



ETHICAL CHALLENGES OF THE NEW ECONOMY:
AN AGENDA OF ISSUES

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RESEARCH PAPER No 463
April, 2002

Published by the Chair of Economics and Ethics

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Abstract

The new economy is a technological revolution involving the information and communication technologies which affects almost all aspects of the economy, business, and our personal lives. The problems it raises for businesses are not radically new, least of all from an ethical viewpoint. However, they deserve particular attention, especially now, in the first years of the 21st century, when we are feeling the full impact of the changes brought about by this technological revolution. In this article, I will try to draw a “map” of the main positive and negative ethical challenges raised by the new economy, concentrating on its three basic features: 1) a knowledge- and information-based technological change, 2) which is taking place in real time on a planetary scale (globalization), and 3) which entails a new, flexible, network-based business organization.

KEYWORDS: knowledge, ethics, information, new economy, network, technology.

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Introduction (1)

The new economy is a technological revolution involving the information and communication technologies which affects almost all aspects of the economy, business, and our personal lives. The economic or management problems it raises are not radically new, least of all from an ethical viewpoint. However, they deserve particular attention, especially now, in the first years of the 21st century, when we are feeling the full impact of the changes brought about by this technological revolution.

In this article, I will try to draw a “map” of the main ethical challenges raised by the new economy, concentrating on its three basic features: 1) a knowledge- and information-based technological change, 2) which is taking place in real time on a planetary scale (globalization), and 3) which entails a new, flexible, network-based business organization.

First of all, I will discuss what the new economy is and whether a “new” ethics is needed to address the challenges it raises. I will then discuss the main economic, social, human and business ethics issues raised by the new information and communication technologies, by the development of a planetary-scale economy (globalization), and by the changes this brings about in companies (flexible, networked organizations), closing with the conclusions.

The new economy

It seems that the term “new economy” was proposed for the first time by *Business Week* in 1994 (Paulré, 2000). However, it was generalized immediately to designate a series of interrelated and not always well-defined phenomena, such as:

- 1) A temporary but long-lasting period of high growth in the United States’ productivity, particularly in the second half of the nineties. This period was

(1) This paper is part of the IESE Economics and Ethics Chair’s research plan. Earlier versions were presented at the *11th International Symposium on Ethics, Business and Society*, IESE, Barcelona, 4-6 July, 2001, and at the *14th International EBEN Conference*, Valencia, 12-14 September, 2001. I would like to thank the participants at these conferences and two anonymous referees for their comments and suggestions. I would also like to thank the Fundación José y Ana Royo for generous financial support.

interrupted by the recession of 2001, but seems likely to resume in the near future (2).

- 2) Perhaps a temporary but long-lasting period of prosperity made possible by the “virtuous cycle” created by high productivity growth rates, low inflation, contained macroeconomic disequilibria and full employment, which lasted at least until the recession of 2001 and goes beyond the technological change that concerns us here.
- 3) The impact of the production and widespread use of the so-called information and communication technologies (ICT). This, in my view, lies at the heart of the new economy.
- 4) A presumed change in the rules by which the economy operates, some of which may have ceased to apply (for example, the rule that high growth leads to inflation) (3).
- 5) The explosion of the prices of equities on the United States and other countries’ capital markets, to the point of stating that the traditional rules used to value shares were no longer valid – based on the fact that companies that had never earned any profits and which foreseeably would not earn them in many years attained very high values. With the benefit of hindsight, we can say that this is not an inherent feature of the new economy, and seems to have been due more to a speculative bubble than to any lasting change in the capital markets.

The experts have argued at length on the meaning, content and impact of the new economy. And it is logical that they should, because the term is appealing to the man in the street and the media, but it does not have a defined economic meaning. And any attempt to give it one requires establishing a delimiting criterion which will inevitably be debatable.

Strictly speaking, the new economy expresses the impact of the technological revolution developed around information and communications, first in the industry that produces ICT goods and services; second, in the industries that use these goods as production capital; and third, in the other industries and in the economy as a whole (4).

However, the key to the new economy is not in the silicon chips but knowledge: the fact that it is based on the acquisition, processing, transformation, and distribution of knowledge and information (hence the name of information and communication technologies, ICT). In a word, the distinguishing feature of the new economy is not merely a change in production and costs, or the use of the new technologies throughout the economy, but rather the nature of the “new” knowledge-intensive goods (Chichilnisky, 1998; Quah, 2001) (5). In a strict sense, it is concerned with:

(2) This is the optimistic view held by some economists; cf., for example, Baily (2002).

(3) *Business Week* has defended this new economic “paradigm”. Cf., for example, Shepard (1997).

(4) At present, we are also witnessing other technological revolutions, such as biotechnology. Although many authors do not include it in the new economy, there is no doubt that, in a broader sense, biotechnology belongs to the same revolution of knowledge, stored in this case not in computers but, as Quah (2001, 15) puts it, “in carbon-based libraries and databases”. All the same, here we shall not discuss the ethical problems posed by the biotechnology revolution, as they are quite specific in content.

(5) When looking at what has been written about the new economy, it is important to distinguish between data, information and knowledge. Cf. Bohn (1994), Boisot (1998).

- 1) the hardware (particularly computers) that processes and stores the information,
- 2) the communication system that receives and sends it, and
- 3) the software that controls the entire system (6).

Obviously, we are not talking about new industries (the calculator and the telephone belong to previous technological revolutions), but it has certain features that give it particular significance:

- 1) The generalized use of software (which is, to a certain degree, a surrogate for human intelligence).
- 2) A high speed of technological progress.
- 3) Certain economic features which, without being radically new, interfere with the markets' competitive functioning, such as the fact that they are "experience goods", which are bought without sufficient knowledge of them and which cease to hold any interest when they are known. Or the presence of high, sunk entry costs, almost zero marginal production costs, and the virtual non-existence of capacity constraints (Shapiro and Varian, 1998).
- 4) The possibility of working in a network, with high adoption externalities, effects of being "locked in" to a certain technology, the tendency towards market domination by one or a few companies, etc., and
- 5) The diffusion of its effects throughout the economy, affecting consumption and work decisions, how companies are run and government policies are implemented, etc.

Does the new economy exist? This question continues to be the subject of discussion between economists, among other reasons because, as we have already pointed out, there is no agreement about what this new economy is, what its effects are, whether they are permanent or temporary, etc.; because the time that has passed is too short to be certain whether the changes observed are real or whether it is just a statistical mirage, and whether they are passing or look like becoming permanent. Our (tentative) opening thesis can be presented as follows (Argandoña, 2001a,b, 2002):

- 1) The degree of technological progress experienced by the ICTs has been considerable since the '50s. Initially, the change was not revolutionary because the "new" products (mainly the computer and the cellular phone) were only variants of the "old" products (the calculator, the typewriter and the telephone). However, eventually (7), technological progress significantly increased total factor productivity in the ICT-producing industries (computers, software, telecommunications, etc.) (8).

(6) See Nordhaus's definition (2000). Other alternative definitions in Paulré (2000).

(7) Greenwood and Yorukoglu (1997) put an approximate date on this technological leap: 1974. Hobijn and Jovanovic (2000) place it between 1968 and 1975.

(8) It is customary to distinguish between two types of change in productivity: (1) the increase in average labor productivity (increase in the output per hour worked) due to a more intensive use of other production factors, such as physical (computers and telecommunication equipment, in our case) and human capital, and (2) the increase in total factor productivity, which affects all factors as a result of the changes in the type and quality of products, in the production processes, in corporate organization and management, etc.

As a result, the quality, speed, capacity, etc. of the hardware, software and communication media increased, and their cost fell. This led to increased demand for their products and increased output, so that the weight of the industry in the economy as a whole has become progressively greater.

- 2) The ICTs are general purpose technologies which are used as factors in the production of many goods and services, and which are combined with currently used technologies in other industries, giving rise to new products, processes, and organization forms. The reduced cost of the ICTs led to a high demand for their products from other industries, which replaced conventional capital and labor with computers, robots, new communication systems, etc., or created new goods and services using these technologies. This led to a rapid increase in the productivity of the other factors, particularly labor, as a result of the more intensive use of the capital related to the new technologies (capital deepening).
- 3) In turn, the new technologies' specifications altered the demand for the other production factors: new labor skills, new management systems, need for support infrastructures, etc. And this also increased the productivity of the information and communication capital.
- 4) As technological progress spreads from one industry to another, spillover effects are generated that increase the total factor productivity in industries that are not directly related to the use of the new technologies' capital goods and, eventually, in the economy as a whole.
- 5) All of these effects have occurred or are currently occurring, first in the US economy and then in the other countries, which are acting in this case as followers (9).
- 6) There is not a new-economy-linked "new" economic theory. The economic laws continue to be the same, although certain specific problems, linked with network economies, high entry costs and virtually zero marginal costs, new competitive models, etc., are raised.

Is the new economy a challenge for ethics?

However, it is not the new economy we are interested in but the ethical problems that it poses for companies. Is a new brand of ethics needed for the new economy? And what are the main ethical issues facing companies as a result of the new economy?

The viewpoint we are interested in here is that of business ethics. The subject has already been discussed elsewhere (10), but we feel that the magnitude of the changes that are taking place requires a more detailed analysis. Also, although there are many studies that discuss the ethical problems of the new economy, there are not so many on the ethical problems of the companies operating in the new economy – in other words, the level of discussion is macro rather than micro.

(9) The evidence that this is so in the United States seems to be strong, but it is not accepted by everyone. In other advanced economies, the effects are even less clear.

(10) Cf., for example, Argandoña (2000a), Cordeiro (1997), DeGeorge (1999), Mason *et al.* (1995).

Is a new brand of ethics needed for the new economy? The answer seems to be no. The new technological revolution does not raise any new ethical problems nor does it require the adoption of new criteria or principles. And the fact that the new economy does not require a distinct technical-economic treatment gives rise to the following thesis: if the economic problems are not different, it is unlikely that the moral problems will be (11).

However, there are powerful reasons for studying the ethical problems raised by the new economy; for example:

- 1) The negative side of ethics (“don’t do bad”) becomes important in the new economy, because the new technologies create the opportunity for immoral conducts. Examples are legion: not respecting copyright of software or information, malicious entry into computers and networks (hackers), violation of privacy rights, creation of information monopolies, falsification of information (informational cheating) and creation of false information (information pollution), loss of security in public information, etc.
- 2) One variant of this problem is the change in values that may be caused (or, at least, facilitated) by the opportunities created by the technology. For example, the new technologies’ potential may lead to aggressive conducts to enter a new market as quickly as possible, corner competitors, acquire size, reduce competition, and make it difficult for customers to change to other suppliers. Also, there may be changes in personal conducts (computer addiction, for example, or the appearance of more individualistic personalities).
- 3) For some authors, the problem goes beyond specific behaviors and even beyond values and is, in fact, a systemic problem: it is the whole capitalist system that is immoral or, at least, suspect. And the new economy, like globalization, simply adds new dimensions to this problem.
- 4) The speed of change hampers ethical learning processes – the speeding up of processes is, in itself, an ethical problem. New companies with young staff in industries where it has not been possible to develop an adequate culture may facilitate non-ethical conducts. The process is probably temporary, until society develops defense mechanisms, but the cost of acquiring the necessary virtues and culture may be very high.
- 5) The positive side (“do good”) also has new aspects, because the new technologies provide opportunities for the economic development of depressed areas, increased participation, going beyond national barriers, defending human rights, etc.

In the following pages, I will review a number of defining features of the new economy, from the business viewpoint, with a view to drawing a “map” of the main ethical problems that are appearing. To do this, I will develop my analysis following the three basic features of the new economy (12):

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- (11) The ethical dimension is not an add-on to technical problems. Rather, any problem has a number of dimensions: technical-economic (prices, costs, returns, investments,...), socio-political (conflicts, power relations, etc.), and ethical.
 - (12) They are not the only ones. As Castells (1996, 1997, 1998) has pointed out, the new economy also has very important political (a crisis in the traditional conception of the State), social and human (an identity crisis) implications. However, we will not go into them as they are not relevant to our viewpoint, which is that of business ethics.

- 1) a knowledge- and information-based technological change,
- 2) which operates in real time on a planetary scale (globalization), and
- 3) with a new, flexible, network-based business organization.

A technological revolution

In a rather arbitrary manner, the distinctive features of the new ICTs can be summarized under three headings:

- 1) The computer. The first major technological leap took place in the early '70s, when Intel launched the first microprocessor, “a micro-programmable computer on a single chip” (Ceruzzi, 1998, 220), a general purpose device which would be adapted to different uses by means of the appropriate software (Jackson, 1997, 75). From then on, technological progress continued at a hectic pace, as summarized in “Moore’s law”, which stated back in 1965 that the transistor density on a chip would double every twelve months and that this trend would continue for quite a few years (13). Thus, a computer’s computing power in 1999 was 66,000 times greater than its 1975 counterpart, for the same cost (Campbell-Kelly and Aspray, 1996).
- 2) The supplementary innovations and the social and institutional adaptation processes, generalized by the use of the computer and, in particular, by the development of communications, whose data transmission speed over ordinary telephone lines has increased 22-fold in a space of 20 years (Maxwell, 1999) – and the use of the cellular phone is still in its early stages. When the computer is combined with the communication technologies, the synergies are enormous. In August 1981, there were 213 computers connected to the Internet, 300,000 in October 1990, and 60 million by the end of 1999 (Cohen *et al.*, 1999).
- 4) The generalized use of the microprocessor in countless applications: products, services, processes, machines, management systems... Because, as we have already pointed out, the ICTs are general purpose technologies applied in many industries and complementary to many other present and future technologies.

Why has the use of the ICTs become so widespread? Because we are not talking about a chip-driven revolution but a revolution driven by information, ideas, knowledge. And these are necessary ingredients of any decision.

The ethical problems of the information and communication technologies

The first ethical problem we face lies precisely in the field of technological innovation. The idea of the ethical neutrality of technological progress is not a new one and it has been criticized from many quarters (Davies, 1995; Dean, 1993; DeGeorge, 1999; di Norcia, 1994; Jonas, 1982, 1984; Kranzberg, 1980; Nicholas, 1990; Parker *et al.*, 1990) (14).

(13) Gordon Moore, co-founder of Intel. Since then, this time has gradually increased to 18 months (Cohen *et al.*, 1999) and 27 months (Nordhaus, 2000), but the growth rate is still considerable.

(14) Other authors, such as Max Horkheimer and Herbert Marcuse, argue that the morality of technology is intrinsically negative, owing to its unforeseeable effects. Cf., for example, Marcuse (1964).

“Technology” is intended here not in the strict sense (knowledge, machines, capacity, production), but in a broader sense, with cultural (ends, values, beliefs) and organizational connotations (structures, users, companies, etc.) (Davis, 1997).

One could argue that the ICTs do not create any moral problems that have not already been encountered in the old technologies (the calculator, the typewriter, or the telephone). But this is not true, because opening up new possibilities for action may change the problems’ nature. A typical example would be the invasion of privacy that is now easier with the new technologies: spying on people in the street or in their homes; “infiltrating” their computer, monitoring their movements, compiling information on their health, their political ideas or their religious beliefs, etc. It is true that this invasion has always been possible but now we can monitor practically all facets of a person’s life, at any time and without that person knowing. And this must necessarily create more serious problems with a greater social, psychological and political impact. This is why some authors prefer to talk of “information ethics” rather than “computer ethics” (Rogerson, 1997).

Obviously, when faced with this type of problem, we can always argue that technology (its creation and development) is neutral, and any problems will lie with the user. But this too is questionable. Any technology that can be used immorally must be developed with caution. A case in point here could be the destruction of barriers to information acquisition: the hackers have developed an undoubtedly interesting technology, which on occasions can be used legally and ethically, but which is more likely to be used for illicit purposes.

A final argument applied to technology is the legitimacy of progress in general: what technology can do, should be done, because it leads to progress, and progress is always desirable, even if it entails costs. This thesis also accepts the opposite argument: any decision, in technology too, has a number of dimensions –not only technical but also economic, cultural, social, organizational and ethical– and it must be judged taking all of them into account.

All of these are old problems and they are usually more acute in other fields of technological progress, such as the biotechnologies or the nuclear industry. However, the people and organizations involved in the research, development, and application of the ICTs must also be able to ask themselves ethical questions such as those we have mentioned.

The ethical problems of information

If the new technologies revolve around information, then this information’s moral requirements will hold a prominent position. Here are a few:

- Truthfulness and accuracy: the person providing the information must ensure that it is truthful and accurate, at least to a reasonable degree.
- Respect for privacy: the person receiving or accumulating information must take into account the ethical limits of individuals’ (and organizations’) privacy (15).

(15) The ethical problem is not raised by the use of information but by its very existence: the right to privacy is violated not just when someone uses information about another person illegally or immorally, to that person’s harm, but even when that information is simply looked for, received or stored. Cf. Argandoña (1998a).

- The same can be said about company secrets, industrial espionage, etc.
- Network security problems: sabotage, removal of information, impersonation, etc. (Banscomb, 1988).
- Irresponsibility, under cover of the anonymity allowed by some of the new technologies.
- How the recipient uses the information.

Admittedly, these are not new ethical problems: the propagation of false news, stealing information, industrial espionage, and misuse of staff surveillance are well-known problems. But, as we have said, the new technologies make them easier, more widespread or more serious (Cordeiro, 1997).

The economic problems of the new technologies

The ICTs have a number of economic features that have attracted the attention of the experts and which may also give rise to ethical problems. Here are some of these problems (De Long, 1998; De Long and Fromkin, 1999; Shapiro and Varian, 1998):

- 1) The ICTs' goods or services are "experience goods": they must be known to be appreciated, but their value falls sharply when they are known (Shapiro and Varian, 1998; De Long, 1998). For example, a new software program may be very useful for a prospective buyer. If her knowledge about the program is insufficient, she cannot appreciate it nor make a decision about purchasing it. But knowing the software means having it and, therefore, being able to copy it, which destroys the program's economic value.

The problem can be palliated by segmenting the market (so that only those who appreciate the product pay for it), such as, for example, by offering an incomplete product free (a software with few applications) and charging for providing the final product; offering a basic version for free and charging for later releases, etc. However, all this may also give rise to moral problems: trust (in the product's quality, in that the other party will keep his word, etc.), deceit or lack of transparency in the information (sometimes, as a defensive weapon, but also as an opportunistic behavior), etc. In addition, this type of relationship may lead to a "gift culture", in which certain individuals "give" something to others (a computer program, or a file with information, etc.), hoping perhaps that the other person will become a customer, or pay a quantity of money for the good or service, or give in turn information to the other party (about her buying habits, tastes, etc.) (16).

(16) Some of the problems which may be raised may not actually be ethical problems. For example, the person who gives for free an incomplete software to a person who is not interested in it but charges for a more advanced version to a person who is interested in it is committing a discrimination. However, this does not raise any special ethical problems, because the criterion does not infringe the individual's basic rights (as would be the case if the discrimination were to be based on gender, race or religious convictions), but only her interest in the product (and her capacity to pay for it).

- 2) The ICTs usually entail high sunk fixed entry costs, very low (even zero) marginal production costs, and no capacity constraints. For example, starting up a portal is enormously expensive and the investment is virtually irrecoverable if the project fails, while the cost of attending to a new visitor to the portal is virtually zero.

From the economic viewpoint, this implies that the best strategy is to become big as quickly as possible. But is this compatible with competition? The economic (and ethical) problem lies in the fact that the traditional concept of what a competitive market is may not be valid in the new economy: for example, the important issue is not the market share controlled by a company but the ease with which new competitors can enter the market, the pace of technological development, the existence of countervailing forces in the market, etc. None of this prevents the existence of practices that may be considered unfair or incompatible with competition (17).

- 3) The ICTs have significant “network effects”: a network’s value depends primarily on the number of subscribers (telephone or Internet services are of little interest if they can only connect a handful of users, but their value increases exponentially with the number of customers connected).

Faced with these effects, companies try to be the first to start a network, increase the network’s size at any price (to attract more users), seek allies and partners (to extend the network and make it stronger) (18) and make it difficult for members to leave the network.

And this is where, without doubt, major moral issues come into play. Being the first may mean launching a new product without adequate testing and guaranteeing that it will operate satisfactorily, or offering certain benefits that it will not be possible to maintain. Increasing the network’s size may also entail limited competition. Likewise, the search for allies and partners requires generating trust in the relationship, and expanding networks enormously increase the number of interpersonal and intercompany contacts (with positive and negative effects), etc.

Transitional problems

Our interest in the ethical problems of the new economy is particularly keen at present both because of the subject’s novelty and because we are currently in a stage of transition. Indeed, any fast change, such as that brought about by the ICTs, creates winners and losers and has mixed effects: for example, selling by the Internet may mean the demise of many businesses, but there are also significant advantages for consumers.

These problems are real, but they should not be exaggerated, because they are problems that are typical of any situation of change: the sensation of a loss of control, the

(17) Ultimately, this means that defining the ethical problem is not separate from defining the economic problem. That is, there are no ethical decisions, but simply decisions. And each decision has several dimensions: an economic dimension, of course, but also an ethical dimension.

(18) But this also entails reducing barriers against competitors by increasing the compatibility of the network’s different components.

human and social costs associated with the necessary learning, or the difficulty involved in this learning, the resistance to change generated by the losers, the complacency and even arrogance of the winners, the risks of committing too soon to untried technological innovations, etc.

These problems are above all systemic or social (macro) problems, and, as such, must be addressed at the appropriate level (19). However, almost all these changes are implemented by companies, and many of their effects are suffered by companies, both in their own existence (closures, strategy changes, funding problems, etc.) and that of their stakeholders (recruitments, layoffs, conflicts with customers or suppliers, cultural changes, etc.). And, in attempting to mitigate these transitional problems, companies must accept their share of the responsibility.

Globalization: a planet-wide economy

The second distinctive feature of the new economy is its globality, because it offers the “ability to work as a real-time unit on a planetary scale” (Castells, 1996, 92).

Globalization is usually understood to refer to the strong growth in the international flows of goods, services, capital, technology and knowledge (and, to a lesser extent, people) which leads to the growing interdependence between nations (or between the economic agents of different nations). Strictly speaking, globalization and the new economy are two different, although closely related, phenomena, because the causes of globalization include:

- 1) Technological progress, particularly of the ICTs (20)
- 2) Political and institutional changes: removal of barriers to the mobility of capital, goods and services, market liberalization and deregulation, etc.
- 3) Ideological causes, mainly confidence in the free market, (21) and
- 4) Organizational developments, such as the formation and development of networks, and organizational and occupational flexibility (also related to the ICTs).

Globalization and its effects have been the subject of considerable discussion on the economic, sociological, political and also moral fronts. Most of the ethical debates about globalization are concerned with the macro level (the system) and included in the “politics model” of business ethics, which focuses on the “business system as a whole: its overall morality, its institutional norms, and its organizational structures and imperatives” (Shaw, 1996, 496).

(19) It is even more justified to include in this category the far-reaching effects of the adoption of technological changes on the standard of living, uncertainty, varying effects of the change on different population groups, changes in values and loss of traditional cultures, etc.

(20) And other technologies, such as those brought about by the development of transportation (which is also related to the ICTs).

(21) The defense of the market economy, free trade and free capital movements is based on economic arguments and not necessarily on ideological arguments; cf. Argandoña (1998c). However, it also allows an ideological interpretation, insofar as it defends a model based on certain ideological and institutional assumptions that need not necessarily be shared by everyone – and Fukuyama (1992) may be a paradigmatic example. However, the opposition to the new economy, as shown, for example, in the mass protests in recent years in Seattle, Washington, Davos and Porto Alegre, is an eminently ideological and political phenomenon.

The following pages will not address in detail this macro, systemic, political dimension of the ethical problems of globalization. First, because there is already a considerable body of literature on the subject (although of very varying quality) (22). Second, because most of these studies do not seek to guide the entrepreneur in decision-making, but to ask “how it happens that the [ethically problematic] choice arises in the first instance and whether organizational, economic, legal and social environments can be restructured or redesigned to alleviate problematic choices” (Torres, 2001, 32). Third, because our interest is in ethical decision-making in the company, not in the system. And fourth, because the ethical problems of the global economy are only indirectly related to the emergence and development of the new economy.

This means that we will leave unconsidered such highly important ethical issues as:

- 1) The challenges and opportunities that the new economy offers to developing countries. Opportunities such as filling the gap left by the advanced countries in industries in which the new economy plays a less important role (for example, labor-intensive industries), or exploiting their comparative advantages to initiate or accelerate the development process, as a basis for subsequently introducing the new technologies in these countries (23).

And challenges such as the need to introduce these new technologies in traditional, labor-intensive industries, or the increased competition between developing countries in traditional products (among other reasons because, with the new economy, geographical location is less important) (24).

- 2) The increased inequality between wage and income levels. This is a widely discussed issue between economists, sociologists and moralists, not always using serious scientific arguments. From our viewpoint, our concern is to point out that increased inequality may be due to less ethical behaviors and, therefore, be worthy of analysis. However, this does not mean that inequalities are immoral, nor that a system in which inequalities occur is automatically immoral, nor that the solutions offered (minimum wages, higher severance costs, direct aid to developing economies, etc.) are the best ones (25).

The first area in which this inequality appears is the labor market itself. For the purposes of our analysis, two types of problem arise: a) the increase in relative

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- (22) Many of these studies point, for example, to the broadening of income or wealth inequalities as an ethical failure, which is attributed, without distinction, to the new economy, globalization or neoliberal policies. However, until it defines what constitutes a fair (which does not necessarily mean equal) distribution of income or wealth, what the specific causes of the unfair distribution are, and how the proposed solutions are expected to take effect, such a thesis cannot claim to be anything more than an ideological argument.
 - (23) The comparative advantage theory suggests that countries should specialize in those goods and services in which they have such an advantage, and not necessarily in more advanced technologies.
 - (24) For an excellent account of how the less developed economies use the new technologies, see Prahalad and Hart (2000).
 - (25) Torres (2001) points out that the “politics model” in which these issues are addressed puts the primary focus on distributional fairness, with the risk of subordinating higher values (human dignity, common good) to social goals. “Structure is seen as the crucial variable, whose manipulation at the macro-level can effectuate desired conduct and behavior at the micro level, analogous to the way pulling the strings of a puppet will move its limbs. (...) Because the politics model is blind to virtue, it is incapable of explaining why, given the existence of putatively immoral systems and structures, individuals are nevertheless capable of behaving ethically, regardless of how you define such behavior. (...) Because of its static outlook, the politics model will never capture morally significant, informal, organizational realities, e.g., cooperation, trust, loyalty, devotion and the unification of personal goals with organizational ones” (pp. 33-34).

wages in the industries where the new technologies have increased the demand for skilled labor, increasing the compensation gap between professions and between levels of occupational skill (26), and b) the competition from more or less skilled workers from other countries, via trade or immigration (that is, more as a consequence of globalization than of the new technologies) (27).

As we have already pointed out, this increased inequality need not necessarily be a distinct ethical problem, although it would be necessary to consider the circumstances of each case (for example, discrimination, unequal opportunities, etc.). Furthermore, this inequality occurs not only between but also within industries or professions, which suggests that its cause is probably not the new technology.

Inequalities also appear in income or wealth levels within a country, taking into account the incidence of taxes, transfers, social spending, etc. Thus, they are only partly related to the above-mentioned wage inequalities and their relation with the new economy seems to be even more remote (28).

The third type of inequality is that which occurs between countries. And here the debate is more complex, for several reasons: 1) the ambiguity of the data (29); 2) because it is usually focused in terms of comparing economic systems or country models, and 3) because of the common confusion with ideological arguments. In any case, the new economy seems to be largely unrelated to this type of problem; even in the world's leading economy, the United States, the ICT industry has a very small weight in the gross domestic product (30).

- 3) The "social exclusion" phenomena, due to the so-called "digital divide" linked with globalization and the new economy. In this context, social exclusion refers to the situation in which certain population groups or even entire nations may find themselves if they do not have the opportunity to take part in the new technologies race (31).

This raises significant economic, social, political and ethical problems which, however, require some qualification. In the developed countries, it is natural that older people should have problems in gaining access to the Internet, but this is not necessarily unfair. Schoolchildren may also encounter problems in accessing the ICTs, if the educational policy does not facilitate it, but this does

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- (26) For the wage differential caused by the demand for skilled labor, see, for example, Blanchflower and Slaughter (1998), Greenwood and Yorukoglu (1997), Katz and Murphy (1992), Kodrzycki (1996), Krueger (1993), and Siebert (1999).
 - (27) There are also many studies on the possible effects of globalization on wage levels. See, for example, Cline (1997), Freeman (1995, 1996), Kletzer (1998).
 - (28) Cf. Atkinson (1997), Freeman (1996), Hills (1996), Rodrik (1997), among many others. For a different explanation of the significant inequalities in personal income distribution (the winner-take-all society), see Frank and Cook (1995).
 - (29) The income gap between countries has been the subject of intense study in recent years. See, for example: Cornia (2000), Crafts (2000), Dollar and Kraay (2000), Laudicina (2000), Siebert (1999).
 - (30) Hardware, software, automation services, telecommunications networks, and voice and data transmission services accounted for 4.5% of the US GDP in 1998 (Gelauf and de Bijl, 2000). The information goods industry (news, information and entertainment stored, broadcast and displayed by digital means), which is the other arm of the ICTs, accounts for another 2.5% of the GDP.
 - (31) For a full discussion of the social exclusion caused by the new technologies, see Castells (1996, 1997, 1998, 2000a).

not mean that there is no possibility of access in the future as users or that they are in a permanent situation of inferiority or that the solution to their future integration problems must be sought in the ICTs (32).

As regards the digital divide between countries, we have already said that the growth of economies with an abundant supply of labor should be based on their comparative advantages and not on the new technologies. However, this consideration aside, they would do well to improve their stock of factors so that they can be ready to include the ICTs as soon as possible. This task may present certain difficulties, due to the lack of infrastructures (telecommunications, electricity) and skilled labor (33).

It seems logical to conclude, therefore, that the new economy is not the cause of most of the inequalities between countries and that the income inequalities within a country caused by the ICTs will be temporary. This does not mean that we are denying the existence of an economic, social, political and ethical problem, but this problem is not caused by the new economy (34).

Does this mean that companies can ignore such problems? Of course not. But we should not confuse our terms. Business ethics must consider its contribution to the common good, and this common good includes all of the problems we have mentioned (35).

A flexible, network-based business organization

The third feature of the new economy refers to the new organizational forms used by companies. In a somewhat arbitrary manner, we could present the rules of the new economy for companies in the following manner:

- 1) A “new financial ecology” (36).
- 2) A flexible, networked organization.
- 3) A new role for work.
- 4) A different way of managing.

Let’s take a more detailed look at these components and their ethical implications.

(32) Tabarrok (2000) points out that, in the United States, 15% of homes with an annual income less than 5,000 dollars and 95% of public schools have access to the Internet. Thus, the problem does not lie in access but in other failures of the educational system (for example, 26% of Afro-Americans do not complete their secondary school education, and this may well hamper their personal development and social integration).

(33) However, there are also many examples of how the new technologies may flourish in very precarious conditions.

(34) An author completely free of any suspicion of sympathizing with the capitalist economy like Castells (2000a) points out that there is no direct relationship between the new economy and income inequality, although the new economy may encourage it through behaviors which, from the ethical viewpoint, deserve a critical analysis: for example, the first to develop a network may hamper the entry of competitors, or the network may be used for criminal or corruption-related activities, etc.

(35) I have developed this issue in Argandoña (1998, 1999a).

(36) The name is from De Long (2000).

Creation and funding

The new ICT companies have a creation and funding model of their own (De Long, 2000). They are usually born from the experience acquired by their founders in previous companies (this is their “ecological niche”), they are started up quickly (as regards prototype development, product development cycle and market trials), they are initially financed with venture capital and then by public offerings on the stock market, and executive compensation is usually deferred and linked to financial performance (stock options).

The capital market plays a crucial role in the new economy, first through venture capital and then through a rapid flotation to recoup the investment, acquire financial independence, and boost growth. This implies that the basic deciding criterion is the share value, perhaps defined in a rather imprecise manner, even accepting that the previous criteria used in company valuations are no longer applicable: “perception is reality” (Volcker, 2000, 78) (37).

The stock market collapse in 2000 and 2001 has put this “new financial ecology” in quarantine. However, there is no doubting that, at the time, it revolutionized company creation and financing, because of the greater opportunities offered by financial globalization, and because of the emphasis on the share’s market value as sole valuation criterion, as the sole management criterion, and as the main criterion for executive motivation.

Obviously, these are not new criteria but simply a way of perceiving the company and its management that is consistent with conventional economics but bereft of any ethical content and subject to significant risk (38).

Flexible, networked organizations

Through the use of networks, the ICTs enable easy access, storage, processing and distribution of information, both within and without the company (Castells 2000a,b). This not only affects the companies operating on the web (the dot-coms), but all companies in general, because this technology is universally available. However, such networks are flexible and changing: although membership of a network offers significant economies to its members, new networks are continually appearing that offer new opportunities. In addition to these advantages, their operation is decentralized (networks are configured around nodes).

Consequently, the company enjoys a high degree of flexibility. The decision unit ceases to be the company and is now the project, and projects are combined through variable networks, so that a company can initiate a project, spin it off, sell it (outsourcing, for example), develop it with other companies (customers, suppliers, competitors) or retrieve it, depending on the expected benefits. Thus, there are no single models but instead highly varied models, both within the company (changing hierarchies, for example) and in relation to other companies (changes in competition and cooperation structures): alliances, joint ventures, joint projects, shared research, etc.

All of this may have major effects on companies. For example, the value chain can be split into smaller parts, integrating or separating each part as circumstances dictate. This in

(37) Quoted in Castells (2000a, 154).

(38) I have developed this subject in a discussion of executive compensation using stock options in Argandoña (2000b,c).

turn gives rise to shifts in the centers of power and decision, changes costs, integrates or separates agents, creates or destroys opportunities in locations that may be very distant (39), changes these agents' bargaining power, reduces transaction costs (40), may make location decisions irrelevant (41), etc. And this is valid for all companies, including traditional companies and those located in developing countries, which must become multinational in order to grow - and perhaps they may need to do so in order to survive (42).

The ethical implications of all this are very significant, even if it is only to intensify or accelerate processes that had already been put into motion. Here are a number of points to consider:

- Working in a network means sharing. And this creates fairness problems (information appropriation), trust, transparency, etc. (43).
- Companies need to be much more flexible than in the old economy. But this means that the old "social contracts" between stakeholders are subject to frequent review, which affects loyalty, trust, resistance to change, uncertainty and unease, both within the company and with the communities in which it is located or which it relates with (44).
- The changing reality and adaptation to it create a true "creative destruction" (45). Who foots the bill for this? Is this situation viewed as fair? Will it distort the values governing the company's culture?
- Because everything is done in real time, the traditional sequence of events can be readily disrupted: any chance event can occur at any time. The risk is greater (Castells, 1996).
- It often happens that power is transferred from the company to the customer (who now receives a large part of the information generated) and, within the company, to the employee who interacts with the customer (empowering people).

(39) For example, airlines are moving their customer service centers to countries where labor costs are lower. And software developers are also exploiting this advantage, moving product creation to developing countries. Or they organize multinational teams which work in "shifts" so that it is possible to work on developing a project 24 hours a day.

(40) Immediate examples of this are the Internet supply auctions, inventory reduction, etc. This causes disintermediation effects (for example, brokers may lose their competitive advantage) but also reintermediation effects (new intermediaries appear, offering previously non-existent services by leveraging the information available on the network).

(41) To the point of operating a "virtual factory". Location decisions cease to be dependent upon proximity to the market or raw material supplies, and take other factors into account, such as the quality of life in the area, technological and transportation infrastructures, proximity of competitors or sources of knowledge (e.g., in Silicon Valley), etc.

(42) And this brings new problems: multiculturalism, culture conflicts, increased opportunities for corruption, etc.

(43) Variants of this problem are transactions security, treatment of the dissatisfied customer, web piracy, stealing information, etc. Cf. DeGeorge (1999), Kallman and Grillo (1996).

(44) The company is not a mere conglomerate of contracts. However, the idea of a kind of "implicit contract" which creates a series of rights and obligations continues to be useful.

(45) The term was coined by Schumpeter (1950).

- Transparency is (or should be) greater. The fact that, for example, the company has a database network means that many more people inside (and outside) of the company will have access to the information.
- Relations with customers and suppliers may become much more impersonal (for example, by means of auctions on the web), but they may also become more personal (insofar as the development of a project implies direct involvement of the customer, supplier, or even of the competitor, and adjusting quotations to the customer's requirements).
- Loyalty-based relationships may become more precarious, insofar as information on other possibilities is constantly becoming available (46).

All of these developments may or may not occur. However, there is no doubting that they may have a considerable weight in how companies are organized and managed. It is true that many of these developments will probably be temporary: for example, the appearance of auction centers on the web has brought about changes in relationships between customers and suppliers. However, once a new system becomes established, new relationships will develop which no doubt will be different from the relationships that existed in the past but they need not necessarily be as changing as they are now, and they will have to be ethical if they are to last.

In short, it is likely that a not insignificant part of the ethical challenges that companies are currently facing in the new economy will change their nature once the transition period is over. However, the adjustment may be harder, first, because we have no prior experience, and second, because many of these changes are taking place in new companies that do not have a strong culture or in old companies whose culture has been considered inappropriate for the new economy (Argandoña, 2000a).

A new role for work

If information and knowledge are the heart of the new economy, then the human factor should hold a central position. And this is so: the key to value in the new economy is the talent gained from the emergence of a self-programmable, flexible labor that is technically equipped and well-trained to adapt to different tasks, contexts and needs (Castells, 2000b). Consequently, it is not knowledge in itself but equipped knowledge (the new technologies), integrated in an organization and trained.

This raises a number of economic, technical, socio-political and also ethical problems (47). For example:

- Who does the knowledge belong to? Undoubtedly to people. But people usually receive this knowledge in their job: What duties of respect for individual dignity and autonomy, but also of fairness and loyalty to the organization are entailed by the acquisition, accumulation, processing, and

(46) Undoubtedly, loyalty based on lack of information cannot be considered to be loyalty. However, this does not prevent the appearance in the new economy of numerous conducts that propitiate disloyalty. Cf. Argandoña (2000b).

(47) Cf. Miles (1989), Noble (1985), Winch (1983), Wood (1982).

transmission of this knowledge? The answer is easier to find when the knowledge is available in an external form (a database, for example), but much more difficult when we are talking about the knowledge held by a person (and which encompasses not only knowledge in a strict sense but also skills, abilities, attitudes and values) (48).

- How is access to this knowledge obtained, and how is its creation, storage and distribution controlled? (Mason *et al.*, 1995).
- There are also problems concerning individual privacy. What information about me are other people entitled to have and what use can they make of this information?
- Value is linked to knowledge, transparency, clarity of the information, and veracity and certain conditions must be met, first with respect to the owners; then to the managers and workers, and also to the other stakeholders (customers, suppliers, local community, etc.). This does not mean that everyone is entitled to the same information, but that everyone is entitled to certain information which, in any case, should be reasonably clear, complete and reliable. At the same time, a duty is created to respect the privacy of the information provided within the company (49).

However, while objective knowledge is important, the source of that knowledge, that is, man's creative ability is without doubt even more important. This creates other interesting problems:

- This ability is based on innate qualities and on the training acquired by means of formal educational processes and social interactions. Should there be equal opportunity in access to these basic resources?
- A large part of this ability is generated within the company (specific human capital), and this raises once again the previously mentioned problems of fairness and loyalty – and other new problems. When an investment is made in specific human capital, a rent is generated (in an economic sense) that is shared between the company and the employee, but which may also be appropriated by either party using an opportunistic behavior (50).

But all this takes us much further. If knowledge is what provides the core of the company's knowledge, what is a company? Traditionally, the concept of what a company is was based on the ownership of the physical capital, because this factor was indispensable for applying the other production factors. Even when the key to a company's profitability was its human capital, this capital could not be used separately from the machine. Nowadays, there are many activities in which this is not true, both in the new economy and outside of it. The creative work in an advertising agency, for example, is in the minds of a few people and, perhaps, stored in a computer connected to a network, but this computer need not even

(48) The way loyalty and trust are understood in the new economy will also change, if we bear in mind, for example, the way face-to-face personal relations are replaced by indirect, computer-mediated relations.

(49) This is not the place for discussing who this information belongs to, what the basis for this right is, and to what extent its protection is something reasonable or creates a monopoly situation.

(50) I have discussed this process of rent creation in Argandoña (2001c).

belong to the company. Another example: the production that previously could not be carried out except by using physical capital belonging to the company now need not even belong to it: it can be outsourced, taken to another site, and even change location from one project to the next.

This changes power relationships within the company: the shareholders are no longer able to maintain full control over human resources that are mobile and which do not depend on the physical capital. And this brings up once again the issues of fairness, loyalty and trust that we have already mentioned.

However, traditional labor relations also undergo changes in the new economy:

- More than ever before, labor must be flexible, that is, it must not respond to pre-programmed tasks but be able to adapt to new needs, opportunities and challenges. However, flexibility means willingness to change, and change is costly. And flexibility also implies the possibility of opportunism by both parties: “I’ll fire you as soon as you’re not needed”, but “I’ll leave as soon as I find a better opportunity” (51).
- It requires ongoing training throughout a person’s professional life – or, at least, repeated training (with different contents and focuses). Is everyone able to undertake this ongoing training? What are the costs of working with a continual worry about keeping up-to-date, of not becoming obsolete?
- The employee must increasingly focus her career as a lifelong project, which includes preliminary training and on-the-job learning, successive promotions, the periodic updates and, finally, retirement (52). But, in a context of no job stability, all this must be done without any lasting commitments to companies. Does this favor short-term outlooks and attempts to appropriate rents as soon as possible?
- If knowledge is the key to the company’s value, employees will have to be given more independence, decision-making capacity and power. And work relations will have to have a much greater individualized content than in the past. And, no doubt, the employee will wish to have a share in the project’s ownership (for example, through remuneration with stock options).
- If location ceases to be important, as we have pointed out earlier, employees’ geographical mobility will also have to increase – although it will continue to be costly.
- New work conditions are appearing, such as the “networker” and the “flectimer”. What level of loyalty can be expected from an employee who is working on different projects with different employers, or who is involved in a project with staff from other companies, customers, suppliers and competitors?
- It was thought that the new technologies would reduce the workload per person. But the evidence points to an increase in the number of hours spent

(51) Such behavior may be morally correct. In any case, this type of decision has an ethical dimension which cannot be ignored.

(52) Which is somewhat similar to Sieber and Andreu’s (2001) “learning trajectories”.

working, to the detriment, sometimes, of the time spent with the family, in resting, in leisure activities or culture. And this too causes problems (53).

- The new economy companies may make magnificent teams for creative work but they may also be ephemeral human groups. Will it be possible to maintain the perception of the company as a community?

The new economy is not a panacea for industrial relations. And it is understandable that this be so: technology cannot solve human problems. It can provide independence, self-realization, personal development, freedom, enthusiasm, creativity, and performance, but it can also provide stress, individualism, self-complacency, loss of the capacity for serving,... These are not new problems, as we have already said. But now the challenges are surfacing with greater force.

The difficult task of managing companies in the new economy

In view of all that we have said, we would be fully justified in saying that managing companies in the new economy is no easier a task than in the old economy. To manage is to govern people for action, to change reality by obtaining results (Pérez-López, 1993). And while the new technologies may make this task easier in certain respects, the new environment may also make it more complex.

We have already pointed out that “the project” has now become companies’ central focus. However, a manager is not responsible for a project but for the whole company. And the task of coordinating the unit over the long term (which continues to be necessary) with the results of projects scattered over shorter terms is not easy. Because, in addition to all the other factors, the environment is continually changing and competition is not any less than before. And with an added element: the manager often aspires to become an entrepreneur himself.

Many of the previously mentioned features of labor relations can also be applied to corporate management: uncertainty, the need to keep up-to-date, greater independence, the need for flexibility and mobility, hard work,... And also many of the questions we asked from the business ethics viewpoint are also applicable: the personal costs imposed by an individual’s lifestyle (54), her fairness and loyalty relationships with the company, with her colleagues, and with the other stakeholders (55), etc.

In short, we are running the risk of developing a type of manager who, while alert to the opportunities that the new economy may offer her and her company in the short term, ceases to be concerned about creating working conditions and stakeholder relationships that make the company more human, nurture personal development and, in the long term, preserve the organization’s unity,...: in short, more ethical companies.

(53) Even though it may only be a passing phenomenon, because it generates learning in people, changes behaviors and entails costs that will only be fully known after a period of time, when probably it will be too late to do anything about them (for example, the costs arising from putting off starting a family to a later age). Cf. Golden and Figart (2000).

(54) Cf. Argandoña (2000b,c).

(55) The most extreme expression of executive mobility is the freelancer, who hops from one company to another to carry out short-term projects, without ever becoming integrated in the company’s culture and responding, above all, to monetary incentives.

Conclusions

The new economy is not radically new. No new economic theory is needed to understand it nor new rules for running companies nor, therefore, new ethical principles to govern it. But we do need to understand the specific ways in which ethical problems arise in the new economy. And this must be done from within each decision, in its different dimensions: technical-economic, socio-political and moral.

Not everything is new in the new economy nor is everything undergoing hectic change. The old economy is still alive and kicking, and for millions of people, earning a living continues to be linked with working methods, tools and machines in which the new technologies are perhaps present but which they have not transformed entirely. It may be that, in the long run, our lives will change completely. But, leaving to one side the innovational frenzy of the '90s, this change will probably be gradual and, foreseeably, also subject to a certain degree of backtracking, as we are currently observing.

Above and beyond semantic issues, the new economy has become a factor of many specific problems of companies and it must be studied together with them. The sweeping condemnations are ideological, not ethical, and, in my opinion, any serious ethical analysis of the new economy should not let itself be influenced by them.

In the course of this article, we have brought to light a broad range of technological, economic, social, managerial and moral problems associated with the appearance and implementation of the ICTs. In all likelihood, many of these problems are temporary and they will lose their uniqueness, or even perhaps disappear, when full adaptation to the ICTs has been achieved. But this does not make the ethical analysis we must now perform any less important:

- 1) Because at stake is the happiness of millions of people, who are suffering these problems now and will continue to suffer them for a lot longer yet.
- 2) Because we are lacking in experience and perspective to understand, diagnose and solve them – also from the sociological, political, economic and technological viewpoints.
- 3) Because many corporate cultures have been lost, with the argument (probably mistaken) that that particular culture was no longer valid in the new economy. Consequently, many people are trying to address serious moral problems without an adequate cultural base.
- 4) Because moral learning takes place during the decision and action process itself, and, with the accumulation of errors, this learning process may become much more laborious and lengthy.

The new economy in itself is neither good nor bad. It is laden with opportunities: for improving the standard of living, for creating an environment in which sharing, trusting and serving others is easier, for furthering transparency and increasing empowerment, with individual dignity as the ultimate beneficiary. However, it also holds dangers: unnecessary destruction of opportunities, encouraging disloyalty and opportunistic conducts, violating copyright or privacy rights, increased insecurity and uncertainty. But whatever may be the final outcome, it will not be a consequence of the new technologies but of the decisions made by the people who invent, develop, distribute and use them.

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