

# Ready for the future? Universities' capabilities to strategically manage their intellectual capital

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## Abstract

**Purpose** – *This paper aims to explore the possibilities of combining foresight techniques and intellectual capital management, as two approaches of participatory strategic management, in higher education institutions. The objective is to generate concrete benefits for prospective strategic management in the academic sector. It also aims to focus on how it may be possible for universities to address the challenges of major change management programmes by implementing foresight and intellectual capital management models.*

**Design/methodology/approach** – *The paper reviews recent literature both on conceptual issues and experiences in relation to foresight and intellectual capital. The paper presents an ongoing project focused on the development of a vision for the future of the higher education system in Romania and a frame to differentiate Romanian universities.*

**Findings** – *A proposal of an integrated use of foresight and intellectual capital management for universities is suggested. The case study presented illustrates how foresight provides an excellent approach to address the question of how to develop a shared vision of the future and jointly define a strategy to best adapt an organization to the new context, and intellectual capital management models play a role in strategic management, resource allocation and monitoring of objectives and organization performance.*

**Practical implications** – *The issues addressed in the paper could provide the starting point for better integration of strategic management in higher education institutions.*

**Originality/value** – *The paper explores two concepts closely related but that have not been analysed together: the relationship between Intellectual capital approaches and foresight.*

**Keywords** *Forward planning, Intellectual capital, Higher education, Strategic management, Romania*

**Paper type** *Conceptual paper*

## 1. Introduction

European universities are immersed in intensive transformation processes in order to face the new challenges of the knowledge-based economy with increased global scale and related phenomena, such as the developing patterns of migration. As key actors in the innovation systems and crucial stakeholders in the production and dissemination of knowledge, higher education (HE) institutions are today at the heart of the European policy agenda. They are increasingly questioned concerning their fitness for addressing the challenges of fast-moving business, technology development, and social changes.

To make these organizations more competitive and sustainable over time, the current paper argues that universities need to create a vision building process and introduce management models to strategically govern their internal affairs and external relationships. The paper proposes combining foresight and intellectual capital (IC) management models in the context of higher education institutions (HEIs), as two approaches of participatory and prospective strategic management, which have remained largely disconnected. Therefore, the objective of the paper is formulated by exploring the extent to which the application of

Foresight and IC approaches could increase the sustainability of universities in the face of the present and upcoming challenges.

In bringing together the concepts of foresight and IC management a clear synergy is observed between the two approaches, particularly from the sustainability perspective, which is considered not only in the ecological sense, but also as a basic principle of the adaptive and successful survival of organizations in their environment. Both of them bring people together in a social process to elaborate on individual experiences and expertise, to enable mutual learning and creation of a common language, to structure prospective collective thought in a prospective stance and finally to inform today's strategies and actions. They can contribute to knowledge management, organizational learning, and instantiate democratic principles in the early phases of decision-making processes. They endeavour to use current knowledge for shaping future actions by exerting influence on the decision-makers and opinion formers.

A combination of foresight and IC management in a professionally facilitated, organized and supported process, promise a deeply anchored change process towards future-oriented strategy and sound implementation. The participatory character of these approaches fits well considering the nature of the academic field with highly skilled and analytically competent individuals. The methods provide a framework to make good use of these capabilities at organizational level.

As a practical case, the paper presents an ongoing project focused on the development of a vision building process for the HE sector in Romania and a frame to differentiate Romanian universities. The three-year project on "Quality and Leadership for Higher Education" aims at discussing the role and future of the Romanian universities in the knowledge-based economy. Its main goal is the creation of a fluid dialogue and negotiation space among the relevant stakeholders in the HE sector in Romania. A systemic foresight approach to better understand the Romanian HE sector in a wider context, and the implications for the strategic management of the IC of universities, are presented.

Thus the paper first sets the context of HE by highlighting the need for European universities to introduce managerial tools and to strategically manage their internal affairs and external relations. Sections 3 and 4 briefly introduce the concepts of foresight and IC management, discussing how to implement these ideas for the HE sector. The following section puts together both concepts and reveals their complementarities. In Section 6, the foresight exercise being developed in the Romanian HE sector is explained. Finally, some preliminary conclusions are drawn in Section 7.

## 2. Why strategic management in universities?

During the last two decades reforming HE systems has become a priority for individual European countries and it is also at the heart of the European policy agenda[1] (European Commission, 2000, 2006a, b, 2009). Changes in the funding modes of universities (OECD, 2007; CHINC Project, 2006), increasing levels of institutional autonomy (Amaral *et al.*, 2003; Pechar, 2003), and new social demands for greater transparency and accountability (Hockfield, 2008; Shupe, 2008; Geuna and Martin, 2003) have intensified the debate about how universities should be managed.

In this changing context, HEIs are forced to work in a more competitive environment, develop entrepreneurial activities, contribute to local wealth, and manage all these functions using efficiency and effectiveness criteria. Simultaneously they are subjected to quality assessment procedures to maintain academic and research standards. However, traditional university governance models do not seem to be capable of running these organizations according to the effectiveness and efficiency criteria demanded by the new socio-economic context and, as a result, better governance structures (Kelo, 2006) and new managerial skills and practices are required (Amaral *et al.*, 2003). The challenge is to combine flexibility and adaptation to the fast-changing environment in a sustainable manner, whilst achieving certain resilience to short-term hazards. In this sense, there is general consensus about the idea that adapting to the new requirements implies the introduction of management tools,



which have been used traditionally in private companies, with the aim of governing universities within the criteria of efficiency, effectiveness and excellence. Thus universities can be seen as organizations in a particular environment that are struggling for resources (funding, students, research and teaching staff) and a market to be addressed (potential students, journals, labour market and society).

However, in the realm of practice, universities face serious difficulties when trying to implement “business” thinking to steer the organization towards a successful future. They are complex organizations dealing with a multi mission approach, task complexity, professionalism and administrative values, and environmental vulnerability (Sporn, 1999). There are also important external constraints, such as the changing role of the state, public budget pressures and new societal demands. In addition, the governing modes of universities and HEIs, often based on managerial models, hinder the implementation of new managerial decision making processes and tools (Elena, 2007). Rectors, faculty deans and heads of department are often academics elected by their own scientific community on the basis of their academic prestige; in contrast to what is the case in corporations, where there is a desire to fill managerial positions on the basis of individuals’ expertise, skills and capabilities. In their managerial role, academics have to deal with financial and organizational affairs, including managing people, for which their academic expertise may not have equipped them for success.

This background and culture of predominance of academic achievements over other crucial management skills and competences, makes it especially relevant for universities to introduce new managerial tools and to develop new capabilities to manage their affairs strategically with a long-term perspective. The current paper posits that the use of foresight and IC in an integrated way can potentially address some of the problems mentioned above. In order to give a background to our discussion of how to integrate these two approaches, we will first describe them briefly.

### 3. Foresight for vision-building and participatory culture in universities

The term “foresight” has become widely used in recent years to describe a range of approaches to improving decision making, to anticipate better the future and share future technological developments (Cagnin and Keenan, 2008). It brings together key agents of change and various sources of knowledge in order to develop strategic visions and anticipatory intelligence to create a shared vision of a desirable future, so as to develop and implement a strategy that can increase the likelihood of achieving it (Miles and Keenan, 2002). Foresight also facilitates dialogue among actors who might otherwise not be communicating with each other (Rader and Porter, 2008). By creating a culture of open and multi-perspective communication it prepares the ground for participatory components in following strategically oriented actions/measures. Foresight is methodologically relatively open. Although the methods used most often are brainstorming, environmental scanning, scenarios, delphi, critical/key technologies, cross-impact analysis, and technology road mapping, the process is equally open to new ideas and the use of new methods. They can be designed on a case-by-case basis, or imported from other areas such as policy making or management and systems science. Other techniques, such as information retrieval, pattern recognition and knowledge and IC management, are also proving to be useful in foresight exercises. The selection and design of methods is, nevertheless, based on some basic principles of foresight, including future-orientation, participation, evidence based (informed opinion, plausibility of conjectures), multidisciplinary, coordination, and action orientation.

Foresight approaches and methods came to prominence during the Cold War period and then, during the 1970s, these tools were adapted to improve the understanding of the linkages between technology developments and social needs. During the last decade, foresight developments have been extended from concerns in policy and investment decision processes to areas of socio-economic life and organization vision building. As explained by Cagnin and Keenan (2008, p. 8), a wider examination of foresight is needed in disciplines such as epistemology, political science, sociology, economics and management



and organization science. By providing that, we will get in turn a better understanding of foresight by using concepts drawn from social science and humanities. For example, the learning effects using concepts borrowed from organizational or management studies (Barré and Keenan, 2008).

When applied at the national level for developing shared long-term visions, for setting research priorities and for strengthening interactions within research and innovation, or by organizations (private or public) for scanning future threats and opportunities and for formulating and future-proofing long-term strategies (Barré and Keenan, 2008), it usually follows a normative approach[2]: identifying targets and setting out action plans for achieving more desirable futures.

Although foresight is considered by policy makers to be a well-established tool, as well as by strategists and managers dealing with statements about long-term future dynamics, either to produce such statements or to perform criticism of existing ones (Barré and Keenan, 2008), its use in the HE sector is not a generalised practice. However, there are some experiences at both the institutional and sectoral level to extrapolate current trends and drivers into the future, to assess alternative scenarios and to build organization visions (Buessy *et al.*, 2008).

The research work carried out by Georghiou and Harper (2008) examines HE as an object of foresight and maps recent efforts in this field with three different foci: international, national and institutional.

International organizations are playing an important role in developing Foresight exercises in the HE sector. The EU DG Research Foresight Unit set up two expert groups in 2001 and 2002. They identified possible scenarios for 2015, highlighting major trends and challenges (STRATA-ETAN Expert Group on Foresight for the Development of Higher Education/Research Relations, 2002). The OECD has also contributed actively to this domain through its "University Futures project", which is designed to inform and facilitate strategic change to be made by government decision-makers and other key stakeholders in HE (OECD/CERI, 2005). UNESCO has developed prospective work in the HE sector in the context of the knowledge-based society (UNESCO, 2005). Recently, the Global University Network for Innovation (GUNI) has carried out a Delphi analysis to better understand the emerging trends of the role of HE in social and human development in different parts of the world (Global University Network for Innovation, 2008).

Besides the relevance of the aforementioned foresight exercises, the definition of policies and instruments for the HE is still being done under national boundaries[3], with national bodies controlling funding and legislative changes. For this reason, various foresight exercises have been carried out at national level, e.g. the "University of the Future" carried out in Sweden (Heinegard, 2005), "University Strategy 2015" in Spain, and the ongoing foresight project on "Quality and Leadership for Romanian Higher Education" (see Section 6). These foresight exercises are very useful for policy makers to understand the broader context, the diversity and complexity of universities and the challenges that universities are and will be facing and it is a tool to support them in their decision-making process.

Foresight exercises are also being developed at an institutional level, aiming at creating a shared vision of the university future which will be translated into mission statements and strategic plans, e.g. University of Manchester's 2015 Vision (Georghiou, 2009), 2015 Sustainability Plan of the Technical University of Catalonia (Barceló and Ferrer, 2008) and Universiti Sains Malaysia (University Sains Malaysia, 2008).

The foregoing recognition of the opportunities to apply foresight for the development of HE is also highlighted by the case studies presenting the application of systemic foresight in two university departments in Turkey with the aim of thinking about the long-term future in a holistic manner with a wide participation, two main outcomes were created:

1. the definition of future directions for the academic departments, which helped to identify future research topics and curricula; and
2. the definition of strategies for human resources to undertake those research activities and to deliver new courses (Saritas, 2006).



These institutional level foresight exercises have been very useful for universities to position themselves as an important player in the knowledge economy and as a tool for defining their long-term visions and developing strategies and actions to make them happen.

Common methods to all the aforementioned foresight exercises (at international, national and institutional level) are: extrapolation of perceived current trends, expert opinion and identification of different scenarios. The time horizons range from ten to 20 years and, except for the international exercises which tend to involve only academics, the other foresight exercises tend to involve a wide range of stakeholders: academics, policy makers, business and local authorities. Surprisingly, students were normally very under represented (Georghiou and Harper, 2008). A vital stakeholder group that should be included in the process is the parents of small children, as they have the most to gain/lose from the changes that will have come about by the time that these are old enough to enter university.

#### 4. IC approaches to make strategy happen

While foresight supports creating shared visions of the future and heightens the sense of environmental developments, and thus can be located at the very beginning of vision building and strategic processes, IC strategic management focuses more on ways to make use of (organizational) resources for realising strategies in a holistic manner, with a focus on intangible assets, and on how to develop such resources and activities.

The original idea of considering the IC of an organization is rooted in the insight that the tangible factors alone are not enough for an accurate estimation of the value of an organization and much less so of its potential for value creation (Lev, 2000). From Solow's studies on technological change (1957) to more recent evolutionary economic theories (Freeman and Soete, 1997), it is widely accepted that intangible assets and investments are the dominant factors in economic wealth and in the value creation process in companies. Thus, intangible factors have been increasingly considered to be crucial factors for organizational success, not only in the form of products (services economy), but also as resources and/or factors influencing processes and decisions of any kind. Internationally recognised models measuring and managing intangibles and IC at organizational level (mainly designed for private companies) are, among others, the Balance Score Card (Kaplan and Norton, 1996); Technology Broker (Brooking, 1996); The Skandia Navigator (Edvinsson and Malone, 1997); and the Intellectual Asset Monitor (Sveiby, 1997). Relevant efforts at EU level to provide IC models that are more comprehensive and with common principles are the MERITUM Project (MERITUM, 2002); the *RICARDIS: Reporting Intellectual Capital to Augment Research, Development and Innovation in SMEs* Report (European Commission, 2006b); and the InCaS Project (2007).

Today, IC approaches are gaining more and more importance as a tool for measuring, managing and reporting on intangibles, not only at firm level, but also within universities and research organizations. Different research centres and universities in Europe have developed different models to manage their IC, among others[4] the Austrian Institute of Technology (formerly the Austrian Research Centre), the Innovation and Knowledge Management Institute in Valencia (Spain), the University of the Basque Country, and the IC in HEIs and research organisations (HEROs) initiative that was led by the European Association of Research Managers and Administrators (EARMA). Austria has established a law that includes the compulsory delivery of an IC report (*Wissensbilanz*) (Altenburger and Schaffhauser-Linzatti, 2006) by its publicly-funded universities.

The concept of IC goes far beyond a limited understanding of individual knowledge only, but covers multiple aspects of an organization, often classified under the headings of: human capital as the knowledge and experience of the individual actors, structural capital as knowledge inherent in structure, processes, and culture; and relational capital as relationships beyond the borders of the organization (compare e.g. Pook and Bornemann, 2006).

In the process of IC management, the three forms of IC (human, structural and relational capital) are specified for the individual organization, and they are linked to the organization's



strategic objectives and its business processes. The notion of connectivity among IC factors (as mentioned by Habersam and Piber (2003)) is, in recent frameworks, included by using network analysis to understand the relations between the individual IC factors. Defining a battery of indicators makes IC and the progress in future IC development measurable.

The benefits of using an IC management model fall into two categories (Marr, 2005; European Commission, 2006a, b):

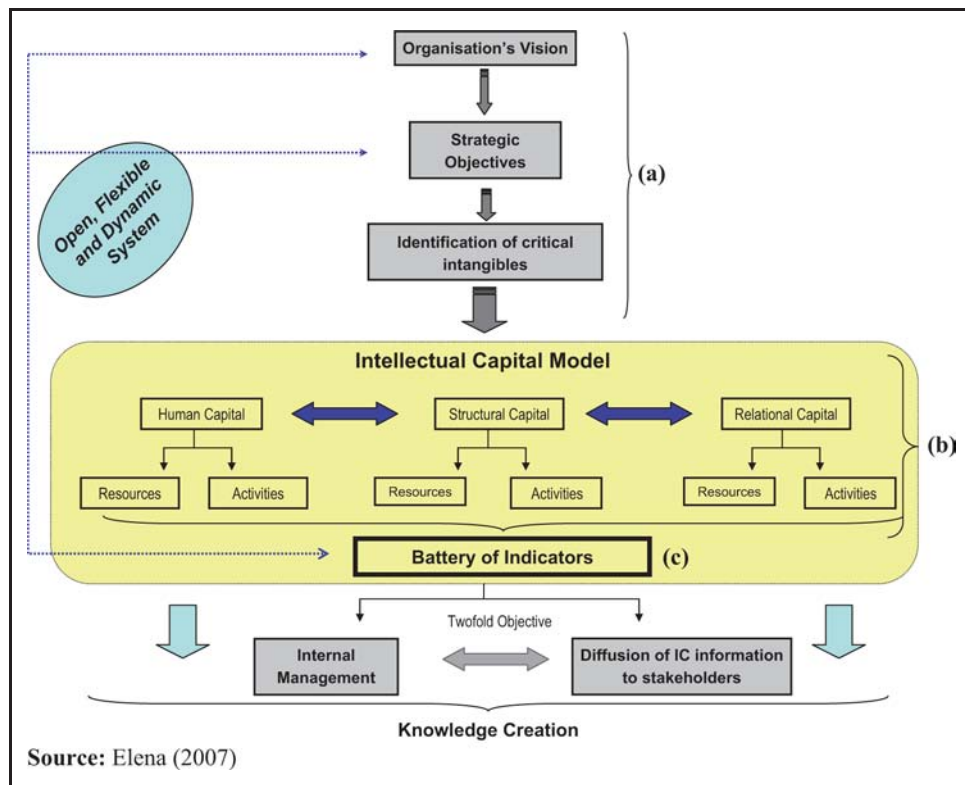
1. Its potential to function as a management tool to help develop and allocate resources – create strategy, prioritise challenges to the firm’s development, monitor the development of the firm’s results, and thus facilitate decision making (internal reporting function).
2. Its potential to function as a communication device linking the institution to the outside world and as a way to attract resources – financial, human and technological (external reporting function) and to foment relationships with partners and customers.

Based on this approach, Sanchez *et al.* (2009) proposed an IC model specially devoted to identify, measure, manage and report the IC of universities: the “IC Report for Universities” (ICU Report).

As explained by the authors, the IC Report has three parts that are equally important (see Figure 1):

1. *Vision of the institution, aiming to present the mission statement, the general objectives and strategy and the key drivers and activities to reach them.* The vision-building process should involve all the relevant stakeholders. This stage of the process could benefit from the application of foresight exercises at institutional level. As mentioned in the previous section, the resulting shared vision of the university future should be translated into more concrete terms, e.g. in mission statements and strategic plans. The IC models would be essential to transform a shared vision into a strategic approach and operational plans, by identifying and measuring the key intangibles resources and activities.

**Figure 1** Scheme of ICU Report process in universities



2. *Summary of intangible resources and activities, aiming to describe the intangible resources that the institution can mobilise and the different activities undertaken or planned to improve them.* It should show the uniqueness of the institution and the priority lines established and the main areas of interest on which the institution will focus.
3. *System of indicators, aiming to allow the internal and external bodies to assess the performance and estimate the future of the institution correctly.* In this way, a university engages with measured and clear objectives that can be assessed over time. It should allow a follow-up on whether the activities have been launched and if objectives are being met.

The ICU Report is a comprehensive way of presenting information of the three pillars of the HEI's IC. The ICU Report is thus conceived to complement financial management information (internally) and the financial report (externally). Hence, ICR is a valuable tool, not only as a reporting tool that improves significantly the transparency of each institution, but also for internal management, and it is a useful tool for visualisation of inputs, processes and outputs. It thereby addresses the needs of different stakeholders and the interests of internal as well as external parties and the need for uniqueness as well as (comparative) evaluation (Flicker and Pook, 2007).

The analysis of the most outstanding initiatives of managing and reporting on IC developed by individual HEIs (based on a voluntary basis) mentioned before and the case of Austrian universities (which are now compelled by law to implement IC reporting) provide some lessons of the co-existing potential benefits and drawbacks. The most significant of these are (Sanchez *et al.*, 2009; Elena, 2007; Sanchez and Elena, 2006):

1. On an internal level, as a management tool:
  - Defines and updates the mission statement of the HEI.
  - Helps to identify priorities in terms of research and teaching activities, clearly defining the organization's profile.
  - Communicates strategy throughout the organization.
  - Allows the alignment of individual goals within institutional objectives.
  - Links strategic objectives to long-term targets and annual budgets.
  - Promotes an internal process of learning about the institution's structure and performance.
  - Facilitates strategic discussions among the members of the organization.
  - Enables the discussion on the intangible value drivers and success factors.
  - Monitors the achievement of goals and assesses the organization's performance over the course of time.
2. On an external level, as a disclosure tool:
  - In general terms, it improves the level of transparency.
  - It provides comprehensive and valuable information to stakeholders: students, teaching personnel and researchers, ministries, funding organizations, businesses, and society as a whole.
  - It can enhance competitiveness. For instance, when a university engages in the process of grant renewal, or endeavours to attract additional funds for research, performance assessment is of crucial importance. Accordingly, the IC Report can facilitate the presentation of results, which could contribute to attracting funds to the detriment of other lower-performing (or less well reported!) competitors. However, as pointed out previously, Universities also have intangible liabilities, so if it is deteriorating, disclosure may prejudice the chances of getting future grants.

However if a proper management of IC at universities is achieved, it can have a significant impact on the performance and efficient use of resources. Hence, practitioners and experts



on this topic affirm that those academic and research organizations able to develop both the culture and the capacity to identify, manage and report on their IC, will be advantageously placed in the HE scenario (Leitner, 2004).

From the practical point of view, most European universities have developed Strategic Plans to initiate the learning process and crystallise their vision of the future. However, because of the current organizational models and practice, the definition of priorities, the establishment of the criteria for resources' allocation and the full implementation of those plans, is not always a straightforward process (see Section 2).

The methods discussed here import "business thinking" (business development, organizational development, customer care and networking) into the academic field of universities, in both mindset and action, so as to identify and address their specific environments or markets.

## 5. Closing the loop: combining foresight and IC management for strategic management in universities

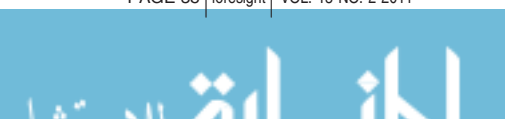
HEIs are operating in a rapidly-changing environment, as societal, technological, economic, ecological and political developments force them to adopt flexible structures that can adapt quickly to new demands (Sporn, 1999). This implies that universities should build their internal capabilities to manage not only their academic affairs but also their human and financial resources in an effective way to position themselves as world-class institutions.

The focus of this paper is the proposal that the integrated use of foresight and IC management can facilitate the efforts to give effective responses to these challenges. In this regard, while foresight provides an excellent approach to address the question of how to develop a shared vision of the future and jointly define a strategy to best adapt an organization to the new context, IC management models play a role in strategic management, resource allocation and monitoring of objectives and organization performance. In other words, the former provide the institutions with the methods to develop a long-term vision which allow the main governing bodies of universities to scan future threats and opportunities and, thus, set up priorities and formulate strategies, and the former provide managers with a concrete tool to strategically manage resources and activities in line with the long-term objectives and strategies. Both approaches should be used in a symbiotic way.

As pointed out by Saritas and Oner (2004) in their analysis of the UK foresight programmes in 1995 and 2000, the implementation of the foresight outcomes is often problematic "due to the lack of a comprehensive and systemic approach and as a consequence of failure to anticipate the implications of change" (Saritas and Oner, 2004; p. 35). Our suggestion is that IC management, which is conceptually based on a systemic approach and facilitates organizational learning, is an integrative and holistic way to structure management issues in universities and to support the implementation of the foresight results.

Furthermore, both approaches are participatory in nature and bring people together in a social process to elaborate on individual experiences and expertise, to create a common language, structure collective thought and enable appropriation by decision-makers. They can contribute to organizational and regional risk management, knowledge management, organizational learning, and instantiate democratic principles in the early phases of decision-making processes. They can also be used in a change management process that addresses cultural liabilities by providing education to power brokers that may facilitate their acceptance of new values and procedures. In other words, they endeavour to use current knowledge for shaping future actions by exerting influence on the decision-makers and opinion formers.

Policy and strategy development are increasingly being conceptualised as a continuous and reflexive learning process that requires systematic instruments of analysis (Smits and Kulhmann, 2004). Foresight has the potential to offer such a set of instruments; it





produces a wide variety of tangible “outputs” (e.g. reports) and less tangible “outcomes” (e.g. changes in organizational culture, new networks and the articulation of widely-shared – or divergent – visions). IC management facilitates a clearer understanding of intangible value drivers and provides methods for transforming strategy into actions. Both approaches need to incorporate an iterative monitoring and ongoing learning process over a period of time and not be carried out as a “one-off” standalone exercise. The real benefit lies in the medium-term adaptation of strategies to the unexpected and uncontrollable.

Taking the concept of sustainable development in a broader sense we find a further match between the principles of strategic management of IC and Foresight. The key requirements of governance for sustainable development are (Meadowcroft *et al.*, 2005):

- developing appropriate political frameworks and adopting a long-term focus; and
- the integration of different kinds of knowledge into decision processes.

In our view, the first point could be achieved by applying Foresight exercises with long-term views and shared visions of the futures, and the second one could be effectively accomplished by implementing IC management models.

Both approaches, foresight and IC management, widen the view for medium- and long-term benefits by integrating multiple perspectives, focussing on resource development and being oriented towards possible futures and the options that have to be designed so that the proposed actions achieve lasting, sustainable effects. For this to happen the Foresight “sponsor” (political authority, funding agency or the senior management of an organization) needs to go beyond involving stakeholders in the discussion process to incorporating their pro-active involvement in the policy implementation stage. In this way the “sponsor” can induce both the reconsideration and modification of policy strategies and funding decisions (both in terms of input funding and internal resource allocation) and widen the likelihood of their acceptance within the stakeholder communities.

If universities are to fulfil their calling to contribute to future socio-economic growth then, especially during periods of economic downturn, they need to develop a carefully thought through and well presented line of argumentation that demonstrates fine resource management and accountability in support of clearly defined, attainable and relevant goals. From a managerial perspective, both foresight and IC management can contribute to making the best use of available resources. A long-term and holistic perspective of the organization together with the implementation of appropriate management tools help organizations to mitigate risk, make the most of opportunities, and enrich decision-making (Hines and Bishop, 2006). It has to be added, though, that current practices in universities are mostly still far away from covering the entire loop.

## 6. Case study: future-oriented reform of the HE sector in Romania

Romania is one of the largest countries in Southeastern Europe but ranks the lowest among EU countries in terms of research and development (R&D) personnel relative to total employment (0.45 per cent) and the second lowest in terms of R&D expenditure as a percentage of the gross domestic product (GDP) (ERAWATCH, 2009).

As argued in the aforementioned report, in 2007, GERD (accounting to 0.53 per cent of GDP) was performed in proportion of 41.6 per cent by the private sector, 33.9 per cent by the government sector and 24.1 per cent by HEIs. A general revitalisation of university research activity has been observed since implementation of the National RDI Strategy 2, when competitive funding for research became dominant, the HE registering an increase in its share of GERD, from 10-12 per cent to 24 per cent between 2004 and 2007.

One of the most relevant and recent events related to the elaboration of R&D policy is the “2007-2013 National RDI Strategy based on strategic planning elements”, which was initiated in 2005 by NASR within its “Sectoral R&D Plan”. The project, which had a duration of 18 months, had the objective to elaborate the 2007-2013 National RDI Strategy and the



2007-2013 National RDI Plan; based on specialised foresight systems and instruments (group consultation and strategic planning) to determine the main directions of evolution of the RDI system. The project was performed by a consortium including 26 HEIs, research institutes of the Romanian Academy, national R&D institutes, public and private research institutions, coordinated by the National Council for Higher Education Research (CNCSIS) – the Executive Unit for the Funding of Higher Education and Academic Research (UEFISCSU). The consortium was supported by the European Commission, and was assisted by an international group of foresight experts. The project was launched in September 2005 and was followed by a series of public events to debate the intermediate results. In February 2006, a broad Delphi survey was initiated, in which over 3,500 persons, who had been identified in the first part of the project, were consulted online in two rounds that ended in May 2006[6].

Referring to the HE sector in Romania, and according to the National Institute of Statistics (2006), in 2008, Romania had a total of 159 HEIs, including 107 public universities (with 770 faculties, 716,464 students and 31,543 teaching staff) and 52 private universities (with 216 faculties, 202,786 students and 4,662 teaching staff).

In terms of restructuring the HE system according to Bologna requirements, Romania has taken major steps. A new HE structure has been adopted on the organization of university studies, providing the legislative framework for the introduction of the three cycles, according to the Bologna objectives (Law 288/2004). New curricula as well as new universities have been set up under the reform programme and the number of students enrolled in various study programmes available in Romania has been steadily rising (ERAWATCH, 2009).

As stated by the Country Report (ERAWATCH, 2009), the HE sector in Romania has become a very important performer in terms of scientific participation and output. However, regarding its education mission, it has failed so far to be restructured in a consistent manner. Both the level of access to tertiary education and the participation in life-long learning remains below the European average. HEIs, especially private ones, have mainly responded to the immediate demand of the target population, without taking into consideration the medium and long-term economic evolutions. As a consequence, HE has faced a significant increase in the number of students in some fields (i.e. Economics or Law). This triggered the rapid, significant and artificial rise of public and private faculties in these sectors, showing virtually zero scientific output. It is also worrisome that none of the Romanian universities is in the top 500 universities of the Shanghai ranking, while national PhD students and researchers have excellent results when performing abroad.

In this environment and in the broader context of the fifth freedom[7] and the ERA 2020 Vision[8], a three-year project on “Quality and Leadership in Higher Education” has been funded by European Structural Funds. Its main goal is the creation of a fluid dialogue and negotiation space among the relevant stakeholders in the HE sector in Romania. The core of the discussion is the role and future of the Romanian universities in the knowledge-based economy.

The Project will capitalise and extend the experience, unique so far at national level, developed through the first National Foresight Exercise in Romania, implemented through the National Strategy 2007-2013 (ERAWATCH, 2009)[9].

The project is coordinated by UEFISCU[10] and involves other seven national and international organizations: the National Council of Rectors (CNR), Romanian Academy (AR), Romanian Agency of the Quality Assurance in Higher Education (ARACIS), Fraunhofer Institute for Systems and Innovation Research ISI-Foresight Group, the Institute for Prospective and Technological Studies (IPTS), UNESCO-Centre for Higher Education (UNESCO-CEPES) and the European Universities Association (EUA).

The importance of the role of the aforementioned participants in shaping the HE sector at national and European level shows the attractiveness of participating in such a foresight initiative in this sector.



The specific objectives of the project are:

- *Elaboration of a vision and strategy document.* Through the implication of all the relevant partners at national level and the broader view of the international organizations involved, the project will create a vision document with a time horizon of 2025 and the set of strategic recommendations that will offer the framework in which Romanian universities will develop their strategies and will be the key actors in the country's socio-economic development. A foresight exercise is being developed to propose such a shared vision and strategy.
- *Development of a knowledge platform for foresight experts.* The project will also develop a knowledge platform for the foresight community with special emphasis on foresight for the knowledge-based economy. This will imply the development of social computing tools to assure a participative web platform.
- *Development of a framework to differentiate Romanian universities.* The project will elaborate a framework for the institutional differentiation of the country's universities through the establishment of a typology of universities to reflect the diversity of the HE landscape, considering the complex role of universities as key actors in knowledge production, transfer and dissemination, which are increasingly important for national and regional development. IC approaches have been recommended as a valuable tool to define a framework to identify the strengths and weaknesses of individual institutions in relation to the three IC pillars – human, structural and relational capital – and, thus, allow the categorisation of universities.

In order to fulfil these objectives and expectations from the exercise, a systemic foresight approach (Saritas, 2006) has been chosen. This approach is considered to be useful to understand the Romanian HE system at present and in the long run – by 2025. The approach will be beneficial for the scoping of the exercise, for the identification of 15 panel topics as intended by the sponsors and for setting up communication channels among the panels once they have been established. Such an approach will also help to define the stakeholders/actors in the system. Being “systemic” the ideas produced in this systemic foresight process will not be disconnected, but instead will be “interconnected” by explaining the structural and behavioural transformations needed to change the existing system to a desirable future system, which will be characterised during the foresight exercise.

The systemic diagram shown in Figure 2, which was produced after the first meeting with the sponsors, will constitute a basis for discussion for the future of the Romanian HE system. The figure places HE in a wider context and highlights some of the important issues involved in this context. The diagram can be discussed and/or modified; new components can be added or existing ones can be removed through the foresight process.

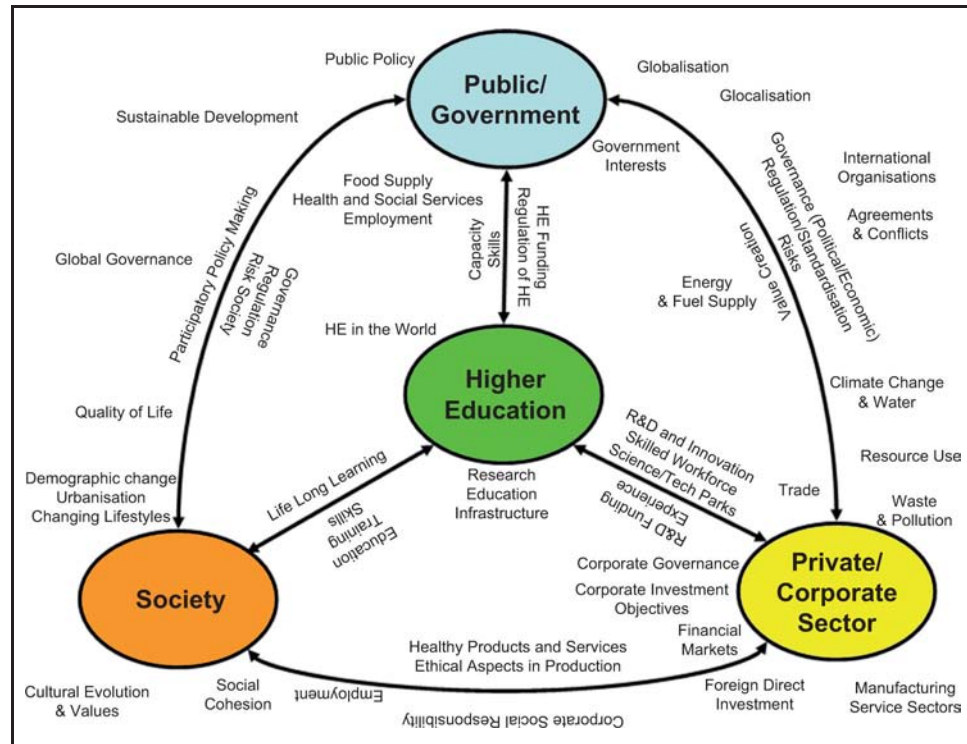
The systemic figure shows the areas/issues/themes to be covered in the HE foresight exercise. Such a systemic representation provides input for the establishment of foresight panels and the profile of the stakeholders to be recruited including universities, policy-bodies, corporations and society in general. Five cross-cutting themes have been identified for the Romanian HE system:

1. universities and human capital development;
2. universities as knowledge producers;
3. universities and economic environment;
4. universities and social values; and
5. international competitiveness of universities.

Each theme requires multi-disciplinary work, which will open new lateral communication channels between panels and systems' actors. Thematic panels will generate success scenarios in order to prepare the HE system for the future. The success scenarios will lead to the development of a long-term vision for the Romanian HE sector. This vision is expected to



**Figure 2** Romanian HE as a system



support policies in the HE sector and will be a reference point to strategically position Romanian universities at the national and EU levels.

Accordingly, our proposal is to build the framework for mapping and differentiating Romanian universities applying IC approaches and its main three pillars – human, structural and relational capital (as explained in Section 4). This framework could also contribute to the vision building process and the definition of long-term strategy for the HE sector by organizing the key elements of the future of universities in Romania into the mentioned three pillars. For instance, for the human capital, the IC framework will help to analyse the need to correlate the educational offer of the HE sector to the demands of the labour market and the need to train research and teaching staff. For the structural capital, the analysis may focus on the potential needs of infrastructures in the following 20 years and different funding sources. Finally, for the relational capital the framework will contribute to study the need of Romanian universities for internationalisation, the need to promote new mechanisms to improve knowledge transfers between industry and academia, or how to link better with society. Connectivity among the three pillars is a key issue to assure a comprehensive and coherent vision and strategy. Some models include this connectivity as an integral part (e.g. InCaS) and the German “*Wissensbilanz*”.

By analysing the human, structural and relational capital of the universities constituting the Romanian HE sector, it will be possible to map them and, thus, to differentiate them.

This process applied at the university level can play a fundamental role in strategic management and resource planning and allocation, as well as developing leadership capacity, which would lead to the definition and implementation of the long-term strategic objectives for individual institutions.

## 7. Conclusions and lines of future action

Universities, as well other organizations, are part of a changing environment that is characterised by increasing uncertainty, growing competitiveness and new demands for

accountability and socio-economic relevance. They are increasingly affected by changes in society and the economy. The need to build an intelligent organization with a vision of the future, while incorporating sustainable management methods, is becoming crucial for universities.

Foresight supports strategic future-oriented actions and assists managers and policy makers in their decision-making process. Planning activities and defining strategic plans in universities (and in general in any other type of organization) can be said to involve an anticipation of the future, since every action decision implies some assumption about the future. Foresight exercises at national and institutional levels are crucial to devise strategies for the HE sector and for individual universities. IC management models contribute to the successful communication and implementation of the strategy.

With high quality leadership and appropriate preparation, it may be possible for universities to address the challenges over a period of time by implementing a change management process that incorporates both foresight and IC management models in an inclusive and participatory way. Many of the issues addressed and illustrated in this paper could provide the starting point of such an initiative. The example of the Romanian university sector shows one way to realise and establish the proposed approach. It describes the systemic character of highly complex foresight initiatives and proposes the creation of links between the vision-building activities to their implementation using IC management techniques and approaches.

The paper explores two concepts closely related but that have not been analysed together: the relationship between IC approaches, and foresight. Many of the issues addressed and illustrated could provide the starting point for better integration of strategic management and IC approaches and foresight. The Quality and Leadership for Higher Education in Romania provides an opportunity to implement and try out the proposed approach. However, much has still to be learned, and tested in practical fields; ideally under different circumstances, in different settings, so that these can be compared and examples of good practices identified. This paper is only a starting point, providing the core idea and a first example; concrete hypotheses should be generated, discussed in detail, rigorously analysed and empirical evidence sought.

As the Romanian case study shows, a foresight exercise together with a strategic management approach following an IC model, could be useful for policy makers to place HE in a wider context and highlights some of the key issues of the future of the HE sector. A framework for mapping and differentiating universities based on IC approaches and its three main pillars (human, structural and relational capital) will be a key to support decision-making processes. Furthermore, the construction of the long-term vision and of the strategy through public dialogue will answer, among other things, the need to correlate the educational offer to the demands of the labour market and will contribute to the structuring of the development of human capital, one of the key elements of the IC, able to assure the economy's long-term competitiveness.

The time is overdue for universities to address requirements of a changing environment with professional, strategic approaches. A combination of foresight and IC management, professionally facilitated, organized and supported, promise a deeply anchored change process towards future-oriented strategy and sound implementation. The participatory character of these approaches seems to fit well into the academic field with highly skilled and analytically competent individuals. The methods provide a framework to make good use of these capabilities.

## Notes

1. Major transformations of the HE sector are also taking place in other parts of the world, as in the case of China, USA, Canada or South Africa (Global University Network for Innovation, 2008). However, this article focuses mainly on European universities.



2. In future studies, normativity indicates the relation with specific values, desires, wishes or needs of the future, which give overall direction for the future (Saritas and Oner, 2004, p. 31)
3. In some countries, for example in Spain and Germany, the regional governments also have an important role and responsibilities.
4. See more detailed information on individual initiatives in Sanchez and Elena (2006).
5. IC has been categorised in different ways by academics and practitioners since the mid-1990s. But the tripartite classification is the one that has the widest acceptance in specialised literature (MERITUM, 2002) and in political language (European Commission, 2006a, b).
6. For more information on the Romanian research policy developments, see <http://cordis.europa.eu/erawatch/index.cfm>
7. By 2020, all players will fully benefit from the "fifth freedom" across the ERA: free circulation of researchers, knowledge and technology.
8. For more information, see: [http://ec.europa.eu/research/era/2020\\_era\\_vision\\_en.html](http://ec.europa.eu/research/era/2020_era_vision_en.html)
9. For more information, see: <http://cordis.europa.eu/erawatch/index.cfm>
10. UEFISCU ensures the management of research programmes mostly addressing the development of scientific careers and increasing the research capacity in universities. UEFISCU organizes national competitions and monitors the winning projects funded by MERY through the National Council for Research in Higher Education Institutions for the development of higher education research. It also participates in national and international bids for attracting external funding for education and research and facilitates information dissemination in these areas

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