

Modelling the Dimensions of a Competitive Intelligence – Based Corporate Culture Using the Digital Memory BRAIN 7

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Abstract

In the context of a dynamic business environment, leading software companies are focusing their strategies on a market-driven approach, exploiting the opportunities provided by competitive intelligence mechanisms, in order to continuously monitor the competitive landscape.

Being aware of the lack of cultural patterns aligned to competitive intelligence issues from software industry, we intend to further explain the design of specific dimensions related to a competitive intelligence (CI) based organizational cultural pattern, which is customized for software companies.

Our paper highlights the creative task of conceiving several dimensions of analysis which characterize the cultural aspects from the organizational life of software companies; by interpreting the information resulted during the open discussions with IT experts from Belgium software industry and taking into consideration the evidence that every organization involved in software development has different goals and requirements for a CI based culture, we propose four dimensions of analysis: expert-coder versus utility developer, competing on talents versus competing on technology, creative impulses versus procedure compliance and shared CI data versus classified CI data. The ideas launched during the interviews were interconnected in a digital map provided by the software “The Brain7”.

We identify areas for further research by crossing the most relevant dimensions of analysis and outline the opportunities for the integration of CI within the corporate culture.

Keywords: *corporate culture, competitive intelligence, digital memory, software industry.*

JEL classification: M14, M15.

Introduction

The study objective is to design several dimensions of analysis related to a competitive intelligence (CI) based cultural pattern in order to emphasize the role of corporate culture in supporting CI techniques.

This study offers a contribution by investigating the moderating effects of specific cultural variables from software companies on the relationship between

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corporate culture and CI mechanisms. The analysis reflects both our ideas on designing the cultural pattern and two experts' perceptions on the software industry realities, as the practical side is often the point at which competitive intelligence has an opportunity to take hold and to be taken into account in the redesign of the corporate culture.

Our argument for the development of the dimensions of analysis related to a Competitive Intelligence-based corporate culture customized for software companies is represented by the fact that few studies on the links between competitive intelligence and corporate cultures were undertaken in this field.

The paper is then organised as follows: in the first section, dedicated to literature review, we highlighted the issues referring to the corporate culture and competitive intelligence; the second section is a description of our research methodology and instrumentation; in the third section, we presented the dimensions of the cultural pattern based on competitive intelligence that we conceived, using the facilities provided by "TheBrain7" digital memory; in the last section, we presented the conclusions, the limitations of our study and its managerial implications.

1. Literature review on competitive intelligence-based corporate cultures

One of the definitions related to corporate culture agreed by the academics and practitioners in this field reflects that it is circumscribed by group parameters (language, concepts, boundaries, ideology) and by normative criteria that provides the basis for allocating status, power, authority, rewards, punishment, friendship and respect (Schein, 1985). Thus, the corporate culture can be considered as being a system of representations and shared values by all the members of a company (Lemaitre, 1984). We consider at MIME (Laboratory of Intercultural Management Research, ICHEC Brussels Management School, Belgium) that the culture makes sense for the individuals and particularly, the corporate culture is a managerial dimension that gives sense.

In the context of competitive intelligence (CI), the culture emphasizes what the members of an organisation pay attention to and monitors in the external environment and how it responds to this environment.

The key points of CI definition refers to the process of gathering, collection, and analysis of raw data as input to the CI process, including only legal and ethical activities, the purpose being represented by the support for better decision making and better achievement of the company's objectives (Fuld, 1995; Kahaner, 1996; McGonagle & Vella, 2002; Buchda, 2007).

In the CI process, there is a continuous interaction between producers and end-users of intelligence, both in the beginning phase to clarify the demands as well as in the feedback phase to establish the quality and utility for the resulted products (Albescu et al., 2007). In the culture's approach of sense-making, we appreciate that the role of the CI corporate culture refers to building identity and

embedding people to be integrated in a market-driven approach.

By taking into account the “4C” approach of competitive intelligence developed by Weiss (2002): Collecting the information, Converting information into intelligence, Communicating the intelligence and Countering any adverse competitor actions, we consider that the last two items (communication and countering) must be efficiently integrated within a competitive intelligence based corporate culture, by means of feedback mechanisms, which have the role to ensure that CI data matches all departments’ needs.

Establishing a competitive intelligence culture within an organisation is a key element to the success of any competitive intelligence practice. The implementation of a CI culture involves the development of a CI community based on practical issues reflected in a market-driven approach (Beurschgens, 2011).

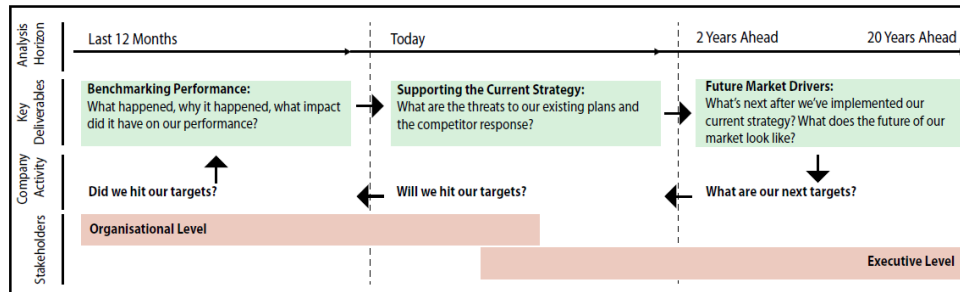


Figure 1. Different focus of a Top-down or Bottom-Up Approach to Building a CI Culture

Source: Beurschgens, 2011

We can extend the approach developed by Beurschgens, considering that the members of organizations make sense of their experiences based on the outcomes of CI techniques and other contextually-relevant cultural issues related to environment scanning. It is important to remind that the vision (what we do) gives sense to the actions - what we want to be, what we need to do (Vanderlinden, 2009).

A CI community, which represents the pillar of a CI-based culture, must be characterized by the following aspects (Fleisher, 2004):

- **Traits** – creativity, persistence, communication skills, analytical ability, understanding of scientific methodology, independent learning skills.
- **Cognitive domains/Teachable skills** – strategic thinking, business terminology, market research and presentation skills, knowledge of primary information sources and research methods; enhancement of interviewing and communication skills, analytical ability, and a familiarity with scientific methodology.
- **Professional experience** – knowledge of corporate power structures and decision-making processes, industry knowledge; enhancement of primary research skills and journalistic interviewing and observational

skills.

A CI-based culture must take into consideration the valuable information provided by specific tools such as company profiling (the most used to the SCIP study on the State of the Art of Competitive Intelligence, 2006), competitive benchmarking, market analysis, early warning alerts, customer profiling, technology assessments, daily reports, strategic impact analysis etc.

Diverse cultural factors affect the cross cultural and cross border CI projects, and thus research into the cultural dynamics affecting a society is a prerequisite for its success. Cultural factors are so different between countries that a bolt-on CI system will fail to add value (Brody, 2008). The challenges inherent in cross-cultural transfer may actually diminish competitiveness, instead of enhancing it. Managers need to understand the cultural context of best practices, both at the source and at the target, in order to overcome these challenges and facilitate the transfer process.

To beat the competition in today's globalized economies, firms involved in international business must have a cross-culturally aware CI program. Such a program should reflect the needs of the firms, facilitate the information processes, and assist the strategic decision-making by management (Tian and Tobar, 2004).

2. Research methodology

Our research is based on an abductive approach, which is used to generate original scientific contributions to a pattern of competitive-intelligence based corporate culture, customized for software companies, by interpreting the meanings of the concepts used by experts from IT industry that participated at our survey. In the case of an abductive approach, we don't launch hypothesis, but we must achieve to them; the theory that we need in view to explain the issues isn't available and it must be discovered by going on the field, then developing an empirical knowledge that must be validated by the return on field (Vanderlinden, 2009).

In this way, two interviews with professionals from Belgium software industry were conducted in view to gain valuable information regarding the dimensions of analysis of a competitive intelligence based cultural pattern which is specific to software companies. The discussions were open and we connected all the ideas provided by our respondents to our cultural issues.

Because our insights on this research are dependent on a cascade and convergent with many others, we used as data collection tool the digital memory embedded into "TheBrain7" software, which provided the opportunity to create a network of information organized in the way we desired.

In order to integrate within a digital memory our ideas associated to the four dimensions of analysis of a competitive intelligence based culture and the feedback provided by the experts from software industry which participated at interviews, we used the free trial version of the "TheBrain7" software.

The most important advantages of using "TheBrain7" digital memory in qualitative research are determined by the creation a digital map similar to paper-

based mind maps, but without limit to the number of ideas and information that can be added and networked. In our approach, the “drag and drop” facilities of this software connected all the information that makes the most sense to us and to gain a better understanding of the links between the relevant ideas regarding our modeling process of a competitive intelligence base culture customized for software industry.

Connections and relationships make the difference between static information and actionable knowledge. Because during the interviews we were overloaded with information regarding our research goals, “TheBrain7” use allowed us to face the challenge to manage multiple connections between our ideas and the answers provided by our respondents.

The conceptual model associated to the dimensions of analysis of a competitive intelligence based culture, which was previously discussed and improved during the interview sessions, is represented in figure 2:

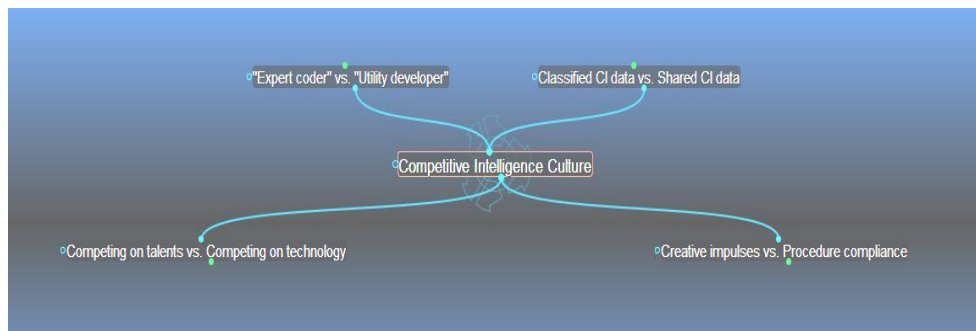


Figure 2. Customized dimensions of analysis of a competitive intelligence based culture for software companies

In the next section of the paper, we will emphasize the main contributions related to the development of each dimension of analysis, by taking into account the peculiarities of different players from the software industry.

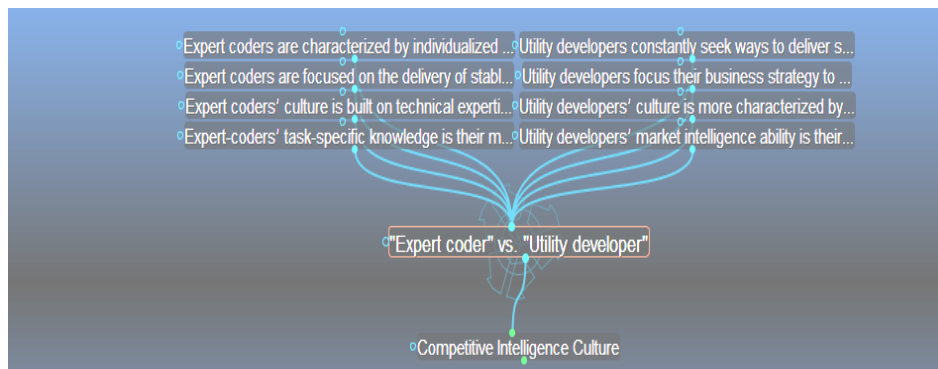
3. Development of the cultural pattern scales using “TheBrain7” digital memory

The process concerning the development of the scales related to a competitive intelligence based cultural pattern, customized for software companies, involved several brainstorming sessions which reported different insights; then, after the interviews with the experts from software industry, based on open discussions, we decided to have in view only four dimensions of analysis: Expert-coder versus Utility developer, Competing on talents versus Competing on technology, Creative impulses versus Procedure compliance and Shared CI data versus Classified CI data.

3.1. Expert-coder versus Utility developer

The concepts “expert-coder” and “utility developer” were previously discussed by Nambisan (2002) that conceived a matrix associated to the clustering process of the software companies, by taking into account two dimensions: nature of software product and range of software development tasks. According to its vision, the utility-developers are mainly focused on how to market their own software products, while expert-coders are involved in the design and coding of major software products on contract basis.

We developed this approach, considering that the most relevant core capability in the case of utility developers is their market intelligence ability, while in the other case (expert coders), it is represented by the task-specific knowledge. We assumed that the utility developers, focusing their business strategy to branding awareness, constantly seek ways to deliver superior customer value by means of efficient after-sales support, while the expert coders constantly develop practices that are focused on the delivery of stable system in accordance with the technical specifications through continuous learning processes. The experts from software industry revealed us that two types of behaviours can be found in the IT companies: individualized behaviours that are motivated primarily by recognition for their high-skills and collective behaviours motivated by their teamwork’s performance, if the employees belong to a virtual community which can be very active. All these ideas were stored in the digital memory provided by “TheBrain7” software, being linked to the dimension of analysis: Expert-coder versus Utility developer (figure 3).



**Figure 3. The knowledge base related to the dimension of analysis:
Expert-coder versus Utility developer**

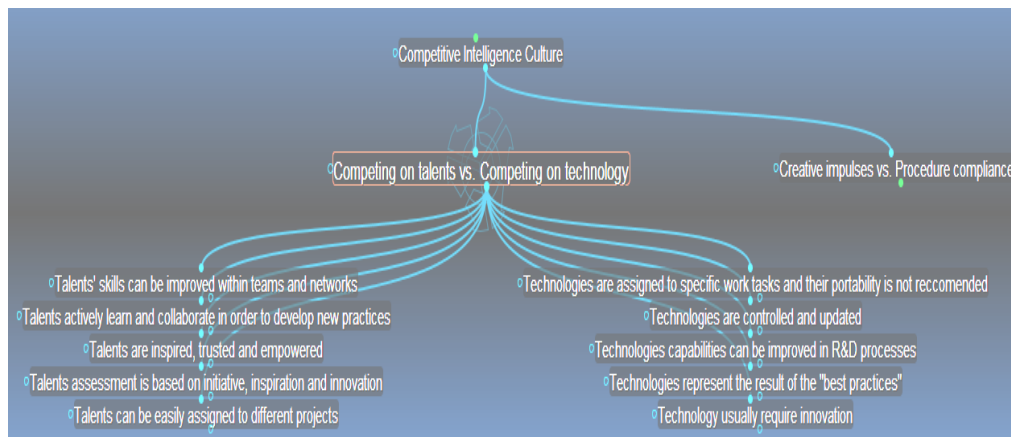
Other interesting ideas shared during our interviews refer to the fact that a global trend for software companies is to develop in first instance their technical expertise and to become utility developers on medium and long term. The competitive intelligence function is more often widespread at the level of utility developers, as a consequence of their market-driven strategy.

3.2 Competing on talents versus Competing on technology

Competing through differentiation is the key success factor of the software business. Adding innovative features to their software products, choosing the selling strategy – license-based or software as a service, performance testing, minimizing costs regarding the implementation of information systems – there are only few examples of how software companies can prove their superiority.

In the new knowledge based economy the human resources get a new status as they are those who generate and use the knowledge. It's only one reason for which more scholars, but also practitioners talk about the human capital (Nastase and Hotaran, 2011), that we call "brainware" in the context of software industry.

Even the competitive advantage of a software company is dependent on talents, represented by the "brainware" resources, which include software developers' knowledge and expertise, on the one hand, and technologies, on the other hand, we included these issues in a single cultural dimension of analysis. The ideas resulted from interviews were also stored in the digital memory provided by "TheBrain7" software (figure 4)



**Figure 4. The knowledge base related to the dimension of analysis:
Competing on talents versus Competing on technology**

We consider that the talents can't be only "controlled" by a software company through a competitive-intelligence culture, which allow the monitoring process of the triangle: talent – experience – expertise that facilitates the competitive positioning. Further, the talents are assessed on initiative, impact, inspiration, and innovation; they must be adequately motivated and rewarded, because they are the most valuable intellectual capital assets of a software company.

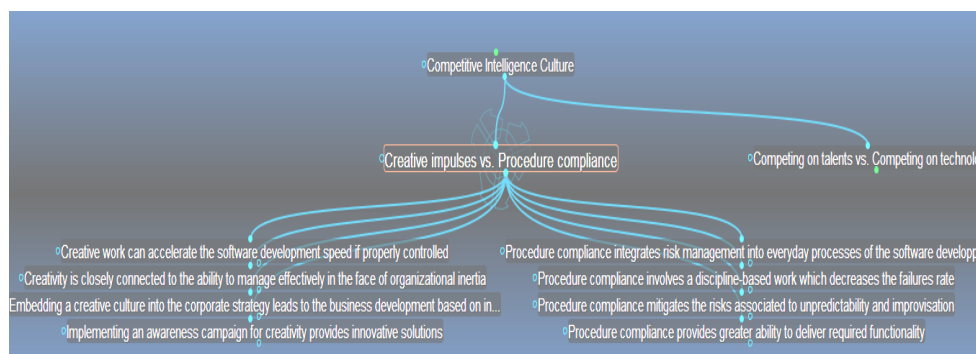
We also take into consideration in our approach of this cultural dimension adapted to software companies' context the following aspects: talents are inspired, trusted and empowered, while technologies are controlled and updated; talents actively learn and collaborate in order to develop new practices and new solutions

for software industry while technologies represent the result of the “best practices” developed within the software industry; talents can be easily assigned to different projects in accordance with their skills and ability to contribute to the company’s goals, while technologies are assigned to specific work tasks and their portability to diverse tasks is not recommended; talents’ skills can be improved within teams and networks, without any additional investment, while technologies’ capabilities can be improved in R&D processes, requiring high investments.

3.3 Creative impulses versus Procedure compliance

As the software market is characterized by small opportunities of differentiation in comparison with other sectors, we consider that creativity is closely connected to the ability to manage effectively in the face of organizational inertia; furthermore, embedding a creative culture into the corporate strategy of a software company leads to a business development based on innovation. The experts of software companies where we conducted our survey validated the idea that the implementation of an awareness campaign for creativity provides innovative solutions for software development, as the creative work can accelerate the software development speed if it is properly controlled.

The opposite side of this scale reflects the procedure compliance, which involves a discipline-based work which decreases the failures rate. The main issue in the IT sector is not solving the ‘bugs’, as they can be fixed, but a problem in the overall architecture, for instance, is much more difficult to address. The discussions with software industry experts allowed us to state that the procedure compliance provides greater ability to deliver required functionality, integrates risk management into everyday processes at all levels of the software enterprise and mitigates the risks associated to unpredictability and improvisation (figure 5).



**Figure 5. The knowledge base related to the dimension of analysis:
Creative impulses versus Procedure compliance**

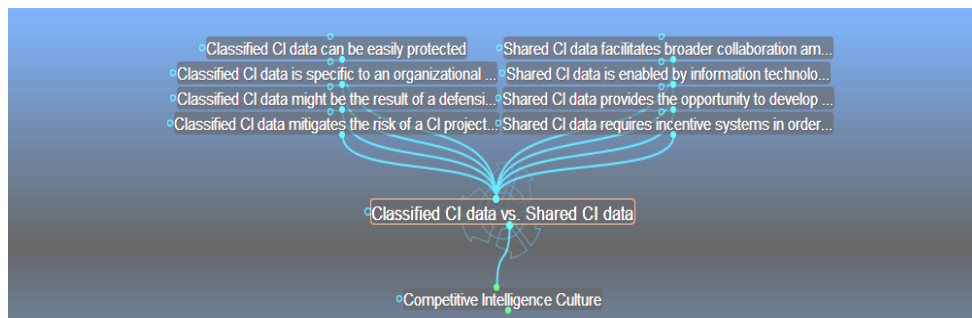
In our opinion, this cultural issue emphasizes that software work requires a range of different creative skills during the first three stages of software lifecycle (analysis-design-development) and procedure compliance during the last two stages (implementation-maintenance).

3.4. Shared Competitive Intelligence (CI) data versus Classified CI data

Before outlining our point of view regarding the cultural dimension related to shared CI data versus classified CI data, we must take into consideration one of the conclusions of a survey developed in UK software sector (Thomas and Tryfonas, 2005) concerning the need for the adoption and growth of the competitive intelligence discipline in software development as such organisations appeared not to have a structured and coordinated programme for the collection and analysis of information about competitors. These researchers also consider that it should be a responsibility of the CI community to advocate this deficiency and the potential benefit of structured CI strategy.

The top management of the software companies decides if it is necessary to classify all the CI data or some of the strategic information can be shared within several departments; the discussions with the professionals from software industry lead us to state that, generally, the big software companies in which CI departments play an important role in strategic positioning accept to share CI data especially in Marketing and Sales Departments, while the SME's concentrate all the CI data at the level of the managers.

Taking into account the interviews' results and the relevant literature in this field, we can state that shared CI data facilitates broader collaboration among company team members which become more market-oriented, being enabled by information technology tools and disseminated to all levels of an organization; this approach is specific to a knowledge-sharing culture that requires incentive systems in order to grow the competitive intelligence knowledge base, providing the opportunity to develop communities of practice inside the company. Contrariwise, classified CI data is specific to an corporate culture that prevents open knowledge sharing; in this case, valuable information on competitors is perceived as quite sensitive and must be classified in order to be protected. Classified CI data might be the result of a defensive strategy that promotes the control to all aspects of the CI process. Another aspect which requires such an approach is represented by the fact that classified CI data mitigates the risk of a CI project failure (figure 6).



**Figure 6. The knowledge base related to the dimension of analysis:
Shared CI data versus Classified CI data**

Analysing the interviews' outcomes, we also found that the software companies collect CI data both from internal and external sources, analyse it through specialized CI platforms connected to their Intranets and share it especially by means of internal newsletters. The main reasons for monitoring the competition are represented by the support of effectively marketing decisions and software products' launch and upgrade. The main CI deliverables which are specific to software industry are focused on competitive benchmarking, product comparisons, early warning alerts, press releases and analysts reports.

Conclusions

Our observations regarding the global software market and the discussions with the experts in this domain outline the fact that the hyper-competition in the software industry services and technologies leads to a transition from an innovation-based culture to a purely market driven culture, which involves the effective use of competitive intelligence techniques. Rather than try to provide more integrated products for its existing customers, the software companies moved continuously into new, technology-driven markets, requiring competitive intelligence programs focused on the scanning of the competitors' strategies.

The software companies are looking to gain market shares by providing mass or customized solutions for specific targets, trying to overtake the portability barriers imposed by their competitors – in our vision, this is the most important role played by the competitive intelligence-based culture.

Our observations and discussions with IT professionals lead us to launch a hypothesis, which will be tested in a future research, corresponding to the fact that software companies promote an excessively procedural competitive intelligence-based culture in view to protect their experts (which involve both talent and experience) and their innovation capabilities.

The most important objective in the future research will be represented by the design of a pattern which will allow the interpretation of the CI based cultures using a strategic matrix, as a result after the crossing of the dimensions: Competing on talents versus Competing on technology and Shared CI data versus Classified CI data.

The main limitation of our study consists in the small number of software experts which were interviewed, but we are sure that we will be able to extend in the future the research agenda, taking into consideration other opinions regarding this topic and conducting a cross-cultural research.

The assessment of the positioning on these four dimensions of analysis related to competitive intelligence – based corporate cultures provides valuable information to software companies' managers regarding the opportunities that competitive intelligence can offer in a rapidly changing market scenario, reflecting the software services and technologies reality.

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