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Chapter 5: The dominant interest of structuring environmental scanning systems: mapping of 20 years of research in Tunisia.

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Abstract

Through this study, we propose an overview of two decades of research on Strategic Environmental Scanning (ESS) and competitive intelligence (CI) in Tunisia. A particular attention is given to Scientific and Technical Scanning (STS) as part of SES practices and as a strong support to R&D activity and trigger of innovation. The objective of this work is to fill a gap faced by academic researchers interested in issues related to this field of research. The scarcity of meta-analyses within the literature review and retrospective studies could be an obstacle to the cumulative nature of the research and the capitalization of actionable knowledge from the various investigations.

Keywords : Environmental Strategic Scanning (ESS) ; Competitive Intelligence (CI) ; Scientific and technical information (STI) ; Technical scientific Environmental scanning ; Environment uncertainty ; Artificial intelligence ; Data visualization,

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1. Introduction

Nowadays, thanks to advances in digital technology, namely Big Data Data visualization and Artificial Intelligence, the Environmental strategic scanning and Competitive Intelligence (CI) practices has changed. The digital transformation is allowing a faster access to a big amount of structured, semi-structured and unstructured information. Big Data is a valuable resource for decision-makers aiming to improve their strategic positioning, whether locally, regionally or internationally Analytical Business Intelligence and AI
Software, coupled with data visualization is all tools that can facilitate access to strategic information and its deployment for competitiveness and innovation purposes.
Because of the digital gap, and the abundance of information with a high risk of perceived environmental uncertainty, developing countries, such as Tunisia, may not benefit equitably from the opportunities offered by the technology progress. An overview of the literature of this field of research could be relevant for verifying such a proposition.
We frequently see researchers conducting research based on exploratory approaches, claiming, often wrongly, that the phenomenon being studied is new. However the fact is that previous researches are neither sufficiently visible nor well enough documented to allow progress in confirmatory research. The perceived break in this research dynamic could suggest that ESS and CI have not succeeded in establishing themselves in Tunisia as a strong axis for improving the competitiveness of Tunisian products. The commonly shared observation is that local research has been eroded and there is no homogeneous community capable of offering practitioners a serious alternative to the recipes of experts from elsewhere. Authors (Souifi, 2014; Amri, 2017), showed that STIS as a continuation of the Library Information System (LIS), is disjointed from R&D practices and innovation as recommended by Jakobiak (1992).
Our project of mapping the research in the field of SES, aims at identifying the research directions in each domain of this field during two decades to verify our proposition about the supposed digital gap in the field of SES in Tunisia. The following underlying research question is:

What are the dominant issues approached by the Tunisian researchers in the multidisciplinary field of SES?

In order to provide some answers to these assumptions, we will proceed as follows:
We define the two key concepts of our framework, then we draw up a retrospective of the research published by Tunisian authors since 1996 in the proceedings of two specialized international symposiums STSI (Scientific and Technological Strategic Intelligence) and ISEI (Information Systems and Economic Intelligence). This database is used to analyze the situation of ESS and CI research in Tunisia, based on the recurrent problems and future paths of research identified by academics. The classification of the researches identified within the framework of this retrospective study, according to their disciplinary anchorage, is intended to enable a mapping to be drawn up. It will provide better visualization of the orientations and social concerns of researchers in this field and, eventually, a harmonious representation that can give meaning to what is being done to date. The possible emergence of federating interdisciplinary axes would be a relevant

contribution to this work. These preliminary exploratory results, based on content analyses, will be later the subject of expert consultation for validation.

2. Key concepts

2.1. The perceived Environment uncertainty

Uncertainty may correspond to situations of information overload, insufficient information available or ambiguity. In this case, leaders are supposed to adopt informational behavior to fill their information gaps.
The informational behavior consists of scanning the sources of change, to collect process and exploit information that can help them to make their environment intelligible:
Information is useful for reducing uncertainty in decision-making" (Pateyron E, 1998: 19), it helps to reduce the ignorance and ambiguity that often surrounds the decision-making process. It is the trigger of informational behavior and ESS at the micro-economic level and the macro-economic level.
The abundance of information that characterizes the digital era, combined with the limit of human attention, may be a source of uncertainty as well as incompleteness of information in the decision-making process. This issues, has been largely discussed by researchers building on Daft, R.L. and Lengel R.H., (1984) work.

2.2. Environmental Strategic Scanning (ESS)

ESS is a translation of the French concept of ‘’ veille stratégique’’ that includes the different facets of scanning: technological, competitive, societal…
We retain as definition that of Aaker (1983), who proposes the concept of ESS as a contribution based on information system of a team of trackers, who collect information that meets the needs of decision-makers.
ESS is also a practice of scanning immediate and long-run data at a micro-economic level which is considered a valuable external information system of the company. The most relevant information for strategic decision-making is not the structured information produced by internal units but the "weak signal" type (Ansoff, I.1975) which alerts on ruptures or changes that can generate threats or opportunities for a company. As Aguilar, F. (1967) pointed out, it is these "bits" of information that reach decision-makers through different channels, especially oral communication, that is of value for strategic action. Such information used to be gathered on the research ground be, Nowadays, found across the social networks. Competitive Intelligence (CI), as part of SES practices, concerned with the macro-economic level, aims to protect the national heritage and its promotion at

The international level. As part of a digital strategy, it could capitalize on the progress made in the field to allow and promote access by entrepreneurs to information and knowledge useful for their business

Sustainability. German economic patriotism and Japan's sense of the primacy of the national interest have made these two countries leaders in robotics and low AI.

2.3. Scientific and Technical information as source of innovation

Information is the content of message apt to trigger some action (J.de ROSNAY, 1975, p.168), thence, attention is refocused on the conditions that enable it to make sense, and to provide a useful interpretation for an appropriate action, Amabile and Caron-Fasan (2002). This information is submitted to a group of managers who collectively give them meaning and generate knowledge.
These are stored in a database and distributed to members of the organization. Therefore, we noticed that knowledge is the intermediary between Scanning and innovation, that means the collected information through the scanning process, is transformed into useful knowledge for innovation (Chouk 2007)
STI is specialized information that brings together all the information produced by research and necessary for scientific activity as well as for industry1. The expression “specialized information” is sometimes used in synonym.[1] All the information produced by research refert to scientific and technical information, as defined by the official NASA’s website. it covers all scientific and technical sectors and comes in many forms as paper, abstract, journal article, presentation, etc. that contains and delivers the results (the analyses of the data, facts, and resulting conclusions) of basic and applied scientific, technical and related engineering research and development. TSI are mainly used in the establishment of a state of the art, in the context of technology scanning, TSI feeds the information system applied in the scientific, technical, technological and economic environment which allows the company to scan its scientific, technical and technological environment.

2.4. Scientific and technical Scanning as external information system

Since the work of Jacobiak (1999), Scientific and Technical or Technological Scanning (STS) associated with R&D and thus with industrial innovation, has evolved in several directions according to the disciplinary anchoring of the research laboratories. All these laboratories consider information as the fundamental resource: engineers in R&D structures in the industry, researchers in information sciences, researchers in management sciences (management of intangible resources), and computer scientists.

The huge amount of information is not valuable until companies can extract useful information from it. It is up to human intelligence to clarify and give sense to this information. Information processing is the step which data and information are brought to the state of knowledge through a systematic process of evaluation, interpretation and synthesis. The purpose of this step is to filter the information to keep only that is relevant and appropriate; in concrete terms, that offers an added value in the decision-making process.

[1] Information scientifique et technique (IST) | Enssib » [archive], sur *www.enssib.fr*

Information processing involves the acquisition, recording, organization, retrieval, display, and dissemination of information. From a cognitive perspective, information processing theories focus on how people : attend to environmental events, encode information to be learned and relate it to knowledge in memory, store new knowledge in memory, and retrieve it as needed Schunk (1996).

2.5. From humain to Artificial intelligence and data visualization

Simon (1960) refers to intelligence, the phase of collecting all possible information about the company and its environment that would help to reduce uncertainty and deal with complexity. At present, intelligence is increasingly solicited in all its forms: collective intelligence, emotional intelligence, and artificial intelligence.
A more elaborate definition characterizes AI, as "a system's ability to correctly interpret external data, to learn from such data, and to use those learning to achieve specific goals and tasks through flexible adaptation (Andreas K; Michael H. 2019). Computer science researchers define AI research as the study of "intelligent agents": any device that perceives its environment and takes actions that maximize its chance of successfully achieving its goals (Poole, Mackworth & Goebel, 1998).

AI, as a simulation of human intelligence which is distinguished by its computing power, liberates humans from algorithmic tasks by submitting a packet of data to them. The merit of AI would, therefore, be its ability to overcome the limitations of human attention in tracking and mapping sources. It provides the monitor with information to which the traditional way of formulating the search equations would not have provided access.

Datavisulaisation is a technique adapted to Big Data and an advanced form of scientometrics which is part of the bibliometrics. All three have the purpose of studying, processing and representing the information contained in scientific and technical publications. As result, which relate to scientific and technical information. Data visualization is the visual and interactive exploration and graphic representation of data of any size, type (structured and unstructured) (Jack G. Zheng 2017). The purposes of visualizing data are multifold, ranging from general comprehension and understanding of ideas, supporting information behaviors (analysis and decision support, information seeking, browsing, navigation). Data visualization allows trackers to find hidden data patterns and how they are handled.

Our research aims to verify if Tunisian researchers in the field of ESS are taking in consideration the progress achieved in information processing devises. Our project aims to identify the research directions in each domain of this field during two decades.

The research objects, which differ, depending on the objectives and the scanning and CI practices, are analyzed from the perspective of the researcher's discipline:

1. The industrial engineer would be attentive to the translation of innovation throughout the

Technological and scientific scanning process;

2. Information science specialists would pay particular attention to the sources and channels of information transmission;

3. Managers would focus on one or other dimension of their discipline: the organizational and managerial dimension or the artefactual dimension;

4. Computer specialists would focus on the engineering and actuarial aspect (data analysis, design, and modeling of information systems).

Our research is particularly interested in ESS and its integration into research issues in the 86 articles collected. The present mapping summarizes the occurrences of words defining ESS, which will allow us to identify them in the corpus of the treated problems.

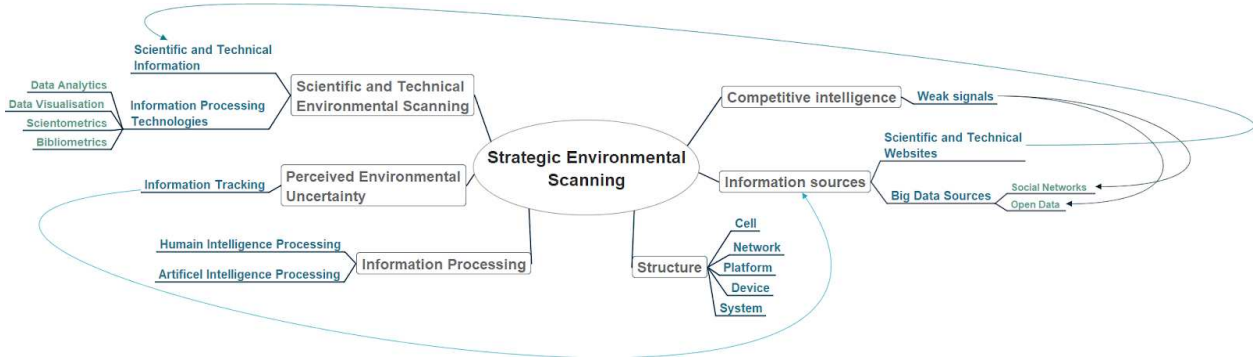

Figure 1: cartography of the Main perception of SES by practitioners

3. The Tunisian context

Tunisia is a country considered to be in the process of development and eternal political and economic transition.

This situation is likely to generate a high level of perceived environmental uncertainty. But the status of consumers and providers of free digital data, of those left behind by the data industry, does not allow these countries to take full advantage of the opportunities that the global superpowers GAFAM (Google, Apple, Facebook, Amazon Microsoft) and BATX (Baidu, Ali Baba, Tencent, and Xiaomi) have capitalized on their favor thanks to their visionary dimension. Europe, but to a lesser degree, is also failing with the CNILS (Commissions Nationales de l' Informatique et Liberté) to emerge a European data industry (L. Alexandre (2017), while the reduction of perceived environmental uncertainty in a globalized world no longer seems possible today without a strategy in the data industry.

The limit of human attention that is too much solicited nowadays, faced with the multiplicity of data sources, makes the use of digital technologies unavoidable: the media (images, videos, audio, podcasts, social media, such as Facebook, Twitter, YouTube, Instagram), public and private clouds, the Web, IoT, traditional and modern databases. Without information literacy skills, environmental uncertainty is bound to increase.

In this context, we want to address what does research in the Tunisian context reveal about ESS and CI practices? Are there at the level of public institutions and/or at the level of enterprises a common use of these sources and/or an awareness of the stakes of a possible under-use of digital technologies?
Based on a mapping of ESS & CI research in Tunisia, we will design the questionnaire that we will administrate to researchers/experts identified through content analysis. The Delphi method that will be used recommends not going beyond 18 experts (Paliwoda, 1983, cited by Okoli & Pawlowski, 2004).

However, we will ensure that the four disciplines mentioned above are represented in proportion to the volume of research published and identified during the content analysis stage.

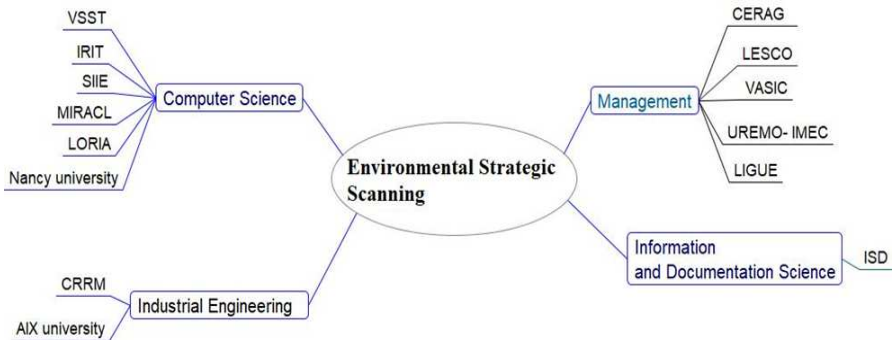

Figure 2: Cartography of research units within the disciplines interested in ESS

4. Method of data collection

In the exploration process, the data collected comes from papers published at the ISEI conference, papers published at the STSI seminar, scientific journals, and theses, taking into account the following criteria: the Tunisian nationality of the authors, their affiliations to Tunisian research laboratories, and emerging issues from the Tunisian context.
However, the database collected is the result of individual research that cannot claim to be exhaustive. Moreover, we were confronted with the absence and/or inadequacy of certain data. First of all, the unavailability of all papers published at the ISEI and STSI conference, which were limited to only four editions of the ISEI, namely the editions of the years 2008, 2009, 2010, 2012, and only five editions of the STSI seminar, namely the editions of the years 1998, 2008, 2001, 2004, 2007, and 2010. Secondly, the absence of a

Database of defended theses. Our collection was based solely on the theses available at the university library of the business school (ESCT) of Manouba University. All in all, we were able to obtain 85 references from four sources, i.e.: ISEI, STSI, scientific journals, theses.

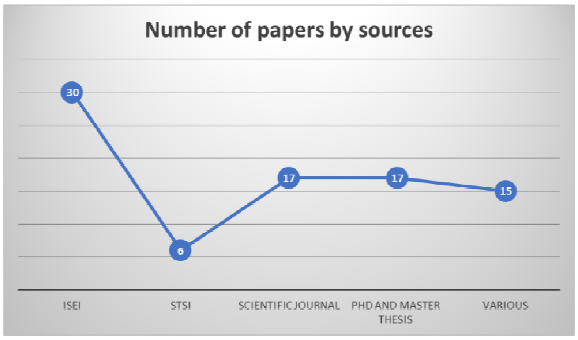

Figure 3: Reference Number by source

The discrepancy in the number of references collected by the source is not due to chance, it can be explained first of all by the availability and accessibility of the data as mentioned above, and by the nature of the source. For example, the highest number of publications collected is that of the ISEI conferences (30 publications), this can be explained first by the geographical location of this conference: Tunisia, which encourages Tunisian researchers to participate and publish, then by the number of editions carried out: the conference is in its eighth edition, and finally by the broad spectrum of the conference, which covers several fields, which gives researchers from different disciplines the opportunity to participate.
On the other hand, the STSI seminar research area is based strictly on strategic, scientific and technical intelligence. Notably, STSI is a conference that has never been held in Tunisia, it is often held at its headquarters in Toulouse, and it has been held once in Morocco, which explains the dominance of French publications and the small number of Tunisian publications.

4. **Articles by field**

By collecting primary data subject to automatic processing using NVIVO 11 plus out of the 85 references collected, we were able to distribute them over the 4 areas mentioned above in the mapping, namely: management, computer science, industrial engineering, and information and documentation sciences. The following figure shows this distribution:

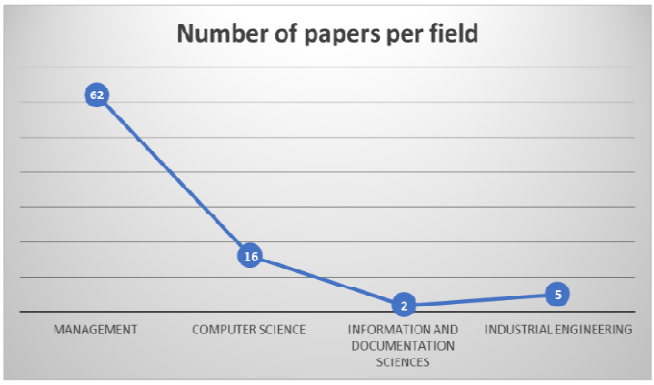

Figure 4: Distribution of papers by research area

The field of management accounts for the largest number of articles 62 articles, while the field of information science and industrial engineering has only one publication each. This leads us to note that the most frequently treated research areas focus essentially on problems related to strategic intelligence, which includes, among others, business intelligence, marketing intelligence, etc. It is in this perspective that we have opted for the analysis of the most frequent occurrences of concepts to identify the most addressed issues and the most cited research perspectives.

5. The most frequent occurrences of concepts

We submitted a text corpus to Nvivo 11 plus software and defined nodes to sort and eliminate redundancies, to identify the most frequent concepts in the problems and research perspectives of the articles found. The interest of the word cloud is to be able to visualize the lexical scope and the most frequent terms.

The following cartographies allow a visual representation of the most cited keywords in the search problems according to the different sources:

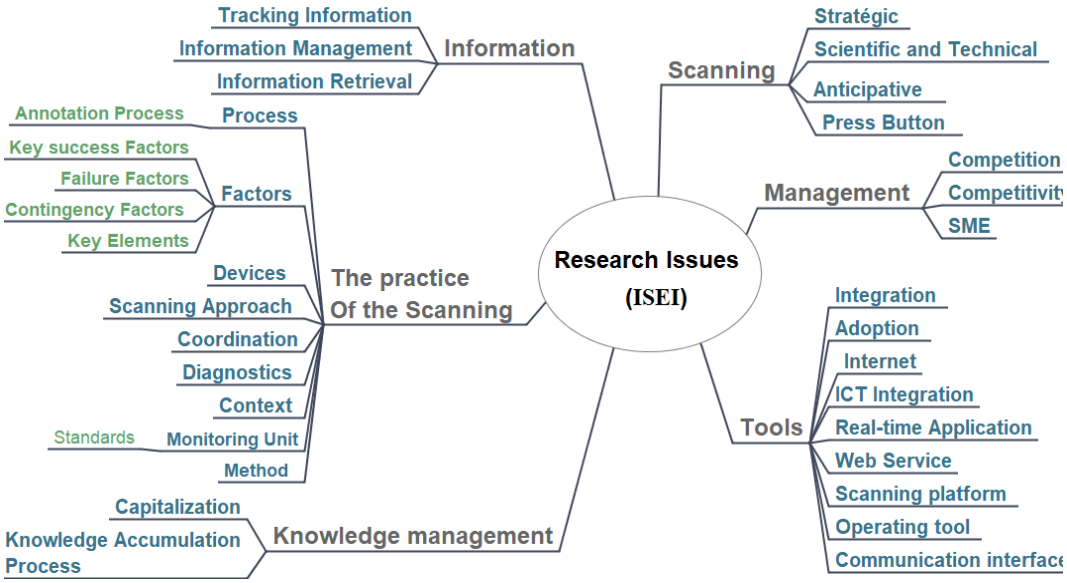

Figure 5: Cartography of research issues (ISEI)

Among the keywords most cited in the research issues dealt with in the articles published by the ISEI conferences, we found: watch, information, knowledge, technology scanning, competitiveness, competition. These words are mainly related to the field of management. Other keywords refer to the problems of the practice of scanning such as process, practice, trust, factors. As a result, the issues most frequently dealt with, relate to ESS as determinants and success factors for the competitiveness of companies in different contexts affected by globalization. The knowledge that results from scanning practices also seems to be an important concern of researchers. This is understandable because knowledge management is considered an extension of economic scanning and economic intelligence.

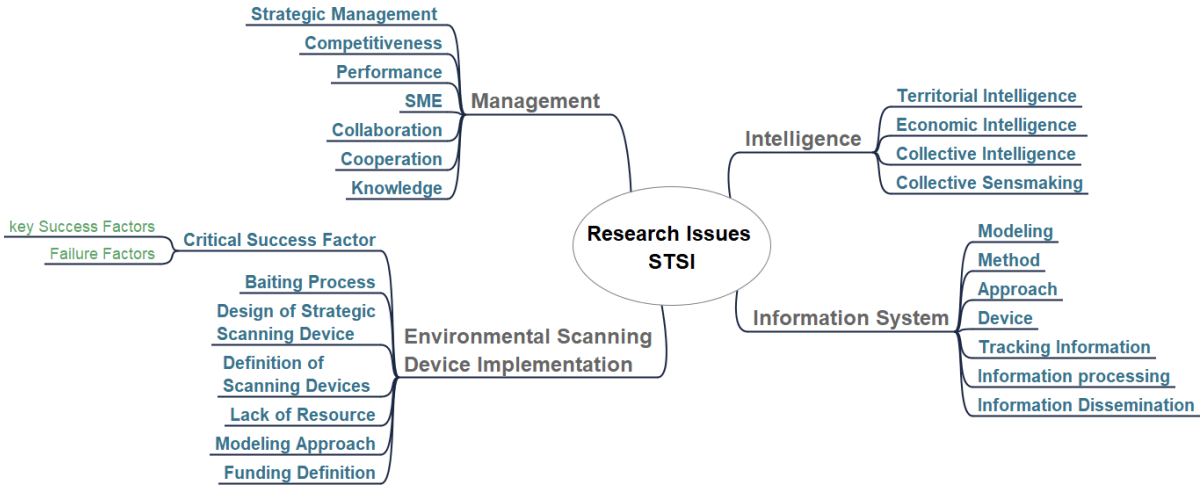

Figure 6: Cartography of research issues (STST)

The keywords most frequently cited in the research problems dealt with during STSI seminars are oriented towards the management field. This can be explained by the less general and more specific aspect of the colloquium, which is specifically dedicated to STSI Scientific and Technical scanning. The problems most frequently addressed are distributed as we can see in the cloud around the central notion of the system. The lexical field includes frequent notions such as intelligence, approach, modeling, method, and priming. Research problems related to the implementation of strategic intelligence systems seem to be central to this scientific community.

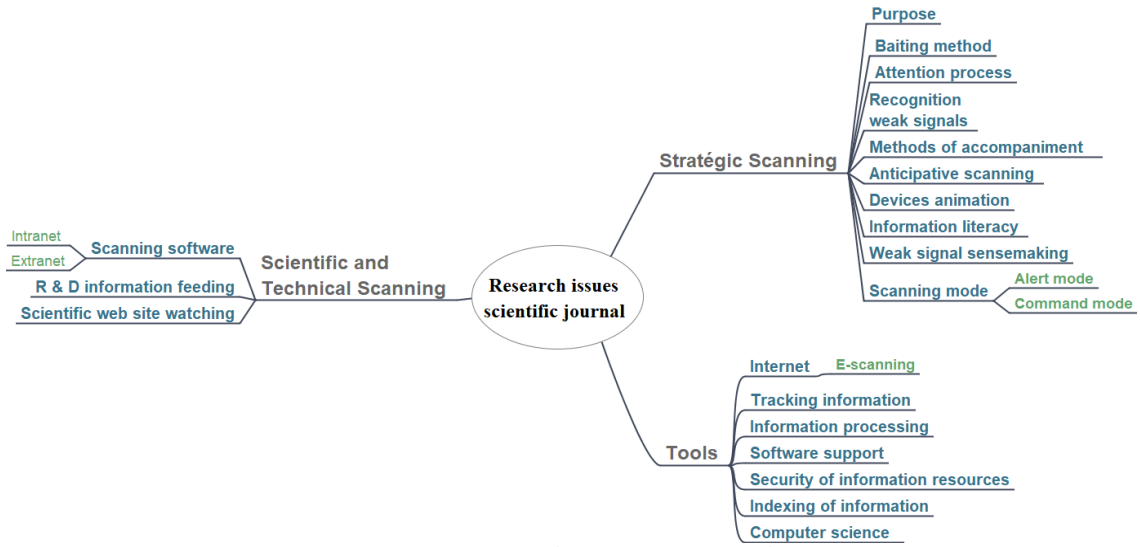

Figure 7: Cartography of research issues (Scientific journal)

The most frequent keywords in the research problems, mentioned in scientific journals are broader, covering several fields: computer science, management. The problems dealt with are not only related to strategic intelligence but also technological intelligence. The articles in scientific journals seem to go beyond the issue of success factors, and determinants of good scanning practice, to focus more and more on the scanning mode (kamoun-Chouk, S. 2009) : "Alert mode" that is recommended by experts as a critical success factor of ESS practices and “Command mode’’ which doesn’t allow the institutionalization of the ESS practices. Digital devices and technologies deployed during the implementation of the scanning system are also present in the identified published papers.

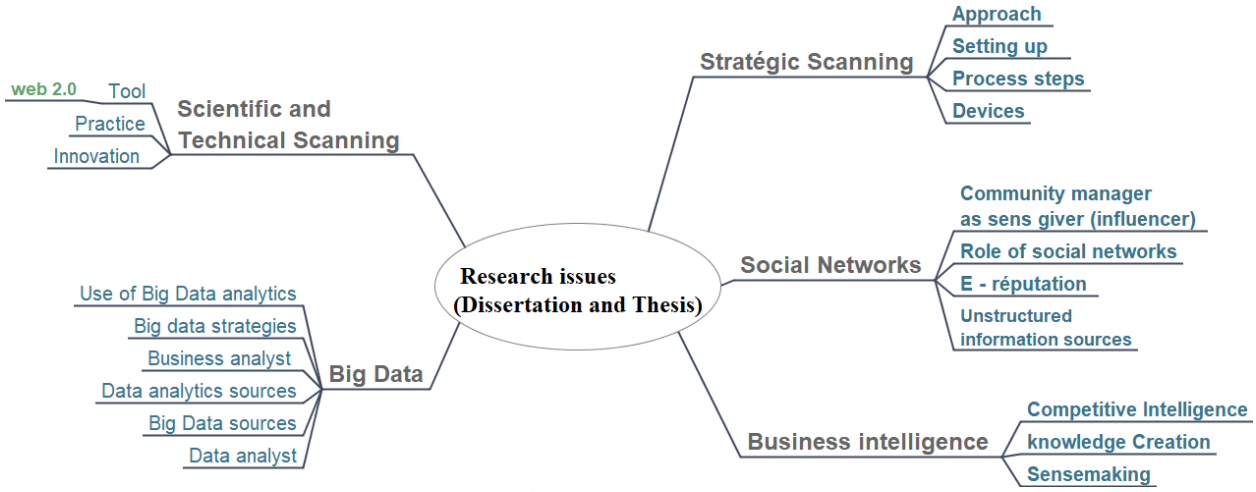

Figure 8: Cartography of research issues (Ph.D.and master thesis)

Most of the seventeen master's and Ph.D. thesis treated in the framework of this preliminary study are those available at the Tunisian Business Schools, so it is not surprising that the keywords are limited to the field of management. The research problems related to ESS are the most dealt with in the Ph.D. and master thesis.

6. Research perspectives

The analysis of the corpora found in the various works was done manually, given the relatively limited number of corpora. Our reading of the passages relating to perspectives reveals a weak tendency to deal with problems related to the integration of scanning in strategic or decision-making information systems and the taking into account of technical progress. Only one article in our corpus deals with this subject and plans to go further. Big data offers an opportunity to watch and BI specialists to use semi-structured and unstructured data that are the most relevant for anticipation. AI and data visualisation for its part enables faster processing of increasingly varied and voluminous source documents.

7. Timeline of research issues

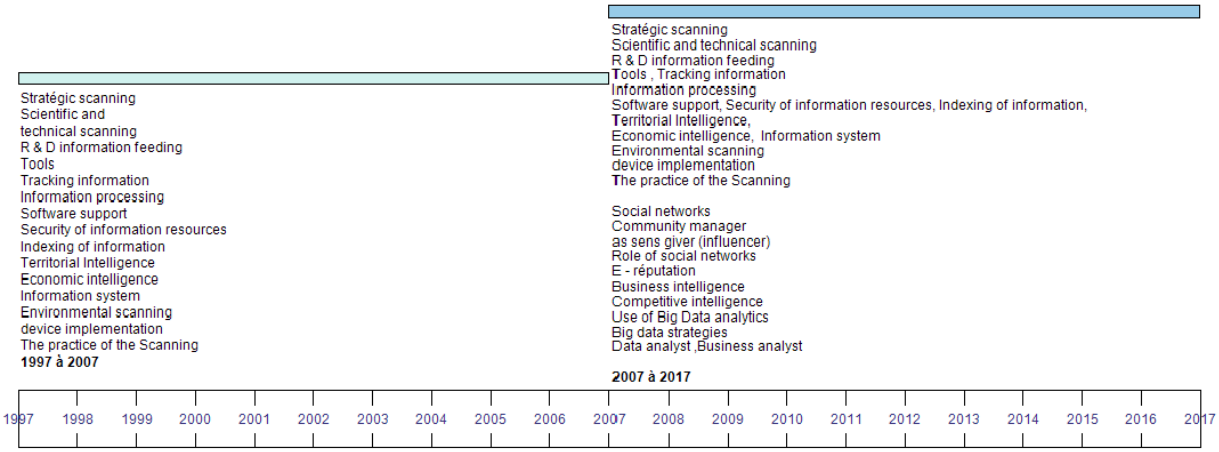

Figure 9: Timeline of research issues

Following the analysis made by Nvivo and after the extraction of the most frequent occurrence of concepts we have been able to identify the most common themes in the research issues. To better understand the evolution of the research issues, we have designed a timeline with the help of the website Frisechronos. This timeline illustrates the most frequently discussed themes over two consecutive periods; the first period is between 1997 and 2007 and the second period is between 2007 and 2017.

The first period underlines an emerging interest in the concept of Environmental scanning, and scanning practices, a long-standing research trend since the pioneering work of Aguilar (1967). With the evolution of digital technologies, issues have taken a technological orientation such as inter-organizational platforms devices (Kamoun-Chouk, S. (2008) and the integration of Computer Supported Cooperative Work to support ESS practices (Kamoun-Chouk, S., 2014). Research continues to follow the same topics, but since the emergence of big data, we have noted that several research projects have integrated these concepts into their research issues. Big Data analytic and Big data strategies use, (Amri, A., 2017), Community manager as sense giver i.e. influencer of the e-reputation of young startups (Gabani, W.2017) are some examples of these new topics. Therefore, and although these new emerging directions progress still at a slower pace than the global

trend. We notice that until now, we have not found any research that introduces artificial intelligence into the practice of Strategic scanning.

Artificial intelligence could be an interesting research track for researchers in the field. Therefore, although research continues to progress, it is still at a slower pace than the global trend.

8. Conclusion

Let us recall at the end of this research work that we started with the objective of making a map, with the research in the field of ESS, aims at identifying the research directions in each domain of this field during two decades. Faced with a lack of traceability of research in this field, researchers tend, through their publications, to fall back on the perceived ease of exploration approaches. Our contribution was essentially at this level. Thanks to the collection of primary data, subject to automatic processing using NVIVO 11 plus out of the 85 references collected (see appendix), we were able to distribute the publications over 4 research areas, namely: management, computer science, industrial engineering, and information and documentation science. And to highlight the most frequent occurrences of concepts, we submitted to the Nvivo 11 plus software a corpus of text and defined nodes to sort and eliminate redundancies, to identify the most frequent concepts in the problems and research perspectives of the articles found. Our preliminary results show that the research in Tunisia focuses mainly on the determinants of success of the implementation of the scanning and that the practice of the scanning is mostly occasional. We can see that decision-makers always adopt the scanning command mode and not the alert mode, and we can, therefore, conclude that the practice of scanning is not always part of the company's culture.

The managerial orientation of the articles we were able to collect and the low number of publications in the field of documentary in Tunisia did not allow us to find publications on subjects that include keywords: Big Data, bibliometrics, data visualization and AI for publications in information and documentation fields. Research in the field of IST aims at supporting innovation and R&D. which suggests that the innovation strategy in Tunisia, as among telecommunications operators Souifi, 2014, Amri, 2017), does not explicitly or formally integrate the STS so that it can capitalize on the contributions of digital progress and contribute to business performance and their competitiveness. These issues seem far from the Tunisian researchers' interests for the moment.

On the other hand, if we examine the most frequent occurrences of concepts in the research perspectives, we notice that they take into account the technological evolution and the importance of integrating new technologies in the structuring of scanning. But few types of researchers tried to deal with this issue to bring out evidence allowing to identify the future tracks of researches. In addition, the ESS can now be done through the web. This tool is allowed anticipating and taking advantage of relevant digital information to generate knowledge and help informed decision making.

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Communication Conference					
VSST					
Nbr	**Year**	**Article title**	**Authors**	**Affiliation**	**Source**
1	2015	Intelligence territoriale et sécurité sanitaire des aliments : vers un système d'information au service des acteurs tunisiens	Kamoun Chouk Souad/ Annabi Thouraya	ETHICS - ESSECT	Colloque VSST 2010, Toulouse, 25-29 octobre.
2	2010	Identification des compétences pour l'animation de la veille anticipative stratégique et proposition d'un outil d'accompagnement d'animateurs novices	Kriaa Salima, Lesca Humbert	ETHICS – ESSECT/ CERAG Grenoble 2	Actes-VSST 2010-Toulouse
3	2007	Création et partage de connaissances environnementales : application à la veille stratégique	Kamoun Chouk Souad	-	VSST' Veille Stratégique Scientifique et Technologique, Marrakech, 21-25 octobre.
4	2004	Proposition de facteurs clés de succès pour l'amorçage d'un dispositif de veille stratégique dans les PME/PMI : cas d'une PMI tunisiennes	Kamoun Chouk Souad/ Lesca Humbert	CERAG-Grenoble 2	Colloque VSST (Veille Scientifique Stratégique et Technologique), organisé par l'IRIT, l'UPC et la SFBA, Toulouse, 25-29 octobre.
5	2004	Connaissances actionnables à l'usage des chefs de projet de Veille, novices dans ce domaine. Vers un Guide d'application pour la maîtrise des Facteurs Critiques de Succès.	Boulifa Ines, Humbert Lesca	CERAG-Grenoble 2	Colloque VSST 2004. 12 p. (Toulouse 25 octobre 2004)
6	2001	Vers un système national d'intelligence économique intégrant la PME tunisienne	Kamoun Chouk Souad/ Chichti Fatma	IRIT / DFBA / FPC	Colloque VSST (Veille Stratégique Scientifique et Technologique), organisé par la FPC, la SFBA, et l'IRIT, 15-19 octobre à Barcelone.

E-mail address: souad.chouk@esct.rnu.tn / marouaa.benfradj@gmail.com

7	1998	Définition d'un dispositif de veille stratégique pour la PME tunisienne	Chichti Fatma Hassanaly Parina	Institut Supérieur de Documentation (Tunisie)	VSST'98: veille stratégique scientifique & technologique (Toulouse, 19-23 octobre 1998)
8	1998	Définition d'un dispositif de veille stratégique pour la PME tunisienne	Kamoun Chouk Souad, Salles Maryse	CRRM- Université aix-marseille	Colloque VSST (Veille Stratégique Scientifique et Technologique), organisé par l'IRIT le CNRS –INP-UPS & Delta Veille, Toulouse,19-23 octobre
		SIIE			
9	2012	Linking competitive intelligence to knowledge management can lead to a sustainable competitive advantage	Chebbi Ghannay JiheneBen Ammar Zeineb	ESSEC ESCT	Journal of Intelligence Studies in Business 2 (2012) 23-34
10	2012	Business Intelligence and informational advantage: case study in Tunisian public organism	Besbes Abir Khesnissi Mohamed Ghazi Gharbi Jamel Eddine	LIGUE-ISCAE	International Conference on " Information Systems & Economic Intelligence "Jeudi, 16 février 2012 Session 3
11	2010	Society and science: divergent rationalities	Mzioudet Mednini Balkis	CREM - Université de Rennes 1	3d International conference on information système and economic intelligence jeudi 18 fev 2010 sousse (session B2)
12	2010	A web platform for a self-diagnisis of CI requirements by SMEs	Talel Zid Hkiri Emna Salles Maryse	FSJEGJendouba etUniversité Toulouse	3d International Conference on Information Systems and Economic Intelligence, At Hammamet Tunisia, Volume: 3 (fev 2010)
13	2010	Integration of the competitive intelligence in enterprises : case of Tunisian pharmaceutical laboratories	Ben Arfa-Belkadhi Hajer	UREMO- IMEC Carthage	Deuxième conférence de l'AIMS communication 38
14	2009	Mise en place de processus de veille stratégique et concurrentielle dans le domaine de la réassurance : le cas du département de documentation de BEST	Ayari Narjes Ramrajsingh Athissingh	CRRM- Université aix-marseille	Colloque SIIE 2009, Hammamet, Tunisie

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15	2009	Les effets de l'ouverture, de l'innovation stratégique et l'intelligence économique sur le marché de travail dans les secteurs de l'industrie tunisienne	Terzi Chokri	FSEGT	2ème Conférence Internationale sur les "Systèmes d'Information et Intelligence Economique" 12, 13 et 14 Février 2009 à Hammamet – Tunisie. Session C2
16	2009	Information technology effectiveness as a success key factor for economic intelligence	Mahfoudhi Sami, Faiz Rim	LARODEC- IHEC	2ème Conférence Internationale sur les "Systèmes d'Information et Intelligence Economique" 12, 13 et 14 Février 2009 à Hammamet – Tunisie. Session A3
17	2009	Le traitement des alertes dans un contexte de veille sanitaire : cas de l'agence nationale de contrôle sanitaire et environnemental des produits (ANCSEP) en Tunisie	Souad Kamoun Chouk,Annabi Attia ThourayaMahjoub Zarrouk Alya	ETHICS - ESSECT	Tunisie, SIIE'2009, Hammamet (Tunisie), 12-14 février.
18	2009	Du besoin informationnel à la cartographie de l'information : donner à l'information un caractère stratégique et décisionnel par sa modélisation heuristique	Ayari Narjes, Hamdi Hassen, Ramrajsingh Athissingh	Cherpa-IEP d'aix en provence aix marseille III	2ème Conférence Internationale sur les "Systèmes d'Information et Intelligence Economique" 12, 13 et 14 Février 2009 à Hammamet – Tunisie. Session B3
19	2009	Etude de cas pour la sélection des services web	Turki Hazar	RIADI-GDL, ENSI	2ème Conférence Internationale sur les "Systèmes d'Information et

		basée sur les contraintes temporelles	Kossentini,Leila BaccoucheHenda Ben Ghezala		Intelligence Economique" 12, 13 et 14 Février 2009 à Hammamet – Tunisie. Session c3
20	2009	Vers une approche pour la capitalisation des connaissances décisionnelles : application au domaine médical	Turki Mohamed, Gargouri Faiez	MIRACL- Institut Supérieur d'Informatique et du Multimédia de Sfax, TUNISIE	2ème Conférence Internationale sur les "Systèmes d'Information et Intelligence Economique" 12, 13 et 14 Février 2009 à Hammamet – Tunisie. Session A5
21	2009	Vers une nouvelle approche d'annotation sémantique des articles scientifiques : application du domaine médical	Majdoubi,Jihen Gargouri Faiez	MIRACL- Institut Supérieur d'Informatique et du Multimédia de Sfax, TUNISIE	2ème Conférence Internationale sur les "Systèmes d'Information et Intelligence Economique" 12, 13 et 14 Février 2009 à Hammamet – Tunisie.
22	2009	L'impact contextuel sur la typologie de veille dans les organismes publics	Khenissi Mohamed Ghazi, Gharbi Jamel-Eddine	LIGUE-ISCE	2ème Conférence Internationale sur les "Systèmes d'Information et Intelligence Economique" 12, 13 et 14 Février 2009 à Hammamet – Tunisie.
23	2009	Proposition d'une norme d'une cellule de veille sur internet	Ghrab Hatem, Ouergli Faika	ESC-UMAT	2ème Conférence Internationale sur les "Systèmes d'Information et Intelligence Economique" 12, 13 et 14 Février 2009 à Hammamet – Tunisie. Session B5
24	2009	Capitalisation des connaissances sur l'objet image du patrimoine : acception de partage et de communication par les acteurs	Khemiri Nabil Sidhom Sahbi, Ghenima Malek	MIRACL Laboratoire RIADI-GDL [Manouba]	KIWI - Knowledge Information and Web Intelligence
25	2009	Enrichissement des contenus par la réindexation des	Harbaoui Azza,	Esc, UMAT Loria	KIWI - Knowledge Information and

		usagers : un état de l'art sur la problématique	Ghenima Malek, Sidhom Sahbi	Nancy 2 Nancy	Web Intelligence
26	2009	La veille stratégique sur le web un outil d'optimisation de portefeuille boursier	Bessgheir Amel	ESCE-UMA	2ème Conférence Internationale sur les "Systèmes d'Information et Intelligence Economique" Session C2
27	2009	Innovation informationnelle, le temps et l'intelligence économique : quelques pratiques et politiques	Neffati Mmohamed, Chkir Ali	L'URDEE-Université de Sfax	dans le cadre de la 2ème Conférence internationale sue le Systèmes d'Information et l'Intelligence Economique (SIIE)'2009, tenu les 12-14 Février 2009 à HAMMAMET, Tunisie.
28	2009	Veille stratégique : Un Facteur d'échec paradoxal largement avéré : la surinformation causée par l'Internet. Cas concrets, retours d'expérience et piste de solutions	Lesca Humbert, Kriaa Medhaffer Salima, Casagrande Anette	CERAG-Grenoble 2 ETHICS- ESSEC	CAHIER DE RECHERCHE CERAG n°2009-01 E5
29	2008	Veille et intelligence économique au sein des TPE : vers l'application des outils gratuits	Hamdi Hassen, Alhiane Rachid, Ben Dhia Kamel	CRAIC IEP-Université Paul Cézanne Aix - Marseille III, France	Siie'2008 14-16 Février 2008 à Hammamet – Tunisie Session B4
30	2009	Intelligence territoriale entre continuité rupture scientifique	Mzoudet Mdnini Balkis	CREM-Université de lorraine	2ème Conférence Internationale sur les "Systèmes d'Information et Intelligence Economique" 12, 13 et 14 Février 2009 à Hammamet – Tunisie
31	2010	Experience return of implementing a collaborative environmental scanning platform within a Tunisian	Kamoun Chouk Souad	ETHICS - ESSECT	3d International conference on SIIE, February 18-20, 2010-Sousse, Tunisia.

		observatory			
32	2008	Système de veille générique par la méthode centre acteur	Mseddi Rim, Marouane Raoudha	-	Siie'2008 14-16 Février 2008 à Hammamet – Tunisie Session A2
33	2008	La veille stratégique dans les organismes publics d'un pays émergeant	Khenissi MohamedGhazi, Gharbi Jamel-Eddine	LIGUE-ISCAE	Siie'2008 14-16 Février 2008 à Hammamet – Tunisie Session C2
34	2008	L'intelligence économique et le knowledge management : enchainement ou complémentarité ?	Ben Fadhel Olfa, Aydi Ghassen	FSEGS	Siie'2008 14-16 Février 2008 à Hammamet – Tunisie Session A3
35	2008	L'impact de la veille stratégique sur la performance des entreprises tunisiennes certifiées	Lejmi Hamdi	LORIA- Inria Nancy	Siie'2008 14-16 Février 2008 à Hammamet – Tunisie Session A4
36	2008	Intelligence Economique et TIC : bilan d'une décennie d'apprentissage dans le contexte des PME/PMI tunisiennes	Turki Chichti Fatma/ Kamoun Chouk Souad Kriaa Medhaffe Salima	CERAG-Grenoble 2	Siie'2008 14-16 Février 2008 à Hammamet – Tunisie Session A5
37	2008	L'accompagnement des dirigeants, facteur critique de succès de l'émergence de pratiques d'Intelligence économique	Kamoun-Chouk Souad	FSEGS et ISGT TUNISIE	Siie'2008 14-16 Février 2008 à Hammamet – Tunisie Session A2
		Divers			
38	2019	Contribution of Intellectual Capital to Competitive Intelligence	Fatma Chichti, Inès Jedidi	ESCT	International journal of innovative research and development ; Vol 8 Issue 7
39	2017	Towards integrated model of Big Data (BD), Business Intelligence (BI) and Knowledge	Kamoun-Chouk Souad,Berger	UMA	KMO (Knowledge Management in Orgnaizations), Beijing, 21-25 Août

		Management (KM),	Hilary, Bing Hwie Sie		2017
40	2016	Co creation of value for Tunisian Environmental Scanning Agriculture Observator	Kamoun-Chouk Souad Uden Lorna	UMA	Communications in Computer and Information Science book series (CCIS, volume 731)
41	2013	Vers un système d'Intelligence Territoriale au service du Groupe Chimique Tunisien	Tlig Fadhila Souad Chouk	-	Journées RAME (Recherche Appliquée en Management des Entreprises) ISET Radès 10 et 11 avril
42	2013	How could Library information Science Skills Enhance Information Literacy in the Tunisian High Independent Elections Authority	Yosra Seghir Souad -Chouk	-	Eropean Conference on Information Literacy, Istanbul 22-25 October
43	2012	Sécurité sanitaire des aliments en Tunisie : l'apport différentiel de l'intelligence territoriale pour une gouvernance à plusieurs dans une logique de développement durable »	Chouk Souad	-	Agro-ressources et écosystèmes, Enjeux sociétaux et pratiques managériales, Septentrion presse universitaire
44	2010	L'Intelligence Economique en action au sein de laboratoires pharmaceutiques : une investigation à travers ses fonctions	Hajer Ben Arfa, Olfa Zribi Ben Slimane	UREMO-IHECT	XIXème Conférence de l'AIMS - du 01 au 04 Juin 2010 - Luxembourg.
45	2008	Reconnaissance et Interprétation des Signaux faibles : une méthode d'Accompagnement à distance utilisant l'Internet. Présentation d'un cas	Humbert Lesca, Salima Kriaa Medhaffer	CERAG-Grenoble 2	Colloque AFME Grenoble 2008
46	2008	Towards a better articulation between creativity, innovation and ICTs: the case of an environmental scanning CSCW project for a tunisian administration context	Chouk Souad Kamoun	UMA	MCIS- (Mediterranean Conference on Information Systems)

47	2007	Les métiers de l'Information-Documentation : Quelles nouvelles compétences pour s'imposer dans la société du savoir	Kamoun-Chouk Souad	UMA	Revue maghrébine de documentation. 2007, Num 17, pp 43-63, 21 p ; ref : 2 p
48	2007	Le concept de « création collective de sens » Un usage pertinent dans le contexte de veille anticipative stratégique (VAS-IC®)	Ben Fredj Ben Alaya Lamia	IHEC	La Revue des Sciences de Gestion 2007/4-5 (n°226-227), pages 99 à 109
49	2005	Expérimentation d'une méthode d'amorçage du processus d'attention à l'environnement dans des PMI tunisiennes	Chouk Souad Lesca Humbert	CERAG-Grenoble 2	10 ième Colloque de l'AIM (Association Information et Management) Toulouse, 21-24 septembre
50	2004	Veille Anticipative Stratégique et PME/PMI tunisiennes : la création collective de sens, un moyen efficace pour amorcer l'intérêt des dirigeants à l'égard des informations de veille	Chouk Souad et Humbert LESCA	CERAG-Grenoble 2	9ième Colloque de l'AIM (Association Information et Management) Paris, 26- 28 mai.
51	2004	Le support de l'information : un facteur clé dans le processus d'attention collective aux signaux faibles	Chouk Souad Lesca Humbert	UPMF -CERAG-Grenoble 2	Cahier de recherche CERAG n° 2004-34. Le contenu de ce cahier a d'abord été présenté en 2003, sous le titre « Le support, un facteur clé de succès dans un processus d'attention aux signes d'alerte précoces » aux Journées d'étude Montp' 2003
52	2003	Un dispositif de veille stratégique pour l'amélioration de la formation universitaire en entrepreneuriat	Lesca Humbert , boulifa Ines , ben soltane Ramzi	CERAG-Grenoble 2	Colloque AIRPME : 23-24 octobre 2003
53	2003	Veille Stratégique, exploration de la fonction d'Animation : conceptualisation, état d'avancement et perspective de validation empirique	Lesca Humbert kriaa Salima	CERAG-Grenoble 2	3emes Journées Internationales de la Recherche en Sciences de Gestion, Association Tunisienne des Sciences de Gestion, Gammarth, 20-22 fév. 2003

Mémoires et thèses

Thèses

54	2013	Identification des facteurs critiques de succes pour la mise en place d'un dispositif de veille stratégique	Tamboura Ines Boulifa	Lesca Humbert Ben Ammar Mamlouk Zeineb	ISGT
55	2011	Système d'information ressources humaines et identification des compétences distinctives : recherche intervention avec conception d'un outil de gestion appliqué à l'entreprise Poulina Group Holding en Tunisie	Rajhi Oueslati Sarra	Ben Ammar Mamlouk Zeineb / Bidan Marc	RASEG Université Tunis El Manar / DEGEST (Angers) Ethics ESSEC Tunis
56	2009	Intelligence territoriale et observation socio-économique et environnementaux : un processus d'intelligence territoriale adapté (PITA) à l'observatoire de Menzel Habib au sud de la Tunisie	Haddad Mohamed	Meyer Vincent	Université de Metz
57	2006	Veille stratégique : l'évaluation de l'utilisation des agents intelligents	Fourati Fatma	Goumeziane Smail / Michel Kalika	Université Paris 9
58	2006	Veille anticipative stratégique : problématique de l'animation : proposition et expérimentations des connaissances actionnables situées : cas des entreprises tunisiennes	Kriaa Medhaffer Salima	Lesca Humbert	Université Pierre Mendès France (Grenoble)
59	2005	Veille anticipative stratégique : processus d'attention à l'environnement : application à des PMI tunisiennes	Kamoun Chouk Souad	Lesca Humbert	Université Pierre Mendès France (Grenoble)
60	2004	Veille anticipative stratégique pour réduire le risque des agressions numériques	Sadok Moufida	Lesca Humbert / Ben Ammar Mamlouk Zeineb	Université Pierre Mendès France (Grenoble)

61	2004	Comment aider les managers à être davantage capables d'exploiter les informations de la veille anticipative stratégique en valorisant leurs connaissances tacites : proposition d'une méthode et évaluation des résultats de son application	Ben Alaya Lamia	Lesca Humbert	Université Pierre Mendès France (Grenoble)
62	1997	Démarche de mise en place d'un système de veille stratégique au service de la PME tunisienne	Kamoun Chouk Souad	Salles Maryse	Université Toulouse
		Mémoires			
63	2002	Intelligence économique : émergence, principe et procédure de mise en place : Application au marché tunisien.	Khalil Houda	Ziadi Jamel eddine	FSEGT
64	2008	Veille et système de gestion : cas des entreprises de mise à niveau	Ben Abdallah Hamami Achref	Frioui Mohamed	FSEGT
65	2009	Intelligence économique et création de valeur : cas des entreprises tunisiennes de service.	Hamdi Nadia	Frioui Mohamed	FSEGT
66	2016	Rôle des medias sociaux dans la gestion de l'e-réputation des e-entreprises : étude exploratoire dans le contexte entrepreneurial tunisien	Gabani Wajih	Chouk Kamoun Souad	ESCT
67	2017	Conditions d'intégration des analyses Big Data dans un dispositif de Business Intelligence pour l'aide à la décision stratégique	Amina Amri	Chouk Kamoun Souad	ESCT
68	2015	Appui institutionnel aux PME tunisienne en matière d'intelligence économique : Perception des institutionnels	Maafi Rim	Chouk Kamoun Souad	ESCT
69	2014	Pratiques de veille technologique et innovation de produit dans les entreprises tunisiennes de télécommunication	Souifi Amira	Chouk Kamoun Souad	ESCT

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NBr	years	Article title	Authors	Affiliation	Sources
70	2016	Les Archives à l'Ère des Big Data Les Enjeux de l'Archivage des Données Numériques Massives	Ben Amor Fatma Mkadmi Abderrazak	ISD-UMA	*DTUC '18*.
71	2014	Modélisations dans une approche de veille générique (GWatch) : Clustering centré acteurs de veille	Mseddi Rim Sidhom Sahbi , Ghenima Malek Ben ghezela Henda	LORIA-Université de lorraine/ ESCEM-UMA/ RIADI-GDL	Concepts and Tools for Knowledge Management (KM)", Nov 2013, Marrakech, Morocco
72	2014	Veille scientifique, veille technologique : Application à l'économie et à la recherche en Tunisie	Chichti Fatma Hassanaly Parina	ISD	Rev. Maghr. Doc. Information: (no 17), pp. 43-63
73	2014	Computer Supported Collaborative Environmental Scanning: Diagnostic Framework and Its Application for a Tunisian Case Study	Kamoun Chouk Souad	(LARIME)-Tunisia	Journal of Information & Knowledge Management, volume 13 Numéro 4, december 2014, 16 pages.
74	2014	A Legal Knowledge Management System Based on Core Ontology	Gargouri Faiez, Dhouib Karima	MIRACL	A Legal Knowledge Management System Based on Core Ontology. Information Systems for Knowledge Management, 183–214.

75	2013	Modélisation centrée sur l'acteur dans une approche e-veille : analyse de corpus sur les nanotechnologies	Mseddi Rim, Sidhom Sahbi, Ghenima Malek, Ben Ghézala Henda	Laboratoire RIADI-GDL-Manouba	KIWI - Knowledge Information and Web Intelligence
76	2012	Territorial Intelligence as a knowledge creation process: the Tunisian National Food Safety System Experience,	Kamoun-Chouk Souad	UMA	The UIP Journal of knowledge management, july issue
77	2010	La veille stratégique : Bilan de la culture numérique la veille du 2.0	Khénissi Mohamed Ghazi Gharbi Jamel-Eddine	Université de Jendouba	Les Cahiers du numérique
78	2010	La surinformation causée par l'Internet : Un facteur d'échec paradoxal largement avéré : Veille stratégique – Cas concrets, retours d'expérience et piste de solutions	Lesca Humbert Kriaa-Medhaffer Salima Casagrande Annette	CERAG-Grenoble 2	La Revue des Sciences de Gestion
79	2009	Identification et Validation des Facteurs Critiques de Succès pour la mise en place d'un dispositif de veille stratégique	Inès Boulifa Tamboura / Zeineb Ben Ammar Mamlouk	ETHICS-ESSECT	La Revue des Sciences de Gestion
80	2009	Comment convaincre de l'utilité de la veille stratégique? Le cas d'une PMI tunisienne	Kamoun Chouk Souad	UMA	La Revue des Sciences de Gestion, Direction et Gestion n° 237-238, mai août p 195.
81	2008	E-Montoring® pour l'accompagnement à distance de chefs de projet de veille novices en la matière	Lesca Humbert, Kriaa Salima	CERAG-Grenoble 2	AAAF Association Aéronautique et Astronautique de France, Nice, 8-10 novembre
82	2007	Le concept de « création collective de sens » Un usage pertinent dans le contexte de veille anticipative stratégique (VAS-IC®)	Ben fradj lamia	Université de carthage - IHEC	La Revue des Sciences de Gestion

83	2007	Les métiers de l'Information- Documentation : Quelles nouvelles compétences pour s'imposer dans la société du savoir	Chouk souad	UMA	Revue Maghrébine de Documentation etd'Information N°17, pp. 43-63.
84	2007	Environmental scanning in Tunisian manufacturing SMEs,	Kamoun-Chouk Souad	ETHICS-ESSECT	Journal of Information Knowledge Management, Vol 6, N°1, pp 57-67
85	2005	Connaissances actionnables à l'usage des chefs de projet de Veille, novices dans ce domaine.Vers un Guide d'application pour la maîtrise des Facteurs Critiques de Succès.	Boulifa Ines, Lesca Humbert	CERAG-Grenoble 2	Vers un Guide d'application pour la maîtrise des Facteurs Critiques de Succès.
86	2005	Expérimentation d'une méthode d'amorçage du processus d'attention a l'environnement dans des PMI tunisiennes	Lesca Humbert Kamoun Chouk Souad	CERAG-Grenoble 2	Colloque AIM Toulouse, sept 2005, CD Rom, 2005. □halshs-00103223□