2000, most of the OECD countries dedicated between 5% and 6% of their Gross Domestic Product to investments regarding Information and Communication Technologies (<http://europa.eu.int>). However, this important impulse to promote the New Economy is not having into account the current reality in the diverse labor markets, not even

the likely consequences that can occur.

Information and Communication Technologies, as any other application of new technologies, generate the traditional displacement and compensation effects in labor markets (Alonso Borrego, 1999:127). However, in addition we should take into account how these technologies affect both the demand side of this labor market, and the offer side of it.

Consequently, it is necessary to analyze which problems are companies facing when using these technologies, and how they can affect their current workers, as well as how they can influence the individuals that now have difficulties in the labor markets.

### **2.2.1 Employment demand**

Most of the companies of the developed countries that are trying to promote electronic commerce and who are willing to incorporate the Information and Communication in their business activity, need to employ a worker with a very defined characteristics. He or she has to be highly qualified, flexible, creative, able to manage in an international environment, and with a minimum experience of three years.

This type of worker is not the predominant one in most of the labor markets in developed countries. Therefore, companies are having some difficulties that are necessary to take into account.

- There is an important lack of people with the necessary knowledge and skills. This is resulting in an interesting paradox. That is, in some regions with a high unemployment rate, have to attract workers specialized in these technologies from other areas, sometimes even from other countries. This is generating some social tensions.
- There is a lack of adequacy between the profile of the candidate and the needs of the company. As it was said before, any incorporation of new technologies can eliminate jobs in some productive and professional sectors; as well as it creates new positions in other areas (software, consultancy and Internet) (OECD, 2000: 88-89). It demands form an adequate adaptation of educative systems to the new companies' necessities. It also calls for an adequate plan to give more formation to the people currently working or the ones who are unemployed. However, the rhythm that it is taking place in most of the developed countries is really low companies' necessities.
- The cost of specialized workers is extremely high and it can affect negatively to business profits and to the total employment level. For example, if in Europe

high salaries for the specialists needed to develop electronic commerce keep on being so high, it is thought that between 2000 and 2002, around 16,6 billion pesetas can be lost (Alvarez, 2000b).

On the other hand, if these costs are hardly supported by small and medium sized companies, which are the base for a European productive network, any crises due to their excessive labor costs can have a deeply negative multiplicative effect in European economies. Therefore, labor markets of these countries would be damaged.

- Finally, companies that have to face an important lack of workers mobility jeopardize the problem of lack of qualified personnel in some regions (Melle, 1999: OECD, 1999). This phenomenon can generate an important distortion in sources distribution at a regional level. It can affect not only the productivity activity of some regions, but also income distribution among some European regions.

Definitely, most of the companies, that demand employees, are facing excessive problems of incorporating qualified personnel that allows them to develop properly an entrepreneurial activity based in the Information and Communication Technologies. These problems are significantly important in some countries, in Spain for example, but in order to solve this problem, it is necessary to consider what is happening in the demand side and which could be the better solutions so both sides of the labor market adjust adequately, rather than interacting in the demand side of labor market.

### **2.2.2 Employment supply**

When the consequences of the Information and Communication Technologies are analyzed, we have to consider that these new Technologies affect both those who are currently working, and those who are unemployed.

#### **a) Which problems can have people who are currently working?**

As companies are suffering, due to the development of digital economy, important alterations in their internal management and in their environment, some of the people who are currently employed can be moved out of the labor market if their knowledge is not renewed.

In fact, as stated in a research carried out by Infoempleo (Infoempleo, 2000), companies that suffer from some alterations in their different functional areas. This have to be taken into account in the marketing area, because it will reduce less qualified employments, meanwhile there will be an increase in applications for the clients' attention area. Regarding

productivity functions, there will be important differences, because in one hand quality area get worse, purchasing area will be more important due to the higher degree of companies' interrelation. Finally, all of the areas regarding Information and Communication Technologies experiment an important increase, especially of qualified personnel. All of these changes have to be considered by the people who are currently employed, because it can be instability in their positions in a short run.

Moreover, the European Commission thinks that by year 2005, 80% of the knowledge that now workers have, will be obsolete quickly, due to the high rate of technological innovation that is taking place in the last years. In fact, the European Commission considers that a professional who has finished his or her education in year 1995, will have to renew his or her knowledge if he or she wants to know most of the techniques that will be used by 2005.

**b) How the Information and Communication Technologies can affect the current unemployment situation?**

In developed countries there still are unemployment rates (see table 2) that due to its level and to the type of persons affected, have to taken into consideration when analyzing the effect of the Information and Communication Technologies in labor market.

**Table 2. Unemployment rate, in percentage, in several international areas**

	<b>OECD</b>	<b>EU</b>	<b>EMU</b>	<b>USA</b>	<b>Japan</b>
1998	7,1	9,9	10,9	4,5	4,1
1999	6,8	9,1	9,9	4,2	4,7
2000	6,4	8,2	8,9	4,0	4,7
2001					
January	6,2	7,8	8,5	4,2	4,9
February	6,2	7,8	8,4	4,2	4,7
March	6,2	7,7	8,4	4,3	4,7
April	6,3	7,6	8,3	4,5	4,8

Source: Banco de Espana, June 2001.

Most of this unemployment affects mainly to some parts of population. This unemployment situation affects youth (especially those under 25 years old) and women, who have been limited their chance to acquire an adequate working experience (which can affect to their future productivity). This situation also affects people with low qualification, who should be given some education in order to adapt them to the new necessities of the

market. There are also significant long-term unemployment rates, which main difficulty is to reincorporate to the labor market because of their lack of experience and likely adaptation problems, or even the worker is not motivated.

Considering which kind of demand can be generated in the labor market in the future (see table 3), it is important to work, from now on, in educating unemployment people so they can take advantage from these future opportunities. Some countries are starting implementation of Educational Plans [8] in such sense, but there is still too much to be done if we really want to avoid that in a near future the unemployment situation would not be jeopardized by the use of these technologies.

**Table 3. 1999 – 2003 Growth Demand of Information and Communication Professionals by Specialties**

Area	Increase	% annual average variation
Internet	59.600	32%
Applications	104.000	9%
Distribution	47.500	7%
Consultancy	61.100	31%
Big Servers	500	1%
<b>TOTAL</b>	<b>272.000</b>	<b>12%</b>

Source:ICD, 2000

### 2.3. Conclusion

If we compare labor necessities for an adequate development of electronic commerce to the current labor market situation, in most of the developed countries it can be observed that perspectives are not so favorable as it was thought at the beginning.

- If currently there are significant unemployment problems in people with no qualification, these problems can be deeper if in a future most of the persons that now are considered to be qualified ones, can be considered non-qualified if they do not recycle themselves following programs to readapt to the new business' necessities.
- Since entrepreneurs demand for qualified people, aged, priority, between 25 and 35, the current difficulties that unemployed people who are over 45 to find a work can worse. In fact, it seems to be predictable that this type of unemployed

person will be hardly reconverted. Therefore, the long-term unemployment rate can keep on being high. This situation would damage not only unemployed people, but also economy in general because it will generate significant lacks of productivity.

- Finally, the necessity of qualified personnel also makes difficult the access to the labor market of the youngest people. The reason is that they can have problems in order to get such qualification due to their age.

If in future we do not want to see undesirable situations in the labor markets, it is extremely necessary to implement important educational measures:

- Important modifications in educative systems.
- Continuous updating of current workers.
- Creation of alternative positions for those people who cannot adapt to the new environment. The so-called new employment deposits can play a significant role (Cachon, 1999).
- Promotion of auto employment as an alternative mechanism to access to the subcontracting activities. They are typically developed in digital economy, because some systems as distance work do not work out properly in some countries.

If these adjustments do not take place, some of the development countries that want to promote the economic use of the Information and Communication Technologies can face some serious distortions in their markets, as well as they can have significant losses.

For example, from an economic point of view, the numbers made for the European Union, as stated in a report carried out by Datamonitor Consultancy and Microsoft, there is a lack of qualified personnel in the European Union. This lack is going to result in a cost of 63 billion pesetas, approximately, between 1999 and 2002. It can put in danger a proper evolution of these economies. Moreover, although it is considered that electronic commerce development could increase in 1,5 points European Union GDP by year 2002, it could only be achieved if 1,7 million qualified professionals can be generated (Alvarez, 2002).

### **3. PSYCHOLOGICAL EFFECTS OF HUMAN RESOURCES MANAGEMENT AS A RESULT OF THE ALTERATIONS IN LABOUR MARKET OWED TO THE INCORPORATION OF THE INFORMATION AND COMMUNICATION TECHNOLOGIES**

Analyzing the companies that are incorporating the Information and Communication Technologies in their structure, it can be observed that they evolve as flexible as the

technologies they are working with. In addition, the most typical ones, e-business firms, are not solving problems rather than creating new ones.

### **3.1. Main problems that can take place**

In most of these companies, employees work by the nature and urgency of the projects more than ten hours a day, including weekends and part of their vacation, under a stress pressure above the average. However, working in more comfortable places that, really, promote staying at the workplace is compensating them. They are also allowed to work at home; therefore, they increase their time dedicate to the firm which means more problems; that is the case of the 70% of the IBM personnel.

On the other hand, most of the common workers of these companies have precarious contracts, both in terms and in guarantees; their positions are not defined and the salary tables are quite confusing; their salaries are not as high as companies' profits. Therefore, they are compensated with technical and language learning that increases the way they can be employed and their productivity for the company. The most important thing is that these conditions are considered, by the experts in the sector, as necessary to achieve a successful take off of the company.

In a lot of these firms, human resources policies are not well defined yet, and sometimes they are contradictory and erratic. It is has to be pointed out that most of the employees remain in the companies less time that the national average do. Other characteristics of these companies is that there are hardly firms' committees, they are companies that seem to be bad organized and with a low degree of concern about labor laws.

Regarding internal communication, it is chaotic because the sector is very competitive and changes rapidly. Employees suffer from a lack of formation regarding results and strategy of the firm. It is considered to be an intentionally management policy.

When this situation happens, a lack of work awareness takes place. It makes workers to look carefully at their concept of fidelity to the firm in the way that external rotation increases towards companies of their competence or their clients (20% in Silicon Valley).

Working in these companies also exposes their employees to a new variant of stress, called by Craig Brod "Technostress", that predisposes them twice to anxiety attacks. It is permanently caused by technical changes, as well as their necessity to recover from the frustrations that a continuous work in them involves. Meanwhile, other persons develop a high degree of technophobias, usually in mature persons, that had had a superficial contact, and did not have a adequate formation in technologies, and who have been out of the labor

markets form a long period of time.

### **3.2. Factors to be considered from a Human Resources point of view**

Due to this situation and taking in account that the psychological effects on workers, companies should change their Human Resources Management. In this sense, some of the points that companies have to consider are analyzed below.

#### **3.2.1. Recruitment**

It is becoming more common the use of Internet in order to find a work. As stated by Computer Economics, the increase of curricula sent via Internet has increased from 1,35 million in 1997 to 4,90 million in 1999. Moreover, it is thought to reach 16,35 million in 2002. The existence of this market in Internet will make workers to have a wider chance of opportunities to change their work. There will be to make great efforts in motivation in order to keep the best employees; meanwhile there are opened files to new candidates through the system.

#### **3.2.2. Tasks**

There has been an evolution to joining tasks together. Therefore, it has diminishing direct production tasks and increasing the indirect ones. Technological development diminishes physical effort but work has become more complex, increasing the autonomy, decision and responsibility levels. It all calls for a new formation and support from Human Resources to worker in order to have a proper transition to this new model. If it does not take place, workers could not be useful to their companies.

#### **3.2.3. Positions**

Both the ergonomic aspects as well as the interpersonal ones have a significant importance regarding productivity, quality, motivation, and loyalty to the company outperforming. The necessity to generate creativity and satisfaction of their real clients' necessities demands for flatter working structures with less hierarchical levels. These structures needs from more capacity of real leadership. In addition, they reduce their capacity of control by their managers. Therefore, managers and employees will have to

readapt themselves to this new co-participating way of managerial.

#### **3.2.4. Professional categories**

The concepts of functions and polyvalence substitute the concept of professional categories. In this new kind of firm, qualification and formation requirements increase, as well as the functional mobility in its broader sense. Specialists are a category directed threatened because of their specificity. The reason is that specialists have less restructuring possibilities and are less favored than technicians, whose formative level is higher than the specialists' one: therefore, they have higher polyvalence indexes.

#### **3.2.5. Security and labor hygienic conditions**

The high age of the personnel is causing significant problems in their professional adaptation to the new demands of the new technological and managerial systems. Moreover, this problem specially affects those workers whose professional experience, however a long one, has limited to simple, monotonic and routinely tasks.

On the other hand, this technological innovation has permitted the automatization of high-risk productive processes. Therefore, achieving an important reduction of traditional pathologies. However, new pathologies are emerging. They are related to the new labor conditions (increase of responsibility, a higher uncertainty and insecure labor conditions, and less regulate and more flexible working hours). It provokes stress, alcoholism, additions and cardiovascular and psychosomatic diseases.

#### **3.2.6. Labor relations**

This new structure of the company has to make labor relations to seem more like to those of an independent professional or an associate, rather than to those of a normal employee. It has to change from close schemes in specialization and tasks assignments of very structured and defined professional categories to a flexible labor organization. Those close schemes are inside a legal framework that determines and conditions labor organization: schedules, work shifts, salary conditions, etc. On the other hand, the flexible labor organization has a more personalized and individualized character regarding relationships between employer and employee in the labor and contractual conditions.

### **3.2.7. Formation**

Companies that are incorporating Information and Communication Technologies requires for qualified knowledge and constant formation. Knowledge demands are significant, and they change over the time. Companies themselves to their employees should supply these demands. If it does not happen, the real “e-business makers” would prefer to work for companies that assure their future possibilities to be employed in a very competitive world. This formation policies should be changed and focused on the following three levels: administrative-operative level with a formation focused on the new technologies; an intermediate managers level with a formation more related to managing workgroups and human relations; and, finally, managers, in order to give them a wider and more strategic vision of this new business scenery.

### **3.2.8. Internal communication**

Internal communication has to be truthful, and it is necessary to promote it through intranets. The reasons are that due to its immediacy, they will be able to give all the employees all the news that concerned themselves, even before than through press or rumors. It will also allow them to access to the activity abstracts of the different departments. It will also facilitate work of their employees because they can find in their intranet the information they need to carry out some of their functions.

In addition, intranet can offer the chance of feed back in order to get suggestions, questioners about labor climate, distance learning, an internal web for human resources, etc. It generates a complementary value that should be taken into account.

### **3.2.9. Control systems**

Currently, we consider that management by objectives is the best control system. Indeed, it seems to be especially good for virtual companies where management by results is fundamental. However, focusing exclusively on results can have collateral problems. Therefore, it is important to consider other behaviors. For example, it is necessary to establish task evaluation programs that focus on behaviors with their colleagues.

### **3.2.10. Personnel**

It seems to be evident that in this kind of companies will coexist fixed personnel, outsourcing, temporal, subcontracted, independent and distance workers. Therefore, there

will be different economic conditions from one category to another. This is not a sporadic phenomenon. It is being observed that there is a tendency to increase in the future. It may create tensions in the internal equity of the compensation policy. In order to avoid these tensions, it will be necessary to negotiate with trade unions the situation of periphery workers. Therefore, it may be an essential element in collective negotiations.

### **3.2.11. Distance working**

This way of working has a clear trend to be generalized (Padilla, 1998). If it becomes the only way of working, it would provoke economic, professional and social uncertainty, because the legal situation of such workers is not clearly defined yet. Consequently, workers can be contracted under very different conditions.

In many cases they are not linked directly to the company. To some extent, it can result in labor instability to the worker. Moreover, distance-working employees can have difficulties in finding equilibrium between their professional work and their personal and domestic tasks. It can provoke problems in managing their time, with a high degree, frequently, of lack of organization of the day-to-day schedule. Finally, these workers can suffer from psychological diseases as a result of their loneliness and isolation.

### **3.2.12. Compensation**

E-business companies' salaries are more variable because of their management by objectives. Therefore, stock options and differed bonus are becoming a normal way of getting part of their wages.

### **3.2.13. Trade union relations**

Finally, it is observed that employees of e-business companies are less likely to join trade unions. Due to displacement in projects, different work places, distance working, transversal groups, etc. makes more difficult their access to information regarding their rights and the way of claiming for them, whether it is necessary.

## **4. ETHICAL CONSIDERATIONS**

The ethical approach is a very complex one due to the diversity of interesting points to focus on and the different theories that can be applied to them. In this paper, we are going to

focus in the Utilitarian and Kantian approach.

#### **4.1. Utilitarian approach**

The Utilitarian theory' most important defendants are Jeremy Bentham and John Stuart Mill. Its motto is "the maximum benefit for the maximum number of people". What we intend to do is to apply this motto to the labor situation, described before, in e-business companies.

From a Utilitarian approach, e-business companies can be considered to be ethical if the accomplished with some standards. First of all, if companies perform adequately, it will be good to the society as a whole. Therefore, companies are ethical. However, it is necessary to deeper into how they achieve an appropriate performance.

Looking carefully into companies' human resources management, it is required to have an ethically policy in that area. Moreover, it implies not only having such policy, but also carrying it out. The question draw here is how such policy has to be.

According to the Utilitarian approach, the target is to give employees their maximum good. This point can be achieved through different ways. We are going to discuss the most important ones.

##### **4.1.1. Distance working**

Since working many hours at the office usually results in a lack of personal life, or in a deterioration of the familiar life [9], distance working can be the appropriate solution.

Distance working or the chance to connect to the company at any time and send the work to the offices, gives workers the chance to schedule their days so they can meet every task, professional and personal ones. It may lead to a greater motivation. Consequently, the results of their work are better. Therefore we meet the Utilitarian motto "the maximum benefit for the maximum number of people".

However, as pointed out when considering the psychological analysis, distance work can provokes a situation contrary to the desired one. If a person does not schedule properly, she or he can become a work addict, or it can result in a lack of motivation and a bad done work.

### **4.1.2. Formation**

Another important point to be considered is formation. If companies do give appropriate formation to their employees, they will get a better outcome while benefiting all of their stakeholders:

- Employees because they are motivated and they feel their knowledge is updated to the latest technologies which can result in easing their search for another employment or a decreasing change of losing their job.
- Clients, because they will get a better product, made by updated professionals with high quality standards.
- Stockholders, because although companies have to invest in giving an adequate formation, they get a trade off by being able to produce better products, or offer better services. Consequently, the company will remain in the market and will be known as a company that implements the latest technology and knowledge in their chain of value. Therefore, stocks may rise, resulting in a better position to stockholders. In addition, it is achieved one of the financial management mottos, “maximize stockholders’ wealth”.
- Society in general, because if employees keep their position, It will make unemployment rates remain stable, even decrease. In general, it will lead to a better social welfare.

### **4.2. Kantian approach**

The Kantian theory demands for a superior law or rule that can be applied to everyone. For example, in some cases what can be considered ethical from a Utilitarian point of view, it is not ethical from a Kantian approach because it does not meet this superior criterion.

Nevertheless, the superior criteria that can be applied to the labor markets studied in this paper are meeting labor laws by making office environment as comfortable as possible, and not treating workers as if they were objects. This last point means that companies have to remember they are formed by people. These people have to be motivated and know that their work is necessary to a proper firms’ development. It also means that if they carry out their job properly, they will have the chance to remain at their position. In order to get it, companies have to give them the adequate formation.

There is also another superior criterion: employees should have time for their personal life. As said before, in this new era, there is a trend to work weekly an increasing number of hours. It results in alienating people whose lives are evolving around their professions. This

situation is making people forget about their families and other moral values *Laborem Exercens* encyclical calls for.

As a conclusion, a company can be considered ethical by the Kantian approach in their human resources management if they give their employees opportunities to update their knowledge and give them the sufficient time to have a “private” live in addition to their professional one.

### **4.3. Code of ethics**

There is one other significant point that is the existence of a code of ethics in a company. Most of the companies, regardless their sector, they have a code of ethics. However, it usually just means written words that are not carried out.

In some countries there is a tendency in making e-business companies to have a code of ethics specialized in their sector. Therefore, we find the main difference to the current situation in which most of the companies have very similar codes of ethics.

These companies regarding e-business and electronic commerce need to have a special code of ethics because of the changes that can take place in labor markets due to the use of Information and Communication Technologies in the economic activity.

The professional who is specialized in activities connected with the ICT is qualified, very flexible, and with a well defined tendency to be independent, but also, this kind of professional tries to be the own player of his or her management. This is possible because this professional can access to a lot of information and to the knowledge that can be found in an out the firm.

This professional must have some point of reference to establish clearly what kind of use will have all that information. About this issue, the implementation of a series of special ethics code is becoming more and more relevant.

### **4.4. Ethical considerations regarding worldwide labor markets**

There is another point to be ethically considered, that is, the ethical concerns regarding worldwide labor markets. We do not have to consider that implementation of the Information and Communication Technologies are good for the labor markets all over the world, because it is not true, as has been showed in part one of the paper. Therefore, if e-business companies are considered ethical because they will help unemployment rates to

decrease, we are wrong.

From an Utilitarian point of view, it is obvious that electronic commerce is not benefiting the maximum number of people, it is just benefiting some developed countries, while making less developed and developing countries even poorer, because they are losing investments needed to develop the country just in order to develop communications when there are more important necessities to be met in those countries.

From the Kantian point of view, we get to the same conclusion. The difference is the rationality behind. As said before, the Kantian approach relies on a superior criterion. This criterion is that it is more important to meet citizens' primary needs for food, education and housing rather than implementing Information and Communication Technologies in those countries. We also have to keep in mind that the workforce of those countries is not prepared to work in that technical environment.

## 5. CONCLUSIONS

The use of Information and Communication Technologies in the management of companies is not recent. However, it is evident that velocity and broadness that implementation of the ICT is taking place in the business environment, demands for taking into account some bad aspects that can be found.

1. The number of Internet users is increasing considerably worldwide. Nevertheless, in many countries there is not an appropriate business structure able to deal with an adequate electronic-business, yet. There are several reasons for it, but the most important ones are lack of legislation and lack of infrastructure.

There is the topic that ebusiness is good for all sectors; nonetheless, it is wrong because it affects mainly some productive sectors and hardly affects other sectors.

2. The use of the Information and Communication Technologies has effects in labor markets. It has to be specially considered because of the psychological and ethical effects it implies. Initially, the consequences of electronic commerce in the United States of America seemed to show that the use of the Information and Communication Technologies could create employment in the economy. Nonetheless, it has been observed that this effect is not going to remain as long as thought. This demands for considering in more detail the effects that the use of the Information and Communication Technologies can have in the labor market of every country interested in promoting the economic use of these technologies.

In the concrete case of European labor markets, there are high unemployment rates that specially affect youth and people over 45 years, low qualified women and

long-term unemployed. In this case, the use of the Information and Communication Technologies can worsen significantly this imbalance because of the specific kind of worker needed in companies that are dealing in electronic business.

From an economic point of view, if we do not want to worsen this unemployment situation in most of developed countries, it will be necessary to implement some measures (among others, the ones related to formation) in both sides of employment, supply and demand.

3. If the possible macroeconomic consequences of the use of the Information and Communication Technologies are important, the other regarding internal changes that have to be accomplished in the human resources area are significant too. When a company decides to implement e-business, it has to alter all its business strategy. Consequently, it is going to have some effects on diverse aspects regarding workers. Some of these changes not only influence the relation between employee and employer (for example changes regarding trade unions), but also will have an influence on the relationships among employers and employees' feelings (such as the generation of new types of stress).
4. Finally, from a Utilitarian and a Kantian approach, we get to the same conclusions regarding considering an e-business company to be ethical in relation to their human resources management. In both cases, companies have to give their employees an adequate formation. The reasons, however, are different. In the Utilitarian approach the reasons are to get the maximum benefit for the maximum number of people, which can lead, somehow, to Milton Friedman's (1970) well-known statement "the social responsibility of a company is to increase its profits. In the Kantian approach it applies for the existence of a superior rule that has to be applied to every human being. That is, to be treated with consideration, not like objects to be used and thrown away when they are not useful anymore, despite considering updating their knowledge.

The other important point is the one that employees need to have equilibrium between their personal and professional lives. If a company does not give its employees time enough to develop as a human being with all their social values, this company is not an ethical one. Firms do not have to forget that they are dealing with people, with their own feelings and different personal development.

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## 7. INTERESTING WEB SITES

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## **NOTES**

[1] The continuous progress in sciences and techniques.

[2] Reorganization and revision of the structures.

[3] Application of optic fiber, digital technology, diversification in the use of satellites, etc.

[4] For example, to pay taxes.

[5] Auctions, for instance.

[6] The composition was as follows: 30 of them were American (United States of America and Canada), 9 million were European and 6 million were from Asia and Pacific area (Australia, Japan, etc.). See <http://www.nua.ie>.

[7] Forrester Research, Andersen Consulting (now Accenture), Nielsen, OECD, IDC, Computer Economic, Jupiter Communications, etc.

[8] For example, the Spanish government is aware of the deficit of specialized workers and the unemployment rate that exists in the Spanish economy. Therefore, it has launched a plan to try to educate in activities regarding the Information and Communication Technologies. This plan will benefit 14.000 unemployed citizens. The objective is that most of them, around 60%, will find a position in the private sector (El Pais, 05/07/2001).

[9] That is, workers hardly see their wife or husband, and spend little time with their children, becoming strangers to them.