3-5 February 2014- Istanbul, Turkey
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1321

Scope and Aims of Intellectual Capital Management and Reporting

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Abstract. The concept of IC is a term that has been conceived through practice. IC has also been categorized in different ways by academics and business management since the mid-1990s. It is important to stress the notable efforts that the business world has made in the search for a valid universal classification. However, without doubt, the tripartite classification is the one that has the widest acceptation in the specialized literature and in political language, structuring IC in three blocks that are human capital, structural capital and relational capital. Nevertheless, it is important to note that the real wealth from IC not only resides in the sum of the elements which make up the whole, but in the interconnections between them.

In the context of universities human capital is the knowledge that resides in individuals which includes teachers, researchers, PhD students and administrative staff. Structural capital comprises the governance principles, the organizational routines, procedures, systems, university culture, databases, publications, intellectual property etc. of a university. Finally, relational capital is related to the various types of relations to its stakeholders and very similar to what is known as Third Mission.

Universities are immersed today in an intense transformation process triggered by the need to make universities more flexible, transparent, competitive and comparable. To face these challenges, universities need to consciously manage the processes of creating their knowledge assets and recognize the value of IC to their continuing role in society. The role of HE institutions is particularly relevant in the economic structure of countries and regions as they add value in terms of educated workforce and enhanced entrepreneurship.

Depending on the type of university (e.g. research University versus teaching university) the different elements of IC may have different roles and meanings.

The Impact of Measuring and Reporting IC at University level: mission, performance, national resource allocation and international ranking.

The increasing national and international competition to win students, scientists, research funds and other resources of income as well as ranking and reputation is a continuous challenge for universities. These allow considering at first IC development as a mission for universities and HE Institutions as they are created and funded with the purpose to build the workforce of tomorrow, stimulate organizational and technological innovation, and enhance the network of relationships which cross-fertilize industrial and academic expertise. Second, IC is a metric of performance and the intangible report may well represent for HE and research organizations what the balance sheet and the income statement are for business companies. Third, IC reporting results could affect the

3-5 February 2014- Istanbul, Turkey
Proceedings of INTCESS14- International Conference on Education and Social Sciences Proceedings

1322

financing of universities by National Ministry through the Financing Fund modalities and the local financial resources assigned by universities to their departments. Finally, IC reporting for universities can impact on the visibility at national and international level. The analysis derived from some identified indicators allow the university governance to set up the strategic directions for his national and international competition changing and setting up new strategic direction to improve resources allocation and international ranking.

Finally, IC reporting is at the basis of the strategic coordination of the universities within a wider national or regional policies policy context. Of course the strategic impact of measuring IC at societal and regional level is not free of risks. The university more involved into these transformations processes distinguish themselves through a market performance orientation as well as a clearly recognizable profile based on their scientific strengths. Under these circumstances many universities will find themselves in a situation of conflict between the growing pressure of commercialization and gain orientation from one side and the wish to fulfill their claim for academic quality on the other. The realization of the right balance requires a responsible and competent leadership, the mobilization of all members of the institution towards the common goal and the bonding of all the stakeholders in the regional context.

1. Introduction

The concept of IC is a term that has been conceived through practice. IC has also been categorised in different ways by academics and business management since the mid-1990s. Universities are immersed today in an intense transformation process triggered by the need to make universities more flexible, transparent, competitive and comparable. To face these challenges, universities need to consciously manage the processes of creating their knowledge assets and recognize the value of IC to their continuing role in society. The role of HE institutions is particularly relevant in the economic structure of countries and regions as they add value in terms of educated workforce and enhanced entrepreneurship.

European universities have been immersed during the last decades in important transformation processes aiming to make them more autonomous, economically efficient and competitive. They have to demonstrate professional resource management and accountability in support of clearly defined and feasible goals, even more important during periods of financial crisis and budget cuts. Intellectual Capital (IC) management and reporting can contribute to making the best use of available resources.

The increasing national and international competition to win students, scientists, research funds and other resources of income as well as ranking and reputation is a continuous challenge for universities. These allow considering at first IC development as a mission for universities and HE Institutions as they are created and funded with the purpose to build the workforce of tomorrow, stimulate organisational and technological innovation, and enhance the network of relationships which cross-fertilize industrial and academic expertise. Second, IC is a metric of performance and the intangible report may well represent for HE and research organisations what the balance sheet and the income statement are for business companies. Third, IC reporting results could affect the financing of universities by National Ministry through the Financing Fund modalities and the local financial resources assigned by universities to their departments. Finally, IC reporting for universities can impact on the visibility at national and international level. The analysis derived from some identified indicators allow the university governance to set up the strategic directions for his national and international competition changing and setting up new strategic direction to improve resources allocation and international ranking.

2. What is Intellectual Capital in the context of universities?

The term `Intellectual Capital´ (IC) refers to the resources on which the organisation relies in the broadest sense, including not only human capital resources, but those of the organisation itself and

3-5 February 2014- Istanbul, Turkey
Proceedings of INTCESS14- International Conference on Education and Social Sciences Proceedings

1323

its relations with its environment.

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In the context of universities human capital is the knowledge that resides in individuals which includes teachers, researchers, PhD students and administrative staff. Structural capital comprises the governance principles, the organisational routines, procedures, systems, university culture, databases, publications, intellectual property etc. of a university. Finally, relational capital is related to the various types of relations to its stakeholders and very similar to what is known as Third Mission[3]. Relational capital includes all the activities and relations between university and non-academic partners: firms, non-profit organisations, public authorities, local government, and society as a whole.[4] IC of universities can be described as in the following table:

Table 1: Elements of Intellectual Capital for Universities and Higher Education Systems

Human Capital (HC): referring to the intangible value that resides in the individual competencies, this includes the expertise, knowledge and experiences of researchers, professors, technical and administrative staff and students' competencies.
Structural Capital (SC): referring to the resources that are found in the organisation itself, i.e. what remains without the employees, this includes the databases, the research projects, research infrastructure, the research and education processes and routines, the university culture, etc.
Relational capital (RC): referring to the intangible resources capable of generating value linked to the university's internal and external relations. This includes its relations with public and private partners, position and image in (social) networks, the brand, involvement of industry in training activities, collaborations with international research centres, networking with professors, international exchange of students, international recognition of the universities, attractiveness, etc.

Source: own elaboration, adopted and modified from the MERITUM (2002) project

Universities are immersed today in an intense transformation process triggered by the need to make universities more flexible, transparent, competitive and comparable. To face these challenges, universities need to consciously manage the processes of creating their knowledge assets and recognize the value of IC to their continuing role in society. The role of HE institutions is particularly relevant in the economic structure of countries and regions as they add value in terms of educated workforce and enhanced entrepreneurship.

From a more broad and macro perspective, IC of a university can be interpreted as *"the assets in a society that, although not reflected in traditional accounts statements, generate or will generate value in the future"*[5] and hence those outputs the university generated for society and economy. Thus, building more universities and getting more students into HE will not create IC unless the economy can provide graduates with relevant jobs, or the environment to set up innovative companies. Intellectual wealth, according to the World Bank, can improve people's lives as well as give them higher income. Thus, the role of the university is 'amplified' in a country's IC by additional features, which encourage production and innovation. These include a country's

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[1] MERITUM (2002), European Commission (2006a).

[2] Roberts (2000).

[3] See Molas-Gallart (2005).

[4] See Sanchez and Elena (2006); OEU (2006).

[5] See Bueno and Salmador (2000, p.110).

3-5 February 2014- Istanbul, Turkey
Proceedings of INTCESS14- International Conference on Education and Social Sciences Proceedings

1324

infrastructure, particularly communications and computing infrastructure, networks which include trade but also university and research networks, and ability to renew or innovate with research and development underpinned by the financial and economic conditions to do so.

In practical terms, the specific tool successfully applied in different sectors is the so-called IC Statement or Report (ICR). Its main objective is to help the institution to identify and deliver information on strategy, aims, visions, activities and resources, based on (financial and non-financial) indicators. IC management and reporting systems hence aim to identify, measure, manage, control and different forms of IC and support mangers and external stakeholders in their decisions making by disclosing information about IC. Depending on the type of university (e.g. Research University versus teaching university) the different elements of IC may have different roles and meanings. Table 2 gives an overview of possible roles IC may have for different universities.

Table 2: IC for different types of universities

	Characteristics	HC	SC	RC
World class research university	World class universities attract best academics and best students. There may be a mismatch between the strategic goals of a world class university and the needs of local community e.g. social science research may be conducted according to the 'world' trends neglecting the local context and needs.	It is assumed that academics transfer their tacit and explicit knowledge to students and other members of the academic community.	Quality research is therefore an 'acid test' for taking a 'total quality' picture of a university.	Strong brand and economic ties with wealthy sponsors and donors including the graduates.
Entrepreneurial university	An entrepreneurial university allows supporting the creation of entrepreneurial attitudes that constitutes an engine of economic growth and is increasingly involved with industry both as human capital provider and seed-bed of new firms and creation/diffusion of an enterprising culture.	Human capital component includes the staff, students and researcher with an "Entrepreneurial mindset" or involved into the creation of economic and social value from a new technology or scientific insights.	Structural capital include more the assets created by human capital in terms of spin off, spin out activities, research contract, innovative products and services developed.	Relational capital include here particular the relationships with business communities, institutions and all the stakeholders of the innovation ecosystems in which the university is located.
Regional university	Its excellence is based on strong ties with the local community including local businesses, secondary schools and graduates who constitute the labour source in the region. There is usually a mismatch between the strategic goals of a regional university and the criteria evaluated in world university rankings.	Staff is recruited among local academics. Unless the local regulations prohibit 'inbreeding' a large proportion of academic staff are recruited from university's graduates. Good understanding of local context enables quality teaching.	Structural capital aims to support that the university can serve the needs of the local community and educational demand by regional economy and specific social needs.	Strong local brand usually not recognised beyond the region, serving local communities and business needs.

3-5 February 2014- Istanbul, Turkey
Proceedings of INTCESS14- International Conference on Education and Social Sciences Proceedings

1325

3. Why Intellectual Capital management and reporting in universities?

New modes of governance of universities and demands for more transparency and accountability require an adequate allocation of resources, developing new managerial skills and the introduction of new managerial and reporting tools. IC management and reporting systems should provide information about the specific strengths and value of the IC of an organisation and addressed different stakeholders.

As mentioned before, the implementation of IC approaches within universities goes beyond a limited understanding of individual knowledge, but covers multiple aspects of an organisation: 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 organisation.

The following main reasons can be described for introducing IC management and reporting systems in universities:

❖ University's main inputs and outputs are basically intangibles (mostly knowledge and human resources). However, only a small part of these are identified and very limited instruments exist to measure and manage them. Particularly, traditional financial accounting and reporting system fail to recognise these assets and resources.

❖ Universities have to be more transparent and, thus, to disseminate more information to stakeholders (researchers and teaching, students, funding bodies, governmental agencies, labour market, and society as a whole).

❖ Universities are being provided with more autonomy to manage their own affairs, not only academic but also financial, to redefine their own internal structures, which necessarily requires new management and reporting systems.

❖ The increasing cooperation between universities and firms has resulted in the demand for similar processes of evaluation for both players. Accordingly, universities would have to implement new management and reporting systems, which necessarily incorporate intangibles.

❖ IC management can help to shift strategic focus of universities towards intellectual resources and enhance their capability to adapt to the challenges posed by the non-profit environment they are operating in.

❖ The ranking of education and research organisations should be based more on consistent, objective and shared metrics, also to strengthen the links among universities and companies on the basis of a common language.

❖ Another reason to measure IC stays in the fact that measurement could bring the "ivory-tower philosophy" of researchers closer to real requirements of the public and industry, resulting in a more transparent assessment of performance.

❖ Finally, IC should play a key role in human resource management (HRM) within organisations, thereby also addressing the organisational factor (structural capital) that is important that employees and students can enfold their creativity.

4. The impact of measuring and reporting IC in universities

The systematic identification and reporting of IC indicators is of strategic importance in nowadays' universities. Higher education and research increasingly converge towards new organisational assets as emerging, for instance, from the recent policy recommendation of the European *Regional Smart Specialization Strategy*[6]. The distinguishing features of the new university raise the problem

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[6] See Foray *et al.* (2012)

3-5 February 2014- Istanbul, Turkey
Proceedings of INTCESS14- International Conference on Education and Social Sciences Proceedings

1326

of identifying proper frameworks for analysing success, performance and strategic impact, particularly in terms of intangible and knowledge assets generated. Beside the interest in the academic and consulting fields, also supranational organisations like OECD, European Union and World Bank show an increasing attention towards this issue.

Universities have frequently been regarded as key institutions in processes of social change and development. The most explicit role they have been allocated is the production of highly skilled labour and research output to meet perceived economic needs. This forces to identify suitable measures for assessing the performance of universities and for evaluating the strategic impact of the IC measurement and reporting at different levels: i) course or department level, ii) university wide level, or iii) of society and regional development level. There is an increasing difficulty in measuring and reporting the strategic impact of IC reporting when we move from the course or department level to the society and region level (see Fig. 1).

Figure 1: The strategic impact of measuring and reporting IC in universities
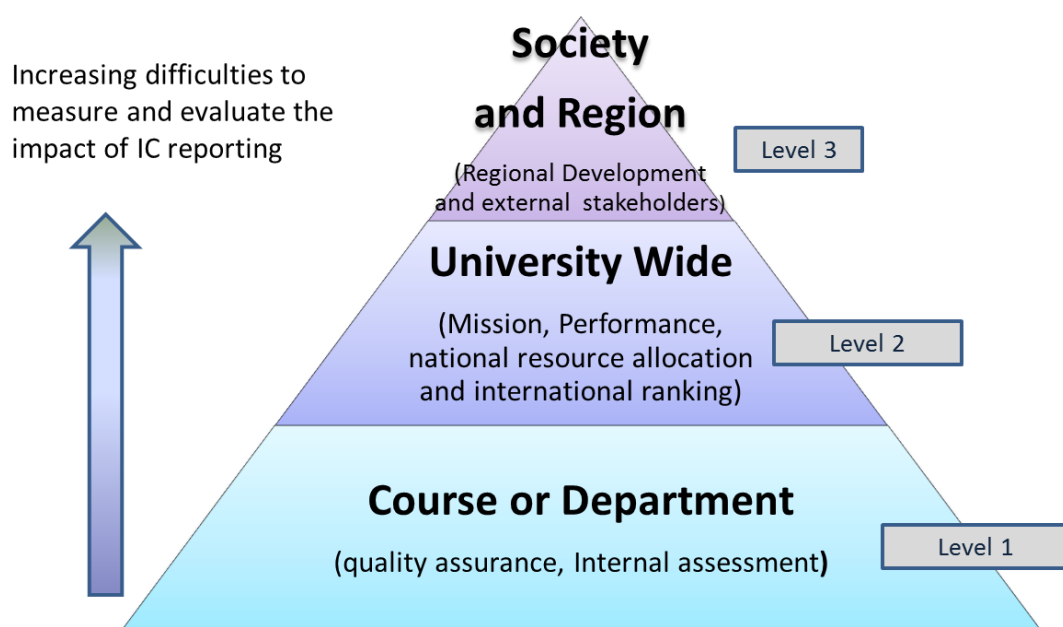
Source: Own depiction

The Impact of Measuring and Reporting IC at Course or Department Level: quality assurance and internal assessment report

Quality assurance is a comprehensive term referring to how HE institutions universities manage teaching and learning opportunities to help students progress and succeed. The IC reporting can support the investigation of concerns about the standards and quality of higher education provision, and the accuracy and completeness of the information institutions publish about their internal assessment report. Where some IC indicators evidence some weaknesses and where the evidence suggests broader failings, the university governance should be able to identify the strategic impact on the management of quality and standards at course or department/faculty level, introducing the necessary revisions and changes. Incremental or radical innovations should be planned when the IC reporting at this level evidence the necessity of changes to increase the human assets or the results in terms of structural capital with respect also to the different University course and department. IC management at this level is more related to internal assessment for improving the quality assurance

3-5 February 2014- Istanbul, Turkey
Proceedings of INTCESS14- International Conference on Education and Social Sciences Proceedings

1327

process. These concerns should be managed by the University Governance Board at faculty or department level, including the rector, the faculty dean and eventually the main stakeholders at ministry level.

The Impact of Measuring and Reporting IC at University level: mission, performance, national resource allocation and international ranking

The increasing national and international competition to win students, scientists, research funds and other resources of income as well as ranking and reputation is a continuous challenge for universities. These allow considering at first IC development as a mission for universities and HE Institutions as they are created and funded with the purpose to build the workforce of tomorrow, stimulate organisational and technological innovation, and enhance the network of relationships which cross-fertilize industrial and academic expertise. Second, IC is a metric of performance and the intangible report may well represent for HE and research organisations what the balance sheet and the income statement are for business companies. Third, IC reporting results could affect the financing of universities by National Ministry through the Financing Fund modalities and the local financial resources assigned by universities to their departments. Finally, IC reporting for universities can impact on the visibility at national and international level. The analysis derived from some identified indicators allow the university governance to set up the strategic directions for his national and international competition changing and setting up new strategic direction to improve resources allocation and international ranking.

The Impact of Measuring and Reporting IC at Society and Regional level: external steering process with university stakeholders, regional development, monitoring the coordination between university and national or regional policies

The mentioned changes at university level demand from universities an entrepreneurial orientation with increasing market relations and a stronger self-reliance, which will be associated with considerable opportunities, but also risks. The strategic impact of IC reporting at societal and regional level where the university is located, allow the universities to implement the general recommendation defined in the EU Guide "Connecting Universities to Regional Growth" (2011)[7], i.e. the active engagement of universities and other HE institutions in regional innovation strategies for smart specialization, in cooperation with research centres, businesses and other partners in the civil society. Universities have potentially a pivotal role to play in the social and economic development of their regions because they are a critical 'asset' of the region. The universities are called to strengthen a steering core with a clear mission and vision, to interact with the external stakeholders in the "outside" world, to identify a diversified funding base (less state funding) and to adopt an interdisciplinary activity for developing an integrated entrepreneurial culture. Successful measurement and reporting of IC resources of the university can have a positive effect on their regional economies and achievement of comprehensive regional strategies. At first, this could allow the public authorities and the other stakeholders to understand the principles underlying why universities can be important agents in regional development. Second, IC reporting could support the strategic debate between universities and regional authorities understanding each other's drivers. Finally, IC reporting is at the basis of the strategic coordination of the universities within a wider national or regional policies policy context. Of course the strategic impact of measuring IC at societal and regional level is not free of risks. The university more involved into these transformations processes distinguish themselves through a market performance orientation as well as a clearly recognizable profile based on their scientific strengths. Under these circumstances many universities will find themselves in a situation of conflict between the growing pressure of commercialisation and gain orientation from one side and the wish to fulfil their claim for academic quality on the other. The realisations of the right balance require a responsible and competent

[7] See Goddard (2011).

3-5 February 2014- Istanbul, Turkey
Proceedings of INTCESS14- International Conference on Education and Social Sciences Proceedings

1328

leadership, the mobilization of all members of the institution towards the common goal and the bonding of all the stakeholders in the regional context.

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The assumption of this Guideline is that the design and implementation of an IC management system is contingent on the specific context of a university, its development paths and the willingness of the rectors and management to govern and manage a university strategically. Accordingly, a flexible and modular IC management system influenced by the idea of maturity models has been developed.

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1329

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1330

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