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Modeling of the research and education strategy in Faculty of Mathematics and Informatics, Sofia University

Extended Abstract

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1. Introduction

The efficient and effective university education system is a huge benefit for individuals and for the community. The competences, innovation, and creativity developed through academic education are a major factor in the success in creating jobs and in our prosperity.

> As Bulgaria join EU community, it has the opportunity to act on the competition challenges and set the economy on a higher growth path. EC and World Bank proposes a strong reform agenda focused on five areas to narrow the income, productivity, and investment gaps and accelerate convergence with the EU [6]. The first of them are to improve the quantity and quality of human capital. To address this problem, we start 7FP Specific programme 'Capacity' - Research potential project named SISTER - Strengthening the IST Research Capacity of Sofia University, Grant agreement no.: 205030. The first goal of the SISTER project is to achieve the following important objectives - Investigate the current state of the innovative education and research practice, develop a strategic model and write the strategy for the period 2008-2013, build the capacity of faculty and industry in the area of IT/IS management and to improve the overall efficiency and productivity of the field.

The right process to create that winning strategy involves all stakeholders and will develop important in-house strategic thinking capabilities. Active participating in the Roundtable for Entrepreneurship Education (REE, http://ree.stanford.edu/), Intel-UC Berkeley Technology Entrepreneurship initiatives (T2 seminars, Global Faculty Colloquium and Business Plan Competitions, http://www.entrepreneurshipchallenge.org/) and European Knowledge and innovation Dialogue (EKID http://www.s144764852.online.de/index.php), FMI try to follow the world's best practices and to develop competitive strategy for research and education [1,3].

The goal of the paper is to introduce and to present the model of the faculty education and research strategy and to show that modelling process of the faculty strategy through Balanced Scorecard (BSC) methodology can be useful.

2. Research and education strategic model

2.1 The current climate in Bulgarian higher education and state of the art of the academic strategic models.

In order to evaluate a state of the MSc education at FMI, we conducted the research using the Brent Ruben's questionnaire [2]. A questionnaire was adopted and sends to some of the active members of the faculty team who have worked in the MSc IT/IS programs. Collected answers from professors at FMI we can see are presented in table 1.

Table 1. Collected answers from professors at FMI.

1	Leadership	8,67
2	Strategic planning	6
3	External Focus	10
4	Information & Analysis	8,67
5	Faculty/Staff Workplace Focus	11,3
6	Process Effectiveness	5,67
7	Outcomes & Achievements	9

2.2. SWOT analysis of the research and education models

The model and the strategy will be based on a SWOT analysis of FMI research and innovation, the Bulgarian and South East Europe needs and the ICT research trends and challenges on European level.

3. Development of the FMI strategic model

In the strategic planning and management models and a host of strategic management literatures have identified the three key strategic planning phases [4,5] – (1) Strategic Analysis, (2) Strategic Formulation and Choice, (3) Strategic Implementation

3.1. Formulating and Translating the Vision and Strategy

Formal strategic planning is a relatively new phenomenon at the Sofia University. There is not improved university and faculty strategic plan and we will use the best practice and benchmarking of the university leaders. We define the strategy plan as follows:

Vision: Create a faculty community that is becoming locally and internationally recognized in research, teaching and service and recognized nationally for student excellence.

Mission: To provide a flexible, multi-disciplinary environment for high quality informatics research and education using the latest technologies and worlds expertise. To achieve excellence in research and teaching within the university, country and international IT/IS communities.

Strategy: We designed the faculty -wide Balanced Scorecard system objectives and key performance indicators and defined for each strategy and their cause-and-effect relationships and illustrated within the all perspectives as well as those going beyond the perspectives.

Measure (KPI): Once the strategy is identified, program managers can measure performance in terms of how well it is executing that strategy over a time. Key performance indicators (KPIs) allow faculty management a fast and complete overview of the efficiency of processes and organizations. Therefore, within the identified strategy, KPIs help the managers define and measure progress toward the university goals.

3.2. Creating a faculty BSC system

We have used ARIS business process management tools and created the balanced scorecard system as value-added chain process – Figure 2.
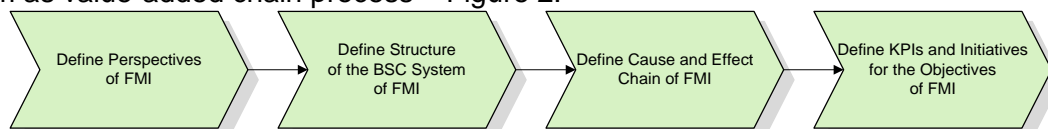

Figure 1. BSC Value-added chain diagram for FMI

Defining perspectives
We create the following perspective – Financial, Stakeholders, Internal processes, Learning and growth
Defining the structure of the BSC system.
Organizational Chart. A Balanced Scorecard system can be set up according to the organizational structure of the faculty. This assignment allocates the objectives required for strategy implementation to the corresponding organizational units - Figure 2.
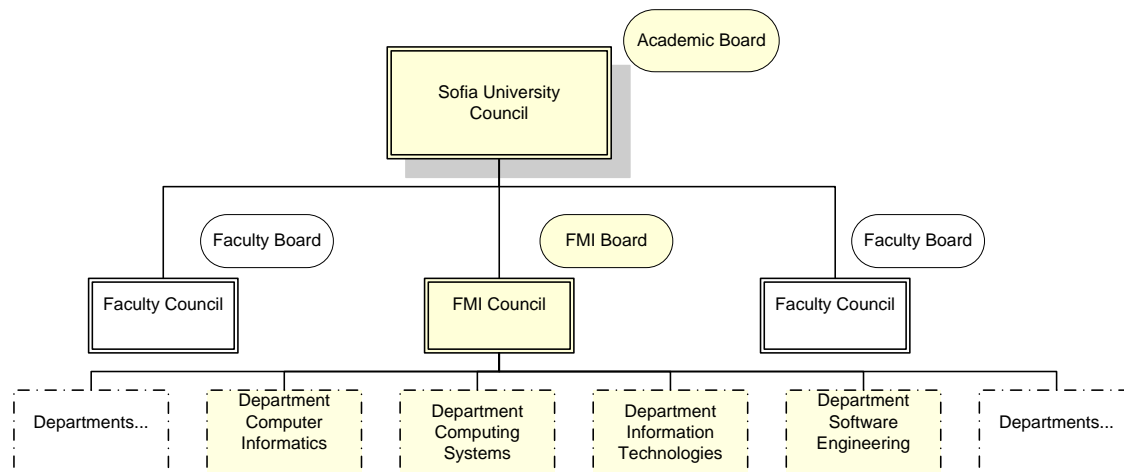
Figure2 FMI organizational structure

Value-added chain diagram or Function Tree.
Defining cause-and-effect relationships. BSC cause-and effect diagrams are assigned to program organizational chart objects, functions or structuring items in the structuring model which determine the structure of the university-wide Balanced Scorecard system. The strategic objectives for implementation and the critical factors are defined in the BSC cause-and-effect diagram. We define research excellence, academic excellence and profitability. We are defining specific goals for each strategic goal.
Defining Key performance indicators. We are going to define KPI about objectives.

4. Discussions of results and experience

To improve the program strategy development, the balanced scorecard and all the detailed information is available to faculty and program staff. It can be available via the Intranet too. If there is positive acceptance, all strategic objectives and key performance indicators will be posted on the Intranet in future.

5. Conclusion

The original deadline for the strategy is January 2009. The first draft of the documents for strategic planning and modelling were created by the authors. A review of strategic planning, goal setting and various documents has been completed to set the stage for information gathered, exercise on planning. Better understanding the perspectives, goals and specific measures through the model can allow to disseminate and discuses the research and educational strategy and to provide synergy to the faculty members and the community.

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