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# KNOWLEDGE SOCIETY : ENTERING A POST CAPITALIST ERA ?

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## Abstract

Worldwide and certainly in the EU, we are silently rather advanced in a new economic logic, a new economic paradigm. This is a huge transformation of the very tool of production, comparable to the shift from agriculture towards industry, last century. And at least in the positive scenario, this post capitalist logic represents a huge shift towards human and nature centred economic logic. Our society is exposed to radical changes in basic paradigms, dealing with challenges that were unknown few decades ago. E.g.: The negative scenario of manipulation of human body and mind is also prospering and very active today. The widely discussed topic is sustainability of current quantitative growth and the shift into qualitative character of economic growth. The valuation of capital is influencing both micro and macro levels. The value of human capital is becoming primary and machines are becoming secondary. Advancements toward the knowledge society lead to fundamental changes in the nature of power, trade, economy, money, and management. The paper introduces positive role of competent human beings (body, minds & souls), who produces knowledge from knowledge, their opportunities and their achievements. The paper deals with the new definition of economy, new way of understanding of a value – adding a special value to objects composed of raw materials. Accepting a complexity of a creation process, most observers now agree that humans use their bodies, their minds and their souls, to create. The importance of abstract values rises in importance. We are shifting from the machine and factory towards the human person. Under the trial and error approach, we are supposed to allow errors and cover them. The innovative management must respect the body mind and souls of his personnel.

## Introduction

In the beginning of this year 2013, many citizens around the world are feeling that something is changing. Most of us are aware that our children will live in a world which will be quite different from the actual one. Or to put it otherwise, the credibility gap is widening between the world citizen on one side and the actual economic order symbolized by the National States, the European Institutions and the Big Banks, on the other.

Many thinkers are saying that we should imagine a new economic logic, which should be more sustainable and socially inclusive. And they express the mentality of an important group of citizens in our European countries.

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This article starts exactly there.

1. Yes we need a new economic system, which should be much more human and environmentally friendly. Yes we need an economic system which is genuinely sustainable. Otherwise we are in danger of collective suicide... This is very important.
2. And perhaps the *knowledge economy and the knowledge society*[1] could be at lest in part this new economic system, because it is a new economic paradigm.
3. Indeed *this knowledge economy, is potentially genuinely and 100% sustainable*, because it is based on *qualitative growth* and because enterprises are pushed to be sincerely and pro-actively sustainable and socially inclusive... if they want to acquire *intangible assets* on the stock market. Incentives towards a sustainable world, are for the first time really strong.
4. But this new economy is a *new economic paradigm, because we are radically changing tool of production*, which means that we are changing our vision of the world. (Karl Marx).
5. Our EU economy is already minimum 40% in this new economy[2]
6. The main difficulty for European Governments are today, is that they have signed and paid for the official entry into this new knowledge society, since 2000. (Lisbon Strategy, and Europe 2020), *but they seem unable to understand that this is a completely new economic logic...* Apart of Finland, no European Government seem to have launched a serious debate on this knowledge economy...probably because we all are trying to put this new wine (paradigm) in our old "industrial" baskets.
7. Indeed in this new economy, *almost everything changes.* The value creation process, the tool of production, the management, the nature of trade, the strategies, the value measurements, the nature of growth, the patenting, the company's very structure, transparency, and ethics. Everything is different. We are in a new world.

As Peter Drucker, one of the highest world authorities in Management theory, clearly explains in his latest book before he died, this new economy is post-capitalist because knowledge becomes more important than capital, in this new context.

*"That knowledge has become the resource rather than a resource, is what makes our society "post-capitalist." This fact changes—fundamentally—the structure of society. It creates new social and economic dynamics. It creates new politics." (p. 45).*

Drucker explains his view further.

*"The economy will, to be sure, remain a market economy, and a worldwide one. It will reach even further than did the world market economy before World War I, when there were no "planned economies" and no "Socialist" countries. Criticism of the market as organizer of economic activity goes back all the way to Aristotle. Most of the charges against it are well founded*[3]*. But as no less than Karl Marx pointed out more than hundred years ago, the market, for all its imperfections, is still vastly superior to all other ways of organizing economic activity—something that the last forty years have amply proven. What makes the market superior is precisely that it organizes economic activity around information. But while the world economy*

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*will remain a market economy and retain the market institutions, its substance has been radically changed. If it is still 'capitalist,' it is now dominated by 'information capitalism.'" (pp. 181-182)*

The trend is the same all over the world—as Jeremy Rifkin showed very well.[4] The major political problem accompanying this change is that, if the agrarian and the industrial sectors cannot provide more than 20–30% employment at the most (along with 30% in the services sector), what can be done with the rest of the population, particularly with those who are not qualified for other types of jobs? That is the very difficult question, which confronts the politicians all over the world.

This change in the production tool contained in the advancement toward the knowledge society leads to fundamental changes in the nature of power, trade, economy, money, and *management.* But with it also comes mutations in the concepts of patents, work, justice, sustainability, ecologic durability, education, and culture—that is, in society itself.

Finalities themselves are changing, evolving toward *something else*. An important trend of centring again toward human is developing becoming apparent at all levels. A centring, however, which could easily become perverted by means of sophisticated manipulation, as I shall also show.

To explain the nature of the transition from the industrial society to the knowledge society, let me first define a few terms.

1. ***Data*** are pieces of raw information, as they arrive in our mailbox in the morning, or on the Internet. The problem with the data we typically receive is that they are too many (overabundant), and they are not sorted.
2. ***Information*** is sorted data. The sorting can be done mechanically—for example, by Google, postal employees, or your secretary (if you are fortunate enough to have one).
3. ***Knowledge*** is data that has been creatively sorted and, by careful reflection, given value or a set of values. The reflection is carried out in the human brain and cannot be mechanised and leads to action: I choose this, reject the other Google entry. *Knowledge always leads to action.*
4. ***Wisdom*** is the ability to make decisions with maximum concern for the common good, including that of future generations, and social cohesion.

Using these terms, I have summarised the transition as shown in **Table 1**.

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## 1. The positive scenario of this knowledge society

Our economy is radically changing. Peter Drucker is right—we no longer are 100% in the capitalist and industrial logic. Human beings, referred to in the new management circles as "human capital," are becoming important again, at least in the positive scenario. The machine becomes secondary and is put into the service of humans. We see a possible rising again of humanism in the heart of business.

Is it not incredible news for industrial ears? And look at the new strategic approach of business. It refuses warlike strategies and chooses instead to employ new "win-win" strategies. And yesterday's rivals start sharing the knowledge in networks and in "communities of practice." In doing so, they shift away from the warlike values of patriarchy. The whole relationship to violence (patriarchal) and exclusion is completely reversed.

And we enter another world.
But before considering the details of this new vision of economy, let's look at a concrete example of a business that functions in this new vision of the knowledge society.

### 1.1. Definition of what "economy" is.

"Economy," in its present form, was invented to establish *management* standards for the new power emerging form the industrial society—*capital technology and private property*.

In the new knowledge society, the power is displaced, and trade is redefined in an exchange system, which works in a different way. Thus, we likely are moving toward a new approach to economics, which will be transdisciplinary, more open to qualitative analysis and to constant dialogue with the civil society. This new economic logic might be inclusive and might have to respect the environment absolutely.
Thus, one should not oppose or criticize industrial economics, because it is still valid and working.
But rather one should urgently start writing new chapters on the knowledge economy, and on intangibles.

*EXAMPLE : ASKO—Management of the website of the European Commission.*

Consider a company called ASKO, which was recently created with very little initial money. It was performing very well in the construction and management of Internet websites for large

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businesses and institutions when, a few years ago, it obtained a managing contract from the European Commission. When it received the contract, the value of its stock shot up 75%.

The contract specified that each day all translations of all texts produced by the European Commission must be placed on the Web every day in all official languages of the Union and that the placement must be performed within 48 hours of production of the text and with an impeccable presentation,.

The "factory" in this case is a set of computers and intellectuals who have one or two university diplomas and speak three or four languages fluently. The role of financial capital and technology is 20% at the most. The remainder is the competent human beings (body, minds & souls), who produces knowledge from knowledge.

The director of the company was aware that his function is not one of "conquest, command, and control." It was simply not possible to control the translators of Greek, Finnish, Slovenian, Hungarian, etc. Instead, the director has six basic functions:

1. *Care for the production tool: his precious personnel...*
   The director must take care of the intellectuals who do the work and who are more competent than he is in their respective spheres—namely, the languages that they are translating. They must enjoy their work environment and want to keep working for the firm. In brief, he must motivate them to return the next morning with their production tool, their intelligence.

2. *Control the work quality.*
   He must control work quality. But how? He is incapable of knowing all languages. To accomplish the task, he put his team members in touch with a *network of people outside his organization* who have written speeches, are responsible for official translating systems, and/or are ambassadors or associated with political parties, trade unions, media etc. By doing so for each translator (and each language), he created a new system of quality control that manages itself by means of linguistic networks of "consumers". All of the Greeks inside the Greek network, for example, want the Greek text to be perfect—because it is dangerous for a political debate to be based on inaccurate text.

3. Make sure that good communication exists within the business and with the outside—that is, with the other translators of other languages.
   If there is a problem with one language, it is very possible that some, and perhaps all other languages, have the same problem. It is absolutely indispensable, therefore, that the politic of translation be harmonious and that each translator be in good standing with the corresponding Commission cabinet members and with those producing the documents.

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4. *Watch over the continuous formation*
   He must provide them with possibilities for continued education—meetings, trips, contacts, etc.

5. *Watch over the non-material value of the business.*
   The quality of the surroundings, the staff relations, the social environment of the business must be good.

6. *Attend to the career plan of each person*.
   His work in the business is part of a personal career plan …within the business itself… and not somewhere else.

This type of management represents a complete departure from the norm… but the story is not finished. The director of ASKO was offered millions of euros to sell his business. He accepted. The next day, the new director arrived and began functioning along the classic model of industrial management of "command and control"—barking orders. Two days later, part of the staff resigned. One week later, the Commission contract was suspended and the stock crashed!

Under pressure to fix the problem, the new director rehired the previous director who accepted to come back, but only with higher pay! The contract with the Commission was resumed, and the stock price rose again.

**Conclusion:**
This is an excellent example of the transition from the industrial society management to the knowledge society one. It illustrates that one cannot act like an "industrial" business executive in a knowledge business. Those who ignore such advice and do not understand the change must beware! This seems to me the clearest example of management change in the knowledge society.

We will now briefly comment our Table 1. Many concrete differences between the industrial society and the knowledge society are obvious, but let's examine them in greater detail. Specifically, let's look at the differences with respect to the following subjects.

## 1.2. A New Definition of economy

Our hypothesis is that the very definition of economy is changing. We are shifting from an *economic science, which was in charge of the management of the ownership of financial capital and technology at the service of the shareholders only.*
And we are shifting full speed towards a new *human centred discipline (science?) which is managing the creative process of the human persons of this new type of companies*. And this management is not anymore only at the service of the shareholders. It is broadly at the service of the stakeholders: clients, providers, but also the community at large and a sustainable world!

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The shift is important. Unhappily very few economists are aware of this change[5].

### .3. New Creation of economic value

The heart of the economic engine of a society is the way it creates value.
In the industrial society, man does not need Nature. He builds objects in the factory from raw materials. From a block of steel, he builds an automobile. *Value production consists in adding value to the object,* or in other words producing "added value." The great political debates of the 20th century were about deciding who the added value belonged to. The left held that it belonged to the worker who, otherwise, "would become estranged of the fruit of his work," whereas the right asserted that this added value should go to the entrepreneur.
In the knowledge society, one produces value *by applying knowledge to knowledge.* And the value produced is knowledge, no longer value added to an object. It is, therefore, "*added, co-created value."* And it is not possible to alienate workers from the fruit of their work, since knowledge remains in the brains and in the mind of the creators of this same knowledge. Indeed, *the human brain becomes the new tool of production.* Moreover, knowledge becomes *the* resource, so that it allows the worker to acquire all the goods that he or she needs.
The challenge is to produce new knowledge by communicating and filtering, intelligently and creatively, data and information to produce knowledge. It is true that computers can facilitate this process, but *the human individual contribution is central and indispensable*. As much as man could be replaced by machine in the industrial society, here he becomes again absolutely indispensable. This transformation is so rapid and fundamental that it is difficult to grasp.

It is possible, however, to also envision using those new technologies to manipulate and domesticate the human brain—to begin with the feeblest and the poorest. This is the negative scenario that is developing also. We have to have no illusions.

### 1.4. New tool of production: the human person: mind body & soul

The creation process is very complex. But most observers now agree that humans use their bodies, their minds and their souls, to create. An artist will tell you: "I have put al my soul in this creation !"
Now it is clear that with this new tool of production, we are changing landscape. We are shifting from the machine and factory towards the human person.
As Marx said if we are this shifting tool of production, we are also shifting "Weltanschauung", vision of the world and paradigm.
It is this new paradigm we are trying to explore with our readers...

### 1.5. New Management:

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This changes naturally the whole management strategy. To manage a machine or a factory is one type of job. But enable human persons to be and remain creative is a completely different job. Progressively we see some managers becoming aware of this fundamental change.

- One element is to ***allow errors and cover them.*** It is rather clear, that if you are trying new ideas you will make errors. This is unavoidable. If you as a member of the personnel, are criticized by your manager for this error, you will not dear to create anymore. If a manager wants to enable creativity he *has to cover this team's errors completely.*
- The second very new element is that ***the management must respect the body mind and souls of his personnel.*** Because in real creation the body, mind and souls are involved. This is really new. And how to do?

### 1.6. New CEO's function :

In order to respect the souls and the personalities of their personnel, the managers discover ***that they have to learn to respect their own souls first.*** And thus go into internal or spiritual growth. I have seen some managers who are going along this completely new path. This is also completely new. But it is very interesting.
Now, let us go back to the example of ASKO. This new CEO jealously cares for his new production tool—the human persons working with him. Everything depends on the human persons, who are the only ones capable of applying knowledge to knowledge in order to create new knowledge.
The new CEO must also increase his staff's creativity by introducing them to the "networks of excellence" and the "communities of practice" where knowledge is exchanged to create new knowledge. Thus, he helps the sharing of the network knowledge.
He can also help networks develop an auto-control of the production quality of his staff—as in the above ASKO example, the head of a translating venture who involves all of the concerned users by creating a users-network around his staff.

This new function is certainly not easier, but it is less violent and less patriarchal. There is still competition, but also collaboration in networks. Some writers are beginning to speak of "coopetition."

### 1.7. New Trade as sharing

In the knowledge society, if I give information to someone else, I do not lose it. My reward for doing so does not necessarily take the form of money, but the return of the information that comes back to me enriched with the creativity of the person to whom I gave it. It might well provide me with things that I did not know, thereby enriching me. That is why new businessmen insist so much on the sharing inside of networks.

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Thus, in the knowledge society there is a radical departure regarding the basis itself of the modern concept of trade. It is no longer a situation where I cannot, by definition, ever "have the butter and its money" but only lose what I exchange.
In adopting this new concept of trade, we are returning to a logic of debt, exchange, and gifting as in the Middle Ages. This cannot be without consequence on the role of money in the world, because in the knowledge society, money no longer occupies the centre of the transaction. Transactions can occur without money.
This could result in a new definition of the role of money in tomorrow's society. We could go towards an alternative money systems, along the lines of some new experiments[6].
The more we progress in the description of the knowledge society, the more we shall see that it is built on exchange and gifting. Thus, it potentially is a more humane society.

### 1.8. New Measurements: intangible assets.

Knowledge is intangible, non material and qualitative. So it is difficult to measure it, to put numbers on it. How to proceed? We are in uncharted waters..
So we observe that the Stock Markets have progressively adopted a new concept[7]: ***the intangible assets.*** What are those new intangible assets?

Verna ALLEE is also the first author in the world to have graphically described the intangibles in her book, *The Future of Knowledge.* She shows that a classical industrial company can be presented with a rather classical map, meanwhile if this new type of company has a lot of intangible assets it appears clearly on the map: a lot of new links with consumers, with producers, with other users, with the environment actions, with the neighbourhood, with the social activists, etc. are appearing and enriching the map. Verna gives us the first "radiography" of the intangible assets of a company. This is really new.

No let us go in detail on the content of those intangible assets:

1. *Assets linked to the internal structure of the business:*
   - Research and development
   - Internal structures of the business
   - The strategic plan of the business
   - The internal communication inside the company
   - The relationship with the staff and the response of the latter
   - How the business manages conflicts
   - The quality of internal management
   - The know-how of the business and its implicit knowledge
   - The structure of the business, pyramid? or network?
   - The balance of its strategy ("balanced scorecards", for instance)

2. *Assets linked to individual competencies:*
   - Diplomas, education, experience of the personal and staff

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- The implicit know-how of each staff member and worker
- How the business capitalises on the implicit knowledge of its members (see Nonaka[8])

3. *Assets linked to the business external structure:*
   - The reputation, the public trust in the business
   - The trust in the product (Iliouchine or Airbus?)
   - The brand (for example, Coca Cola)
   - Relationship with suppliers and consumers
   - Relations with civil society
   - The ***quality of the "value networks"*** to which the business participates

*4. Assets linked to a sustainable world and Common Good*

As a matter of fact, those last items linked to a Sustainable future are becoming increasingly ***more and more important year after year.*** They could become dominant in a few years.

- SUSTAINABILTY: Is the company really working towards a sustainable world?

-SOCIAL INCLUSION: Is the company really efficiently working towards social inclusion in the neighbourhood?

We find ourselves immediately in an incredible situation—the stock exchange is modifying in depth how it quotes businesses. Before, brokers were taking into account what is called in jargon "business *tangible* assets"—their bank holdings, their debts, their stock value, their real estate interests. In brief, ***businesses were measured on their financial assets, and it gave a past-oriented image***, because it was like scanning the past and the present of the enterprise.
For the last few years, however, stock brokers have started to scrutinise the "***intangible assets***" of a business. Why? Because they are more and more conscious that we are shifting to the knowledge society. And those new assets are giving a ***picture of the evolution of this company in the future!*** This is extremely precious and one of the reasons of the importance of those new assets.

This concerns not only the new knowledge businesses; it affects *all* businesses.
In brief, the stock market is becoming more and more a strong vector of change. It seems to be pushing more and more businesses toward this new "intangible" logic and the knowledge society. How does this all function? The new measuring tools are still at their outset and, thus, many brokers confess that they use their intuition to measure the intangible assets. But what are these intangible assets? A partial list is as follows:

*An example of the importance of intangible assets: Coca Cola.*

A recent series of minor crises for the Coca-Cola Company illustrates this matter. The crises occurred most notably in Belgium around 2001, where a few children became sick after drinking cans of Coca-Cola. Coca-Cola managed this crisis *as if it were a crisis of a product. They did not*

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*realise that Coca-cola is* only 10% of brown water with sugar and *90% intangible assets.* So they recalled millions of cans from the Belgian market only to turn around and *send them to the African market*, where they produced no harm.

When the transfer was discovered by the newspapers, it produced a scandal, naturally. Materially, this might be considered good "management" because it spared much money and did not appear to have caused any problem in Africa. But, an intangible image is not managed as a material product, and the CEO did not understand this.

For many, the Coca-Cola brand represents a way to participate for a few moments in the "American dream"—a worldwide symbol of liberty, equality of opportunities, ability to become prosperous no matter one's race, sex, culture, or religion. There is a high level of ethics and hope in this brand. It is a very strong and mobilizing dream, which still fascinates millions of people. But those who buy the American dream of equality and justice cannot accept a cynical behaviour that gives the impression of scoffing at the dignity of another race on earth, even if it were not the case.

To manage an intangible image, one must take into account a content, a meaning. For example, Coca-Cola could have invested in a free aid to poor schools in Belgium and, thus, give back to the business a positive image tied to the values of the brand—social promotion, equality of cultures, equality of chances.

This example shows us that, even in businesses that *a priori* appear distant from knowledge production, intangible assets are increasingly important.

The consequence was that Coca-Cola stock lost 40% of its value on the world market in a few days, and forced its CEO to resign. Thereafter, when a new CEO was chosen, the stock bounced back. The sanctions against the top management have been terrible. Ten years ago, the outcome might have been different.

This example shows clearly that this new knowledge society logic is also touching deeply traditional "industrial" sectors. It is really permeating slowly every sector of our world economy.

### 1.9. New win-win strategies

We are accustomed to hear in business management circles market strategies explained with war-like concepts like "killing your concurrent" in order to "appropriate his market shares". This has become "normal" in our daily business lives.
It is not anymore in the knowledge society. Because when we have to produce knowledge the ***strategy changes completely.*** Humans cannot create alone. They need networks of similar people

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who are confronted with similar challenges. The environment should be dynamic, and certainly not a win-loose atmosphere. So the shift towards a win-win strategy is unavoidable.
Those new strategies are much more human. They suppose and represent a higher level of consciousness.

In 1996 some authors began to speak of "coopetition"[9], which combines "cooperation" and "competition". Elisabeth Sathouris, in a publication called *Earthdance*[10], compares businesses with living organisms. And she observes that these *organisms take an enormous leap in evolution* when they move from *competition to collaboration*. In a mature living system, each party, entity or individual pursues its own interest in a manner that does not compromise the health of the group. Thus, there is collaboration that hurts neither the individual's personal interests nor the network's interest.

Verna Allee[11], in her book explains how this collaboration functions in the midst of a value network.
*"The first principle of a healthy network is that individual participants pursue negotiated self-interest with consideration of the health of the other levels of the system. The value network perspective and approach suggested in this book supports and encourages negotiated self-interest between all the participants, with careful consideration for the next level of holarchy—that of the value network itself. People will want others to succeed when they appreciate that their individual success is directly linked to the health and vitality of the entire network. In a successful network, everybody supports the success of others as well as themselves."*

And she continues, regarding the absolute necessity of fairness in the network.

*"Every participant in a value network needs to contribute and receive tangible and intangible value in a way that sustains both their own success and that of the value network as a whole…. When people feel they are being fairly rewarded for the value they contribute, they become willing to offer even more value… It is essential that everyone in the network operate with an ethic of giving and receiving value in a way that build good relationship and trust." (p. 238.)*

Thus, we are entering a new logic which is no longer warlike or violent, but whose outlines are still unknown. We shall consider them later.

*Example IBM & SAP: enemies working together in a win-win relation...*

One IBM responsible for Europe told me recently that for knowledge creation process, they are more and more collaborating with their biggest concurrent SAP. *"It is less expensive to create together than to fight against each other".* This is win win logic

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**1.10. New Qualitative growth: allowing a sustainable world !!**

When you are on the web, you are not at all interested by quantity. Quantity is *not* the issue anymore. So it is easy to understand that in this knowledge society, quantitative growth is interesting nobody. Your company is expected to provide ***a new level in the quality of knowledge*** which is not yet existing on the market.

*Example: Apple*

Apple's strength on the knowledge market is that they produce new objects which are of better ***quality:*** more beautiful, more human friendly and easy to handle, quicker. Because they create objects they are still industrial/capitalist, but those objects are coming with new creative ideas, like the I-pod, I-pad, I-phone, etc. ***This is qualitative growth of the knowledge content included into the object*** ... which gives them, by the way, also a *huge quantitative amount of cash!* Apple is an excellent example of a company which is one foot in the classical industrial production and the other foot in the knowledge society.

*Excellent news: sustainability is possible in the knowledge society*

Let us remember that the cornerstone of the industrial capitalism is quantitative growth. We understand more and more clearly that this is *the deep reason why the industrial society in its essence unsustainable*, because it is not possible to grow infinitely in a finite environment: our earth.
Now if we understand that this knowledge society is really changing cornerstone *and going to a new quantitative type of growth and uses thus a new cornerstone*, this is really excellent news. Because with qualitative growth it is really possible to go towards a sustainable world. *If the world economy would be shifting towards qualitative growth it becomes possible to imagine a sustainable future for Humanity on earth, otherwise it is not possible.*
This is excellent news. But are we aware of it ?

*Example: Interface's new approach to sustainable carpets*

A few years ago, I had the opportunity and the pleasure to meet Ray C. Anderson, Chairman and CEO of Interface, a carpet factory in the U.S. He told me the following story at a meeting at the Esalen Institute in California.

One day, a customer abruptly addressed him, as director, and accused him of being a polluter and accelerating the climatic change on earth. Ray started to think. This customer was right, and it was inexcusable that the hundreds factories of his company were dumping tons of toxic products in nature (rivers and atmosphere). In fact, carpet manufacturing uses a great deal of acids and other chemicals to treat tropical fibres, their raw material.

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He decided to completely change the entire production method of his carpets in all the factories of the group. It represented a huge investment and the business went into debt. Thankfully, the board of directors supported his audacious strategic choice, without too many problems. Within a few years, even though the financial situation of the group was still fragile, it became number one in its industry, and its stock rose to an historical high. Why? How? Because it was the first carpet on the market the production of which was designed to both respect the environment and sell at a competitive price. Thus, buyers would choose Interface, since it was the same price as other carpets the production of which polluted the environment.

The analysis of his situation, according to the knowledge economy, is simple. Interface's tangible assets were still very weak because its debt. But suddenly the value of its *intangible assets* increased so much that its shares became star on the New York Stock Exchange. Thus, this was the very interesting case of an "industrial" business, which becomes the king of the market even though it is deeply in debt. We are no longer in the industrial logic. Due to their intangible value, the shares increased enormously, even though the tangible assets were still weak or even negative. The "intangible assets" made the whole difference. As seen, the intangible value is tied to the respect of the environment. *The environmental dimension really becomes a preponderant intangible value.* Ray Anderson'[12] book gives more information on this story.

### 1.11. Patenting? or … Open Source

The actual "industrial" system of competition is based on the secret of manufacture. If somebody has the technology that the competitor does not know, the one who has the technology earns part of the market. Similarly if, during a war, one of the enemies owns a new weapon unknown to the adversary (whether gun powder or atomic bomb), he will have an advantage in battle. Is this not, in fact, one of the keys of the history of Western conquests in the world?

However, as Harlan Cleveland[13], statesman and member of the intellectual elite of the U.S., observed already in 1985, the secret tends to disappear in the knowledge society because "information always leaks." This means that secrecy will become less and less possible in the years ahead. As he wrote,

*"Information is porous, transparent. It has an inherent tendency to leak. The more it leaks, the more we have, and the more of us have it. The straitjackets of government 'classification,' trade secrecy, intellectual propriety rights, and confidentiality of all kinds fit very loosely on this restless resource."*

The consequence is that *"hierarchies based on exclusive ownership of knowledge and intellectual propriety are crumbling, quietly but rapidly."* Harlan Cleveland and the World Academy of Art and Science, of which he was the president for years, announced the twilight of patents as long ago as 1990.

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In addition, public opinion appropriates to itself faster and faster that which just yesterday belonged to the world of "secrets." The Internet has contributed greatly here, the most striking example being that of the Apple iPod® and the direct uploading of music through the Internet—with of all the resulting ownership fights. Note that Apple itself is not an "Open Source" company. IBM for example is more going towards Open Source than "Microsoft" and Apple. Another example is the battle of the Third World governments (Brazil, India...) for the *generic medicines* that the pharmaceutical companies are quietly in the process of losing step by step.

In my opinion this trend toward Open Source is unstoppable, precisely because we are changing logic, and are not any more into the "classical industrial frame".
It is also evident that we will have to invent new ways to honour artists and give them a reward for their very important contribution to our societies. Not all those new ways are yet invented. But I am rather certain that we will not go back to the industrial logic anymore...

### 1.12. New Business Structure from Pyramid to flat networks...

Our current structures are almost all pyramidal, whether we realise it or not. We do not even pay attention to them anymore, they are so "normal." We have been in patriarchal structures for thousands of years now and are not even conscious, anymore, that we are in them. And we only become aware of the fact when the need arises to create a new organization. Then we notice how many natural tendencies we still have toward the pyramid—at least men (in their great majority) do. But within the last few years, pyramidal structures have begun to show themselves as problematic—as much in business as in politics, international organizations, religions, trade-unions, NGOs, etc.
The knowledge economy *cannot function in pyramids* because knowledge cannot circulate freely inside a pyramid. It requires flat network structures wherein information can move in all directions, because the new mechanisms of value creation require it. To produce new knowledge, one needs creative humans. And for them to remain creative, they need to be in a network where they can exchange knowledge and where interactions can take place from all sides and all directions. Through interaction, knowledge progresses and develops. There is no other way. We are at the heart of the mechanism of creation of value. ***Knowledge is like love. The more it is exchanged, the more it is received.***

The only really prosperous businesses that survived the financial shocks of the last few years are those that were transformed from pyramids to networks. It is for this reason that we are leaving the pyramidal society… silently but very quickly. Most businesses *did not understand the need to pass from the industrial to the knowledge society*. They simply kept their industrial vision, their pyramidal structure, and their traditional approach to profit, to customers, and to society. Only their products were becoming more and more non-material. *They all collapsed* in the "dot-com crash."
A small minority realised the need to change structure (from pyramid to network) and to transform their world vision. Thus, they included in their intangible network their customers,

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their suppliers, the public, the environment, and their society. They transformed themselves fundamentally and *survived the dot-com crash without problems*. That is a cruel fact. Her examples showed the danger of choosing the wrong kind of management.

### 1.13. New crucial importance of culture

In the present industrial and capitalist society, culture is, unfortunately, often considered by political groups like the "cherry on the cake," a luxury rather than a central value.

In the future, this central place might be offered to culture in a society dedicated to favour creativity at all costs. Why? Because, if you cut people off from their culture, you eventually kill the roots of their creativity, and the creativity will slowly wilt in conformity. This would negate the benefits of the knowledge society.

Thus, we are also possibly on the verge of a repositioning of culture as it comes back to the heart of the knowledge society. In this new vision, *culture becomes one of the main ingredients of the production tool*. Once again, this is difficult to believe, as it is so different from the actual marginalisation of culture, and its submission to strictly commercial criteria.

Richard Florida[14] in his important book shows a completely new phenomenon in US and Europe. Knowledge companies are looking for culture-rich cities to establish new centers. Because their creative employees are looking for a rich cultural environment, in order to foster their own creativity and the creativity of their children. There is thus a new requirement for all cities to have an excellent school system, excellent and tolerant cultural life, and an open-minded and tolerant mentality.

In a nutshell the new competition between cities in the post indsutrial world *happens at the level of culture.* This is completely new. It changes completely the culture policies around the world.

### 1.14. Women are twice more performant in this new knowledge society.

Everyone actively involved in this knowledge society will agree: women are twice more efficient in this more soft and feminine strategies, set of values and principles.

Everywhere I had the same experience. The more I explain this new logic, the more I see the women's eyes opening and deeply understanding my presentation, meanwhile I see only a minority of men understanding and following this new logic.

Why? It seem to me rather simple to understand. The underlying values of this new society are much more oriented towards *life* and Humanity's survival and towards values of care and respect, towards fostering of creativity and respect for bodies minds and souls.

But most women are living those values in their children's education everyday. One could say that the family is a "community of practice" as we have defined it. Or we could also say that the family is the first basic network of solidarity and love, without which societies would collapse immediately.

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So whenever I describe this new environment, I see and I feel that this is deeply received by most women, because it corresponds to what they are trying to achieve in their daily lives anyhow.

Meanwhile for us men, it take a little time to depart from our intuitive command control and conquer (CCC), pyramidal approach. And most of us men are not satisfied, because nobody has explained us clearly anything about this change of vision of the world. There is almost no debate about those topics. Nobody told us that we are since 5000 years in a patriarchal society. Nobody speaks about this change of tool of production, which implies a drastic change of values. Everyone remains silent, because nobody in our society has a mandate to speak about those issues. Men are accustomed to be dominant in society since a long time, and this profound change seems to come from below and not to be controllable...

There is thus a deep malaise among most men, because they feel intuitively that they will have to go through a deconstruction phase of their "normal" behaviour. They will have to learn and to listen to women in order to catch up with those new values and those new strategies...

Meanwhile women are like confirmed in what they always were intuitively feeling and enacting in their daily lives. And they go forward...if they are given the right conditions to work and innovate.

In the Business, the few CEO's who dared to give real power to women in charge of HR for example, have been extremely successful. Simply because those key-women have been able to create a "spirit" of respect and care, enabling authentic and sincere enhancement of human creativity, and quality of life. They have been able to develop the "intellectual capital", but also the bodies and souls capital of their businesses.

*Example CEO of Stanford University*

I had the occasion to meet the new CEO of one Faculty in Stanford University. He told me that the most daring decision he took the day he was appointed, was to install a rule of majority (52%) of women in his Board. Because he explained to me that women begin really to intervene when they see that they are in a majority. And when they do, the first thing they do is to modify completely the agenda. With this new type of Board the conversation has completely changed. And a lot of unthinkable innovations have been introduced very successfully.

After 4 years I was outvoted. My follower maintained all our innovations...but surpressed the 52%....

### 1.15. Social Inclusion: Knowledge works like human love.

One of the major characteristics of knowledge production is that it enriches itself through information sharing. ***Knowledge works like human love.*** The more one gives, the more one receives. And what is given is not lost. The more that knowledge includes different people in the sharing, the more the network becomes diverse and inclusive, and the more it enriches itself. Consequently, *we really find ourselves in front of a completely new inclusive logic*. Nevertheless,

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we are still so strongly impregnated by our dominant industrial creed of exclusive economy that we have great difficulty to see the new inclusive logic appear.

Fortunately, I have excellent news on this front—it is possible to orient this new knowledge society toward an inclusive logic. One may consider that tomorrow's business leader might want to hire non-qualified individuals on his staff in order to increase the potential for creativity and for implicit knowledge in his business.

*Example of social inclusion: "Men's Wearhouse"*

In a meeting of the Club of Rome in Brussels sometime back, Mr. Rinaldo Brutoco, president of the World Business Academy, told the story of an important U.S. men's suit factory called "Men's Wearhouse", of which he is member of the board.

The philosophy of this factory is rather exceptional and ahead of its time. It values human resources, creativity, and staff responsibility at the maximum, and gives maximum employment stability, which results in a lowering of capital revenues to a stable level of 3%. After all, this is an intelligent choice because the reason for me to choose between two men stores will be how I am greeted and helped in my selection of clothes.

The New York Stock Exchange initially was cool toward the stock as if it were without value. Its yield (3%) was considered unacceptable. But after a few years, it became obvious that it was one of the only viable businesses in the sector which, moreover, produced a stable income—whereas, most other concurring stores were going through a serious crisis or going bankrupt, at great loss for the shareholders. The retirement funds were the first to discover the stock, and heavily invested in it. The stock speculators followed them.
Within a few years, this new "social" concept of business was accepted at the New York Stock Exchange. This new vision was not only profitable, but one of the only exits out of the full blown credibility and identity crisis which causes havoc among American business[15].

*Another example: The Colgate Staff... and the cleaning Lady*
Similarly, in the 1950s, the whole of the Colgate board was in deep reflection because they had problems with a pink soap they were selling as toothpaste. And after many hours of discussion, they were going nowhere, unable to decide what to do?
Suddenly, the Spanish-speaking cleaning lady, who was finishing cleaning the meeting room, asked if she could say a word. The board chairman gave her the floor for one minute, which she took to ask, "*Why are you not putting the soap in a tube, people will prefer this."* Doing so became the path to world success for Colgate.
The story does not tell if they even thought to reward this Lady for this huge gift to the company !
The conclusion is clearly indicating that people with Ph.D.'s are not always the most creative ones. Sometimes they need other people with a lot of implicit knowledge that they can use and spread in the network.

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And there is a second reason for a CEO to be inclusive. We have seen that a socially inclusive policy is fostering creativity inside his team. But there is a second powerful incentive: ***intangible assets.*** If a CEO shows a new coherent socially inclusive policy, he will increase the intangible assets of his company and thus be rewarded by a drastic increase of stock value of his company's shares !!

This is the new logic coming more and more to the front.

### 1.16. Transparency:

As Harlan Cleveland warned us 25 years ago, information always leaks. And it is not possible to stop it. In a world of objects it has been possible to install a patenting system. We have seen that in the knowledge society it is probably not anymore possible.

But this new logic has also a second very important consequence: transparency. People know more and more about the so called secrets. And they know more quickly than before.

Companies, Trade Unions, Churches, International organisations are all confronted by a rising degree of transparency. Transparency obliges you not to sheet anymore, and to be coherent between what you say and what you do.

And if you do not observe this ethical rule of coherence, you reputation, your "brand", your "intangible assets" will be negative, which today is extremely dangerous for your company.

This is true for Business but also in politics. Political transparency is increasing and as a politician you better say immediately the truth, otherwise you could loose everything...

### 1.17. Ethics

This leads us to the last item of table 1.: ethics. Ethics has been considered as a non issue in the industrial society because we were supposed to be only rational, make rational decisions about rational items, in a context of rationalist scientific approach of reality. When one is able to reach The Truth through the rational scientific method, like Descartes told us to do, there is no space for an ethical reflection whatsoever.

In simplifying a little we could says that ethics has not been considered as an important issue in the techno-scientific approach of reality in the industrial society. We had not to debate about ethics because we were approaching the very Truth through the rational techno-scientific approach.

Now in this "knowledge society" one is working with knowledge which is an intangible thing like for example TED (Technology, Entertainment (i.e. radio TV, literature, theatre, music, education, etc) and Design.)[16]. Ok but knowledge has always a content and a meaning. Thus we can conclude that knowledge contains always ethics.

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The industrial modern society has thrown ethics from the door. Now it is coming back through the window. In other words it will be impossible to avoid ethics in this new society. People will definitely try to do so, but they will not succeed in the long term.
Ethical debates will be more and more important in the coming years. They will be unavoidable.

**Table 1: The transition from industrial society to the knowledge society**

| | **INDUSTRIAL SOCIETY** | **KNOWLEDGE SOCIETY** | |
|---|---|---|---|
| | | POSITIVE SCENARIO | NEGATIVE SCENARIO |
| 0.DEFINITION OF ECONOMY | Manages the ownership of capital and technology *Shareholders* approach | Manages Human capital and creativity for the common good *Stakeholders* approach | Manages humans to make them subservient to machines *Shareholders* approach |
| 1.CREATION OF ECONOMIC VALUE | Value is added to the object (from steel to automobile). | Knowledge is applied to knowledge in order to create new *Knowl.* | Human mind is manipulated and made submissive |
| 2.TOOL OF PRODUCTION | 1.Financial Capital + 2.new technology + 3.patents<br>Humans = cost | "Human persons (body, mind, & soul), in networks = "human capital" = N°1 | Subtle manipulation of human brain or possible replacement by computers |
| 3.MANAGEMENT | Centred on machines and their logic.<br>Humans must adapt to machines (Taylorism) | Centred on humans<br>Machines must adapt to Humans (Apple) | Manipulation of human mind ...or replacing Humans by computers |
| '4. ROLE OF CEO | Commands Controls and conquers (CCC) | Enables human creativity | Manipulates human brain without problems |
| 5. TRADE & COMPETITION or COOPERATION | "Free Trade" is the only way forward.<br>Competition is the rule | Knowledge cannot be traded !"Free sharing" thus Collaboration... | Free Trade & Monopolization of knowledge. |
| 6. VALUE MEASUREMENTS | *Quantitative* measures and *tangible* assets only... | *Qualitative* measures with ***intangible assets*** | Reduction of the qualitative to quantitative... |
| 7. STRATEGY | Win-loose, and CCC | ***Win-Win approach*** | Win Loose. |
| 8. GROWTH & PROGRESS | Quantitative growth = unsustainable in a finite world | ***Qualitative growth is Sustainable !!*** | *Quantitative remains the norm.* Not sustainable |
| 9. PATENTING or OPEN SOURCE | Business + defence = based on secrecy and patents | Open source, no patents, free sharing of knowledge | Closed systems capable of controlling in subtle ways |
| 10. PYRAMIDS VS. NETWORKS | Industrial structures are pyramidal | Knowledge can only be created in networks | Tries to maintain pyramids of power |

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| | INDUSTRIAL SOCIETY | KNOWLEDGE SOCIETY | |
|---|---|---|---|
| | | POSITIVE SCENARIO | NEGATIVE SCENARIO |
| 11. NEW ROLE OF CULTURE | Culture has a peripheral role | ***Central role of culture = root of all creativity*** | Manipulation of the souls of cultures |
| 12. WOMEN | Peripheral role | Are more efficient in this new logic | Are manipulated |
| 13 SOCIAL INCLUSION | A burden imposed | ***Double competitive advantage*** | A burden. Manipulation is a right |
| 14.TRANSPARENCY | Not important. | Increasing+ unavoidable | No transparency |
| 15. ETHICS | Excluded | Unavoidable | Excluded |



## 2. The Negative scenario of the Knowledge society

We have examined the positive scenario of the knowledge society in detail. We also showed that there are important indices indicating that this scenario is silently emerging in the present-day world. But, there is yet another column in **Table 1**, above. The rightmost column of that table represents a negative scenario. In this second part, I will show how the scenario is already developing and is present worldwide.

This negative scenario is really very easy to understand. It starts from the idea that there is *no paradigm change*—that everything continues as before… "business as usual" in the world… that the world maintains, in businesses and in society, the vision and the behaviour of the industrial society and economy.

In short, the negative scenario arises from *the vision in which there is no transition toward the knowledge society.* The industrial society simply continues with new, more-powerful tools, many of them electronic tools, called Information and Communication Technology (ICT). Thus, industrial strategies hold their places as the most common strategies employed in the world. More capital and more technology, protected by patents, continue to be needed. The competitive nature of business is strongly reaffirmed as a necessity and no "futurists" talking about networks and win-win collaboration are listened to. New concepts, such as that of the knowledge society, are considered hazy, even dangerous, because they might endanger the structures of competition and industrial competitiveness. (And it is true that some network collaboration practices endanger the industrial strategies of competitivity.)

### 2.1. What do to about the environment? Almost nothing

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In the world as described above, it is neither necessary nor urgent to occupy oneself with concerns for the environment. First, since one's competitors don't worry about such concerns, doing so will result in a loss of advantage in comparison with them. Second, to care for sustainability is considered by "industrial" economists as a *cost* to be *subtracted from profit*. Thus, there is competition between the demands of competitiveness and those of environmental respect. The environment loses out in terms of investment. (In technical terms, this is called a "trade- off," and no one thinks in terms of a win-win scenario—only a win-lose scenario).

**2.2. What to do with humans? Two ways.**

The classical "industrial" approach will *tend to prioritise machine over man* as it has done for centuries. It also will try to do without humans. This is deeply ingrained in its logic, and it seems that there are two ways in which it will manifest.

1. *The first way is to replace humans with machines.*

Since a computer beat the world chess champion Gary Kasparov, many scientists believe that the computer will, one day, be able to replace the human brain in all its functions, even the most intimate ones. And they massively invest in more and more powerful and performing computers to be able, some day, to get rid of man. Thus, one could some day progressively reach a society without a human dimension. Like it or not, this seems to these scientists *rational, unavoidable, and perhaps most disturbingly, ethically acceptable.* This is the result of a "modern" vision in which the scientific and rational approach is, by itself, above ethics, since the use of reason and the scientific method is a direct and warranted way toward objective truth. From this point of view, it is perfectly logical and acceptable to replace humans with machines.

2. *The second way, in my opinion, is even more dangerous—that is, to manipulate the human brain.*

Indeed, by remaining in the industrial and rational paradigm, and as much as the human brain cannot be replaced by computers, the most "rational" way to employ it is to manipulate the human brain to produce the knowledge that we want as much, when and how, we want it.

**2.3. Engineering of the human brain?**

Let us now consider the second way to treat humans in this new technological "industrial" vision Humans are manipulated to continue to adapt themselves to the logic of the machines which remain preponderant. Here one talks of "engineering of the human brain."

Let us take an example that was called upon during the Brussels public meeting in the European Commission in 2004:

*"We are in 2035. The school principal summons the parents and tells them, 'Your child is having difficulties in our school. You are totally free; however, I suggest that you give him a small injection, at school expenses of course, of a mix of nanocomputers the size of a cell. We*

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*have observed that often the children increase their performance and become quieter. But, if you do not accept, and I repeat that you are totally free, I regret that the school no longer can assume the responsibility of your child's education."*

This is a possible scenario. Moreover, it indicates the second danger of the negative scenario—manipulation of human mind, beginning with the weak and defenceless.

Is this the direction in which we want to take our world civilization? Are we ready to subject our children or grandchildren to these types of "experimentations"? This certainly merits discussion.

Let us go to one of the highest world authority in astronomy—Sir Martin Rees[17], professor at the University of Cambridge. In 2003, he published a book that is a serious warning about the actual evolution of science and technology. He is much referred to by Jeremy Rifkin in the "European Dream" (p. 315). According to him, "*the odds are no better than fifty-fifty that our present civilization on Earth will survive until the end of the present century*." Rees warns against the construction of small nanorobots that replicate like viruses and that race out of control, devouring matter and turning the Earth' surface to a "gray goo"[18]. Rees worries also about similar threats posed by genetic engineering and computer technology—especially as technology in the high-tech field spreads rapidly.

According to Rees, it is urgent to organise a global discussion on scientific research. Many scientists reply that if the same warnings existed when man discovered the fire, we would have remained primitives. But Rees replies that the major difference is that the prior discoveries only had a limited and local impact, whereas the progress of the converging technologies may have a global and lasting impact.

So that Rifkin concludes (p.320):

*"The divergence in views on science and technology between Americans and Europeans is growing and is now coming to the fore in a myriad of public policy debates, threatening a schism as significant as the divide over our different sense of how best to pursue foreign policy and domestic security."*

It is time now to go to the European position represented by the European Commission. This leads us into another atmosphere, another vision of the world, another scientific and technologic paradigm.

## 2.4. Innovative and critical position of the European Commission[19]

One must acknowledge the European Commission and specifically Mr. Paraskevas Caracostas and his think tank on Scientific and Technological Foresight in the General Direction of Sciences, who initiated a high quality reflection on these crucial questions. They asked a group of experts to provide a report on the converging technologies. This intelligent and in-depth report[20] was published in September 2004 in Brussels. It includes the following items.

1. It clearly warns against any danger of manipulation of the human brain.
2. Involvement of citizens since the first day as a new strategy.

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3. Ethics is completely integrated inside the creative development process, and scientists shall be educated in ethics.
4. A new contract between society and science.

**Conclusion**

I hope the reader will have understood that we are shifting toward an new knowledge society. This represents a new vision of the world, a new economic and ethical logic.

But evidently there are two scenarios. One I call positive and one I call negative. But please be aware that the actors of this negative scenario are not conscious that their scenario happens to be the negative one. They are *not* aware of the industrial paradigm in which they are imprisoned.

Hence one of the most important topics is thus the ***vision***. This is the most crucial debate to come...

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[1] The famous "Forward Studies Unit" of the European Commission's president Jacques Delors, where I have worked almost 10 years, has written in 1993, a white book announcing the transition towards a new economic logic, leading towards a new type of society: *the knowledge society: "Growth, competitiveness, employment: the challenges and ways forward into the 21st century" White Paper*, Office for Official Publications of the European Communities, L 2985 Luxembourg. ISBN 92-826-700-7. But this very advanced document has been neglected by the European governments, in spring 2003, until an exceptional Portuguese Prime Minister called Guttierrez, convinced the other Head of State in March 2000, to sign for this new society...telling them this was a paradigm shift. They have signed but did not seem to have understood or accept this paradigm shift. Hence the difficulty.

[2] A recent report done for the European Council of Ministers shows that a minimum of 40% of the European Union economy already is in the non-material, in the knowledge society. This estimate might be very low—some believe it is the range of 60–70%. There we are. *"THE WORK FOUNDATION": The knowledge economy in Europe: a report prepared for the 2007 EU Spring Council."*

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[3] Peter Drucker quotes here Karl POLYANI (1886-1964) *The Great Transformation* (1944) as being the most cogent of the critics of capitalism.

[4] Rifkin Jeremy. *The end of work.* Tarcher Penguin 1995, 2004.

[5] See for example Arthur W. Brian. *The second economy* in "Mc Kinsey Quarterly" October 2010, pp 1-8.

[6] Like "LETS" (Local exchange trade systems), or "the Swiss "WIR" system for the Business. But Lufthansa "Miles and More" points represents also an alternative money system.

[7] This concept has been invented in Sweden by Karl Erik SVEIBY in 1986.

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[15] More information is available at http://menswearhouse.com/aboutus/our community/giving back.jsp

[16] There are TED conferences all around the world centred on new approaches in economy, design, and technology.. This is the first visibility of this new Knowledge society world Wide.

[17] Sir Martin REES:" *Our final century"* Random House 2003,UK, published in US with the title: *"Our Final Hour*", by Basic Books 2003

[18] Sir Martin REES: ibidem. P.132.

[19] For more details about the Commission's vision see in my latest book: "The Knowledge society" which is open source available on my site "marcluyckx.eu"

[20] Nano-Bio-Cogno-Socio-Anthro-Philo. High Level European Group Foresighting the New Technology Wave: Converging Technologies – Shaping the Future European Societies. Brussels, European Commission 2004. http://www.ntu.no/2020/final.

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