

Using the strategy map as a strategic communication tool in higher education: A case study of Warsaw University of Life Sciences

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Abstract

The governments are often engaged in the higher education sector, which is justified by the need for support in creating and upgrading human capital and scientific knowledge – the key production factors in the New Economy era. However, universities - as well as other public organizations - are commonly criticized for lack of effectiveness and efficiency. The New Public Management concept claims that public sector organizations should try to use management tools and techniques to better accomplish the requirements of their stakeholders. After a period of an enormous growth the higher education system in Poland is actually faced with a set of serious challenges. In order to meet the requirements of accountability, performance measurement and strategic planning, Polish universities can use the Balanced Scorecard and the tools developed in this methodology, such as the strategy map. As it was illustrated by the case study of the biggest life sciences university in Poland – the strategy map could be a helpful technique for communicating the strategic intent of such a public organization. It could be also useful as an input for the performance measurement and subsequently for the strategy execution system. The adaptation of such tools requires some modifications, but expected benefits could justify such an effort.

Keywords: strategy map, Balanced Scorecard, strategic communication, strategic planning, higher education, New Public Management.

Introduction

The key concept of the competitive advantage of nations is productivity. If we agree that the main economic purpose of any nation is to produce a high and growing standard of living for its citizens – the prime determinant of this goal is to increase productivity of its resources by improving quality, adding desirable features, improving technology or boosting efficiency (Porter, 1992). In order to upgrade productivity firms must have access to the pool of superior factors of production. In some cases the creation or improvement of factors of production is viewed as externalities, which means that they offer benefits to the economy that exceed those to any individual participant who invests in them. In this category of factors of production there are advanced and specialized human resources and scientific knowledge. The governments are often seen as the principal engine of such factor creation (Porter, 1992). This is why governments usually engage in the higher education sector and bear responsibility for this sector, which is the key enabler of creating and upgrading human capital and knowledge.

However, public agencies and institutions are often seen as achieving inferior performance in terms of effectiveness and efficiency in comparison to the business sector. It is justified by other purposes of these two kinds of organizations: commercial firms and not profit-oriented institutions. Nevertheless, the society seems not to want to tolerate any more the bureaucratic, non-elastic and resources consuming public entities. There is an increasing pressure for public organizations to be more entrepreneurial in their market behavior and to economize more their operations (Ansoff, 1979). According to the New Public Management concept the public sector

organizations should try to be as efficient and elastic as business firms, particularly by implementing competitive mechanisms, customer orientation, decentralization, performance measurement and, last but not least, strategic management.

The aim of this paper is to discuss the problem of strategic management in public owned universities. The discussion will be focused on the strategy map which could be seen as the state-of-the-art tool for developing and communicating the strategy. The case study of using this method in one of the biggest Polish universities will be the practical illustration of this discussion.

Literature review

As Ansoff pinpointed, there are important differences between companies and not profit-oriented institutions such as government and non-profit agencies. The firms are strictly dependent on their commercial environment. The owner and banks are ready to finance them only if they generate surplus in their operations on the market. Although not profit-oriented institutions have also got markets for their products or services, the link between the commercial environment and taxpayers/donors is much less strict. Fiduciary funds are usually not directly determined by the surplus or deficit generated in the commercial environment (Ansoff, 1979).

In the past it was commonly agreed that the government, non-profit agencies and business enterprises were strictly different and separate entities. Nevertheless, in the last decades the trend is observed that not profit-oriented institutions need to be more engaged in entrepreneurial activities and to operate in a more economic way such as commercial firms do. On the other hand, corporations are under an increasing pressure to run businesses in a more socially responsible way. According to Ansoff we can see the process of overlapping of the features of these two kinds of organizations (Ansoff, 1979).

This trend is particularly observable in public administration, where since the late seventies and eighties the concept of New Public Management (NPM) has started to rise. This term was used to label a group of ideas of different intellectual provenance which collectively underpinned the public sector reforms in many OECD countries, but particularly persuasive in the UK, Australia and New Zealand (Hood, 1991; O'Flynn, 2007). This new concept was raised as a reaction to the weaknesses of the traditional paradigm of public administration based on Weber's model of ideal bureaucracy (O'Flynn, 2007). The origins of the NPM could be seen as a marriage of new institutional economics theories (the public choice theory, the transaction cost theory, the principal-agent theory) and business-type managerialism in the public sector (Hood, 1991). This marriage offered the theoretical and ideological underpinnings of the critique of the monopolistic form of the public services offer and of the claim of the need for a more market-oriented approach (O'Flynn, 2007).

In articulating the New Public Management paradigm the most often referred is probably the Hood's set of key doctrinal components of this concept (Hood, 1991):

- Hands-on professional management (the persons at the top are free to manage actively – the accountability requires the clear assignment of power to take action and to control discretionary);

- Explicit standards and measures of performance (the definition of success is possibly expressed in a quantitative form – the accountability requires the clear statement of goals);
- Emphasis on output controls (the resource allocation and incentives are linked to the measured performance – the results are more important than the procedures);
- Disaggregation of units in the public sector (the U-form structures are broken up into decentralized organizational units around products – there is a need to create manageable units);
- Competition in the public sector (contracts are used – competition is treated as the key to better quality and lower costs);
- Private sector styles of management practice (there is a greater flexibility in HRM, PR is used – the emphasis is put on ‘proven’ private sector tools);
- Discipline and parsimony in resource use (the costs are cut – do more with less).

In short, the NPM pillars are: relying on markets rather than planning, performance measurement, monitoring and management systems, empowered and entrepreneurial management instead of collegial decisions (Ferlie, Musselin, & Andresani, 2008).

The universities, like other services provided by the public sector, have become the place of application of the NPM (Schimank, 2005). The NPM as a public administration framework has been applied to higher educational systems in many western countries (Tahar, 2013). Particularly in all European countries the governance of universities has shifted towards the direction of the New Public Management in recent years (Wilkesman & Schmid, 2012). In the forefront, higher education use methods and techniques such as goals of efficiency and effectiveness, benchmarking, performance measurement, incentives, and accountability (Parker, 2012).

As Taylor and Baines (2012) notice, the universities in the UK have become increasingly concerned with the performance management in recent years. Those organizations begun to apply methods for performance management that were developed in business and industry for example the Balanced Scorecard (Taylor & Baines, 2012). The Balanced Scorecard (BSC) was initially presented by Kaplan and Norton as a new performance measurement scheme. They addressed the problem of misleading signals given by relying only on traditional financial accounting measures, which worked well in the industrial era, but were out of step with the competencies that firms were trying to master in the knowledge based economy. In this context the BSC was introduced as a set of measures that gives executives a comprehensive view of how their companies are doing. This set includes financial measures complemented with operational indicators such as measures of customer satisfaction, internal processes and innovations, and improvement activities (Kaplan & Norton, 1992).

This performance measurement system allows top managers to look at the enterprise from four points of view, by establishing goals and monitoring their measures in so called perspectives (Kaplan & Norton, 1992):

- Financial perspective (how do we look to shareholders?);

- The customer perspective (how do customers see us?);
- Internal perspective (what must we excel at?);
- Innovation and learning perspective (can we continue to improve and create value?).

The Balanced Scorecard gained more and more popularity - managers appreciated the comprehensive performance measurement system. However, as Kaplan and Norton (2004) mentioned in the later publication, executives wanted to use this new system in a more powerful application than simply measuring performance. They wanted to apply the Balanced Scorecard to solve the serious problem they faced – how to implement strategy. This problem was a challenge for both – business as well as public sector agencies and non-profit organizations (Kaplan & Norton, 2004).

Managers understood that if the measurement system will be strategy-driven, which means that goals and measures in the Balanced Scorecard will be drawn from the organization's mission, vision and strategy, then such a system will be helpful to communicate and implement the strategy (Kaplan & Norton, 2004).

The mission is a statement basically defining why the organization exists. It expresses the basic purpose or intent toward which the organization's activities are directed, as well as the values that define the right and the wrong and guide the employee engagement. The vision defines the three- to ten-year's goals of the organization, possibly expressed in 'visionary' terms. As opposed to the mission, which remains fairly stable over time, it sets the organization in motion. The vision drives the action to the desired future (Babich, 2002; Kaplan & Norton, 2004). According to Porter (1996), the strategy is a choice of a set of activities in which a company wants to operate at a superior level in order to create a greater value to targeted customers and to create a sustained advantage over its competitors in the marketplace. The trade-off choices are key to the strategy. It is equally important to decide what to do and what will not be done (Cowley & Domb, 1997).

To have a proper mission, vision statements and a strategic plan is a challenge *per se*, but ultimately it is at least equally important to execute the strategy. Various surveys conducted in the last decades have shown that 60-80% of companies do not succeed in achieving targets in their strategic plans (Kaplan & Norton, 2008). For example a 1999 survey by *Fortune* magazine suggested that 70% of CEO failures are a result of poor strategy execution (Niven, 2008). Surveys done by Monitor Group in 2006 and The Conference Board in 2007 reported that executives' number one priority is the strategy execution (Kaplan & Norton, 2008).

There are four barriers for implementing the strategy identified in the literature: the vision barrier, the people barrier, the management barrier, the resource barrier (Niven, 2002). Only 5% of employees understand the strategy (Niven, 2002). However, in the knowledge age, when value is often created from intangible resources, people need to have the insight into the strategic context if they are expected to contribute in a meaningful way. They need to know where the organization wants to be and how it plans to get there (Niven, 2002; Niven, 2008). Only 25% of managers have incentives linked to the strategy (Niven, 2002). There is a quite common belief that incentives could be used to increase motivation. At least incentives tend to increase the focus of employees (Niven, 2008). What you measure is what you get (Kaplan & Norton, 1992). If the

progress of the strategy implementation is not measured and compensated – it is not done. 85% of executives spend less than one hour monthly concerning with strategy in meetings and discussion (Niven, 2002). In this case the standard is probably managed by "fire fighting" or management meetings focused on financial targets and variations out of them (Niven, 2008). Instead of this the successful strategy execution requires deeper understanding of how the value proposition for customers is built and of how to translate it into financial success. Consequently executives should meet to discuss and learn about the strategy. 60% of organizations do not link budgets and the strategy (Niven, 2002). Many organizations treat the financial and strategic planning as quite separated processes (Niven, 2002). However, the strategic plan should be treated as a guide to decision making and resource allocation (Bryson & Alston, 2011). In fact, the budget should be seen as a kind of a detailed articulation of the priorities of the firm (Niven, 2008). It brings to the conclusion that the strategic planning should guide budgeting, but not the reverse (Bryson & Alston, 2011). If the budget is not linked to the strategy it could be interpreted that the enterprise has not got the priorities or that it does not treat the strategy seriously.

According to Bryson and Alston (2011) the strategic planning becomes a standard practice for public organizations. This could be explained by many reasons, such as fulfilling a compulsory requirement imposed by law or enhancing legitimacy by using practices seen as a mark of professional management. However, the most important reason – as these authors believe – is that executives in the public sector realize that the strategic management can help them to grasp the challenges faced by their organizations: the changing demand for their services, the rising difficulty in acquiring funds for the mission fulfillment, the need for greater accountability and good governance, the increasing uncertainty about the future, the pressure to improve effectiveness and efficiency, the demand to cope better with the expanding array of information, the need to integrate several kinds of plans etc. Bryson and Alston (2011) argue that the strategic planning approach is a must for an organization if a real public value is to be created and a common good is to be served.

Niven (2008) claims that both public and non-profit sectors require performance system that not only counts the inputs and outputs but also allows to assess progress in reaching the organization's mission. The Balanced Scorecard will be applicable to do this. According to him those both sectors can gain from many potential benefits of using the BSC, for example (Niven, 2008):

- Demonstrate accountability;
- Improving performance against mission;
- Attract funding and employees;
- Create focus on strategy;
- Generate knowledge instead of amounts of data;
- Drive change, etc.

The Balanced Scorecard could be seen as a methodology which offers three complementary roles: a communication tool, a measurement system and a strategic management system (Niven,

2008). In the following rest of this paper the main attention will be focused on the strategy map as the basis of the communication role of the BSC. The strategy map is a picture outlining the pathways of the organization's journey to the desired future by defining what the organization must do in each perspective in order to successfully execute its strategy (Niven, 2008). The strategy map consists of two key elements: strategic objectives and cause-and-effect linkages between them. The objectives are defined for each perspective and are represented by ovals with short statements of the desired change direction. But the strategy map is much more than a simple 'what-to-do' checklist. Thanks to the cause-and-effect relations which link the objectives they are not treated as independent elements, but as a systemic whole expressing the strategic intent of the organization.

The strategy map can be viewed as a stage of "describing strategy" or - in a broader view - as one of the tasks of planning the strategy, which is a stage of the process of the strategic management system based on the BSC methodology (Kaplan & Norton, 2004; Kaplan & Norton, 2008). From this point of view the strategy map serves as a mediator tool which helps to translate the strategy into measurable terms. However, it could also be seen as an autonomous tool of communication.

The crucial feature of the strategy map is its simplicity. One page picture can tell us the short story that explains how the organization defines its success and signals to everyone what must be done in order to execute the strategy (Smith, 2007; Niven, 2008). Every example of such story should be specific to the organization and its environment and unique just as unique is the strategy of every firm. However, it is possible to express the main way of „if-then" reasoning which underpins every strategy map in business firms. If we have the right personnel (Staff Development and Improvement perspective) doing the right things (Internal Processes perspective), then the customers will be satisfied (Customer perspective) – and we will keep/get more business (Finance and Business perspective). Such reasoning was developed in the Halifax company and is labelled as „Theory Z" (Olve, Roy & Werter, 2001).

Niven (2008) claims that the BSC, with some modifications and customization, could be a useful tool for any public and non-profit organizational setting. On the basis of British universities' experience with the Balanced Scorecard adoption, Taylor and Bains (2012) conclude that as any other management technique – it cannot be simply transferred from business to universities and needs adapting efforts to satisfy their individual mission and circumstances. For example, it will be difficult to directly use "Theory Z" as mentioned above in a public university. It is because in this reasoning chain the financial perspective is treated as the ultimate definition of success. It seems obvious that in the public sector, such commercial logic of cause-and-effect relationships between perspectives should be modified.

In the literature a few proposals of such modification could be found. However, two seem to be most popular. Kaplan and Norton propose a framework similar to the private sector, but with some crucial distinctions. First, the mission moves to the top of the Balanced Scorecard framework because the ultimate definition of success in public and non-profit organizations is the fulfillment of their missions (Kaplan & Norton, 2004). In the commercial sector the objectives and the measures from other perspectives should lead to enhanced shareholder value/profitability in the financial perspective (Kaplan & Norton, 2004; Niven, 2008). Such homogenous approach is quite inadequate for public and non-profit organizations which are

driven by a broad and diverse set of possible missions defining their public/social impact (Kaplan & Norton, 2004). The mission of these organizations is fulfilled through meeting the needs of people who benefit from services supplied by them. They could be viewed as customers or stakeholders. The financial perspective, which in this case is renamed as the fiduciary perspective, is treated as equally important. The customer and fiduciary perspectives are positioned at the same level - directly below the mission – and are supported by the internal perspective and subsequently by the learning and growth perspective (Kaplan & Norton, 2004).

In Niven's (2008) proposal the mission moves to the top of the BSC framework, as is suggested by Kaplan and Norton. Financial results are not the ultimate aspiration of the government and non-profit agencies which exist to serve higher purposes. Niven stresses that it is difficult to assess the fulfillment of the mission statement in the done-or-failed style. It is only possible to notice a periodic progress. This is why the perspectives of the BSC as supporting the mission fulfillment areas of performance measurement are so vital (Niven, 2008). In Niven's (2008) adaptation the customer perspective is elevated while the financial perspective moves to the bottom of the framework. Public and non-profit organizations have to determine whom they aim to serve and how to do it in order to accomplish their missions, so flowing from the mission is the view of the organization's customers. By elevating the customer perspective the clear message is signalled, that anything that is done is done to support the customers. Although the financial goals' meeting is not the ultimate purpose of such an organization, the Balanced Scorecard would not be complete without the financial perspective. No organization can successfully operate or fulfil any mission without funds. From this point of view the financial goals' achieving is not the purpose which defines the ultimate success, but should be rather seen as an enabler of customers' need serving and of the fulfillment of the mission by this way (Niven, 2008).

Which of the mentioned approaches to the adaptation of the BSC suits the best not-for-profit organizations? It depends on the individual culture and circumstances. So, the author agrees with Smith that there is no universally correct answer to such a question. Any organization should choose the model of the BSC that tells the story the way the institution wishes to tell it. This reasoning also extends to the names and even to the number of the perspectives (Smith, 2007). For example the UK universities surveyed by Taylor and Baines (2012) adopted the names of classical perspectives of the Balanced Scorecard and used own labels. The author of this paper is convinced that using one of the popular frameworks (such as classical one and those proposed by Kaplan and Norton (2004) or Niven (2008)) should be treated as the first choice decision. These are well justified and proven approaches. However if any organization believes that another model suits may substantially be better as a framework to the story it wishes to tell – it could use this model.

Basic Characteristics of WULS-SGGW and its environment

Warsaw University of Life Sciences – SGGW, with its nearly 200-year tradition, is one of the oldest and largest universities in Poland. It was established in 1816 and since this date has continued to develop. At present, the university consists of 13 faculties (Agriculture and Biology; Veterinary Medicine; Forestry; Horticulture, Biotechnology and Landscape Architecture; Civil and Environmental Engineering; Wood Technology; Animal Science;

Economic Sciences; Food Sciences; Human Nutrition and Consumer Sciences; Production Engineering; Social Sciences; Applied Informatics and Mathematics) where 27,000 students are enrolled. WULS-SGGW employs over 1,300 university teachers and instructors. The range of the academic programs includes 34 study programs and within them there are 130 areas of specialization. The academic programs are offered at the bachelor, master and PhD levels. There are also more than 40 postgraduate studies, in such number MBA program is offered. WULS-SGGW has been declared number one in the rankings of life science universities in Poland and occupies the 16th position in Polish universities rank according to the number of students with the 1,4% share in this number.

The Polish higher education system faced a rapid growth after the economic transition. The number of students rose from 390,000 in the academic year 1990/1991 to 1,764,000 in 2011/2012 (Szkolnictwo, 2013). As a result the indicator of tertiary education increased from nearly 22% to over 70% and now is higher than such indicators in France, the UK or Japan (figure 1). However, this impressive growth was extensive in nature and was not supported by the growth of the teaching quality. Opposite, in a common opinion the quality of higher education fell down (Paliszkiewicz, 2010). Moreover, according to demographic changes since the peak in 2005/2006 the number of the students has been slightly decreasing. But now this reduction is quite visible at nearly 5% yearly rate. It is forecasted that by 2020 the number of students will be reduced even by 35% (Pietrzak, 2013a).

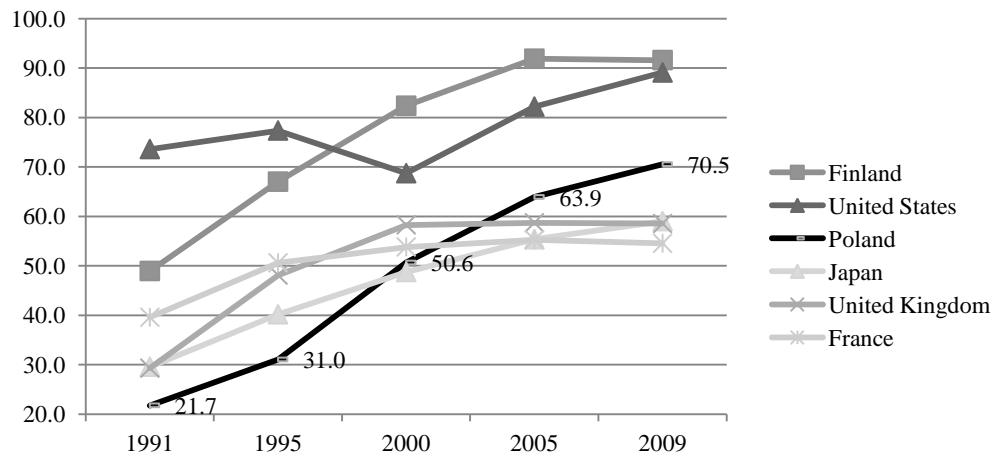


Figure 1. Tertiary education gross indicator (%) in Poland and selected countries in the period 1991-2009

Source: based on The World Bank Database

Not surprisingly, in such a context the higher education in Poland faces an increasing pressure for change. The pressure reflects the need for accountability, improving the teaching quality and enhancing efficiency. Universities are getting forced to use the performance measurement and strategic planning. According to the reform of higher education, the new law introduced in 2011 made it obligatory to develop and then implement the strategy both at the university and the faculty level.

WUSL-SGGW started working on its strategic plan in 2009. This work was done by a special committee. The author of this paper participated in its meetings and was one of two editors of the final document which was voted by WUSL-SGGW's senate in 2010 (Borecki & Pietrzak, 2010). The work on the strategy is continued in an ongoing manner by the committee, which resulted in the actualization of the strategy according to the law changes and new circumstances. The new document was edited by the author and then voted by the senate in 2013 (Pietrzak, 2013b). Basing on his previous experience as a business strategy consultant the author suggested to the committee to use the Balanced Scorecard as the framework for the strategy development.

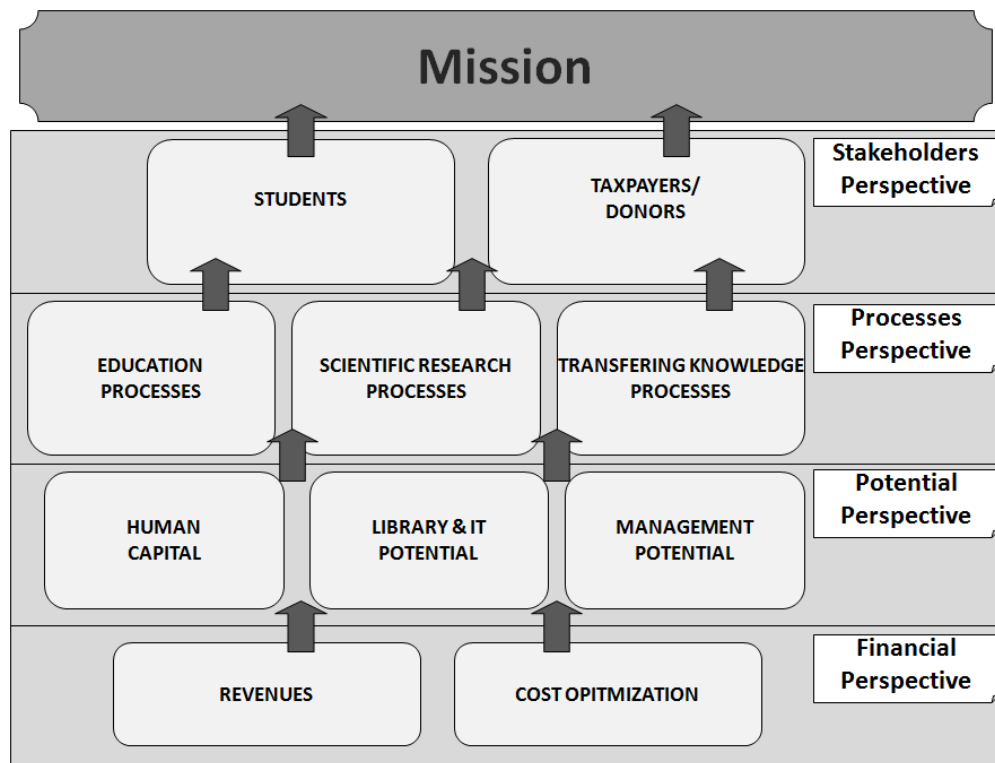


Figure 2. The modified framework of the BSC used to develop the strategy of WUSL-SGGW

Source: own elaboration

Adaptation of the BSC model

There were two modifications done to adjust the Balanced Scorecard model for using it as a template of WUSL-SGGW's strategy. First, some labels of the perspectives were renamed. The name of the customer perspective was changed to the stakeholders' perspective and the learning and growth to the potential perspective. Viewing students as customers causes controversy among the academic professionals and will be probably only partially accepted. In fact, at the public universities in Poland the most of the students do not directly pay for educational services. They benefit from the service, but mostly the society pays for it. So taxpayers/donors are also to be considered as a kind of customers. Ultimately the concept of stakeholders was used. This is a

broader term than just customers and fits better to the specific of the higher education. The term was also viewed as less controversial and probably more easily accepted and buy-in by the academic society. It is planned that the “voice of the stakeholders” will be gained from surveys and other forms of feedback. Such kind of information will be used in the further development of the strategy and the Balanced Scorecard. There were also fears that the term learning and growth as a label of perspective could be misinterpreted in the organization, which deals with education, as a key process and it was changed for the potential perspective.

The main modification was however to turn topsy-turvy the logic of the perspective template. It was decided to choose the Niven’s (2008) concept with the elevated customer/stakeholder perspective and with the financial perspective moved to the bottom and treated as an enabler. The mission was moved to the top as the ultimate definition of the success of the university. Figure 2 illustrates the logic of the “If-Then” reasoning used to tell the story expressing the strategy of WULS-SGGW. It also presents the main building blocks of the BSC framework and names of the perspectives.

Strategy Map of WULS-SGGW

Basing on the framework presented in figure 2 the strategic objectives of WULS-SGGW and the expected cause-and-effect relationships across them were established. The first strategy map covered 30 strategic goals. Those objectives were measured by 49 metrics (Borecki & Pietrzak 2010). In the second map, developed after the actualization of the WULS-SGGW’s strategy, the number of objectives was reduced to 27 but the number of measures increased to 57. This is quite a huge amount of measures. This set of metrics was a compromise achieved during the decision process done in a collegial manner. Such a huge number of measures are however not completely uncommon. For example, Taylor and Baines (2012) reported one of the UK universities using over 60 metrics in its BSC. In fact, those authors claim that a smaller number of the Balanced Scorecard measures should be probably seen as a signal of maturity of a scorecard (Taylor & Baines, 2012). After a recent review of the strategy of WULS-SGGW it is observed the increase of the consciousness of the need of reducing the measure number. The author believes that playing the vice chairman role of the committee responsible for the strategy he will be able to convince the members to the demand of making the strategy map and the BSC more lean.

The strategy of WULS-SGGW was developed in the period of many challenges and pressures faced by the Polish higher education system. The socio-economical context led to the fundamental crisis of the humboldtian model of the university, which seems not to meet the requirements of the higher education stakeholders any more. The two traditional functions of the university (education and research) are not sufficient to meet the contemporary needs addressed by those institutions (Diaconu & Pandelica, 2012). In this situation WULS-SGGW will thrive to shift from the humboldtian model to the so called third generation university. In order to do this shift, it is indispensable to create and develop the third function based on the knowledge transfer in cooperation with business and social entities. By such development of this function, it should become a third pillar of WULS-SGGW activity, equally important as improving teaching and

research. These assumptions WULS-SGGW would like to achieve by successfully executing the five strategic themes (figure 3):

- Theme 1: Improve teaching (by reinforcing and securing positions on the competitive educational market in the context of decreasing number of students);
- Theme 2: Excel the scientific research (by development of academic staff, resulting in noticeable research results);
- Theme 3: Cooperation and internationalization (by more intensively joining the academic interchange and mobility programs, which should support enhancing teaching and research);
- Theme 4: Enhance the transfer of knowledge (by creating closer relationships with business and collectively beneficial cooperation);
- Theme 5: Finance and administration (by securing a long range economic needs of WULS-SGGW and offering substantial and friendly administrative support for academic staff and students).

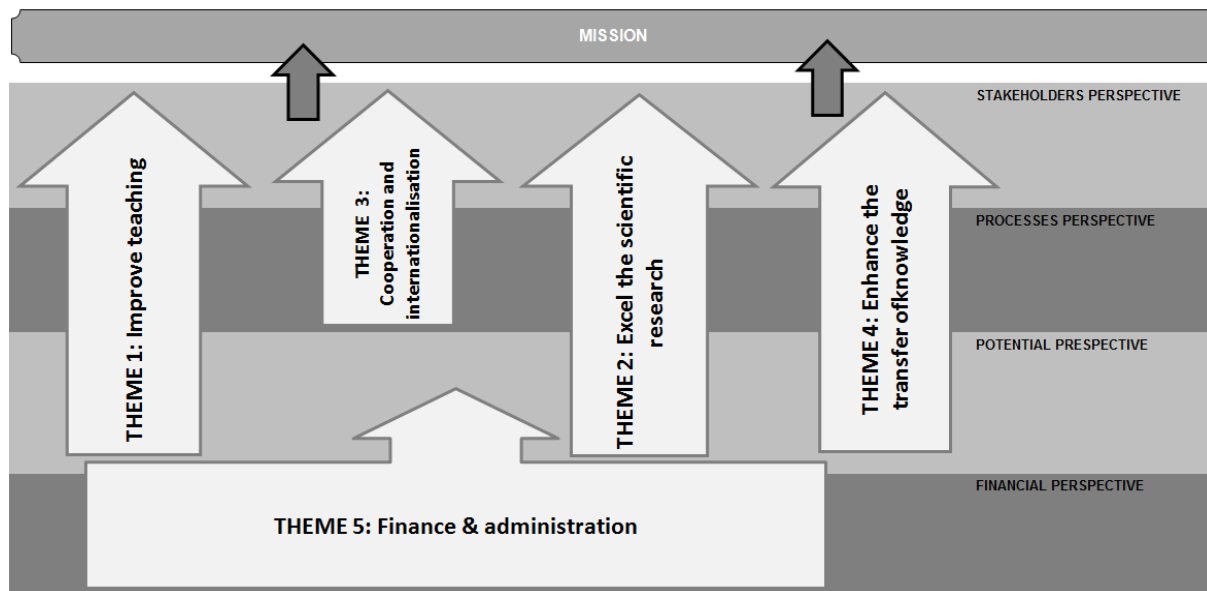


Figure 3. Strategic themes in the strategy map of WULS-SGGW

Source: (Pietrzak, 2013b)

Each of the five strategic themes supports the strategy implementation and the mission fulfillment in a different but complementary way. The strategy should be viewed as a system and only the simultaneously managed execution of all themes, which interact with each other, could lead to success.

Figure 4 illustrates the strategy map for Theme 1: Improve teaching. The demographic collapse of the Polish society creates a challenge for the education system. The huge problem appears in relation to the broadening gap between the higher education capacity strongly developed in the

past (according to the dramatic growth of the educational aspirations of Poles coincidental with the demographic peak coming to the universities at the end of the 90-ties and in the first decade of the new century) and the demand which started falling down. This justifies the high strategic priority put to the improvement of the educational field of activities.

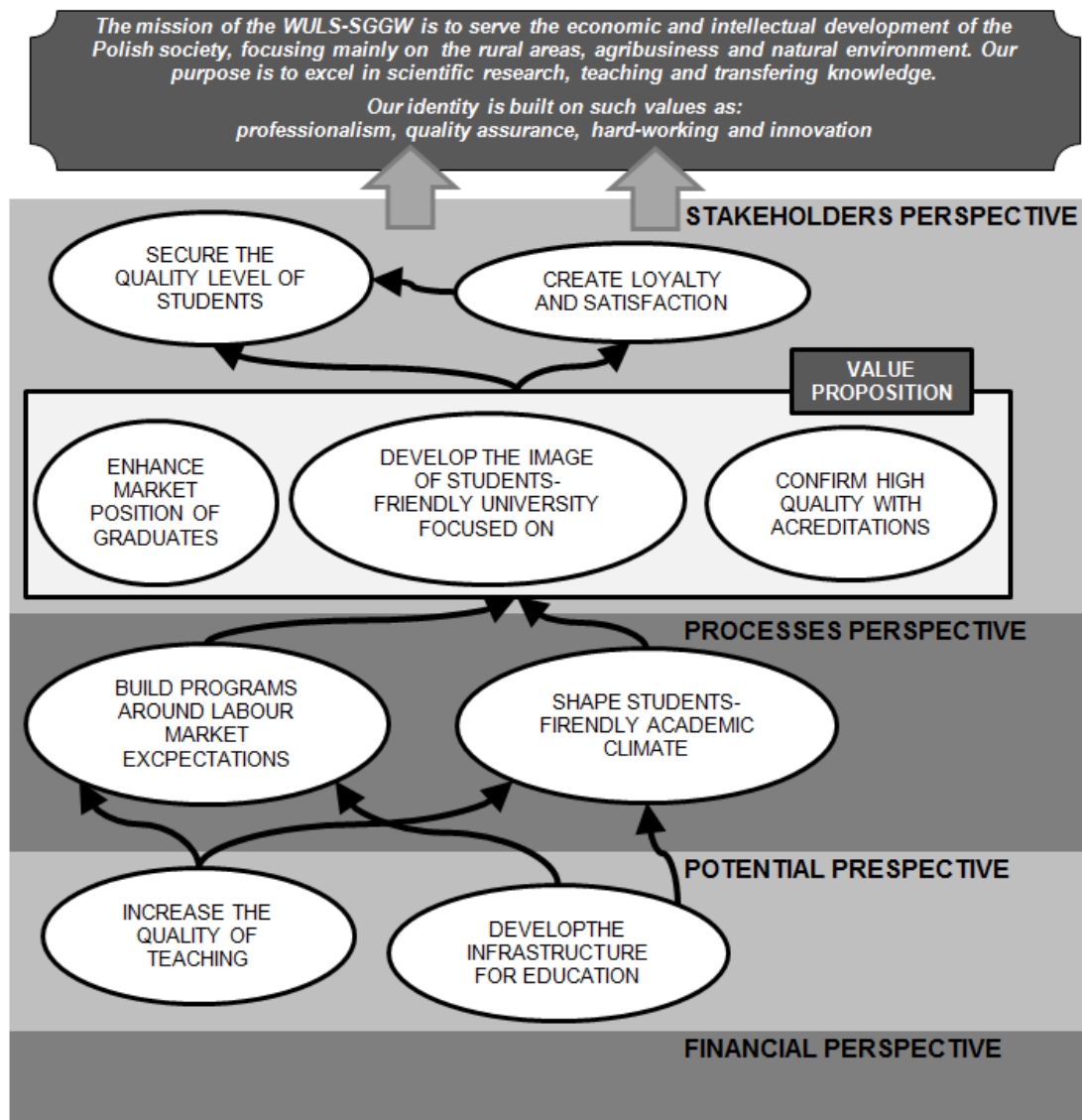


Figure 4. Strategy map of Theme 1: Improve teaching

Source: Pietrzak 2013

WULS-SGGW stresses the need of securing the teaching quality. A high and stable quality should be supported by the quality assurance system. The quality can be defined as the degree of compelling with stakeholders needs and expectations. The quality system should be based on

defining the teaching results used for verification of students' progress, as well as on validating them and continuously improving (figure 4 – goal: Increase the quality of teaching). The building of the quality assurance system will be complemented by the development of the resources which create the educational potential, such as the library pool and information technology. In recent years WULS-SGGW has achieved a satisfactory level of modern buildings and laboratory equipment development. In the nearest future the efforts will focus on more intangible asset investments for teaching support (figure 4 – goal: Develop the infrastructure for education). Achieving the above objectives should support the two strategic goals in the process perspective. WULS-SGGW will modernize the content of curriculum to continuously adapt its educational offer to the needs and expectations of the labor market. It will strive for increasing the share of practical issues and exercises in computer laboratories in study courses (figure 4 – goal: Build programs on the labor market expectations). For many years up to now WULS-SGGW has been winning the rank of the most student-friendly university. It plans to double its efforts to create such a friendly climate and maintain this opinion (figure 4 – goal: Shape students-friendly academic climate).

Achieving objectives in the process perspective is expected to support the creation of an attractive value proposition for the students which consist of (figure 4):

- Enhance market position of graduates;
- Develop the image of students-friendly university focused on practical teaching;
- Confirm high quality with accreditations.

Supplying assumed value proposition should cause to the desired results in the higher education marketplace. WULS-SGGW will strive for high level of satisfaction and loyalty of the students and graduates. The term loyalty means increasing willingness-to-stay at university of graduates when they decide where to study at the next level of curriculum (master degree, PhD). Moreover loyalty is here interpreted as diffusing a positive image of university among family and social network (figure 4 – goal: Create loyalty and satisfaction).

The enhancement of the value proposition and the rise of satisfaction and loyalty should bring WULS-SGGW to the ultimate goal in the stakeholder perspective. The actual number of students could be assessed as optimal. However, the problem is the danger of a decreasing level of recruiting candidates if this number is to be maintained. In such circumstances the assurance of the accepted level of abilities of students (figure 4 – goal: Secure the quality level of students) is crucial and could be seen as a sign of success in the fulfillment of the WULS-SGGW's mission, which is the purpose of both – the whole strategy as well as the strategic Theme 1. According to the logic of the map presented in the figure 4, the quality level of students is seen as an ultimate result of the strategic Theme 1 execution. However, one could argue that the ability of students may also have impact on teachers' quality. It is particularly important in the long term in the context of succession planning. This is true and such possible relations are worthy to mention. Nevertheless the logic of the typical strategy map is just linear. It means that cause-and-effect relations follow the logic of the assumed framework of the map – from the perspective of the bottom with the perspective of the top. Such simplification is an element of the strategy map model.

The strategy map presented above was the basis for the communication of the assumptions of the WULS-SGGW's strategic intent to the academic community and to the external stakeholders. The mission statement, the vision in the form of a change agenda and the strategy map were supplemented by a set of metrics and in such form were published and distributed. This document was also available in the open access on the website of the university. Meanwhile the faculties of WULS-SGGW started their own efforts of establishing strategies at the faculty level. This process was not centralized. Faculties' authorities did it on their own on the basis of the communicated strategy of the whole university. This could be seen as a loose form of cascading. There were not obligations according to any template of framework or even any methodology. The only central requirement for the faculties was the obligation to develop a strategy compatible and supportable to the top strategy. Up to the end of 2013 all of 13 faculties developed their own strategies.

Besides the use of the strategy map as a communication tool, it was also used as an input for the creation of the performance measurement system which could also be used in the future as the basis of the strategic management system. Each strategic objective was operationalized by one or more measures, which were to answer the question: "How will we know that we are moving to where we want to go?". For each measure a detailed dictionary card was created. Dictionary of measures defined such aspects as the description and the rationale for the measure, the formula of calculation methodology, the polarity, the data source, the frequency of reporting and so on. The defined metrics are currently starting to be measured and the first data set has been recently collected and interpreted. This will be the baseline for establishing the targets to accomplish in the future. There are also efforts in progress to develop dedicated software.

Conclusions

In order to gain and sustain the competitive advantage nations need to improve their pool of superior factors of production. Advanced and specialized human resources as well as scientific knowledge constitute a particularly important kind of such factors in the era of the New Economy. The governments are often engaged in the higher education sector, which is a key enabler of creating and upgrading human capital and knowledge. However, public agencies and institutions, even though they supply vital services, are often seen as achieving inferior performance. According to the New Public Management concept public sector organizations should try to be as efficient and flexible as business firms. Public universities are not an exception. A possible way to meet such a requirement is to adapt and use the management tools and techniques which are proven as effective in a business sector. The performance measurement and strategic management methods could be particularly important.

The higher education system in Poland enjoyed an enormous growth of demand after the transition, but recently has been facing an accelerating fall down in the students' number. Such a situation results in an increasing pressure for change generated by stakeholders. To meet the requirements of accountability, performance measurement and strategic planning the universities can use the Balanced Scorecard and the tools developed in this methodology such as the strategy map. As it was illustrated by the case study of the biggest life sciences university in Poland, the strategy map could be a useful technique for communicating strategic intent of the university. It could be also helpful as an input for developing scorecards for performance measurement and

subsequently for creating the BSC-based strategy execution system. However, the adaptation of such tools requires some modifications. Any potential user should also be aware that decision processes at the university are usually much more collegial, so the process of implementation could require much more time than an analogous one in business sectors. Nevertheless, the expected benefits could justify such an effort. Not many case studies of adapting the BSC or the strategy map to the universities has been published and therefore the author believes that this paper will enrich the collection of such examples.

It should be noted that the empirical material used in this paper is based on a relative short story of using the strategy map and the BSC in WULS-SGGW. The limitations of this study are difficulties of assessing the results of development of strategic tools from the quite short-run perspective. It seems to be worthy to come back to the issues concerned in this paper after a longer period of time and possibly having a deeper experience of using these tools. Moreover, the material was collected from only one entity. The case study method has an obvious limitations and does not allow to draw conclusions in a broader context. Therefore, there is a need for further studies in this area. At the moment a bigger pool of case studies is still desired. Our knowledge about implementations of the Balanced Scorecard in the universities seems to be still rather poor and general. To create such a pool could be fruitful in making the knowledge in this area more deep and concrete. It could be worthy to try to study the problem of performance measurement and strategic management in public higher education in a more strict and statistically rooted manner. However the main barrier seems to be accessible to the data set proper for such study.

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Biography

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