



Economic Intelligence: Theory and applications

Dr. Hany M. Elshamy
Lecturer in Economics,
Faculty of Business Administration,
Economics and Political Sciences
The British University in Egypt (BUE)

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Abstract:

One of the important aspects in current business environment is the increased competition. In this context, organisations are becoming more aware of the importance of knowledge as a key factor in obtaining competitive advantage. A possible solution in knowledge management is Economic Intelligence (EI) that involves the collection, evaluation, processing, analysis, and dissemination of economic data inside organizations. The availability of massive quantities of data correlated with advances in information and communication technology allowing for the processing of these data provide new tools for the production of economic intelligence. The research is focused on innovative aspects of economic intelligence process (models of analysis, activities, methods and informational tools) and is providing practical guidelines for initiating this process. In this paper, I try to contribute to a coherent view on the concept of economic intelligence process. Moreover, I try to present the methods of analysis related to Economic Intelligence process and to introduce an example for the Economic Intelligence.

Keywords: Economic Intelligence; Data; Information; SMEs

JEL Classification: O30, O31, O32, O33

1- Introduction:

In the knowledge-based economy, economic intelligence and ICT (Information and Communication Technologies) represent basic components of competitive research and innovation strategies. In this paper, the concept of “economic intelligence” refers to the product resulting from the collection, evaluation, analysis, integration and interpretation of all available information, supportive of the decision-making processes pertaining to the organizational goals of stability, security and development. Focused primarily on information available outside the organization, the scope of Economic Intelligence (EI) covers wide fields, ranging from information technologies to market or legal topics.

Economic Intelligence is closely correlated with other information management approaches such as Knowledge Management (that works, in our opinion, on information collected inside the organization), or Business Intelligence, that excels in the use of software tools dealing mainly with quantitative information. Economic Intelligence mainly addresses users in need of up to date information in order to make the best decisions in the framework of a defined strategy.

The range of ideas associated with this concept is enormous, and the scientific community is far from being homogeneous or aligned to a common approach. The purpose of this research is to answer a few questions: (1) “Which are the basic concepts related to Economic Intelligence?” (2) “Which are the methods of analysis related to Economic Intelligence process?” (3) “What are the applications of the Economic Intelligence?”

The organisation of this paper is as follows: section 2 covers the concepts of the Economic Intelligence. The methods of analysis present in section 3. Section 4 presents some application for the Economic Intelligence. Conclusion presents in section 5.

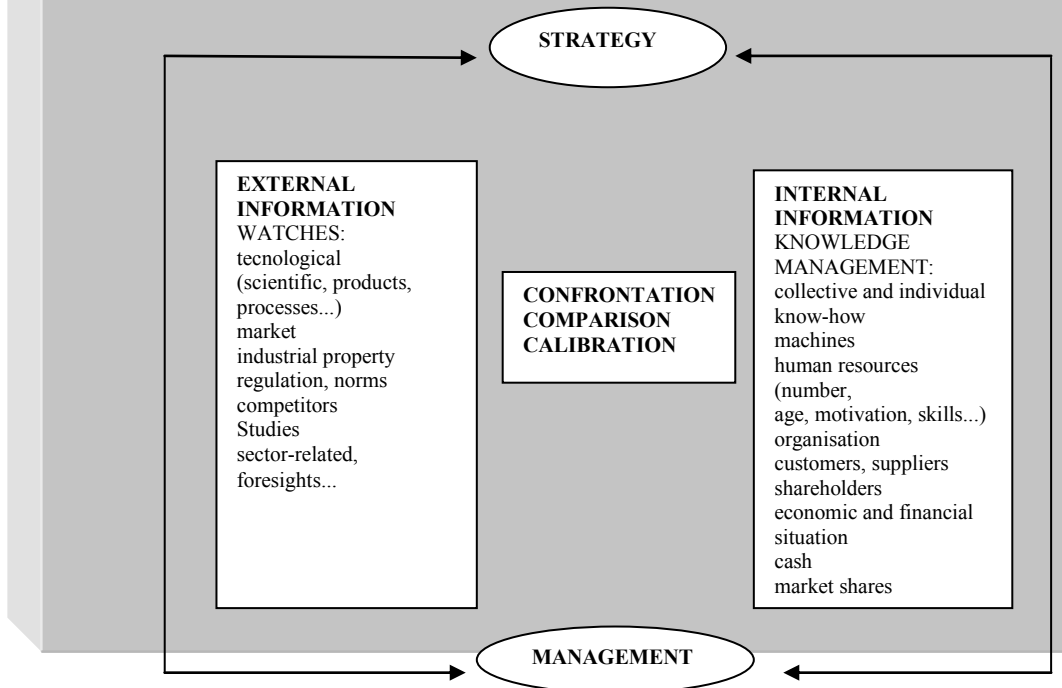
2- Concept of Economic Intelligence:

The flow of information is the lifeblood of organisations. The dramatic increase and acceleration in volume of information poses challenges for day-to-day management in all kinds of organisations. Organisational strategy needs to take account of this and individual systems need to be sensitive to it. All concerned need to understand the process of changing data into knowledge and then into intelligence.

EI is a new way of looking at these issues, connected to Competitive Intelligence, Knowledge Management and Technology Watch, but something different. In the end, what really counts is an understanding of the human dimension of the EI process.

Organisations of all sizes and kinds are challenged by the needs of information management. Some larger enterprises have developed their approach to Economic Intelligence to meet this need. The consistent demand of the Economic Intelligence user is: “I want the right information when I need it”. But consistently getting the right information at the right moment can only be the result of a permanent intelligence process and policy established at the highest level of the organisation. EI is a permanent and iterative process, following the steps shown below in what we call the Intelligence Cycle (Fig. 1). No step can be by-passed without consequence.

Figure 1: STRATEGIC IMPORTANCE OF INFORMATION MANAGEMENT



Source: Cetisme Project, 2002

The analysis of the internal situation informs the decision maker about the current situation of the company on the basis of explicit or tangible knowledge: procedures, machine and equipment capacity, the financial situation, organisation, stocks and tacit or intangible knowledge, know-how, human resources, customer relationships... The external landscape provides other types of information: technology, regulations, market issues (products and processes, customers, competitors, mergers...), and a vision of the future : technology and market predictions, political and social trends...

The growing use of terms like 'information' and 'knowledge' in different contexts means it is sometimes difficult to be clear about what is meant. We have adopted the user's perspective, utilising the user's growing understanding as follows (Bellinger, 1998):

- 1- **Data:** Raw, unconnected figures, words, events, existing without a conceptual framework of reference. With the context missing, there is little or no mean in at all in the data.
- 2- **Information:** Where there is an understanding of the relationships between data, or between pieces of data and other information, but not providing foundation for why the data is what it is, nor an indication as to how the data is likely to change over time.
- 3- **Knowledge:** When a pattern relation exists in the data and information, the pattern has the potential to represent knowledge, provided that the user is able to realise and understand the patterns and their implications. The pattern tends to create its own context rather than being context dependent, providing a high level of reliability or predictability as to how the pattern will evolve over time.
- 4- **Intelligence** (or wisdom) arises when the user understands the principles responsible for the patterns representing knowledge.

From the beginning of the earliest writings that have made reference to different models describing it, the Economic Intelligence has sometimes been presented as a communication system, sometimes as a monitoring process, as a defensive practice or otherwise offensive to some, as a set of methods and management tools for others and eventually as a management style. (Briciu *et al* , 2008)

The concept has evolved over time, from the initial form of "Business Intelligence System" to the current acceptance of "Economic Intelligence". H. P. Luhn (1958, p. 314) advanced the concept of "Business Intelligence System" in 1958.

The notion of *intelligence* is defined here, in a more general sense, as “the ability to apprehend the interrelationships of presented facts in such a way as to guide action towards a desired goal.” Wilensky defines the “organizational intelligence” as “the problem of gathering, processing, interpreting, and communicating of the information needed in decision-making processes” (1967, p. 3).

For Baumard, the “Economic intelligence” is not just an art of observation, but also an “offensive and defensive practice of information. Its purpose is to connect several fields together, in order to better serve the tactical and strategic objectives of the firm. It is a tool of connection between the action and the knowledge of the firm” (1991).

The Martre Report defines Economic Intelligence as the set of coordinated actions of search, processing and distribution for exploitation, of useful information for economic actors (Martre, 1994). These actions have been carried out legally with all the necessary protection for the safeguard of the company’s patrimony, and with the best quality, delay and cost.

According to Lesca (1995), the “competitive intelligence” or the “strategic vigil” is the information process with which the organization carries out the “anticipation” listening of those “weak points” of its economic environment with the creative goal of discovering opportunities and reducing risks related to uncertainty.

In Besson and Possin’s view, the “economic intelligence” is the art of detecting threats and opportunities by coordinating the collection, sorting, storage, validation, analysis and dissemination of useful or strategic information to those in need. It will involve adequate protection at all stages of its development: acquisition, processing, exploitation and protection of informational patrimony. In essence, economic intelligence is an informational cycle whose purpose is to produce strategic and tactical “high added value”.

In 2004, Bertacchini considers that “territorial intelligence” (concept related to “economic intelligence”) can be compared with the territoriality which results from the phenomenon of appropriation of resources of a territory; it consists in know-how transmissions between categories of local actors of different cultures” (2004).

According to Salles(2003) (quoted by , Briciu *et al* , 2008), these definitions show that there are four major periods in the evolution of the Economic Intelligence concept:

- 1- The first period, corresponding to the 1980s and early 1990s, where the definitions are primarily focused on processes, tools and techniques that are described in detail (the definitions of Wilensky, Martre and Lesca, for example);
- 2- The second period, which covers the 1990s, where the definitions concerned primarily the use of economic intelligence or strategic vigil and its overall objectives (Besson and Possin);
- 3- The third period, which began in the late 1990s, has emerged the concepts of comanagement and collective intelligence, organizational learning and collaborative work;
- 4- The definitions of the fourth period began in the 2000s, and include in addition to previous notions, those of cultural identity, regionalism and the concept of “economic defense” (Bertacchini, Juillet).

In conclusion, Economic Intelligence concerns the set of concepts, methods and tools which unify all the coordinated actions of research, acquisition, treatment, storage and diffusion of information, relevant to individual or organization in the framework of a strategy.

These processes are coherent, permanent and interactive and can induce real changes in decision-making mechanisms. The development of Economic

Intelligence in enterprises can affect all the dimensions of the business. Economic Intelligence, based on a set of structured methods and tools, will bring about important changes in individual and collective behavior.

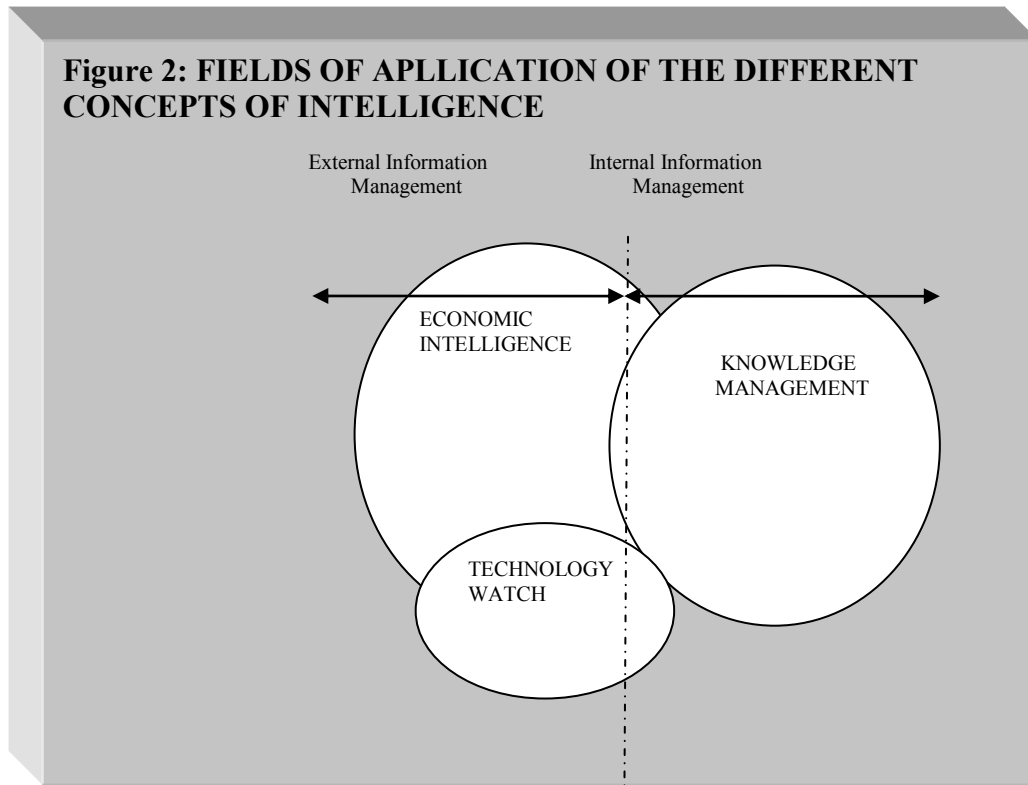
Economic Intelligence, concerns the set of concepts, methods and tools which unify all the coordinated actions of research, acquisition, treatment, storage and diffusion of information, relevant to individual or clustered enterprises and organisations in the framework of a strategy.

These processes are coherent, permanent and interactive. They induce real changes in decision making mechanisms. The development of EI in enterprises can affect all facets of the business (management, marketing, finance, production, organisation, research, human resources...). EI, based on a set of structured methods and tools, will bring about important changes in individual and collective behaviour. Technological information (Intellectual Property Rights, research, products, standards, etc.),

trends analysis and Foresight programmes have been at the forefront of intelligence methodologies and tools development in recent years, under the general heading of Technology Watch.

In addition, several other fields can be added – Competitors, Products, Markets, Customers, Suppliers, Regulations, Management or organisational trends, Finances, Public Policies... These are all in the arena of Economic intelligence.

Alternative approaches, including Competitive Intelligence, could be considered more or less similar to EI, as they are centred in market and competence issues, while the widely adopted Business Intelligence focuses on dealing with quantitative information – and the software methods and tools to process it, such as data mining or the data warehouse.



Source: Cetisme Project, 2002

On the other hand, Knowledge Management (KM) focuses on the existing knowledge inside the organisation, and ways of capturing it in a collaborative framework. Other intelligence techniques and methods, such as Defense and Lobbying, are sometimes called Strategic Intelligence, but this is a concept that is not used in this guide (see Fig.2). All these approaches working in relation to intelligence and decision-making are more or less well known in different countries and are conditioned by the management philosophies at work.

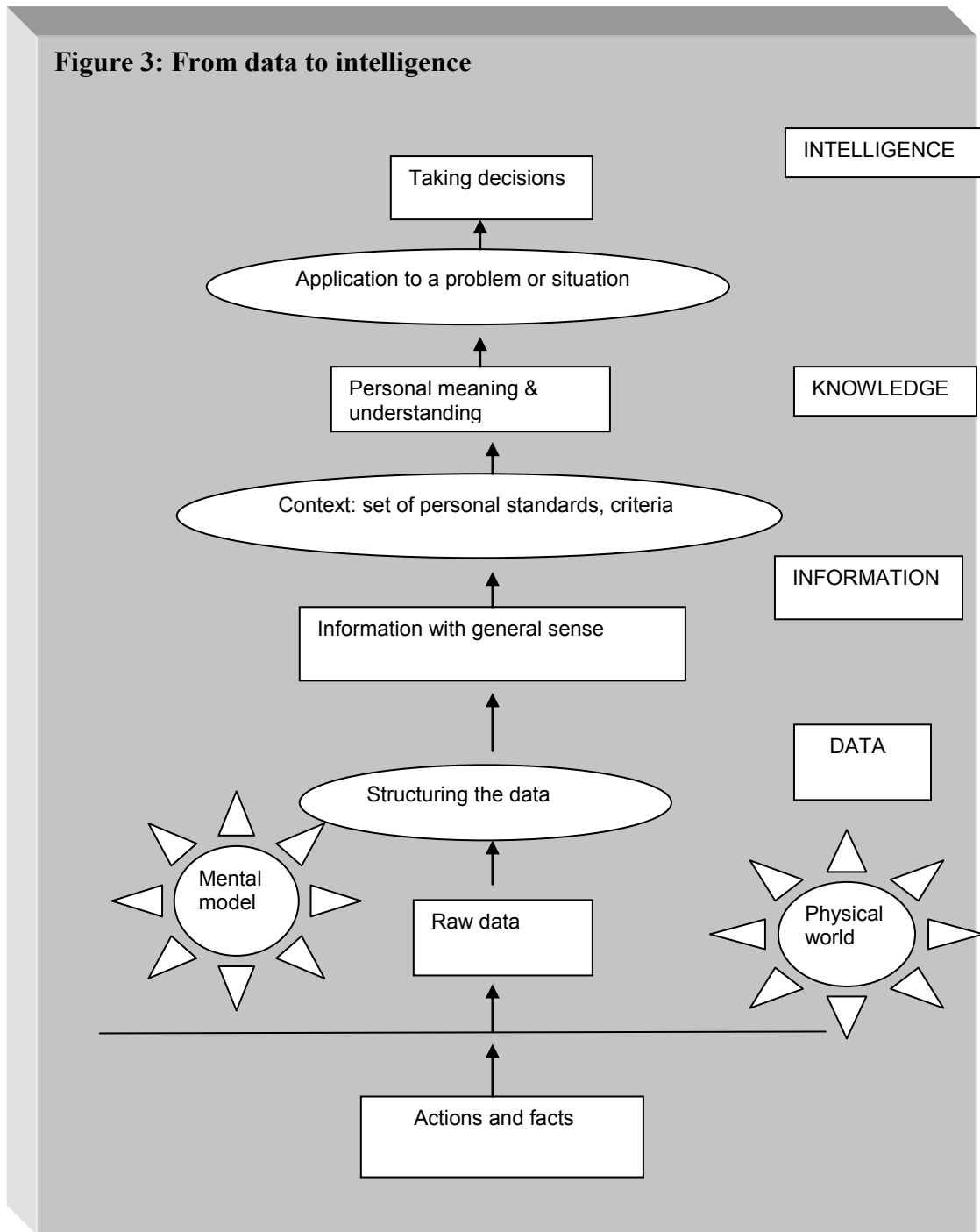
3- Economic Intelligence procedures

The Economic Intelligence process success depends on choices made in each stage, because these choices will eventually determine the type of result. The stages of this process can be defined as follows (Briciu *et al* , 2008) :

- 1) Identification of the problems to solve in terms of threat, risk and danger;
- 2) Transformation of decision-problem into information search problem;
- 3) Identification of relevant information sources;
- 4) Validation of the information sources;
- 5) Collection and validation of information;
- 6) Processing the collected information for the calculation of indicators;
- 7) Interpretation of the indicators;
- 8) Decision-making for the resolution of the problem;
- 9) Protection of informational patrimony throughout the entire process.

Also in this process, one can identify three main actors:

- 1) Decision maker is the individual in the organization that is capable of identifying and posing a problem to solve in terms of danger, risk or threat that weighs on the organization. In EI process, there is a well established flow from raw data, to the highest level of information quality. This process starts with the data sourced in the “real world”. The information is analyzed in the context of the personal standards, criteria and expectations of the decision maker to become knowledge (figure 3). Finally, the decision-maker applies this knowledge to a particular situation to create intelligence.
- 2) Information watcher (or watcher, market watcher, observer, knowledge manager, information specialist, information analyst, intelligence manager, record manager, scientific surveyor, industry watcher, gatekeeper, news master in Anglo-Saxon terminology).The range of concepts from practice referential associated with this profession is enormous. In fact, all the above mentioned concepts refer to the person within the organization that specializes in the methods of collection and analysis of information.
- 3) End user: this is the final user of the system; it can be either of the previously mentioned users or neither of the two. This user can be identified depending on which layer of the Economic Intelligence system he interacts with.



Source: Cetisme Project, 2002

In order to avoid wasting time and resources making the wrong choice, it is best to initiate the process with an organizational diagnosis (Cetisme, 2002).

This should analyze both the hard elements (strategic-structural: law, politics and economic aspects of the working environment or functional: planning, comparing results with efforts, role and task distribution) and soft elements (organizational climate, motivation, various levels of communication, leadership style, problem-solving capability and distribution of power) with the aim of discerning the way they function with respect to the organization mission and objectives.

4- The applications of the Economic Intelligence¹

In this section I would like to present the Economic and Technological Intelligence (ETI) project as an application of the economic intelligence. The Economic and Technological Intelligence (ETI) project scheme is supported under the 'Research and Innovation actions' of the EU's Sixth Research Framework Programme (FP6, 2002-2006), which has an overall budget of €46 million.

Launched under the previous Fifth Research Framework Programme (FP5), the first ETI projects used dedicated networks and information sources to promote innovation in SMEs, to gather, analyse and disseminate information on technological developments, applications and markets relevant to SMEs, and to identify and disseminate best practice. In FP6, this approach has been focused on helping SMEs in specific sectors to take part in FP6's mainstream research projects – Integrated Projects and Networks of Excellence – as a way of improving their competitiveness.

The projects' generic goals are:

- The creation of groupings of SMEs with shared innovation needs;
- The participation of SMEs and SME groupings in FP6 research projects;
- The promotion of trans-regional co-operation between SMEs and networks of industrial incubators.

The projects typically last for three years, with a total budget of around €2 million. Most are carried out by intermediary organisations such as SME National Contact Points, industrial federations, professional associations, and chambers of commerce.

This folder contains profiles of 24 projects from the first FP6 ETI call, prepared in the months immediately following their official launch. Similar folders, presenting a selection of projects from the FP6's first Co-operative Research and Collective Research calls, are also available. All FP6 projects can be found on the SME Tech web. The ETI scheme is managed by the Research and SMEs unit of the European Commission's Directorate-General for Research.

One example of these projects is (DETECT-it). An ETI project is bringing together extensive European networks of intermediaries for small and medium-sized enterprises (SMEs), and fostering transnational links amongst all the parties. Under the leadership of EBN (European Business and Innovation Centre Network), a network of business innovation centres (BICs) across Europe is developing clusters of SMEs to prepare them for participation in European research. Corporate leaders from mainstream industry are also taking part to mentor the clusters.

The DETECT-it project encourages SMEs in specific sectors of industry to participate in European research, especially the Sixth Framework Programme (FP6). It targets technology-based SMEs in three sectors – IT, renewable energy, and food quality and safety. It is mobilising a network of 30 BIC incubators in 15 EU countries to foster SME participation in FP6, and especially in Integrated Projects and Networks of Excellence, with the support of appropriate National Contact Points (NCPs) and Innovation Relay Centres (IRCs). They are developing clusters of SMEs with similar technology profiles and innovation needs corresponding to the designated FP6 research areas, and identifying opportunities for participation in new and existing projects.

The project consortium consists of 42 partners from 17 different countries, including the 30 BICs, and is coordinated by the EBN. During the course of the project, more than 1 000 SMEs will be screened and assessed for clustering. SMEs with well-defined research and technological innovation requirements and capabilities are preferred.

The BIC partners oversee the clusters, while corporate leaders from the private sector in each of the industry sectors offer them mentoring services. Since SMEs generally find it difficult to fund research activities, a number of financial support organisations are committed to assisting the clusters.

It is expected that these developed clusters will eventually generate high-tech SME start-ups, building on the foundation of results from FP6 research projects.

A network of FP6 experts in each of the three industry sectors, including NCPs and technology brokers, guides the clusters of SMEs towards appropriate FP6 research projects.

At the beginning, this pool of experts concentrated on training and educating the BICs on all aspects of the current Framework Programme. The emphasis now is on identifying appropriate Integrated Projects (IPs) and Networks of Excellence (NoEs) for SME participation.

This is a large and ambitious project, bringing together two extensive networks – the leaders of IPs and NoEs, and the locally-based innovative businesses organised by the BICs. The BICs' core mission is to incubate small businesses and make them more innovative.

¹ This part depends on the report of the Economic and Technological Intelligence (ETI) which published by the European commission (community research).

They have expanded over the last 20 years supporting innovative businesses of all kinds. Many of their SME clients have never been active in research. Therefore, as specialists in FP mechanisms, they can offer powerful insights into how these innovative small businesses that would otherwise stay off the radar screen might join in FP6 research activities. Perhaps the project's most innovative contribution lies in the integration of FP6 instruments, SME support bodies, and the SMEs themselves, and the way different organisations are being involved.

This applies in particular to sizeable corporations since the project assumes that mentoring schemes from the large corporate partners like British Telecom, Procter & Gamble, and Gaz de France can really provide the leverage to propel SMEs forward into research activities. This makes sense, however, since most large corporations – whether technology-based or not – are increasingly outsourcing many of their research requirements.

SMEs now have an opportunity to position themselves in the value chain of corporate outsourcing mechanisms. This 'network networking' effect also applies to the clever way EC intermediaries are co-operating for the benefit of SMEs and FP6 stakeholders.

The big company partners are opening up to all kinds of collaborative ventures proposed by the SMEs. Many of the large corporations are already involved in advanced DG Research instruments, such as technology platforms. It appears that they do indeed provide a link to even the most recently formed policy instruments. For example, the presence of a DETECT-it major multinational in the chemical industry has visibly cemented the commitment to the project of BICs, companies and technology platforms in that field.

A long-term goal of the project is to set up a sustainable mechanism to channel the BICs' SME clients towards appropriate research opportunities, with the help of the relevant NCPs as intermediaries.

In fact, improving NCP-BIC co-operation is seen as an important outcome of the project that will further benefit SMEs in the future. Another important facet of DETECT-it is the development of regional networking models for research in the new accession countries.

The project aims to overcome many of the obstacles preventing SMEs in the new EU Member States from participating in FP6. This will be achieved by networking with FP6 experts, corporate players, financial support instruments, and NCPs and other SME intermediaries. The consequent research results will help create high-tech start-ups in these countries.

5- Conclusion:

The purpose of this research was to contribute to a coherent view on economic intelligence process. The prior literature reveals an enormous range of ideas associated with this concept and is far from being aligned to a common approach. This paper tries to review the nature of economic intelligence and to highlight the challenges of systematically managing economic intelligence. The current process of intelligence activity is divided by organizational function, or is related to an individual manager. An optimal management solution should combine the informational tools with the analysis and synthesis abilities of informational watcher. Managing economic intelligence cannot be subject to sole technical solutions. Enabling technology to assist decision-makers in their intelligence scanning and analysis activities is a challenging task. We expect that, in the future, effective managing economic intelligence will rely heavily on an organizational approach including illustration of organizational vision, sharing tacit/explicit or formal/informal knowledge, establishing an intelligence culture, creating an organizational memory and redesigning the process of intelligence gathering, analysis, and dissemination.

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