The relationship between Economic intelligence and Innovation

Haichar Mohammed
Professeur Habilité à l’Ecole Hassania des Travaux Publics
Membre du Laboratoire de Recherche sur l'Intelligence Stratégique à la Faculté des Sciences Juridiques, Economiques et Sociales de Mohammedia
Equipe de Recherche : Intelligence Economique et Compétitivité
Courriel: haicharmohammed@yahoo.fr
Tél: 06 19 200 203

Haouari Sanae
Docteur en sciences de gestion à la Faculté des Sciences Juridiques, Economiques et Sociales Ibn Tofail-Kénitra
Courriel: sanaehaouari@yahoo.com
Tél: 06 21 80 28 01

Résumé
Dans un monde de plus en plus intégré et connecté, les entreprises sont sous la pression d’une concurrence intolérable qui les pousse à chercher chaque jour des solutions pour leur problème aussi bien technique, organisationnel que financier. Ainsi, l’intelligence économique représente un outil de premier plan pour aider ces entreprises à prendre les bonnes décisions au bon moment. Cependant, cet outil reste sans intérêt si l’entreprise est incapable d’innover en permanence pour répondre aux besoins du consommateur et assurer sa position au niveau du marché. De ce fait, l’intelligence économique est devenue un instrument à la disposition des entreprises innovantes qui peuvent l’utiliser afin d’avoir les informations nécessaires sur leur environnement interne et externe pour garantir leur continuité sur le marché faute de quoi elles seront éjectées par le système. Ce papier est une occasion pour éclaircir la relation existante entre les deux outils à savoir l’intelligence économique et l’innovation.

Mots clés: Intelligence économique, capacité d’absorption, veille stratégique, veille technologique, innovation, entreprise innovante, réseaux interfirmes

Abstract
In an increasingly integrated and connected world, companies are under the pressure of intolerable competition which drives them to seek solutions every day for their technical, organizational and financial problems. Thus, economic intelligence represents a leading tool to help these companies make the right decisions at the right time. However, this tool remains useless if the company is unable to constantly innovate to meet consumer needs and ensure its position in the market. As a result, economic intelligence has become an instrument available to innovative companies which can use it to obtain the necessary information on their internal and external environment to guarantee their continuity on the market, failing which they will be ejected by the system. This paper is an opportunity to clarify the existing relationship between the two tools, namely economic intelligence and innovation.

Keywords: Economic intelligence, absorptive capacity, strategic watch, technology watch, innovation, innovative company, interfirm networks
Introduction

The current environment in which companies operate is characterized by volatility, uncertainty, complexity and ambiguity (Bennett & Lemoine, 2014). This is due to a multitude of factors such as the increasing opening of markets, the appearance of new competitors, the use of new information and communication technologies (NTIC), etc. As a result, we are witnessing the disappearance of the most vulnerable companies that are unable to adapt with this environment and the appearance of new, more resilient companies equipped with the tools necessary to overcome the current obstacles on the strategic and financial level. This situation was amplified by the health crisis and the Ukrainian-Russian war, two factors which had a negative effect on many sectors but also created several opportunities for innovative companies, especially in the field of E-commerce (Alibaba, Amazon, etc.).

In this context, both governments and international organizations such as the IMF (International Monetary Fund), the World Bank and the OECD (Organization for Economic Co-operation and Development), have agreed on the existence of a slowdown global economy which has caused so many business bankruptcies, an increase in the cost of materials, an increase in the cost of living, etc.

Thus, the OECD considers, in the same way as the IMF and the WB, that innovation is the keystone for bringing companies and therefore countries out of this slump. It is the main factor of competitiveness of companies that allows them to survive in a volatile and unstable market.

This capacity for innovation is the result of the combination of several factors such as the existence of a clear innovation policy over time, a highly qualified workforce capable of creating added value and finally a system effective development and transfer of knowledge within the entity in question.

However, innovation presupposes that the company is always attentive to its technical, technological, scientific, economic environment, etc. At this level, innovative companies are obliged to use the tools offered by economic intelligence to identify signs of change, monitor the environment and identify trends that can be a source of innovation.

The objective of this article is to understand the relationship between the concept of innovation and that of economic intelligence. To do this, this paper will be divided into two parts. The first part will be reserved for the presentation of the concept of innovation as a whole as well as that of economic intelligence, its tools, etc. to finish with a second part in which we will see how economic intelligence can be used to serve innovative companies.
I – Literature review

The two fields of innovation and that of economic intelligence have been the subject of a very abundant literature which is constantly increasing. This can be explained by the importance of the two concepts at the level of the real business world. The competitiveness of companies is conditioned by their ability to innovate and to collect information on the environment in order to help them in decision-making.

In this first part, we will deal with the types of innovation, …… in the same way, we will see economic intelligence, its definition, its tools, etc…

1- Innovation

Innovation has always been considered a powerful tool to ensure the survival and continuity of businesses in an increasingly competitive market.

At the level of this part, we will try to define it and see the different forms that this concept can take.

1.1. Innovation: Definition essay

Innovation is a concept that has caused a lot of ink to flow, hence the existence of a multitude of definitions to try to understand it. We can list several economists who have worked on this subject, but Schumpeter remains by far the one who has approached this theme with great affinity and depth. He defined innovation as “new combinations of new or existing knowledge, equipment resources and other factors that are subjected to commercialization attempts” (Deblock, 2012). It is about putting new resources, ideas, and any other factors into commercial practice. This author emphasized the difference between invention and innovation. The invention is generally the discovery that can be the subject of a patent. Innovation is the exploitation of the invention for wide dissemination to the public.

The organization for economic cooperation and development has also tried to lend its hand by trying to come up with a definition of innovation. According to this organization, “a business innovation is a new or improved business product or process (or a combination of the two) that differs significantly from the company's previous products or processes and has been commercialized or implemented through it” (OECD, 2018). This definition emphasizes two main categories of innovation, namely: business process innovation and product innovation.

For the first category, it “designates significantly new or improved business processes by one or more functions, which differs significantly from the company's previous business processes” (OECD, 2018). The second category of innovation can still be defined by the same organization as being “the introduction on the market of a new or improved good or service which differs significantly from the goods or services offered until then by a company”.

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Other authors have defined this phenomenon according to their own vision and lived experience. In the book "Innovation Management Practices", the authors considered innovation as "a business process aligned with an organization's mission and strategy, which responds to market needs or creates a new one by developing an innovative solution (product, service, process or business model) the success of which provides a competitive advantage leading to a measurable benefit” (Gardoni and Navarre, 2017).

By referring to this definition, we can see that innovation must be aligned with the strategic objectives of the entity in question on the one hand and on the other hand, it must allow the company to acquire an advantage setting it apart from the competition. In this sense, M. Porter (1990) declared for his part that indeed innovation is the essence which feeds the engine of the competitiveness of the company. It allows him to have a competitive advantage, the only element capable of ensuring the survival and development of the company in a constantly changing market.

In the same vein, according to a study carried out by the firm McKinsey and which focused on a sample of 1000 companies operating in 15 different industries over a period of 36 years. The results of the study were presented by Miller (2006). It was found according to this study that even the most successful companies are unable to ensure sustainable and sustained growth for more than 15 years. This is the reason why McKinsey (2013) noted following a survey carried out that 84% of the leaders of S&P 500 companies consider that their development is dependent on their innovation process in terms of technology, strategies and in terms of business models. Furthermore, the leaders signaled that without innovation there will be no growth and of course without growth there will be no investment. It is therefore a virtuous circle whose centerpiece is innovation. This circle can become vicious if the innovation process fails not only for companies but also for countries. Because if business growth is called into question, we will certainly end up with an economically vulnerable country, hence the significant importance of the innovation component. This strongly explains the policies adopted by the various governments to strongly support innovation.

Furthermore, in the book “Innovation and Entrepreneurship”, the author argued that innovation “is a tool available to entrepreneurs, the means by which they exploit change as an opportunity for a different business or service” (Drucker, 1993).

This definition has dealt with another aspect of innovation, which is the exploitation of the uncertainty linked to change as an opportunity to be seized to derive the maximum benefit. As a result, entrepreneurs must absolutely have this quality to succeed in their professional life. In
addition, given that we currently live in a world of crisis and rapid change, innovation can be a panacea for the various problems encountered by companies.

1.2. Types of innovation

The literature on innovation is abundant. This also applies to the typology of innovation, which is classified in several ways that often leads to confusion. This is the reason why we will begin the categorization of innovation by referring to the innovation matrix which is based on two dimensions for classification, namely: the technology adopted and the market in which the technology operates (Mignon & Laperche, 2018). The combination of these two factors gives rise to several categories of innovation.

1. Incremental innovation: this is the type of innovation most used in reality. It is in a way an improvement of an already existing product in a market that also exists. This innovation is the most adopted by companies in all fields to make the investments made in research and development profitable. Companies increase their innovation step by step. They try not to concentrate most of their innovation in a single product. The technique is to distribute the innovations over several successive products to benefit as much as possible from the market. Companies proceed by iteration in order to supply the market each time with new products and therefore ensure their survival and existence as much as possible.

2. Disruptive innovation: this is the type of radical innovation that brings a revolutionary technology or a new business model to change the consumption or use patterns of a given product. This is the case, for example, of touch technology, which has profoundly changed the use of electronic products. This type of innovation is rare in reality because it requires heavy investments in money and time to achieve a result that is not clear at the start. In addition, this type of innovation can change the structure of the market as a whole by allowing startups to access the rank of large firms and vice versa. It is important to note that disruptive innovation can be deadly for companies that cannot adapt to new things, which was confirmed by Clayton Christensen (1997) in his book "The Innovator's Dilemma" explained that disruptive innovations are considered a major reason for business failure.

This type of innovation can affect either a product or a process. We talk about product innovation when it comes to the implementation of a new product with a radical change in technical characteristics to meet market needs (Damanpour and Evan, 1984).

We talk about process innovation when it comes to doing the job with a new method accompanied by a radical change either in the tools used, the technology adopted or the business process followed (Davenport, 1993). The new method can concern either industrial enterprises
in their manufacturing process or commercial enterprises in their marketing process (Utterback and Abernathy, 1975).

Finally, companies accentuate their research so as to have innovations at the product level and not at the process level because they judge that the expected benefits of the first type of innovation are better and greater than those of the second type (Ettlie and Reza, 1992).

3. Economic intelligence

Since today's world is largely virtual and based on data and information in all areas of activity, economic intelligence has become a popular concept both academically and practically. It is a concept that is used by any form of structure, both public and private.

At the level of this part, we will try to elucidate this concept by defining it and seeing its different phases as well as the different conceptual currents.

3.1 Economic intelligence: an attempt at definition

In 1994, the Martre report defined economic intelligence as being “the set of coordinated research, processing and distribution actions, with a view to its exploitation, of information useful to economic actors”.

Economic intelligence is an important tool available to companies whose objective is to anticipate changes in its environment and therefore make the right decisions at the right time. As a result, the survival of companies depends essentially on their ability to collect and interpret economic, financial, etc. information to act immediately or in the future. The application of EI comes down to knowing the operational and strategic objectives in order to act effectively and to choose the appropriate organizational and technical means to achieve the expected objectives. (Levet and Paturel, 1999).

Economic intelligence is a continuous process within the company. It takes the form of iterative phases that can be described as follows (Alice Guilhon, 2003):

The first phase of economic intelligence is the identification of information needs. It is a question of determining with precision the nature of the information which the company needs as well as the subjects on which the information will relate.

The second phase is information gathering. At this level, the company must search for data among the primary and secondary sources it has or those where it can access it. Public sources are of great use such as newspapers, activity reports of different organizations, scientific journals, ........

This information is archived and stored electronically in databases (Big Data) for immediate or future use through methods such as Datamining, etc.
The third phase is data processing. This is the most important phase in the process because it is at this level that we will analyze the data collected and filtered to make them available to decision-makers. That being said, companies must have an information processing unit with the appropriate skills in the field of data analysis by suggesting to top management the different hypotheses and possible scenarios for the different scenarios.

The last phase is that of the dissemination of information. At this level, once the data is properly processed, the analysts transmit it to the decision-makers who will assign it to their team according to the need identified at the start. This information helps decision makers design sound strategic and operational plans to deal with unforeseen events and thwart future competitive actions.

3.2. The conceptual currents of economic intelligence

Generally, we can identify three main conceptual streams of EI: war and economic security, competitiveness and economic diplomacy. We will content ourselves in this paper with just dealing with the first two elements.

3.2.1. War and economic security

From the 1990s, we have witnessed an unprecedented proliferation of books on economic intelligence that associate this term with economic warfare.

Among these authors, we can cite Bernard Esambert who defines it as "the pursuit of war by other means" (Esambert, 1977, 1991). Economic events are seen as the direct consequence of the policies adopted by nation states. Economic warfare is inevitable and reflects a set of values referring to economic patriotism (Carayon, 2006). Nation-states consider the protection of national companies to be legitimate and qualify it as economic defence.

At that time, economic intelligence was synonymous with economic violence and uses state intelligence that is made available to companies deemed national to help them in their conflict vis-à-vis foreign competitors. The objective is to defeat the economic enemy in this continuous war in time. Therefore, national companies must be provided with all possible means to beat foreign companies.

However, this concept of economic warfare was too violent and was not unanimously accepted by academics and authors working in this field. This is the reason why another lighter posture qualified as economic security was preferred. At this level, countries have the right to protect their economies within a secure framework for employment and wealth creation. Every country has the right to defend itself economically to ensure national economic security. And of course, competitive intelligence as a concept and a process must be used to achieve this national goal.

3.2.2 Economic competitiveness
Almost all the authors agree to associate economic intelligence with that of competitiveness. Competitiveness, which can be national, territorial or corporate.

According to Bournois and Romani, economic intelligence expressed in terms of competitiveness is none other than an "organized approach, at the service of the strategic management of the company, aimed at improving its competitiveness by collecting, processing information and dissemination of knowledge useful for controlling one's environment (threats and opportunities); this decision-making process uses specific tools, mobilizes employees, and relies on the animation of internal and external networks" (Bournois and Romani, 2001).

This definition refers to the ability of companies to collect, process and disseminate knowledge to exploit the opportunities offered by the environment and better manage the threats they face. That being said, for economic intelligence to be an effective decision-making tool, the companies concerned must be successful, efficient, innovative and have the ability to adapt to their internal and external environment, which is increasingly demanding.

This posture is supported by the State, which is supposed to help companies by supporting them through the creation, for example, of competitiveness clusters which bring together research structures and companies by associating them in a dynamic of creating added value. Moreover, the existence of an economic intelligence process is necessary or even essential, but it is not the only element of the decision-making puzzle. Companies need to have an agile structure capable of integrating information into the decision-making process and of acting quickly on all changes that occur at the level of the environment, otherwise this concept remains useless and a loss in terms of cost and time.

II - The link between innovation and economic intelligence

The economic literature is rare in writings that attempt to highlight the existing relationship between innovation and economic intelligence. Innovation can certainly bring competitive advantages, notably by improving profitability, growth and productivity. We always believe that the innovation process leads to discoveries that are useful to the company on all fronts. But we never associate this process with that of economic intelligence.

The company is the central and main player in both processes. It is an integral part of an economic system in which it interacts with other actors such as consumers, customers, suppliers, laboratories, etc.

Innovation is a decisive choice that can be a source of major risk-taking. Hence the constraint for the innovative company to have an economic intelligence system to help it in decision-making.

1. The innovative company
Understanding the phenomenon of innovation and its relationship with economic intelligence necessarily involves defining the innovative company, which is the basis of both processes. This is the reason why the analysis of its behavior, its organization, its conditions of existence and its relations with the outside world seems necessary. Thus, the innovative company can be defined as being “the one which chooses to develop its productive resources with the aim of manufacturing a new product at a competitive cost innovation (product innovation) and/or an existing product at a lower cost (process innovation)” (Lazonick, 1996). According to the OECD report, "innovative firms are not superior algorithms for maximizing production functions, but organizations capable of learning so that they can imaginatively seize the opportunities offered by technologies and markets to push the frontiers of production” (OECD, 1996).

Companies tend to innovate if they have the human skills to do so, the financial means, the links with various institutions (laboratories, etc.) as well as careful monitoring of their environment, hence the importance of the process of economic intelligence. Innovative companies attentive to their environment can easily appropriate products, services or processes developed by other organizations by making just a few additions, which will allow them to save research & development costs and reduce their production budgets investments, particularly in a context of crisis. Firms are motivated to innovate if they expect to make big gains. This is the first factor that can encourage a company to innovate. The second factor is that of the existence of a competitive market because when the market structure is monopolistic, interest in innovation disappears. The third factor is the one defined by Schumpeter and other evolutionary economists. It is indeed the size and the internal organization. At this level, multinational firms have a much greater capacity for innovation than small and medium-sized enterprises, especially since it benefits from better opportunities.

The fourth factor is the availability of environmental information and data. The capacity for innovation depends on the degree of competition in the market, the structure of customers and suppliers, technological development, changes in regulations, etc. these are elements that the company must constantly monitor to have innovative ideas to later transform into innovative products or services.

2. Economic intelligence and the innovation decision

The innovative company is supposed to have a process of economic intelligence, one of the essential components of which is technological monitoring. It mainly consists of the study of the technical, scientific and technical-economic environment in order to determine the opportunities and threats. The goal is to have as much information as possible and the most
important thing is to structure it, synthesize it to manage it effectively. The role of this watch is to acquire all the means to detect all technological and technical developments likely to have a considerable impact on the production or quality of products.

However, this type of monitoring remains the most developed within companies, especially industrial ones, which are obliged to protect their technical discoveries to avoid being overtaken by competitors. The Japanese model remains among the most successful models in this area. Its success is due to a careful and organized collection of information published around the world.

This watch makes the company able to ensure innovations on a permanent basis without difficulty and therefore always be in a favorable position with regard to the various increasingly erratic and difficult to predict developments.

In addition, the existence of a well-controlled process in terms of economic intelligence at the technological level makes it possible to provide managers with all the means that will facilitate their decision-making. As such, decisions can be defensive, offensive or organizational.

The main objectives of defensive decisions are the management of all kinds of risk (financial, commercial, etc.) as well as the protection of the company's assets.

Risk is characterized by two elements: impact and occurrence (frequency of repetition). The economic intelligence process consists of identifying areas of risk in order to reduce the impact and frequency of occurrence and in particular the risk of misinformation which can have harmful consequences on the company's activity on the court, medium and long term. This also applies to the detection of several threats such as commercial threats (appearance of a new competing product, etc.) and or technical threats (appearance of a new process, a new technology, etc.)

As for offensive decisions, they concern several activities such as technology transfer, the launch and development of research & development programs, etc. These activities provide a boost to the innovation capacity of the company.

Finally, there are organizational decisions that are essentially based on the restructuring of the company either by setting up a new organization of work or production, or by the creation or elimination of departments, departments, etc.

The economic intelligence process offers reliable databases or information to managers who have several possible choices. The objective is to limit its choices according to the constraints identified at the level of the environment.

As such, according to a study carried out on the practice of strategic intelligence, which is a component of economic intelligence at the level of Swiss SMEs, the following results were
noted. Strategic intelligence has the following main objectives (Begin, 2007): Detection of opportunities and threats (83%), Innovation (75%), Knowledge of competitive practices (63%). Customers occupy a place of choice as a source of information (84%). they are followed by the press and professional organizations (66%), company employees (59%), and lastly forums and exhibitions (58%). it remains to be noted at this level that the majority of people declared that they act according to a reactive logic and not a proactive one. In other words, respondents were waiting for the information and did not seek it out either for free or through paid services. Search engines top the list as internet monitoring tools (75%) followed by newsletters (49%) and social networks (34%). Fourthly, we can group alerts (29%), RSS feeds (17%), web page monitoring tools (13%) and bookmark management tools (3%). So, we can see that even SMEs that do not have a cell specially designed for information processing use the tools of economic intelligence to develop innovations that will ensure their survival thereafter.

3. Economic intelligence contributes to the success of innovation

Currently, wealth is no longer material. It is intangible and driven by knowledge. The competitiveness of companies is now conditioned by their ability to manage the information available internally and externally to translate it into decisions capable of guaranteeing their sustainability.

That being said, economic intelligence offers this advantage and allows the entity in question to meet its information needs from formal or informal sources with a clear and transparent approach. It makes it possible to support the innovation process through its absorption capacity and its potential for the development of inter-firm networks.

3.1. Absorptive capacity

Absorptive capacity refers to the company's ability to make the best use of information, data and knowledge from its environment and integrate them into its production system for innovative products or services. It is a question of correctly identifying the signals emanating from the internal and external environment. According to Cohen and Levintal, when it comes to an internal absorptive capacity we speak of "inwardlooking" and when it comes to an external capacity, we speak of "outwardlooking" (Cohen & Levintal, 1990).

According to Charpenteau, who conducted a study on the pharmaceutical and micro-electronics sector, he noted that the company's external environment is the one that provides the most novelty and learning opportunities for developing products or innovative services. However, this depends on the internal skills of the company to detect this type of information (Charpenteau, 2002). This internal learning capacity depends on a number of factors, such as
the history of the company, its size, its culture, its structure, etc. (Gabet, 1997). At this level, companies must be very attentive to superficial or unreal signals that can mislead them. This is why the reading and analysis of data and information offered by the environment must be entrusted to qualified personnel capable of detecting the opportunities offered by the market.

3.2. The interfirm network

According to Callon, the network can be defined as “the set of flows of instruments, skills, literature, money that tie and connect laboratories, companies or administrations” (Callon, 1988).

The innovative company has an interest in developing its own network made up of partners (customers, suppliers, ……). The objective is to benefit from all the skills available to the partners and to put them to good use at the company level. This is a project that the innovative company must design and encourage all partners to participate actively in it for the benefit of the group. Innovation should not be seen as an individual action. Rather, it is a collective action and the whole group will reap the benefits. This action is not limited in time. It is a virtuous and continuous circle that the company must constantly try to develop. And as the network grows, opportunities for innovation may also open up and improve.

However, innovative companies must be aware of the challenge that innovation represents for them and for the associated partners. We cannot conceive of a random network which will subsequently be a source of risk. For each area of innovation, it is necessary to carefully choose the best partners who can contribute positively and actively to the creation of innovation opportunities. Certainly, it is necessary to interest the partners by all available means of attraction to make them adhere to the innovation project. These membership actions generate costs for the innovative company, but the benefits of the innovation projects are much higher than the costs incurred.
Conclusion

According to Pinte, with globalization and the growing openness of economies, we are witnessing the transition from the era of the industrial society to another form of society qualified as the information and knowledge society based on the immaterial and conduct through knowledge where wealth is no longer material but rather physical passage demonstrates today that the most important wealth is no longer material or physical (Pinte, 2004). In this context, the new competitiveness of organizations is based on the enhancement of internal and external knowledge which constitute the keys to success and success of any entity wishing to ensure its sustainability in the near future and in the future.

Innovation is also a determining factor in the competitiveness of companies. According to (Julien, 2003), strategic information and its transformation into know-how can be the very foundation of product and process innovations. The survival of the company is conditioned by its ability to make strategic decisions based on information that is well interpreted and disseminated within the structure in an adequate manner, hence the interest of the economic intelligence process. Access to value-added information certainly makes it possible to anticipate competitors' developments and tactics. Economic intelligence has thus become an essential tool for organizations in order to have a mechanism for detecting environmental trends allowing it to achieve overall performance (Sporta, 1999). The implementation of an economic intelligence approach offers the different structures the ability to learn, a possibility of capitalizing on knowledge with reference to their environment (Voyant, 1998). But this depends on their absorption capacity and the network formed with the partners that must be involved and integrated into the innovation project to guarantee its success.
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