

# The New Way of Thinking and Acting in the World Knowledge Economy: how combining Efficiency and Social Welfare

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## **The New Way of Thinking and Acting in the World Knowledge Economy: how combining Efficiency and Social Welfare**

**Camille BAULANT<sup>12\*</sup>**

*59<sup>ème</sup> Congrès de l'A.I.E.L.F.*

*Croissance, population, protection sociale : faits et théories face aux enjeux*

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### **Abstract**

Over the last 20 years, the world economy has evolved at great speed. Globalization induces rising competition and the knowledge economy induces rising cooperation. Despite these two evolutions, different paradoxes seem more and more important in daily life. The gap between being potentially happy and the reality of happiness has never been as wide as today. In order to solve this problem, some authors recommend using “economic war” tools to increase their power on the world market (Baumard, 2012 ; Harbulot, 2014). On the contrary, others dream of a rising human development where everybody could increase the happiness in life (Morin, 2011, Attali, 2013). This paper proposes a new vision mixing cooperation and competition approaches in order to propose a new way of thinking and acting for the individuals and the organizations of a world knowledge economy. In the first part, the paper analyzes how recent world changes evolve to use a complexity theory in order to propose the qualitative inter-dependences which exist between the economic and social efficiency. In the second part, the paper demonstrates that the individual strategies of the agents created in order to increase happiness, could also induce long run collective strategies in order to increase the long run innovation for the society as a whole. In the third part, the paper proposes some short run action in order to reach a greater economic and social efficiency for all agents.

**Keywords:** Complexity, Happiness advantage, Knowledge labor division, Intermediary network, Share-holders

**JEL Classification Code:** F40, L14, L16

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Over the last 20 years, the world economy has evolved at great speed. Every good, capital asset, knowledge is mobile and induces rising competition (Porter, 1990; Aghion et al, 2005). The knowledge economy induces rising cooperation with the “Division of Cognitive Labor process” (DLC) which induces a specialization within knowledge (Brown and Duguid, 1991, Muldoon, 2013). In this process, agents need to cooperate with others in order to co-build new knowledge. Despite these two evolutions, different paradoxes seem more and more important in daily life. In effect, the increase of technological progress seems to have been accompanied by a decrease in happiness. Moreover, the gap between being potentially happy and the reality of happiness has never been as wide as today (Easterlin, 1974, Inglehart, & Baker, 2000, Senik, Flèche and Clark, 2012). The Attali working group on the “positive economy” remarks for example, that France is ranked 5<sup>th</sup> for her economic activity but only 22<sup>nd</sup> for her social and environment activity (Attali, 2013).

In order to solve this problem, most of the agents tend to follow linear solutions. Some of them recommend using “economic war” tools in order to increase their economic power on the world market (Baumard, 2012; D’Aveni, 2012, Harbulot, 2014). On the contrary, others dream of a rising human development where everybody could live in happiness (Morin, 2011, Attali, 2013). However, these binary answers could become dangerous because no interaction is proposed, between these two approaches. In the world knowledge economy, understanding and learning how one should think and act in a complex world is difficult. This is because the factors involved in the dynamic of individual and organizational development are often opposed: local or global approaches, long run or short run analyses, rational or emotional behaviors...

This paper proposes a new approach through mixing the cooperation and competition approaches in order to propose a new way of thinking and acting for the individuals and the organizations in a world knowledge economy. In such an economy, thinking and acting must be founded on a dynamic process based on co-building networks in order to increase economic and social efficiency. In the first part, this paper analyzes how the recent world changes evolve towards using a complexity theory (Morin, 1977; Le Moigne, 1990) for establishing the qualitative inter-dependences which exist between the economic and social performances. In the second part, the paper demonstrates the individual strategies of the agents in order to reach a state of rising happiness (Ben-Sahar, 2007 ; Achor, 2010) could induce long run efficient collective strategies for the organizations (Porter (1990, Aghion, 2005) in order to increase the innovation process in the whole society. In the last part, the paper proposes a short run action. In improving their degree of happiness, individuals could thus involve an efficient collective management of knowledge and information which is more and more required by the world knowledge economy where they live.

### **1. The Complexity Approaches are well adapted to the moving world**

The recent world changes involve a situation where we observe both competition behaviors and cooperation behaviors. The globalization entails a rising competition while the new Cognitive Labor Division involves a rising cooperation. The complexity approach is able to reflect the qualitative inter-dependences between order (organization) and complexity (innovation). Through a dynamic process, the

cognitive sciences analyze these interdependences across several time periods (long and short run) and several areas are considered (local and global).

### 1. Rising of globalization and knowledge economy requires the use of the complexity approach

When the “economic policy” started to become known, the classical theory (Smith, 1776; Ricardo, 1846) sought to separate economic relationships (founded on the “labor value theory”) from the social relationships (depended from the ‘fair price’ of Santa Thomas Aquinas) and the political relationships (developed by the Mercantilism theory). But Smith in his first book on the “theory of moral sentiments” (1750) and others economists as Hume (1759) or Mills (1948) wanted to understand the interrelations which exist between these three different types of relationships.

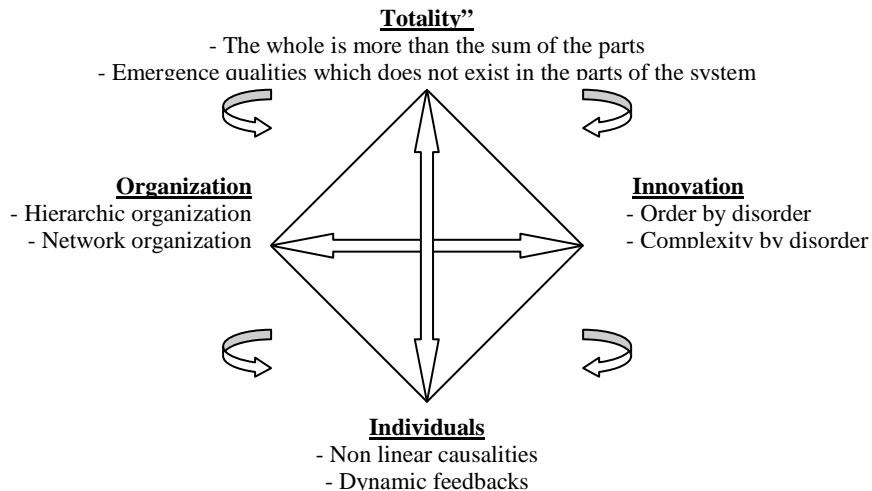
On this economic and social approach, the institutional approaches (Veblen, 1925; Polanyi, 1944) insist on the role of the institutions in order to stabilize the economic and social relationships. During the post-second war period (1945-1975), the role of the social institutions is given less study, except for the post-Keynesian economists, particularly the French School of Regulation (Aglietta, 1976; Boyer and Mistral, 1978). The use of the complexity approaches in economic analyses during the 80’s remains rare. However, E Morin (1974), and, A Koestler (1988) insist on the key role of the dynamic interactions between opposite factors. In these approaches, the interactions of agents are able to co-create some intermediary levels which stabilize the behaviors of the individuals in producing “regularities by disorder” and in producing “complexity by disorder” (Atlan, 1968).

With the globalization and the crisis of the quantitative system, we observe the renewal of the complexity theory (Le Moigne, 1990, Foray, 2000). Economists such as D Cohen (2013) or J Attali (2013) consider the rising necessity to study the conditions of the individuals’ well-being in order to propose a new kind of economic regime more founded on qualitative relationships. The complexity approaches interlink different analyses of society (such as psychology, sociology, economics, philosophy...) in order to explain the way of thinking and acting of individuals and society. These authors go on to emphasize the complex process of the Cognitive Division of Labor (CDL). Thus, the relationships between the individuals are seen to be more important than the knowledge that they create as individuals”. In this knowledge process, Brown and Duguid (1991) and Cohendet & al (2000) show how the new intermediary networks, called “communities of practice” must be flexible enough in order to help the individuals adapt their strategies to the changing world knowledge economy.

The complexity approach formalizes the dynamic interactions which exist between the agents, the organizations, and the environment which are co-built by a combination of all parts (**Figure 1**). In an economy which tends to become “inclusive”, it is important to analyze the contradictory relationships which exist between the degree of liberty of each individual and the degree of organization of the whole society. In this analysis, the agents have to stay “open” to the external environment in order to innovate and have to be “constraint” by the internal organization through the “path dependency”. The key factor of the complexity approach is to connect dynamically the competition and the cooperation relationships, relationships which are contradictory. On the one hand, the

cooperation relationships involve some increasing scale economies for all the agents. On the other hand, the authority relationships give a stable direction that agents must follow over a certain period of time.

**Figure 1: The Complexity Approaches: managing dynamic feedbacks between individuals and totality, innovation and organization**

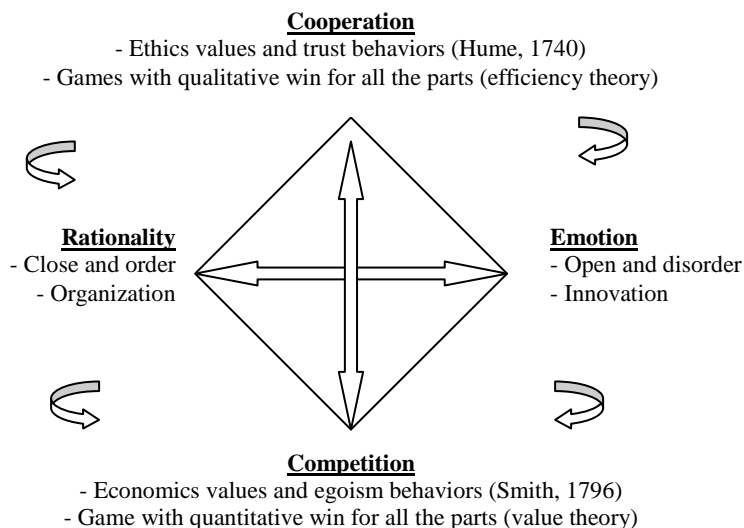


Source : Marx, 1881, Simon, 1955, Atlan, 1968, Morin, 1977, Koestler, 1988, Le Moigne, 1990

The disorder process and authority process co-evolve in order to exploit the innovations which emerge from these frequent interactions. In the “hard sciences” as mathematics, Atlan, 1968 and Morin, 1977 show that the “negative feedbacks” (orders created by disorder) are more important than the “positive feedbacks”. Contrary, for the “soft sciences”, as human sciences, the positive feedbacks (complexity) are more important that negative feedbacks (order). Poets such as Paul Valery, philosophers such as Gaston Bachelard, and engineers such as Jean-Louis Le Moigne (1990) analyze the specific case of the “engineering sciences” which are in between the “hard sciences” and the “soft sciences”. This intermediary position is interesting because this level has specific proprieties. Upon this subject, Leonardo da Vinci already mentioned concerning the painting Mona Lisa how he wanted to paint “a budding smile”. Along the same lines, Paul Valery evoked the specificity of the “water’s surface” which is neither water, nor air but in between. These “intermediary levels” are used to mix opposite factors such as ethics and sciences, emotion and rationality, dream and reality (Le Moigne, 1990, Kahneman, 2011, Taleb, 2012). In this organizational process, order is related to complexity by the concept of “emergence proprieties”. In emergence proprieties, the relationships between individuals are more important than the individuals alone and the interactions finally create organizational levels which could become independent from the individuals. The emergences proprieties could therefore stabilize the behaviors of the individuals and the whole over a certain period of time by co-creating intermediary levels. These specific levels could play the role of a “meta levels” (Watzlawick, 1972) which edict general rules stabilizing the agencies’ behaviors or a “meso levels” which authorize a kind of flexibility within the global system (Atlan, 1968). This intermediary level escapes therefore from the binary approaches which oppose the “individualism approach” and the “holism approach”.

2. The complex behaviors of the individuals which use both emotion and rationality  
 The complexity approaches take into account two opposite behaviors (competition and cooperation) in order to explain paradox situations between the rising economic efficiency and the decrease of social efficiency without leaving any contradiction. As the world changes induce rising paradoxical situations, today all agents must think and act in this new way, which is more adapted to the rising “radical uncertainty”, in using reason and emotion, cooperation and competition (**Figure 2**).

**Figure 2: Cognitive Sciences: think and act by managing opposite situations**



Source: Léonardo da Vinci, Valery, Bachelard, Piaget, Atlan, Le Moigne, Kahneman

To go further in to the analysis of the world knowledge economy, it is interesting to analyze the approaches developed by psychologists. They propose a new way of thinking between reason and emotion. The “positive feelings” could in these analyses effectively increase the rationality as in the Shapiro-Stiglitz theory of efficiency wages (1984) where an increase of wage induces an increase in the productivity. Contrary to the systemic approaches, which give the same weight to all the opposite factors, the psychologists propose to inverse the relationship between rationality and emotion. Emotions (and positive feelings in particular) could make the people innovative and pro-active in the knowledge economy. “*Your life therefore goes well when you feel happy*” (Dolan, 2014: 5). In a knowledge economy, being rational (in supposing that agents know how to define rationality (1)) is not sufficient. The use of emotion in the decision making is analyzed by all behavioral economists. Daniel Kahneman (2011) determines how agents must think both “slow” (with their rationality) and “fast” (with their emotion). From this analysis, we could rethink the feedbacks between competition behaviors and cooperation behaviors. The use of the emotion in the decision making is also analyzed by the researchers in management. Daniel Goleman (2011) for example points out the key role of “emotional intelligence” in the new kinds of leadership which emerge in a knowledge economy. The psychologists working on happiness (Ben-Salar, 2007; Achor, 2010) point out two main characteristics to obtain better economic and social results for individuals and society. First, in developing a “positive spirit”, all the individuals would be able to work longer, harder, quicker. Second, the agents would

have to exchange a “perfectionist” behavior (work hard to be happy later) for an “optimalist” behavior (be happy today to have better results tomorrow).

Using the analysis of behaviorist economy and psychologist in economy, we could analyze in depth, the real contradiction which exists between cooperation and competition in a knowledge economy. In such an economy, control becomes thus impossible and we observe more and “free rider” behaviors. So controls must be replaced with the “pre-choice” and the “pro-action” of the actors. The pre-choice (Kahneman, 2013) and the nudge (Thaler and Sunstein, 2007) are developed by the policy makers or the leaders for helping people make good decisions. For Garvin and Roberto (2001), the decision making is now a processes and the new manager has to be sure that everybody of his organization will has a real interest in applying the company’s strategies. And in doing so, the manager does not have to control the agents. The new leader has to innovate into a new kind of management: which leaves the agents autonomous and inventive without constraints. In the firms as well in the whole economy, the Competitive Intelligence approaches are looking to formalize the information cycle processes in such a way that individuals and organizations would be able to integrate the complexity of the world knowledge economy and pro-act in such a moving world. Competitive Intelligence approach is a new “way of thinking” about the complexity of the world and the new “way to acting” (pro-action behaviors) in this evolving world (Massé, 2000, Levet, 2001).

## **2 New thinking in long run for promoting innovations in the evolving world**

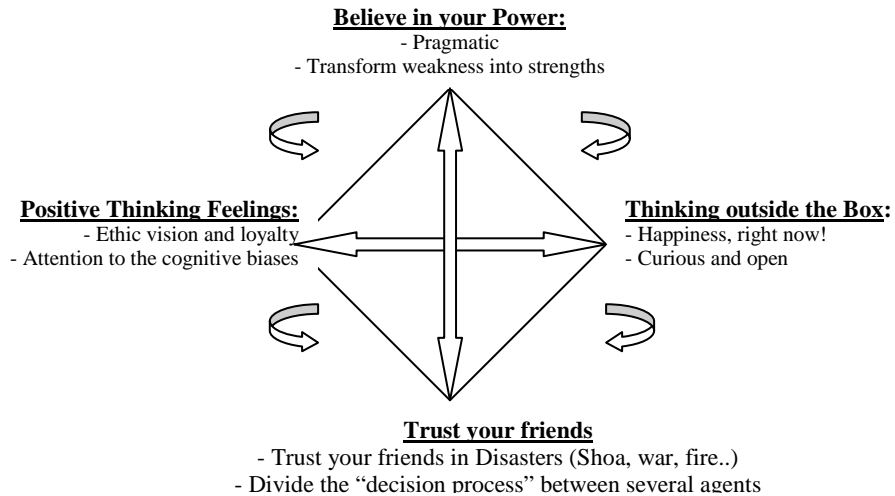
This section proposes new long run strategies, based on co-building networks, which are capable of promoting “ethic” and “trust” for innovating in a knowledge economy (Nelson et Winter, 1982). The knowledge is a dynamic process where innovations are continuous. Two different steps will be analyzed here in order to adapt the individuals to the moving world. The first step is to understand how the individual behavior works in emphasizing the key role of positive feelings in the determination of the individuals’ way of thinking. On the base of this individual way of thinking, the second step is to build a collective thinking which interlinks cooperation and competition in order to innovate in the long run.

### **1. How individuals can improve their long run “happiness advantage”?**

This paper studies how the individual behaviors mobilize different factors to increase happiness in order to induce cooperation amongst individuals. In effect, it is quite impossible to “order” individuals to cooperate with one another. With the aim of encouraging people to form cooperation relationships, it seems important to understand the interrelations which could exist between opposite feelings such as being close and being open. In building the “happiness advantage”, Achor (2010) and other psychologists (Ben Sahar, 2010, Kahneman, 2012, Dolan, 2014) use the studies carried out using the complexity approach. The “feedback effect” is a key factor for creating the “emergence proprieties” described by Atlan (1968).

In the “happiness diamond”, four factors seem important in order for individuals to increase their long run happiness: have positive feelings, to be open, trust others and trust themselves (**Figure 3**).

**Figure 3: Long run sustainable “happiness advantage” for the individuals**



Source: Achor, 2010; Neslon and Winter, 1982; Inglehart & Baker, 2000; Ben-Sahar, 2007; Kahneman, 2011; Senik, Flèche and Clark, 2012; Dolan, 2014

To develop his “positive feeling”, each agent must be able to change his mind and learn to think positively. For example thinking about their actions in the long run (inventions, projects, way of life...), having positive feelings induces the three components of happiness: “*pleasure*”, “*engagement*” and “*meaning*” analyzing by Martin Seligman (2011) in his concept of “*full feeling*” (closed to the concept of “*Eudaimonia*” of Aristotle). For Paul Dolan, “*happiness is experiences of pleasure and purpose over time*” (Dolan, 2014: 3). This definition of happiness induces a two by two model which mixes feelings (positive or negative) and purpose (motivation or without motivation). With this analysis, we understand not only the power of positive feelings (such as joy or excitement), but also the power of the motivation (which could be associated with negative feelings such as anxiety or anger) which have the power to transform weaknesses into strength and threats into opportunities. The knowledge economy process involves thus the emergence of a new paradigm concerning the scientific process. It is happiness which creates success and not the opposite reversal (2). A lot of experiments carried out in psychology show that “thinking positively” makes us more intelligent, more motivated and more powerful (Kahneman, Ben-Sahar, Dolan). The second factor of happiness process is to “think out of the box”. In being “open” to innovations, individuals can avoid what Achor calls the “Tetris effect”. The Tetris effect is an addictive video game which creates “repeat cognitive pictures” in our brain. So people, who are video game addicts, are not capable of thinking in a different way from their usual way of thinking. The third factor required in order to reach happiness is that the individuals must be able to think for themselves. In order to innovate, each person must believe in his power. It is the famous “lever effect” described by Archimedes: “*Give me a place to stand and with a lever I will move the whole world*” (3). In everyday life, the “place to stand” could be represented by the capacity we have inside ourselves and our knowledge that we can improve each day. The “lever” could be represented by the state of spirit we have when we want to change the world. Changing our mind and

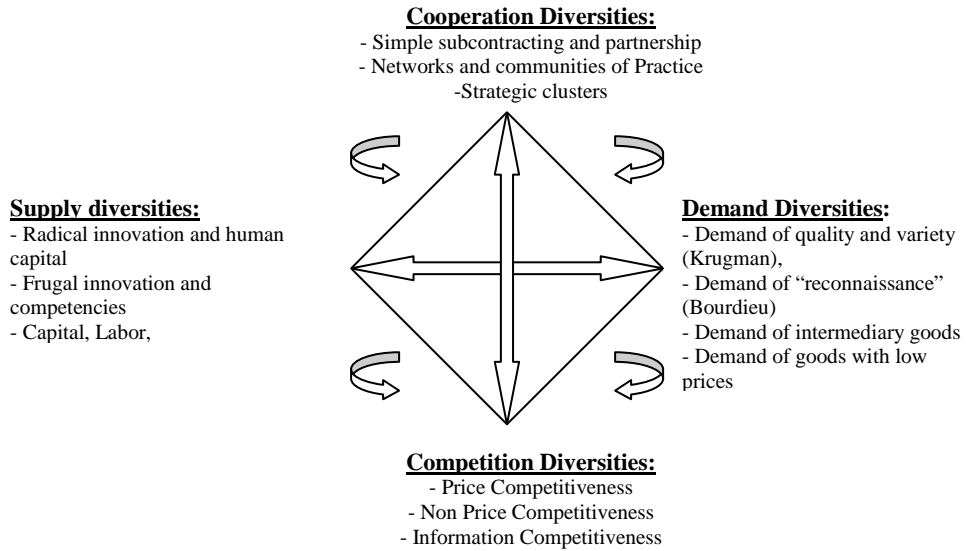


deciding to have positive thoughts and feelings could induce the success of our actions (4). The last factor of the happiness process is to develop confidence in our friends: S Achor describes in his book a fireman's exercise he carried out when he was young and where the confidence in others was crucial. Every time we face difficult situations the "panic feeling" is the worse solution as it overwhelms us and we forget to trust others. For most psychologists (Kahneman, Ben-Sahar, Goleman,..), social relationships represent a powerful investment required in order to build a real "competitive advantage". When you are supported, it is easier to manage adversity and transform it into opportunity for personal development. All together these four psychological factors: positive feelings, openness, self-confidence, and confidence in others therefore interlink and connect individuals to the others by creating sustainable happiness advantages for all.

## 2. How an organization can create a long run "Competitive Advantage" through a network

In this section, the analysis of individuals who seek happiness is enlarged to several individuals working in networks. The objective is to show how the creation of collective networks in a world knowledge economy could help all kinds of organizations (community of practice, firms, clusters) to co-build long run sustainable "competitive advantages". The results of psychologists' research concerning happiness (Kahneman, Dolan, Ben-Sahar, Achor...) could be used to reach the "competitive advantages" created by Porter in 1990. In effect, the building of "happiness advantages" seems important for the motivation of the agents co-building cooperation networks. In this analysis, the social efficiency (happiness advantage) induces the economic efficiency (competitive advantage). In this analysis, the paper seeks to enlarge the concept of "competitive advantages" in taking into account the key role of the agents' "diversity" and environment. In such a way, it is possible to co-build new relationships between supply and demand factors, and between cooperation and competition behaviors capable of inducing a rising social and economic efficiency (**Figure 4**). The use of competition relations is thus more and more costly and difficult to settle in a knowledge economy. In such a society, qualitative networks must be settled to co-build efficient competitive advantages. In this dynamic approach, social and economic efficiencies are co-built by the agents. The rising efficiency is obtained in combining cooperation and competition relations in order to innovate on the whole "share value chain" (Porter and Kramer, 2011).

**Figure 4: Long run sustainable “competitive advantage” for the organizations**



Source: Porter (1990, 2011), Baulant (2007, 2013, 2015)

Cooperation and competition networks could therefore generate rising internal scale economies for each agent (more wealth and profit for each agent) and rising external scales economies for the society as a whole (more knowledge and well-being for society). The “strategic” choices of each agent, analyzed by Herbert Simon in 1955, remain fundamental to increase the global efficiency in an uncertain world. Because of a “limited planet” and limited wealth, the “coopetition” process is useful in order to avoid the situation where the gain of a few agents corresponds to the loss of the majority. In the sustainable competitive advantages, all the agents are able to reach “win-win situations” by co-building networks. All agents could therefore propose their own specific supply factors (in labor, capital assets, raw material, explicit knowledge, tacit knowledge..) or their own specific demand factors (goods or services in high, middle or low quality, high, middle and low priced goods and services ) and finally obtain new innovations of a different nature (“radical innovations”, “market innovations” or “frugal innovations”). The competitive advantage approach is therefore far away from the “non price advantage theory” of Helpman and Krugman (1985), where the success of the firm depends on its size. Porter’s analysis, considers that it is more important to be “flexible” in order to be able to place one innovation on the market that is well adapted to the consumers’ needs. This approach is close to Morin’s or Koestler’s analyses, where the co-building of networks always induces an output which will be more than the sum of its parts.

### **3. New acting in short run to pro-manage activities in the moving world**

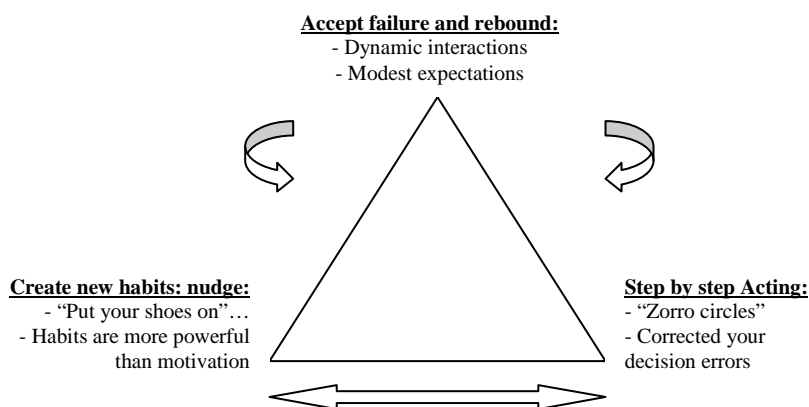
In a world knowledge economy, each agent has to pro-act in the short run. Thus, the decision making process gives a key role to the “strategic relationships” which induce some competition feedbacks developed in the behaviorist approaches (Simon, 1955, Watzlawick, 1972). The competition relationships remain determinant on the short run horizon. As a result, the organizations must constantly

face significant constraints of time, space, technological and social dependency path, and the constraints of their competitors who have also innovated on the same type of product. However, the new type of action induced by the network economy, the increasing competition relationships would concern the presentation of alternative innovations and the making of constructive criticisms. The most difficult thing for this action is always “to put our shoes on”, as William James, the famous psychologist of Harvard used to say. The first part of this section develops the factors used by individuals for acting. On the base of these individual actions, the paper then enlarges the study to the collective action. In the two cases, the action is more and more a dynamic process where all the people co-build their moving, with the others and with the environment, in order to reach positive scale economies.

1. How individuals can get motivated begin to start acting?

To reach a greater efficiency in an individuals’ action, the question is for each individual to know how to begin to act. The researches of psychologists (Ben-Sahar, 2007; Achor, 2010) show that it is impossible for people to be courageous and efficient all their life. Therefore habits and routines seem much more powerful than motivation, when spurring action. The “action triangle” that I propose summarizes the three main actions that individuals should undertake in order to begin to act positively (**Figure 5**).

**Figure 5: Short run co-acting of the individuals through creating new habits**



Source: Simon, 1955, Watzlawick, 1972, Achor, 2010, Ben-Sahar, 2007, Kahneman, 2011

The first factor is to create new habits. William James (1875) analyzes all the actions that the people practice each day (have a show, brush their teeth, put the alarm clock on ...). These actions do not require effort as they form part of a daily routine. Achor enlarges this analysis to other topics which also induce collective consequences. For example, most people agree to never drive when they feel that they have drunk too much alcohol. However it is difficult to know if people are able to drive after one or two glasses. Therefore Achor proposes to individuals in his study, to just decide not to drive when they drink any amount of alcohol. In taking this type of action, people don’t have to ask themselves the question: “Am I OK to drive?” This pre-choice is very useful as it helps individuals become more efficient as they don’t have to ask themselves the question each time they drink alcohol they

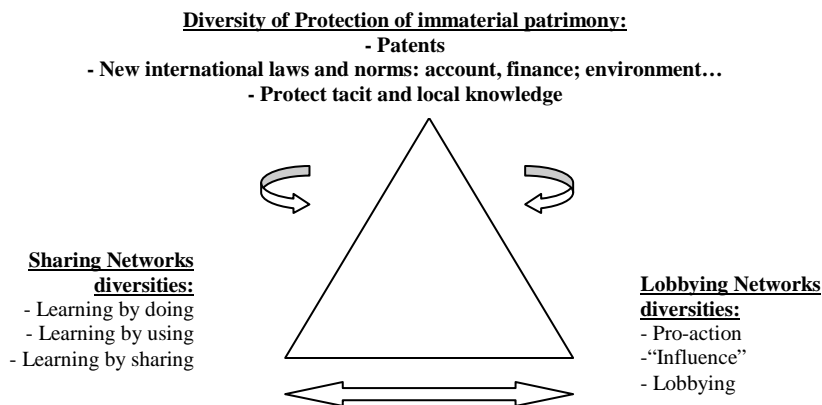
can choose the “lazy” option. Following the same kind of approach, Thaler and Sunstein (2007) show the role of the “nudge” used to make these pre-choices. Nudges are the specific habits which help people make the “right” decision, as for example encouraging the practice of sport to avoid stress and health problems. The analysis of a nudge is interesting because it can be applied at all levels of decision making. The idea of a nudge (5) for decision making could be applied for establishing new public policy at a macro level. For example, changing the law concerning organ donation, where consent is presumed unless an individual has registered a prior refusal, as in Wales, UK from 1<sup>st</sup> December 2015. This new law could enable more lives to be saved without any constraint or action from individuals. The second factor for spurring action is to “walk one step at a time”. S Achor makes reference to the famous hero of Zorro in his book “How to become a contagious optimist”. He uses the example of Zorro to demonstrate the transformation from someone afraid, lacking self-confidence to the story’s hero. Before leaving one’s comfort circle, people need to learn to control emotion, to know their capabilities, to trust that their capabilities will enable them to reach their objectives. They have to concentrate their efforts on limited objectives that they know they are able to attain. Achor uses an interesting example of an old ill woman in a retirement home who increases her health and her moral by taking care of a house plant. Tal Ben-Sahar (2007) also suggests that the people need to switch from a “perfectionist” attitude to an “optimist” attitude. The third important factor required in order to act efficiently is to know how to take risks and to be able to accept failure. Individuals could accept failure in two cases. First the individuals consider that they fail because of the “external” competition and they thus compare their action with those of the other people. Second, the individuals consider that they are to face an “internal” competition and they in this case compare their present performance to the expected performances they thought able to reach. Psychologists remind us that most famous people succeed because they failed in the past (for example Edison who tried several times before succeeding to invent the telephone). If we accept failure and are willing to try again, we will enter into a dynamic process which transforms weaknesses into strengths and threats into opportunities.

## 2. How networking could help organizations to pro-act efficiency in the short run

During an action, to take into account in the short run other people and the environment, the agents have to co-build networks with other people in order to increase the power of their action. In a knowledge economy, everybody can create long run innovations (by frugal or market innovations for example). It is thus important to pro-act their innovations in the short run in order to be sure that these innovations will be fully integrated on the international markets. The agents have to manage different kinds of short run competitiveness. With the ICT revolution, the “information competitiveness” involves a greater economic and social efficiency for all world knowledge economy actors. The “information competitiveness” which had been

described by Baulant (2007, 2013, 2015) is now playing a rising role in the world knowledge economy as this kind of competitiveness involves the “whole information cycle”. Hence, the “competitive intelligence” approaches, which begun during the sixties (6), have come about a second time during the nineties because information and knowledge are now more and more important for the stimulation of new production and the consumption processes. The aim of the “Competitive Intelligence” methodologies is to increase the information competitiveness of agents in transforming “information” into “knowledge” and then, in transforming new knowledge into “useful information” which permits the actors to act quicker and with greater depth in the world economy. This information management cycle is therefore quite different from the price competitiveness mechanisms (to have low costs and low prices) and from the non price competitiveness approach (to develop oligopolistic positions to avoid competition). Because information and knowledge are “public goods”, the actors must cooperate on pro-active networks in order to benefit from rising scale economies. For increasing their competitiveness on the world markets, the agents have to create different kinds of pro-active networks (**Figure 6**).

**Figure 6: Short run co-managing of the organizations through increasing their information competitiveness**



Source : Wilinski, 1967, Ansoff, 1975, Baulant (2013, 2015)

The first step to co-build information competitiveness concerns the creation of a “sharing network”. This sharing network is crucial today in order to co-build new knowledge and to induce useful learning processes between all agents (within a community of practice or a firm). With the I.C.T. Revolution, Internet networks become more and more important for co-acting in a knowledge economy (as the social networks for example). The second step is to develop “lobbying networks”. However, this lobbying network is today more and more democratic because of the fact that “positive influence” could be as powerful as “negative influence”. In negative lobbying, agents pro-act the information which allows them to have increased power in economic, political, social spheres. In positive lobbying, the agents pro-act a true and “fair” information which allows a rising preservation of the planet and a rising well being for all the people around the world. The third step of

information competitiveness is to co-build ‘institutional networks’ capable of protecting the long run innovations. Institutional networks help to establish a new kind of action that aims to increase the economic and social efficiency of all agents. For example, they help agents find financing for their individual invention in using the crowd-funding systems on social networks. The institutional networks could be also very useful for small firms in order to protect their immaterial knowledge by helping them depose patents in international institutions. Finally, institutional networks could help consumer or producer associations use the international laws to defend their rights. All these institutional networks (as regional organizations or non governmental organizations...) help all agents (firms, clusters, countries) act efficiency and protect their knowledge. Because of the globalization, the institutional networks can also inform agents about new changes in international laws or norms. Thus, even if the agents are not powerful enough to change the international laws that they dislike (for example the “value account reform” based on market prices), they can adapt their organization to this new norm before the other competitors.

Using the informational competitiveness is therefore important today in order to protect what the agents require the most: their knowledge, their health, their friends, the earth upon they live and their feeling of fulfilment and happiness.

## **Conclusion**

The globalization and the knowledge economy lead to an increasingly complex world. In such a world, thinking “inclusive growth” which takes into account economic efficiency and social efficiency induces more cooperation relationships. The complexity approaches analyzed in this paper may be useful for improving agents’ reasoning and action in a world knowledge economy. The interrelations between contradictory factors are necessary to preserve the diversity of the points of view. More precisely, the interrelations between cooperative and conflictual relationships induce an efficient co-building of specific intermediary networks which are flexible enough to move with the time but fixed enough to stabilize the behaviors of agents in the uncertain world. To explain why the individual behaviors will be induced to cooperation, the paper has shown how the main results of psychologists’ researches concerning happiness could be used by the economists, as Smith and Hume already aspired to carry this out during the eighteen century. The co-building of the long run “happiness diamond”, proposed by Achor in 2010 is therefore crucial to induce all the agents to research cooperation relationships. In order to stimulate cooperation relationships, it is important to understand the interrelations which exist between opposite feelings: having positive feelings (so in being closed on ourselves) and thinking outside the box (in being open to other visions). Most of the psychologists have shown that in order to reach their happiness advantage, individuals have to learn both how to trust others and to trust themselves. In analyzing first the individuals’ decision making, it is possible to build in the collective competitive advantage diamond described by M Porter in 1990 without having to constraint people to cooperate. We reach a rising economic and social efficiency for long run strategies which generate more happiness for individuals and more innovation for society. In mixing our own supply and demand factors and our cooperation and competition relationships, Porter proves us that everybody can invent their own “competitive advantages”.

The two long run strategies induce a higher efficiency founded on the co-building of cooperative networks. However agents live and work in reality where things can sometimes go quickly and sometime slowly. So it is not sufficient to think in long run terms for a short run action. In a complex world, each agent has on the contrary to become “pro-active” and not only adaptive or anticipative. Working together is a difficult task for managing when the “invisible hand” of the markets fails to reach economic and social efficiency. It is therefore important to analyze how each individual could act in order to reach an increasing state of happiness. For increasing the happiness of people, the more important thing seems that they will create “new habits” which are more efficient than their motivation. The individuals could be happier if they accept to learn to work step by step with easy objectives and learn to accept failure and rebound from it. All agents could attain a better quality of life by considering their diversity as strength rather than as a weakness. Agents who succeed are individuals who accepted failure and sought to help others. In putting human feelings in the center of the action, the acting process will be more efficient economically and socially and can give the best solutions for sharing world resources. The paper argues that the people who manage their individual life with happiness will be also able to manage their collective acting in a world economy, more efficiently. In such a world, people must learn to be more autonomous and must accept to be more required by others. With the ICT revolution, the managing of the information competitiveness has a key objective to transform information into knowledge and useful information. For achieving this “information cycle” process, the co-building of networks first stimulates different kinds of learning by sharing process. Do not be afraid to practice influence, inside and outside the networks, also constitute an easy and non costly step to diffuse knowledge and innovations on the world economy. The knowledge protection is the last step in a knowledge economy for the stimulation during these innovations processes in order to obtain a rising economic and social efficiency.

The complexity approaches we use in building long run and short run strategies authorize and stimulate all agents to think and act efficiency in a global world. They help them to develop dynamic interactions between opposite factors for co-building their new thinking and acting behaviors. These two strategies, both interlinked and mainly based on cooperation relationships, are today more efficient for the economy as a whole and they also give also a “degree of liberty’ for all the agents in a moving world which remains constraint. The famous Newton’s sentence in the XVIII<sup>e</sup> century remains therefore cutting edge. Yes we definitively are “*dwarfs mounted on the shoulder of giants*”.

## Notes

- (1) The rationality studies are more complex than it seems. Simons (1951) distinguishes the “procedural rationality” and the “bounded rationality”. The last one seems to be well adapted to the situation of radical uncertainty. The agents just adopt the first best solution they meet.
- (2) The knowledge economy and the ICT Revolution involve a new paradigm which could be compared today to the “Copernicus Revolution” (1542), where Copernicus discovered that the earth turns toward sun.
- (3) Archimedes: *“Give me a place to stand and with a lever I will move the whole world”* in *Chiliades 2*, p 129-130 (translated by Francis R. Walton)
- (4) For the same reason, it is so difficult to change bad habits because people do them without effort and without thinking of the consequence (free rider behaviors for example). Most of psychologists (William, Schwartz, Gardner, Langer, Seligman, Collins, Gilbert, Achor, Ben-Sahar) recommend that we should create new small habits. The authors of the behaviorist approach of economy (Kahneman, Dolan, Thaler, and Goleman) and the authors in management and business administration (Porter, Drucker, Davenport, Kotter, Ancona, and Garvin, Roberto) also take into account the key role of habits for making the good decision.
- (5) On the same topic, if we put candies out of sight children in the store, the public decision will involve less consumption of unhealthy food, better health, and decrease of the deficit in social welfare system. It is clearly a win win system without constraining people.
- (6) Even if Business Intelligence is not new (Wilensky 1967, Ansoff, 1975), the Business Intelligence practices sharply increased from 1990, with the end of the “cold war”.



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