

## BALANCED SCORECARD AS A TOOL OF INTELLECTUAL CAPITAL MANAGEMENT AT UNIVERSITY

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### **Abstract:**

Under the conditions of the knowledge society, the intellectual capital of the organization is one of its most valuable resources. University seen as the institution, which is creating and transferring knowledge, should effectively manage this resource. One of the intellectual capital management tool is Balanced Scorecard. This paper is a case study, and the author's intention is to introduce the Balanced Scorecard as a tool for the management of intellectual capital on the example of Maria Curie-Skłodowska University in Lublin. The research methods were used in this article include: review of the literature, analysis of source materials, direct interview.

*Keywords: management, intellectual capital, Balanced Scorecard, higher education*

## 1. INTRODUCTION

Modern university is an enterprising organisation, functioning in a specific market, rendering educational and research services for specific recipients. An enterprising university should be able to adjust to changes in its environment and to establish relations with its specific entities.

Under the conditions of the knowledge society, the intellectual capital of the organization is one of its most valuable resources. Modern university seen as the institution, which is creating and transferring knowledge, should effectively manage this resource. The managing of intellectual capital gives universities the possibility to create their strategic advantage. There are many tools of intellectual capital management. One of them is Balanced Scorecard described by R.S. Kaplan and D.P. Norton.

## 2. THE ESSENCE OF INTELLECTUAL CAPITAL – THE TERM, COMPONENTS AND TOOLS OF MEASURING

The term of intellectual capital is often discussed, but not always well defined. A multitude of different words have been used to describe the same or a similar concept. Most of people tend to use terms such as assets, resources and they often replace intellectual with words such as intangible, knowledge-based, or non-financial (Marr, 2008, p. 5).

T. Stewart defines intellectual capital (IC) operationally as an intellectual material that has been formalised, captured and forced into action to create property of a higher value [Kok, 2007, p. 184].

The notion of intellectual capital may be connected with knowledge management. In K. Sveiby's opinion is "still correct to regard Intellectual Capital (IC) and Knowledge Management (KM) as twins - two branches of the same tree" (Sveiby, [www.sveiby.com](http://www.sveiby.com)).

L. Edvinsson and M. Malone defined the intellectual capital as the difference between the market value and book value of the organisation, that is the sum of the assets not reported in the company's balance sheet (Edvinsson, Malone, 2001, p. 39).

The review the intellectual capital literature shows, that intellectual capital consists of three elements:

1. Human capital, which includes the know-how, education, experience, skills, intelligence, commitment, ability to learn, creativity of the human members of the organization.
2. Structural capital (or organisational capital), which includes management processes, organisational culture, management philosophy, organisation's history, corporate methods, financial structure, communication systems, knowledge bases, information systems, patents, concepts, trade secrets, copyrights, trademarks, capacity for organisational learning and the strategy development processes.
3. Relational capital (or customer capital) which includes trade brand, customers and their loyalty, customer relations, contracts and agreements (licence, concession), enterprise's goodwill and image, formal and non-formal relations with suppliers, shareholders, partners or other stakeholders.

To sum up, it should be emphasised that the organisation's intellectual capital:

- is based on knowledge,
- is a combination of intangible assets (their organisation),
- consists of various components.

The intellectual capital management (IC management) is a fundamental approach to the management of resources and assets in an organization (Kok, 2007, p. 186). IC management may be defined as the use of the enterprise's intellectual potential to accomplish the objectives. Therefore, the main purpose of IC management is constituted by the recognition of its particular elements, their measurement and proper development.

It should be emphasised that each organisation should develop its own model of IC management, considering its specificity and needs, using known management methods, including IC measurement in particular. According to K. Sveiby the IC measurement methods include:

- scorecard methods – includes the methods of IC estimation considering mainly the qualitative measurement of particular IC components,

- direct intellectual capital methods – they enable the identification and estimation of pecuniary values for particular IC components with the use of several indicators or one combined measure,
- return on assets methods,
- market capitalization methods – they enable one to indicate a difference between the book value and actual value of the enterprise (Sveiby, www.sveiby.com).

The three relatively well-known intellectual capital reporting frameworks are the Skandia Navigator, the Balanced Scorecard, and the Intangible Assets Monitor. All share a similar scorecard format that provides a mechanism for companies to report a greater variety of information about the various elements of its intellectual capital [Fincham, Roslender, 2003, p.25].

The Balanced Scorecard<sup>1</sup> as described by R.S. Kaplan and D.P. Norton constitutes a measurement and management system supporting the implementation of the organisation's strategy. Its essence consists of the translation of an operating strategy into a set of specific measures. They enable the measurement of the organisation's efficiency in four perspectives:

- financial: measures for the financial situation of the organisation,
- internal business processes: measures for the efficiency of processes executed in the organisation,
- customer: measures for the level of satisfaction of the customers' needs and increasing the market share,
- learning and growth (or development): measures for the capacity to develop new products and acquire new skills in the future (Kaplan, Norton, 2001, p. 38-45).

It is important to note, that the term intellectual capital has not been used by Kaplan and Norton, although later they acknowledged the existence of a link between the Balanced Scorecard (BSC) and reporting on intangible assets. In the case of non-financial perspectives, the authors are clear that they expect management to identify measures that represent superior business performance. The contingent nature of any prospective measures makes the BSC valuable mechanism for intellectual capital reporting. The three non-financial perspectives are closely associated with the human capital (learning and growth perspective), relational capital (customer perspective) and structural capital (internal business process perspective) concepts (Fincham, Roslender, 2003, p. 28-30).

It is important to emphasize, that IC measurement is difficult, and the following factors are worth mentioning:

- multidimensionality of the IC components,
- most values describing this capital being qualitative,
- no uniform capital measurement system.

### **3. IMPLEMENTING A BALANCED SCORECARD AT THE MARIA CURIE SKŁODOWSKA UNIVERSITY IN LUBLIN**

The Maria Curie Skłodowska University (UMCS) is a public university that has been functioning since 23 October 1944. Today about 24,000 students attend 52 programmes (including over 200 specialisations) delivered by 11 faculties. The university offers:

- full-time and part-time programmes,
- BA/BSc, supplementary MA/MSc studies and doctorates,
- postgraduate studies.

The Maria Curie Skłodowska University has more than 3000 employees, including around 1800 academics. It should also be noted that several other public and non-public academies function in Lublin, constituting a strong competition base for the UMCS.

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<sup>1</sup> A name of this tool in the literature on the subject is strategic scorecard .

### 3.1. Development and implementation process for a strategic scorecard<sup>2</sup>

The academy management process is executed under the internal autonomy of the university, which is perceived as self-governance. The specification of this process results partly from the statutory tasks executed by academies.

Development of the UMCS strategy of operations and the measures of its execution constituted the main purposes for the implementation of a Balanced Scorecard. Development of the BSC project was commissioned to be executed by an external company in 2011, with university employees also participating in the works.

The sequence of operations was as follows:

- analysis of the university and its external environment, including a strategic SWOT analysis,
- development of a mission, vision, strategic objectives and their translation into the system of measures,
- cascading of the university's strategy to those of the faculties.

The analysis of external conditioning of the UMCS development was conducted in five areas:

- processes and documents on the national and international level superior to the UMCS strategy of development,
- shape of the UMCS's external environment,
- demographic changes with reference to Poland and the Lublin Voivodeship,
- possibility of public financing of higher education,
- global trends.

The UMCS is an organisation operating in the public sector, so its objectives should be identified in three non-financial perspectives: customers, internal processes and development. While considering the basic tasks executed by each university department and the main groups of recipients of the services rendered by the UMCS, the strategic and operational objectives were assigned to the five following areas in three perspectives:

1. Perspective of the service recipients:
  - area of education,
  - area of scientific research,
  - area of relations with the environment.
2. Perspective of the internal processes.
3. Perspective of development.

Table 1 summarises the 15 strategic objectives assigned to the particular perspectives.

**Table 1:** Strategic objectives of the UMCS

Perspective	Strategic objectives
Perspective of the service recipients Area: education	Internationalisation of education Improved quality of education Improved studying conditions
Perspective of the service recipients Area: research	Improved quality of scientific research Increased research activity income Research internationalisation
Perspective of the service recipients Area: relations with the environment	Establishment of a permanent relation between the UMCS and its environment Development of a positive image Use of the region's economic potential in its activities
Perspective of the internal processes	Improvement of those processes supporting the basic activity Stabilisation of the financial situation Improved strategic management of the university
Perspective of development	Human capital development Improved management of the university's assets Strengthening of cooperation with the Lublin academies

Source: (Misja, wizja..., 2011)

<sup>2</sup> Developed based on the source materials and the interview with the UMCS employees participating in the works related to development of the strategic scorecard

The indication of the relations between particular objectives constituted the next action. Four bundles of strategic objectives were identified, including:

- internationalisation,
- quality improvement,
- better management, processes and finance,
- relation management.

Subsequent activities concerning the development of a strategic scorecard included the assignment of specific measures to each strategic objective. Table 2 presents the proposals for the measures required to assess the accomplishment of the selected strategic objectives.

**Table 2:** Measures for accomplishing the strategic objectives of the UMCS

Strategic objectives	Measures/indicators
Perspective of the service recipients Area: education	
Internationalisation of education	Share of classes taught in a foreign language (%)
	Share of foreign academics in the UMCS
	Share of foreign students in the UMCS
	Relation between ECTS credits obtained by UMCS students abroad and the total number of UMCS students
Improved quality of education	Ratio of graduates working in a learned profession
	Number of the contest laureates admitted to the UMCS
	Assessment of the employers' preferences
	Quality assessment of education conducted by employers in the Lublin region
	Share of classes conducted by practitioners in all the classes
	Aggregated quality assessment of education
Improved conditions studying	Assessment of the administrative service quality by the students
	Assessment of the level of development of electronic means of communication by the students
Perspective of the service recipients Area: research	
Improved quality of scientific research	Number of A or A+ faculties
	Share of interdisciplinary research in all research
	Number of credits of the Ministry of Science and Higher Education (by university, faculty, institute and department) compared to the number of academics
	Relation between the number of publications to the number of effectively working academics (excluding teaching staff and librarians)
Increased potential of the UMCS to generate research activity income	Share of income from sales of R&D works and services in the total income from research activities
	Share of funds for research projects and of earmarked funds in the total income from research activities
Research internationalisation	Share of publications reviewed and published in foreign journals compared to all publications
	Share of publications, the authors or co-authors of which include foreign scientists, compared to all publications
	Number of research projects completed in cooperation with foreign institutes

Perspective of the service recipients Area: relations with the environment	
Establishment of a permanent relation between the UMCS and its environment	Average daily number of users of the UMCS knowledge base
	Ratio of graduates answering the UMCS's queries (e.g. concerning their professional career)
Development of a positive image for the UMCS	Ratio of the number of positive and negative press articles concerning the UMCS
	Assessment of the UMCS's image
Use of the region's economic potential in the activity	Number of dissertations and research studies concerning subjects submitted by employers
	Share of classes conducted by practitioners in all the classes
Perspective of the internal processes	
Improvement of the process supporting the UMCS's basic activity	Weighted average of quality assessments concerning the method of supporting departments in executing particular internal processes
Stabilisation of the financial situation	Ratio of faculties with a positive financial result
	Average assessment of the Centre for Scientific Research and External Funds functioning provided by the UMCS academics
Improved strategic management of the university	Number of organisational units with access to the full range of management information
Perspective of development	
Development of human capital	Indicator for the rotation of employees working for 3-10 years
	Average assessment of the quality of internal communication provided by UMCS academics
	Relation between the employment-related costs and the operating revenue
Improved management of the university's assets	Indicator of the level of use of the premises
Strengthening of cooperation with the other Lublin academies	Number of research projects completed in cooperation with other institutes from the region
	Published report on the benefits of consolidating the academies
	Organised conference concerning the benefits of consolidating the academies

Source: Own study based on: (Załącznik 6).

The last stage of works concerned the translation of the UMCS strategy to the strategies of particular organisational units. This process, known as "cascading", involved all the faculties and selected pan-university units.

The 2012-2021 strategy for the development of the UMCS in Lublin, formulated with use of a Balanced Scorecard, was adopted by the University Senate by special resolution on 23 May 2012 and executed from that moment.

### 3.2. The recommendation of application the BSC in the assessment of UMCS intellectual capital

In the Balanced Scorecard various components of intellectual capital is identified by specific measures and indicators. The strategic scorecard model is the most applicable for managing and measuring the intellectual capital of institutions of higher education (Kok, 2007, p. 186).

The BSC developed for UMCS proposed measures and indicators assigned to strategic objectives (see table 2). Table 3 presents the proposals for the measures required to three components of intellectual capital, i.e. human capital, structural capital and relational capital. These measures can be used to assess the intellectual resources of UMCS.

**Table 3:** Measures assigned to the components of intellectual capital

The component of intellectual capital	Measures/indicators
Relational capital	Number of research projects completed in cooperation with other institutes from the region
	Share of foreign students in the UMCS
	Average daily number of users of the UMCS knowledge base
	Ratio of graduates answering the UMCS's queries (e.g. concerning their professional career)
	Number of the contest laureates admitted to the UMCS
	Assessment of the employers' preferences
	Quality assessment of education conducted by employers in the Lublin region
	Ratio of the number of positive and negative press articles concerning the UMCS
	Assessment of the UMCS's image
	Assessment of the administrative service quality by the students
	Assessment of the level of development of electronic means of communication by the students
	Number of dissertations and research studies concerning subjects submitted by employers
Structural capital	Number of A or A+ faculties
	Share of interdisciplinary research in all research
	Share of income from sales of R&D works and services in the total income from research activities
	Share of funds for research projects and of earmarked funds in the total income from research activities
	Share of publications reviewed and published in foreign journals compared to all publications
	Share of publications, the authors or co-authors of which include foreign scientists, compared to all publications
	Weighted average of quality assessments concerning the method of supporting departments in executing particular internal processes
	Number of organisational units with access to the full range of management information
Human capital	Indicator for the rotation of employees working for 3-10 years
	Share of foreign academics in the UMCS
	Average assessment of the quality of internal communication provided by UMCS academics

	Relation between the employment-related costs and the operating revenue
	Share of classes taught in a foreign language (%)
	Number of credits of the Ministry of Science and Higher Education (by university, faculty, institute and department) compared to the number of academics
	Relation between the number of publications to the number of effectively working academics (excluding teaching staff and librarians)

Source: Own study based on: (Załącznik 6).

#### 4. CONCLUSIONS

The higher education reform process, which includes the assumption of changes in the funding system, forces the universities to take actions related to seeking ways to strengthen their competitive position on the market.

Implementation of a strategic scorecard is a multi-step undertaking, while its application in an academy requires the consideration of its specificity related to the execution of its statutory tasks.

The authorities of the UMCS attempted to implement the BSC in order to formulate and enforce its strategy of development. That task was commissioned and executed by experts from an external company. However, it should be noticed that UMCS employees also participated in these tasks, which was extremely important to create an effective strategy as the employees understand certain specific areas in the functioning of the university.

According to the author, the measures assigned to strategic objectives (contained in the BSC) can be used to assess the intellectual resources of UMCS, also.

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