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Competitive intelligence theoretical framework and practices

The case of Spanish universities

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Abstract

Purpose – The purpose of this paper is to summarise previous studies to develop a theoretical framework useful to describe and classify competitive intelligence (CI) practices. It is applied to study CI practices developed by Spanish universities, comparing usual practices with those developed during the process of adaptation of degrees to the European Higher Education Area (EHEA), with strong challenges.

Design/methodology/approach – The research employs a mixed-methods approach (semi-structured interviews and questionnaires) developed in two phases. It has focused on the academic offer, which represents 46.35 per cent of the degrees presented in 2009, belonging to 90.16 per cent of Spanish universities.

Findings – The results reveal predominance of incipient and reactive practices, oriented to the tactical level. During the adaptation process, these practices evolved due to the perception of the involvement of universities in the adaptation process. In addition, the proposed theoretical framework could be a tool to study CI both in other university management areas and other kind of organisations.

Research limitations/implications – This research has been applied only to a critic incident: the design of university academic offer to be adapted to the EHEA. More studies about CI practices in other areas of universities should be done, using the same framework proposed in this study.

Practical implications – This framework based on research done in business sector can be applied to any kind or organisations, including NGO and public sectors.

Originality/value – Management tools used in the business sector, such as CI, have been adopted by Higher Educations Institutions, but while CI has been studied in depth in the business sector, it has scarcely been studied in higher education. This framework can be applied to any kind or organisations.

Keywords Strategic planning, EHEA, Competitive intelligence, Economical intelligence, Environmental scanning, Higher education sector

Paper type Research paper

Introduction

The term competitive intelligence (CI) has innumerable definitions, from which we have selected one offered by Bergeron and Hiller (2002), due to its focus on information management processes: CI is the "collection, transmission, analysis and dissemination of publicly available, ethically and legally obtained relevant information as a means of producing actionable knowledge […] for the improvement of corporate decision making and action". The term CI includes the activity of environmental scan (ES). Consequently, although some literature uses ES as synonym of CI (Choo, 2002), we include environmental scanning into CI.

This paper studies CI practices in the higher education sector, focused on the design of university academic offer, as a critic incident.

This topic answers the need to study two fields: a) CI practice in sectors scarcely explored until now; b) New emerging forms of management in the higher education sector.

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Academics and practitioners of CI claim the need to explore other contexts and sectors in which CI practices are developed (Fleisher *et al.*, 2007; Hesford, 2008). Compared with the predominance of studies on CI practices in the business sector, studies in the public sector or non-profit organisations are rare (Brouard *et al.*, 2010). Higher education is one of the scarcely studied sectors, although different authors recommend CI as a management tool for universities (Cronin, 2006; Garcia-Alsina *et al.*, 2011; Morrison and Mecca, 1988; Ortoll *et al.*, 2010; Rombert *et al.*, 2007). Second, in order to optimise their resources and their involvement in the development of the region where they are located, the university sector needs to incorporate efficient forms of management (Brennan and Teichler, 2008; Jongbloed *et al.*, 2008). In fact, in the last 20 years, universities have progressively incorporated business management tools, as required by both the academic and governmental spheres (Commission of the European Communities, 2003; European University Association (EUA), 2003; Taylor *et al.*, 2008). Representative examples of these tools are strategic planning, the scoreboard and quality management, which are linked to management evaluation and accountability (Álamo Vera and Garcia Soto, 2007). CI has also been progressively incorporated as a management tool in universities, because information acquisition – financial, demographic, technical and social – and its exploitation facilitate the design of multiple future scenarios for decision-making processes (Havas, 2009; Mayberry, 1991; Morrison and Mecca, 1988; Murphy, 1987; Rombert *et al.*, 2007; Souari and Ben Salma, 2007). The studies done are study-case oriented. Consequently, more empirical studies about CI practices in universities are needed (Garcia-Alsina, 2011).

Specifically, this paper builds a theoretical framework to study these practices, and then deals with the peculiarities of these practices in Spanish universities, being one of the tools used to cope with challenges such as management and optimisation of resources granted by the Government or those obtained by the university as a result of its own initiative. Recently, Spanish universities have incorporated CI as a tool to define actions and strategies in response to the changing needs of the environment and the demands of society, as well as contributing to their competitiveness (EA-2008-0152, 2009; Garcia-Alsina, 2011; Garcia-Alsina *et al.*, 2011; Ortoll *et al.*, 2010). Recent exploratory research on the adaptation of the degrees to the European Higher Education Area (EHEA) reveals a predominance of reactive, tactical and decentralised CI practices, although with a tendency to become more systematic, and strategy oriented (Garcia-Alsina *et al.*, 2011). These practices have been promoted by the need to obtain information about the environment in a context of pressure and uncertainty - more highly stressed than the usual everyday framework in which CI practices are involved - to fulfil the requirements to certify the degree adaptation process to the EHEA: degree justification, and adaptation to its environment according to Real Decreto 1393/2007.

Therefore, considering the aforementioned elements, the aim of this paper is twofold. First, we analyse CI practices in Spanish universities, comparing usual practices with those specific to the adaptation process, taking into account a sample broader than that considered in previous studies (Garcia-Alsina *et al.*, 2011). Second, we identify the characteristics of the universities in comparison with organisations in other sectors, and their involvement in CI practices.

The rest of this paper will first present some theoretical foundations and our analysis framework founded on a literature review and second, a description of the methodology and methods employed. The following sections will detail the results, discussion and conclusions.

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Theoretical background and analysis framework

According to few previous studies, we can characterise CI practices in universities by organisation of the function and processes of the intelligence cycle. Besides, different factors influence CI practices. The literature offers different frameworks to analyse CI practices (Cartwright *et al.*, 1995; Fahey *et al.*, 1981; Saayman *et al.*, 2008) that progressively tend to be more holistic. According to the literature review, we propose a holistic framework that incorporates features detected in other studies, but that until now are dispersed. This framework integrates the intelligence function and cycle, and factors influencing CI (Figure 1).

Intelligence function

Components of the intelligence function are: area location, define responsibilities, search frequency and orientation. First, organisations can choose between different organisational formulas for the intelligence function (Heppes and du Toit, 2009; McGonagle and Vella, 2003; Saayman *et al.*, 2008; Sawka, 2001, Trim and Lee, 2008). These formulas are: centralised, decentralised and intelligence networks. Specifically, the centralised formula guarantees greater control of data, and avoids the dispersion of information. Some authors consider centralisation convenient to organisations with a strategic orientation (Gilad and Gilad, 1986; Sawka, 2001). The decentralised formula is especially adequate to apply a tactical orientation because it facilitates specialisation in specific topics. However, when coordination of CI efforts is lacking, this formula can produce information dispersion, and creates informational islands between the units or those in charge of obtaining and managing information. Hence, this decentralised formula could have a negative influence on the efficiency of CI practices (Gilad and Gilad, 1986; Mcgonagle and Vella, 2003). Finally, intelligence networks are conformed by employees in the organisation as well as external agents, this being a flexible organisational formula, where social capital plays a main role (Davenport and Snyder, 2005; Levy, 2009; Nahapiet and Ghoshal, 1998). This formula has three characteristics: it is a bridge between corporate intelligence and the rest of the organisation, it creates a wide sensitivity to the environment, and it can be adapted both to tactical and strategic orientation (Ghoshal and Kim, 1986; Gilad and Gilad, 1986; Grabowski, 1987). In this case, as in the latter, coordination of the networks is decisive to optimise efforts.

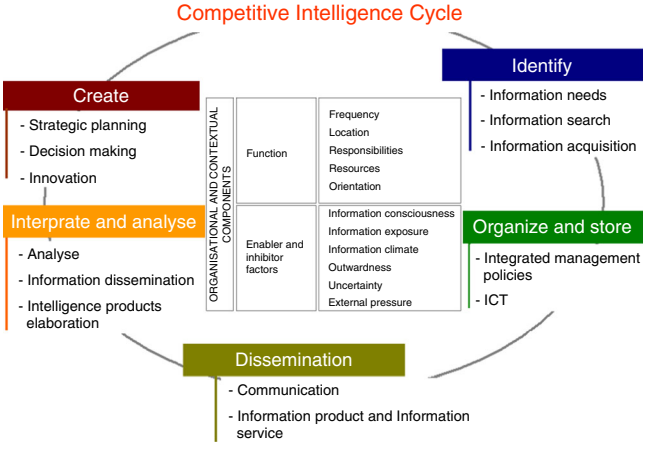

Figure 1.
Facets of the CI practice

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Second, organisation should define responsibilities and translate them into procedures and allocated resources – human and material – also influence the system in the adopted practices (Cartwright *et al.*, 1995; Fahey *et al.*, 1981; Heppes and du Toit, 2009; Saayman *et al.*, 2008).

Third, according to the frequency of searches, practices are either proactive – foreseeing problems and detecting opportunities – or reactive – answering concrete information needs or solving unexpected problems or as consequence of some environment uncertainty (Cartwright *et al.*, 1995; Rouach and Santi, 2001).

Finally, the orientation – proactive or reactive, tactical or strategic – function is due to the needs of the information expressed by the organisation's objectives, or by the unit where the function is allocated, or by the organisational level where the obtained intelligence applies, or by the temporary framework to foresee the results of the designed actions (Cartwright *et al.*, 1995; Fahey *et al.*, 1981; Rouibah and Ould-Ali, 2002). Organisations devoid of a strategic planning culture have a reactive and not very systematic orientation. Thus, they search for information to reduce short-term environment uncertainty and only to manage a specific problem. In contrast, organisations that regularly and proactively scan the environment according to a plan, detect threats and opportunities in time to design actions. Orientation is tactical when the intelligence function is focused on operational-level managers, who make the short-term decisions. Orientation is strategic, when the intelligence is addressed to upper-level managers whose decisions and actions are long term. Orientation and the needs detected determine which concrete subjects are aims of the environmental systems (market, customers, products, technology, etc.) (Culver, 2006; Fahey *et al.* 1981; Ghoshal and Kim, 1986; Peyrot *et al.*, 2002).

Intelligence cycle

The framework proposed by Choo (2002, 2006) is a starting point to analyse the five phases of the intelligence cycle. The first phase is detection that refers to identification and collection of the organisation's information needs. The subjects of the information collected give insights into the orientation, systematic degree and the maturity of practices (Cartwright *et al.*, 1995; Fahey *et al.*, 1981; Heppes and du Toit, 2009). In this phase three indicators emerge: first, organisational procedures to identify information needs, and to update and/or validate the sources employed; second, information sources employed and their relevance according to previously detected needs; and third, channels employed to obtain information. In the second phase, information organisation and storage, two indicators are taken into consideration: first, integrated procedures inside the organisation to manage information, which coordinate the efforts applied in different organisational areas to manage information; and second, Technologies available in the organisation to support information management. The dissemination phase contributes to join the distinct pieces of information obtained in order to give sense to the collected weak signals (Hiltunen, 2010; Rouibah and Ould-Ali, 2002). In this phase, features considered are: which channels – both formal and informal – there are to communicate and disseminate information; which information products and services are created or obtained by the organisations; and how these channels, products and services are available to members of the organisation. In the interpretation and analysis of the information phase, we analyse four indicators: first, use of the information products and services, with added-value; second, use of the dissemination channels for these products and services; third, existence of spaces and structures to share, interpret and analyse information inside

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the organisation; and fourth, analysis techniques to extract intelligence. Finally, in the intelligence generation phase we have considered which structures are responsible for decision making and the model followed (Choo, 2006); and decisions and actions designed considering the intelligence generated.

Factors influencing CI practices

Although there are no conclusive studies about which factors influence CI practices, we can consider four groups of factors taken from different authors and summarised by Garcia-Alsina *et al.* (2013). First, the size of an organisation influences economic and human resources allocated and consequently it influences the resource investment and the development of efficient CI programs. Hence CI is a greater challenge for small companies than for large ones (Saayman *et al.*, 2008). Second, the sector of activity where an organisation operates and the frequency of changes in the local environment would influence the degree of information used (Ghoshal and Kim, 1986; Hesford, 2008; Kourteli, 2005). Third, individual factors influence how organisations detect, disseminate and interpret information through predisposition of employees to develop activities related to information, value given by employees to information about the environment, or exposure of organisation members to contexts rich in information by participating in professional events or in social networks (Jaworski *et al.*, 2002; Correia and Wilson, 2001). Fourth, organisational factors such as infrastructures that determine access to and use of information influence CI practices: procedures, technological resources, information systems, rooms, information services, bibliographic collections, dossiers, etc. (Choo, 2002; Correia and Wilson, 2001; Jaworski *et al.*, 2002). Five, organisational culture influences CI processes through work structures adopted by the employees, communication patterns, culture of improvement and learning, and informational culture, that contributes to sense-making and to adapt the organisation to the environment (Choo, 2006). These components can affect the activities and the structures related to the entire cycle: information sharing; giving value to the intelligence extracted; third, detecting which information should be obtained and how; using and applying the information obtained for decision-making processes; reacting to market changes; adapting organisational processes to environmental changes (Choo, 2006). Finally, an influential factor is also the self-perception of organisations with regard to their environment, and the pressure felt to obtain information. This perception determines how these organisations organise and apply the CI process, how they analyse information about the environment and adapt the information to their environment (Daft and Weick, 1984; El Mabrouki Nabil, 2007).

Methodology

The methodological design is based on two questions: which features characterise usual CI practices in universities, both before and during the EHEA degree adaptation process, and what are the peculiarities of higher education in comparison to other sectors, and how do these peculiarities affect CI practices?

This research is based on mixed research methods, with predominance of qualitative techniques (Creswell and Clark, 2011; Hernández *et al.*, 2010; Teddlie and Tashakkori, 2009), and it has two sequential phases. In the first stage, we explored CI practices in universities by means of qualitative methods, with a reduced sample. In the second phase we took data extracted during the first research phase and we selected a wider sample. To design the interviews and the questionnaire, we used the indicators

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identified in the function, the cycle and the factors (Figure 1). Finally, as the term CI is scarcely known in Spain, during our study we avoided employing the term CI, using terms related to the intelligence function or the intelligence cycle, or the term information management instead. It was a way to focus the interviewees in the information management processes, without causing misunderstandings with other meanings of intelligence.

First phase: sample, data collection and exploratory analysis

In this phase, the universe of the study comprised the degrees that are part of the first ministerial call for accreditation (October 2007 to February 2008), regardless of the results obtained. This universe was composed of 200 degrees in 33 universities (43.5 per cent of Spanish universities). From this universe we selected 15.5 per cent of the degrees presented in February 2008 from 14 universities, representing 42.43 per cent of the universities that participated in the call. This selection is based on a wide variety of casuistry that conforms the context: autonomous communities, with variety in population density, territorial extension and guidelines for the adaptation process; age of the university and management and financial model (public or private); background to the degrees presented; all the branches of knowledge. The unit of analysis is the university.

Information was collected through observation of documentary sources (strategic plans, quality management systems, verification dossiers, corporate portals, national and autonomic legislation – that is the specific of one Spanish autonomous community – and autonomous community guidelines); and, open interviews focused on a pre-established guide, adaptable depending on each interview course: 47 managers were confidentially interviewed and the conversations were recorded. The interview questions were designed specifically for this research.

Lastly, to analyse the content we defined a group of codes corresponding to the facets and indicators identified in the literature (Figure 1) and the content was labelled using software to assist the analysis of qualitative data.

Second phase: sample, description and data integration

The study universe was expanded to all degrees that had presented adaptation memorandum before May 2009, regardless of the evaluation result. From a total of 863 degrees that were presented for verification, pertaining to 82.43 per cent of Spanish universities, we drew a sample of 400 degrees (46.35 per cent). The selection criteria were: 200 degrees were all the degrees presented in the first call for accreditation, and the remaining 200 belong to the second call for accreditation. The latter were simple random sampling, with a level of confidence of 99.7 per cent and a ±5 per cent margin of error. The sample profile was similar to the first phase, and the unit of analysis was also the university.

Data were collected with online asynchronous semi-structured questionnaires, based on the contexts and data obtained in the first phase. This questionnaire was composed of open and closed questions (yes/no or selection of closed answers that were taken from the first phase results), with predominance of the latter, addressed to deans and coordinators. For this phase the questionnaire was also specifically designed for this research. For the analysis we used survey software to monitor and exploit the answers. Before sending the questionnaires we identified the interlocutor, and later we followed up the answers until an answer ratio of 38.75 per cent was reached.

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Finally, we analysed the data with descriptive statistics and coded the open questions. Then we integrated the results of the frequencies and the open questions with the knowledge obtained in the first phase of the study. Thus the results presented in this paper are an integration of the two phases, and are based on a sample that represents 46.35 per cent of the degrees presented to be accredited until May 2009, pertaining to 90.16 per cent of the universities presented in 2009 (83.53 of Spanish universities). In 2011, when the EHEA process finished, the total number of degrees in Spanish universities was 2,338, so the 863 degrees presented in 2009, which are the universe of this study, account for 36.91 per cent of current degrees.

Results and discussion

In this section we present intelligence practices in Spanish universities, contrasting usual practices with those specific of the adaptation period. This section has been structured in three parts: function organisation, intelligence cycle, and peculiarities of the university sector. We present together the results of private and public universities because we have not found differences. These come from others factors, mainly from the perception they have of the adaptation process and the environment, as we will see in this section.

Function organisation

The intelligence function is generally recognised and implemented in Spanish universities, although practices are discontinuous and with incipient formalization, contrary to what happens in the case studies previously done (Mayberry, 1991; Morrison and Mecca, 1988; Murphy, 1987: Rombert *et al.*, 2007; Souari and Ben Salma, 2007). Practices have been intensified and systematised during the adaptation process and tend to be more continuous. These results coincide with previous studies (Garcia-Alsina, 2011).

Location, responsibilities and resources. Different units collect and manage information about the environment (Social Council, Foundation University-Enterprise, Occupational Observatory, Labour exchange or orientation service, Quality Unit, Board of Trustees, or Library). Formalisation is still incipient because of the diffused responsibilities, scarcity of procedures and integrated policies of information management, and lack of coordination between units, as we can see in the following fragment:

> […] The process of information management is still without resolution in this university and that generates a lot of difficulties, we have a quality unit dedicated to this, we have the Foundation that collects also the same information, […] taking advantage of […] that we are so small and we have a so personal relationship […].

It influences optimisation of resources allocated to these tasks, creates informational islands, duplicity and divergence of data as a problem for decision making as occurs in other sectors (Heppes and du Toit, 2009; Sawka, 2001). The following fragment is illustrative:

> […] Our university has different databases, that sometimes don't coincide between them, and you must take from one side and from others […] Then […] it has given us more work, but we are correcting it, […] the data warehouse […] that we are implementing […].

The organisational level that is in charge of the intelligence function is predominantly the quality unit (40.63 per cent), directly reporting to the vice-chancellor or vice-dean. Due to the culture of procedures implemented by the quality function, the allocation of the intelligence function in the quality unit could have positive implications for CI practices in universities, such as having devoted resources and having implementing

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some systems in the CI activities. The existence of formalised procedures constitutes one of the enabling factors of CI practices (Choo, 2002; Correia and Wilson, 2001).

About the responsibilities to scan the environment, these are formally or informally delegated to specific teams, placed in different departments or units. In addition, these university members are connected to external stakeholders from whom they also obtain information. This organisational formula is similar to the intelligence networks proposed by some authors (Choo, 2002; Trim and Lee, 2008). Therefore, there are intelligence networks formed by internal and external agents (professors, associated professors, employers or public administrations). These networks should be connected with other units that also collect information from the environment in order to optimise efforts, according to recommendations made in previous studies about other sectors (Ghoshal and Kim, 1986; Grabowski, 1987; Jaworski *et al.*, 2002).

Usually, there is scarcity of dedicated resources to CI. Regarding human resources, interviewees mention the need for a professional profile to manage information. This issue influences the time employed in decision making, which is greater to search for information than to analyse it. Before these common practices, during the adaptation process there is intensification of the intelligence function, more systematic, and greater contribution of human and material resources. Nevertheless, regardless of their size and the management model (public or private), CI systems are different between universities, depending both on the perception of pressure that each university felt from their environment, and the vision that each university had of the adaptation process – either as an opportunity for improvement or an administrative formality. Apart from an information management unit or units, the centres in general have adopted different formulas to capture and manage environmental information, depending on environment's perception, coinciding with previous studies (Daft and Weick, 1984; EA-2008-0152, 2009; El Mabrouki Nabil, 2007).

Frequency. In universities, information is usually searched on an irregular basis, either for specific needs or as reaction to a problem that has arisen (Figure 2). Meetings with stakeholders or professional networks are also irregular. Therefore, with regard to frequency, the intelligence function is reactive, although it has some interest for carrying out proactive practices, scheduling information searches.

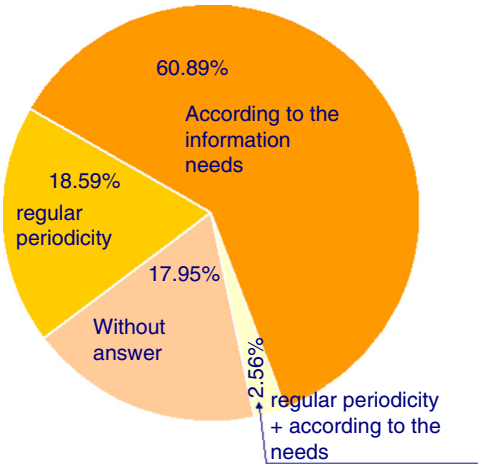

Figure 2.
Frequency of environmental scanning

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During the adaptation process – characterised by some pressure and uncertainty – the search frequency in some centres increases, depending on the perception of the adaptation process. Since the adaption process started, a high percentage of universities search for information systematically (51.92 per cent). In this sense, universities follow patterns already identified in literature about CI practices in the business sector: organisations increase their CI practices in the face of greater pressure from the environment (Bergeron and Hiller, 2002; Rouach and Santi, 2001).

Orientation. The intelligence function is predominantly oriented to tactics and it is reactive, both in usual practices and during the adaptation process. Nevertheless, during the adaptation process we have identified an increasing strategic orientation.

This tactical orientation can be deduced from the usual information needs confronted to those specific of the adaptation process and degree aims, and the organisational level where intelligence is applied. Both before and during the adaptation process, the predominant subjects are tactically linked to the market (competition and demands of the environment) (Tables I and II). Tactical orientation is motivated, among other causes, by process regulations, but also by the perception of the adaptation process (opportunity or administrative formality). The opportunity is perceived both from the market point of view and from the organisational point of view. In addition, perception of opportunity, or competition and more commercial features has influenced the design of innovative degrees, and the development of actions to scan the environment. Hence, in spite of the tactical predominance, it is expressed strategic orientation (Table III).

Regarding the predominance of reactive orientation, four facts indicate reactive practices. First, we have identified a lack of proactiveness and planning of the intelligence function, as a usual activity, because few universities admitted having

Subjects – usual information needs	Total (%)
Regulations, specifications and recommendations of ANECA	98.72
Universities training offer	96.15
Insertion in the labour market of the university graduated students	95.51
Demand of graduates and profiles searched in the work offers	94.87
Legislation	93.59
Prospective future needs of the labour market	91.67
Evolution of the number of students enroled in the own university	91.67
Degrees demanded by the population that wants to study in the university	87.18
Key features of students practices	85.26
Detection of possible alliances with other faculties or departments	83.97
How to attract students	82.69
Those indicated in the quality system	80.77
Evolution of enrolments in other universities considered direct competition	80.13
Detection of changes in society	80.13
Detection of changes in technology	75.64
Those indicated in the university strategic plan	73.72
Detection of changes in politics	68.59
Detection of changes in the economy	68.59
Other subjects	24.36
I have not looked for information	8.97

Notes: Tactical subjects; strategic subjects

Table I.
Orientation of the function according to its usual information needs

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Table II.
Orientation according to topics of the information searches during the adaptation process

Needs to draw up the memorandum	Total (%)
Indicators of graduation, drop out and efficiency	95.51
Referents of the degree	92.31
Evolution of the number of enroled	91.67
Labour insertion	90.38
Legislation	90.38
Competitions	89.10
Opinion of students about which features of the degree they would improve	77.56
Companies and institutions collaborators in the design of practices	71.79
How employers see graduates from the faculty/department	66.67
Operation level of the current practices in the old degree	57.05
Due to lack of time, we have not looked for information, although we would like to	0.64
We have not needed more information. What we had at the university was enough	0.64
Others	0.00

Notes: Tactical subjects; proactivity/passivity

Table III.
Orientation of the intelligence function according to the aims established in the degree design

Objectives	Total (%)
Quality of the degree	91.67
Adapt the degree to the methodology and to the requirements of the accreditation process	87.18
Improving existing degrees in the university	75.64
Aligning the degree to the strategy and environment needs	69.23
Being a referent in its influence area	64.74
Differentiating our degree from the competitors'	56.41
Obtaining competitive advantage	42.31
Consolidating the degree in the university influence area	39.74
Breaking academia inertias, organisational and methodological, which were not working in the degree before the accreditation process	32.05
Expanding market	30.13
Attracting foreign students	16.67
Attracting lecturers	9.62
Stopping the enrolment's diminish	8.97
Only fulfilling the regulations of legislation (Decree 1393/2007)	1.92
Any	0.00
Unknown	0.00
Others	7.69

Note: Market orientation

sufficient information in the university at the beginning of the adaptation process (11.54 per cent). Second, a high percentage of universities indicate that they have searched for information systematically since the beginning of the convergence process (78.85 per cent). Third, although before the publication of RD 1393/2007 universities already had degree referents that could be indicative of proactiveness, other facts denote reactivity. Namely, universities before the adaptation process search reactively for the information needed to draw up a White Book for each degree, or to participate in self-evaluation processes or in announcements to participate in a pilot programme. Finally, during the adaptation process, the consults to stakeholders have increased in front of the scarcity before the adaptation processes (Table IV).

Stakeholders consulted	Before the process (%)	During the process (%)
Professors of the centre/department	33.97	93.29
Students	36.54	82.55
Professionals of the sector or sectors related to the degree	28.21	74.50
Employers of the private sector previously linked to the faculty or university	16.67	71.14
Representatives of professional corporations (colegios professionales)	15.38	69.13
Professors of other universities	10.26	68.46
Non-academic staff	21.79	68.46
Representatives of professional associations	17.31	65.77
Graduated students of the university	20.51	61.07
Experts in some branch of knowledge, external to the university	12.82	57.72
Professors of other university faculties	10.26	52.35
Public administrations (such as employers)	16.03	49.66
Social council	4.49	36.24
Occupational observatory	16.67	30.20
Unit of marketing	7.69	28.86
University – companies foundations	9.62	28.86
Representatives of chambers of commerce	3.21	19.46
Board of trustees	7.05	16.78
Other stakeholders	3.85	5.37

Notes: Intern; external; internal organisms

Table IV. Sources of Information: stakeholders consulted, before and during the adaptation process

Organisation of the intelligence cycle

Management of the intelligence cycle in universities is presented through four subjects: first, detection and collection of information; second, organisation and storage of information; third, interpretation and analysis; fourth, intelligence generated.

Detection and collection of information. Procedures are incipiently formalised. Both during usual activities and during the adaptation process, the information sources used are diverse. Four types of sources are employed: first, documentary information sources; second, commissions, internal working groups, professional meetings and professional networks included digital networks; third, stakeholders; fourth, internal units (Table V).

Commissions or working groups, external professional meetings and professional networks and digital networks facilitate personal contacts in almost all the universities, and, therefore, enable access to information rich contexts. They are highly valued sources; their common use has been intensified in almost all the universities during the adaptation process. During the adaptation process, internal and external stakeholders are relevant sources when they have been preferentially consulted, as happens in the work of Havas (2009). This fact is more similar to previous research dedicated to other sectors (Kourteli, 2005). Before the adaptation process, these sources were less consulted (Table IV). The wide variety of stakeholders and the intensification of the queries to them are partly due to the requirements of legislation RD 1393/2007. This regulation indicates that universities should justify the degree presented to be verified and describe the procedures of internal and external enquiry used to draw up the syllabus. This group of sources has given information to design the degree, and

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Information sources	Total %
Those indicated in the White Book	91.03
Web pages of foreign universities	88.46
Web pages of Spanish universities	85.26
Informal contacts – personal relations	78.21
Official web pages of EU institutions related to the EHEA	75.64
Market research about degree of insertion of graduates	70.51
University databases	70.51
External stakeholders	69.23
Research about potential demand of the degree	59.62
Research about work offers published in the labour market	57.05
Professional forums	43.59
Self-evaluation according to the quality system	37.82
Prospection about the socio-economic features of the zone where the university has influence	37.18
Pilot proof	26.92
Internship reports of students issued by tutors	26.28
Reports or studies drawn up by the information management unit	23.08
Reports or studies studies drawn by the foundation university-company	19.87
Reports or studies studies drawn by the social council	14.10
Clippings supplied by the university cabinet	11.54
Other sources	11
We have not needed information	7.05
Reports or studies drawn up by the board of trustees	5.13
Internet discussion groups	4.49

Notes: Collections of information existing inside the university carried out by units or internal department, used as sources during the process of adaptation; collections of information existing inside the university, that have been able to be elaborated both by units or internal departments, and external organisations

Table V.
Internal and external sources of information employed during the adaptation process

adapt it to the needs of the labour market. In depth, the most frequently consulted stakeholders are students and faculty professors, followed by professionals in the sector, linked to the degree to be verified – some of them part time professors in the same university in which they act also as employers – and the professional associations. In addition, they are part of the intelligence networks of each university.

The organisations in the university (such as social council, or foundation university-enterprise) are sources employed by 57.69 per cent of those interviewed. Therefore, they are still susceptible for further exploitation in the future. The coordination of work developed by the different units is especially relevant to configure the intelligence networks of each university.

Finally, in the information detection and collection phase we have analysed the information channels. Both before and during the adaptation process, universities obtain most information by formal channels. Exceptions are the informal personal relationships outside the university (78.21 per cent) and formal and informal relationships with professors of other universities (Table V). The predominance of formal channels is coherent with: the need to document all the actions carried out, in order to generate evidence of these queries, according to the requirements of the quality management systems and of the adaptation process, according to legislation RD 1393/2007; second, the low predominance of informal information exchange, both before and during the adaptation process.

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Organisation, storage and dissemination of information. Practices in this phase are in process of formalisation, because universities have implemented them in different degrees (Table VI). This tendency has continued during the adaptation process, although the activities have been intensified, even some universities have designed specific procedures.

Information management in universities is usually supported by different applications that organise the information and facilitate its retrieval and dissemination. Nevertheless, the use of these applications is dissimilar and under-used, as has occurred in previous studies about the implication of ICT in universities (Uceda and Barro, 2010).

Interpretation and analysis. These activities are quite common between university managers, and increase during the adaptation process, due to the context of pressure. This collective analysis – done in ad-hoc meetings to comment information and project scenarios – could enable CI practices. In total, 58.98 per cent of managers analyse the information obtained about the environment, and during the adaptation process this percentage increases to 99.36 per cent. Collective analysis is predominant both before (52.56 per cent) and during the adaptation process (69.87 per cent), more than the individual analysis carried out, both before (33.97 per cent) and during the adaptation process (10.90 per cent). The increase in collective analysis during the adaptation process and the significant decrease in individual analyses could be due to the work groups created during the process. This working structure makes it easier to socialise and exchange information (Table VI).

The use of analysis techniques is beginning to become widespread in universities, although characterised by simplicity, in contrast with more sophisticated techniques implemented in the business sector (Fleisher and Bensoussan, 2008). During the adaptation process, analysis has been based on self-evaluation guidelines (42.95 per cent) followed at a lower percentage by other techniques such as benchmarking (21.15 per cent) and SWOT (18.59 per cent).

Finally, capture and storage of knowledge generated is incipient (Table VI). Universities prepare conclusions and reports once the information is analysed (35.90 per cent), which later are classified and stored (25.64 per cent), and the intelligence arising from the analysis is disseminated (21.15 per cent). The low percentage of these activities can explain that during the adaptation process the responsibility of capturing

Usual tasks of information management	Total (%)
It is analysed in a group/commission/in a specifically created department	52.6
The information obtained is stored and classified	40.38
Conclusions and reports are drawn up	35.90
Information is analysed individually, according to own interests	33.97
Result of the analysis classified and stored	25.64
Information disseminated by the intranet	23.08
Information disseminated by e-mail	21.15
Reports and the studies generated are disseminated	21.15
Information validity is reviewed and updated	19.87
Specify other actions	5.77
Unknown	0.64

Notes: Organisation and storage; information validity review; dissemination and informative products; interpretation and analysis

Table VI.
Usual information management

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and storing information has been developed predominately by a group or by a commission, instead of being developed by the information unit. The low practice to capture knowledge generated during this phase can influence the perception of the utility of CI practices, if some analyses carried out in the past cannot be used in other processes of decision making (Choo, 2006).

Intelligence generated. University governing bodies usually follow a collegiate decision-making model. These governing bodies are established by legislation (LO 4/2007) and university statutes. During the adaptation process, the design of actions and decision making has been mostly the responsibility of groups or commissions created specifically for these tasks and, as a last resort, of the university collegiate bodies according to their competencies. Although this result coincides with the collegiate decision-making model, characteristic of Spanish universities (Troiano, 2004), we detect a political model in the universities' departments to decision making related to the curricular design of a degree. This model has served to resolve conflicts between different areas of knowledge within a faculty or department.

Regarding generated intelligence applications, during the adaptation process intelligence has had more applications. In front the habitual use of intelligence to design traineeships for students, during the adaptation process intelligence has been applied in decision making involved in the degrees: keeping the degree that the department already taught with some adequate modifications; deleting it; designing a new degree without antecedents inside the university, in compliance with the requirements of Spanish legislation RD 1393/2007, and designing the syllabus of the degree.

We analyse the contribution of CI practices to the EHEA adaptation process by analysing which intelligence is generated. Nevertheless, national and autonomic regulations have been able to restrict this contribution and the innovative drive. These regulations have boosted uniformity between universities, and consequently restrict innovation, as some of the interviewed have stated (51.28 per cent). This result coincides with previous research (Pagès, 2006; Serra, 2006).

Peculiarities of the higher education sector

According to the data previously presented, and the content analysis of the documents related to the universities studied, the results show that the Higher Education sector displays some similarities with business sectors, but it also has organisational peculiarities. Regarding the similarities, universities, both public and private, like business sector organisations, intensify their CI practices in the face of uncertainty perceived in the environment. When they have competition, universities also try to find their own market niches (Table III). Besides these similarities, we find peculiarities of the university sector that influence the CI practices. First, universities present specific organisational features that influence the orientation of the intelligence function: Spanish legislation (LO 4/2007) determines the governing bodies, which creates some rigidity and uniformity in university organisation, which can limit the impact of CI practices in the creation of competitive advantages. Besides, during the interviews some deans pointed out this rigidity; their top managerial staff is elected according to legislation (LO 4/2007), which can hinder the continuity of previous actions designed during a former mandate, and the short-term kind of actions, avoiding long-term actions due to a lack of immediate return of the actions; and this consequently influences the tactical orientation of the CI; the power of decision is

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fragmented and diffuse – as we can see in the different universities structures – influencing decisions that affect the totality. Second, universities have objectives such as providing social benefit and optimising resources given by public administrations, foundations or boards of trustees. This influences the orientation of their non-lucrative activities, some organisational procedures, and the way they develop activities and identify stakeholders. Third, as we have identified during the interviews, customers – as employers or students – can be part of the university structures and of governing bodies. Therefore, customers can be part of the intelligence networks more intensively than business sector customers. Hence, universities could obtain information about environment needs with greater frequency, as well as more fluent and rich analysis. Fourth, the perception of the competition can be present in the governing bodies depending on: the situation of each university in its sphere of influence in the city or in its autonomous community; the number of pupils enroled in each degree. Finally, as we have pointed out before, the sector regulations could have a negative influence on innovation, as some deans assert, coinciding with previous studies (Pagès, 2006; Serra, 2006).

Conclusions

We have identified CI practices in Spanish universities as discontinuous, tactical and reactive and with lack of formalisation. During the adaptation process, although these practices are tactical and reactive, they have been intensified and have evolved to some periodicity with some strategic orientation. First, intensification is due to the university's social responsibility and accountability for using funds for the triple mission of the universities. Therefore, the inclusion of procedures to obtain and process information about the environment in the quality system could be a way to consolidate CI practices in universities. Second, by a circumstantial fact, CI practices have been intensified in universities due to the pressure and uncertainty that has characterised the degree verification process. Moreover, universities have manifested a will to formalise practices in order to obtain greater performance of the information acquired. If that happens, CI practices could be consolidated.

Thus, CI practices are becoming more formalised, especially actions to obtain and analyse information. Considering the first structural fact, there are indicators that this development will continue. Nevertheless, in order to evolve and design actions for improving CI practices in each university, we should take into account the different evolution from one university to another depending on two facts: perception of the environment, and more specifically, perception of the adaptation process as an opportunity to improve the training offer, or as a simple administrative formality.

Taking these factors, universities should formalise CI in universities that could attenuate the factors influencing the CI practices negatively. First, it is necessary to define the intelligence function, with an explicit formula, defining responsibilities and coordinating efforts. Decentralisation is the prevalent organisational formula, and intelligence networks decentralised emerges as adequate formula to universities, coordinated by a vice-chancellor, a dean or a vice-dean. More studies about CI practices in universities in other countries could give insights about which organisational formula is more convenient. Second, it is necessary to define integral procedures to manage information (collect, classify and store information about the environment) in order to avoid duplicate data and coordinate the different efforts allocated to CI practices in universities. These procedures could improve best practices for information management between university members, since they are part of their

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intelligence networks. Topics to be considered should be: establishing search frequency, identifying information needs, and aligning CI practices with the strategic aims of the university and the degree. Third, it is necessary to boost informational habits, to intensify information systems in universities to obtain maximum performance, and to share information, promoting the habit of communication and analysing information in order to obtain the maximum performance from the time invested in the environmental scanning. Finally, universities should hire information professionals to carry out specific CI activities. This facilitates the optimisation of the intelligence cycle, and enables decision makers to invest more time in the decision-making processes.

With regard the peculiarities of the higher education sector – specific organisational features and decision-making styles – their negative influence on CI practices could be neutralised if universities promote informational culture and systematic procedures in the CI function and cycle. In front, we have identified similarities with CI practices in business fields. Consequently advances obtained by other studies in these fields could be applied in the university field.

To sum up, CI is becoming a strategic management tool in universities, although actions should be taken to design, implement and systematise CI practices and overcome the inhibiting factors detected. In this research we have considered the applicability to design the academic offer. Nevertheless, CI could also prove valuable in other university management fields. For instance, to identify in which fields universities could develop applied research projects, to establish cooperation between universities and companies to improve knowledge and technological transfers or to design alliances between universities for more competitiveness. In this sense, new research about CI practices in other university areas should be done.

Finally, from the discipline point of view, our holistic framework acts as a systematic guideline to analyse CI practices in organisation of any activity sector. In this sense, more research about CI practices in any organisation give more insights about the convenience of the proposed framework.

References

Álamo Vera, F.R. and Garcia Soto, M.G. (2007), "El proceso estratégico en el sector público: análisis en el contexto de las universidades españolas", *Investigaciones Europeas de Dirección y Economía de la Empresa*, Vol. 13 No. 2, pp. 113-129.

Bergeron, P. and Hiller, C.A. (2002), "Competitive intelligence", *Annual Review of Information Science and Technology*, Vol. 36 No. 1, pp. 353-390.

Brennan, J. and Teichler, U. (2008), "The future of higher education and of higher education research", *Higher Education*, Vol. 56 No. 3, pp. 259-264.

Brouard, F., Larivet, S. and Sakka, O. (2010), "Social entrepreneur: definitions and boundaries", *Canadian Journal of Nonprofit and Social Economy Research*, Vol. 1 No. 1, pp. 46-64.

Cartwright, D.L., Boughton, P.D. and Miller, S.W. (1995), "Competitive intelligence systems: relationships to strategic orientation and perceives usefulness", *Journal of Managerial Issues*, Vol. 7 No. 4, pp. 420-434.

Choo, C.W. (2002), *Information Management for the Intelligent Organization: The Art of Scanning Environment*, Asis&T, Information Today, Medford.

Choo, C.W. (2006), *The Knowing Organization: How Organizations Use Information to Construct Meaning, Create Knowledge and Make Decisions*, Oxford University Press, New York, NY and Oxford.

Downloaded by TASHKENT UNIVERSITY OF INFORMATION TECHNOLOGIES At 21:37 07 November 2016 (PT)

Commission of the European Communities. Communication from the Commission (2003), *The Role of the Universities in the Europe of Knowledge, COM(2003) 058 Final*, European Commission, Brussels.

Correia, Z. and Wilson, T.D. (2001), "Factors influencing environmental scanning in the organizational context", *Information Research*, Vol. 7 No. 1, available at: http://InformationR.net/ir/7-1/paper121.html (accessed 14 August 2014).

Creswell, J.W. and Plano Clark, V.L. (2011), *Designing and Conducting Mixed Methods Research*, SAGE Publications, Thousand Oaks, CA.

Cronin, B. (2006), "The intelligent campus: competitive intelligence and strategic planning", *20th Annual Conference of the Indiana Association for Institutional Research (INAIR)*, *INAIR, Indiana, IN*.

Culver, M. (2006), "Using tactical intelligence to help inform strategy", *Strategy & Leadership*, Vol. 34 No. 6, pp. 17-23.

Daft, R. and Weick, K.E. (1984), "Towards a model of organizations as interpretation systems", *Academy of Management Review*, Vol. 9 No. 2, pp. 284-295.

Davenport, E. and Snyder, H.W. (2005), "Managing social capital", *Annual Review of Information Science and Technology*, Vol. 39 No. 1, pp. 517-550.

EA-2008-0152 (2009), *Análisis y procedimientos de interacción entorno-universidad en el proceso de adaptación e implementación de titulaciones oficiales al EEES*, Universitat Oberta de Catalunya, Barcelona.

El Mabrouki Nabil, M. (2007), "La pratique de l'intelligence économique dans les grandes enterprises: voyage au coeur d'un système non univoque", *XVIème Conférence Internationale de Management Stratégique*, *Montreal, AIMS, 6-9 June*, available at: www.strategie-aims.com/events/conferences/7-xvieme-conference-de-l-aims/communications/2166-la-pratique-de-lintelligence-economique-dans-les-grandes-entreprises-voyage-au-coeur-dun-systeme-non-univoque (accessed September 2014).

European University Association (EUA) (2003), "The role of the universities in shaping the future of Europe", EUA statement to the European convention.

Fahey, L., King, W. and Narayanan, V.K. (1981), "Environmental scanning and forecasting in strategic planning – the state of the art", *Long Range Planning*, Vol. 14 No. 3, pp. 32-39.

Fleisher, C., Wright, S. and Tindale, R. (2007), "Bibliography and assessment of key competitive intelligence scholarship: part 4 (2003-2006)", *Journal of Competitive Intelligence and Management*, Vol. 4 No. 1, pp. 34-107.

Fleisher, C.S. and Bensoussan, B.E. (2008), *Business and Competitive Analysis: Effective Application of New and Classic Methods*, Pearson Education Inc., Upper Saddle River, NJ.

Garcia-Alsina, M. (2011), "Contribución de la inteligencia competitiva en el proceso de adaptación al EEES: el caso de las universidades españolas", (doctoral dissertation), Universitat Oberta de Catalunya, Barcelona.

Garcia-Alsina, M., Ortoll, E. and Cobarsí-Morales, J. (2013), "Enabler and inhibitor factors influencing competitive intelligence practices", *Aslib Proceedings: New Information Perspectives*, Vol. 65 No. 3, pp. 262-288.

Garcia-Alsina, M., Ortoll, E. and López-Borull, A. (2011), "Aplicaciones emergentes de inteligencia competitiva en las universidades", *El Profesional de la Información*, Vol. 20 No. 5, pp. 503-509.

Ghoshal, S. and Kim, S.K. (1986), "Building effective intelligence systems for competitive advantage", *Sloan Management Review*, Vol. 28 No. 1, pp. 49-58.

Gilad, T. and Gilad, G. (1986), "SMR forum: business intelligence. the quiet revolution", *Sloan Management Review*, Vol. 27 No. 4, pp. 53-61.

Downloaded by TASHKENT UNIVERSITY OF INFORMATION TECHNOLOGIES At 21:37 07 November 2016 (PT)

Grabowski, D.P. (1987), "Building an effective competitive intelligence system", *Journal of Business & Industrial Marketing*, Vol. 2 No. 1, pp. 39-43.

Havas, A. (2009), "Universities and the emerging new players: building futures for higher education", *Technology Analysis & Strategic Management*, Vol. 21 No. 3, pp. 425-443.

Heppes, D. and du Toit, A. (2009), "Level of maturity of the competitive intelligence function: case study of a retail bank in South Africa", *Aslib Proceedings: New Information Perspectives*, Vol. 61 No. 1, pp. 48-66.

Hernández, R., Fernández, C. and Baptista, M.P. (2010), *Metodología de la investigación*, Mc Graw-Hill, Mexico.

Hesford, J.W. (2008), "An empirical investigation of accounting information use in competitive intelligence", *Journal of Competitive Intelligence and Management*, Vol. 4 No. 3, pp. 17-49.

Hiltunen, E. (2010), "Weak signals in organizational futures learning", doctoral dissertation, Aalto University School of Economics, Aalto, available at: http://epub.lib.aalto.fi/fi/diss/?cmd=show&dissid=400 (accessed December 2014).

Jaworski, B., Macinnins, D. and Kholi, A. (2002), "Generating competitive intelligence in organizations", *Journal of Market-Focused Management*, Vol. 5 No. 4, pp. 279-307.

Jongbloed, B., Enders, J. and Salerno, C. (2008), "Higher education and its communities: interconnections, interdependencies and a research agenda", *Higher Education*, Vol. 56 No. 3, pp. 303-324.

Kourteli, L. (2005), "Scanning the business external environment for information: evidence from Greece", *Information Research*, Vol. 11 No. 1, available at: http://InformationR.net/ir/11-1/paper242.html (accessed 30 August 2014).

Levy, M. (2009), "WEB 2.0 implications on knowledge management", *Journal of Knowledge Management*, Vol. 13 No. 1, pp. 120-134.

Ley Orgánica (4/2007), "de 12 de abril por la que se modifica la Ley Orgánica 6/2001", de 21 de diciembre, de Universidades. *Boletín Oficial del Estado*, 13 de abril de 2007, No. 89, pp. 16241-16260.

Mcgonagle, J. and Vella, C.M. (2003), *The Managers's Guide to Competitive Intelligence*, Praeger Publishers, Westport, CT.

Mayberry, A. (1991), "Effects of a selective dissemination of information service on the environmental scanning process of an academic institution", information sources, doctoral dissertation, North Texas State University, Denton, TX.

Morrison, J. and Mecca, T.V. (1988), *Managing Uncertainty: Environmental Analysis/Forecasting in Academic Planning*, Piedmont Technical College, Greenwood, SC.

Murphy, M.F. (1987), "Environmental scanning: a case study in higher education", doctoral dissertation, University of Georgia, Athens, GA.

Nahapiet, J. and Ghoshal, S. (1998), "Social capital, intellectual capital and the organitzational advantatge", *Academy of Management Review*, Vol. 23 No. 2, pp. 242-266.

Ortoll, E., Lopez-Borrull, A., Canals, A., Garcia-Alsina, M. and Cobarsí-Morales, J. (2010), "El papel del capital social en la inteligencia competitiva", *Revista General de Información y Documentación*, Vol. 20 No. 1, pp. 313-323.

Pagès, J. (2006), "La gobernanza de las universidades", in Aneca (Ed.), *VII Foro ANECA. Gobernanza y rendición de cuentas: las universidades ante la sociedad del conocimiento*, Madrid, pp. 12-13.

Peyrot, M., Childs, N., Van Doren, D. and Kathleen, A. (2002), "An empirically based model of competitor intelligence use", *Journal of Business Research*, Vol. 55 No. 9, pp. 747-758.

Downloaded by TASHKENT UNIVERSITY OF INFORMATION TECHNOLOGIES At 21:37 07 November 2016 (PT)

Real Decreto (1393/2007), "de 29 de octubre, por el que se establece la ordenación de las enseñanzas universitarias oficiales", Boletín Oficial del Estado, 30 de octubre de 2007 (260), pp. 44037-44048.

Rombert, M., Borges, L., Quoniam, L. and Luiz, E. (2007), "Using competitive intelligence as a strategic tool in higher education context", in Martins, B.M. and Reminyi, D. (Eds), *8th European Conference on Knowledge Management (ECKM)*, *Universitat Politécnica de Catalunya*, *Barcelona*, pp. 1017-1023.

Rouach, D. and Santi, P. (2001), "Competitive intelligence adds value: five intelligence attitudes", *European Management Journal*, Vol. 19 No. 5, pp. 552-559.

Rouibah, K. and Ould-Ali, S. (2002), "PUZZLE: a concept and prototype for linking business intelligence to business strategy", *The Journal of Strategic Information Systems*, Vol. 11 No. 2, pp. 133-152.

Saayman, A., Pienaar, J., Pelsmacker, P., Viviers, W., Cuyvers, L., Muller, M.L. and Jegers, M. (2008), "Competitive intelligence: construct exploration, validation and equivalence", *Aslib Proceedings: New Information Perspectives*, Vol. 60 No. 4, pp. 383-411.

Sawka, K.A. (2001), "Deciding where to locate the intelligence unit", in Miller, J. (Ed.), *Millennium Intelligence Understanding and Conducting Competitive Intelligence in the Digital Age*, CyberAge Books, Medford, NJ, pp. 43-54.

Serra, A. (2006), "La universidad y la construcción de la sociedad del conocimiento", in Aneca (Ed.), *VII Foro ANECA. Gobernanza y rendición de cuentas: las universidades ante la sociedad del conocimiento*, Madrid, pp. 9-10.

Souari, W. and Ben Salma, S. (2007), "L'implémentation du processus d'IT à l'université du sud: cas de l'observatoire de l'Université de Gasfa", in ISDM (Ed.), *VIe Colloque International «TIC & Territoire: Quels développements?* Université Jean Moulin, Lyon III, Lyon.

Taylor, J., Machado, M.L. and Peterson, M. (2008), "Leadership and strategic management: keys to institucional priorities and planning", *European Journal of Education*, Vol. 43 No. 3, pp. 369-386.

Teddlie, C. and Tashakkori, A. (2009), *Foundations of Mixed Methods Research: Integrating Quantitative and Qualitative Approaches in the Social and Behavioural Science*, Sage, Los Angeles, CA.

Trim, P.R.-J. and Lee, Y.-I. (2008), "A strategic marketing intelligence and muti-organisational resilience framework", *European Journal of Marketing*, Vol. 42 Nos 7/8, pp. 731-745.

Troiano, H. (2004), "Modelos de toma de decisiones en la reforma de los planes de estudio universitarios", *Revista de Educación*, No. 334, pp. 235-258.

Uceda, J. and Barro, S. (2010), "Evolución de las TIC en el Sistema Universitario Español 2006-2010", *Conferencia de Rectores de las Universidades Españolas*, *Madrid*.

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