

USING THE IDEA OF THE BOSTON CONSULTING GROUP MATRIX IN MANAGING A UNIVERSITY

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Abstract

The literature on the subject has includes numerous methods and tools which may be helpful in managing a university. Some of them are related to the aspect of balance [1]. This article presents a suggestion to use the idea of the BCG matrix in managing a university. Currently, the BCG matrix is widely used in shaping the production portfolio or the service portfolio. It indicates profitable products and services the surplus of which should be allocated for the development of unprofitable ones which may bring profit in the future. According to the author of the article, the idea of the BCG matrix could be transferred to the level of universities and used to assess faculties indicating the faculties which, due to high profitability, should be maintained and those which require rationalizing actions. The article also presents an example of using a model based on the idea of the BCG matrix in managing faculties at a university.

Keywords: BCG matrix, management at a university

Paper type: Conceptual paper

1. Introduction

Demographic transformations as well as growing competition on the market of educational services result in the fact that universities presently face a situation in which it seems necessary to improve the method of their previous functioning. It seems significant to use new management methods as a result of which it would be possible to improve the functioning of universities on the market. “It is necessary to change the management of education and bring it closer to professional management based on rational planning, methods and techniques of strategic management as well as educating personnel” (Projekt: Ministerstwo, 2004). The majority of universities in Poland does not use the professional approach to management and it seems that each suggestion improving a university’s situation in this aspect may be important and useful (Ryńca, 2014). It also seems significant to take into account aspects related to social responsibility in the university’s management process. The model based on the idea of the BCG matrix suggested

by the author may be a helpful tool in the hands of managers. It makes it possible to eliminate problems emerging at universities, indicate areas in which rationalizing actions should be undertaken.

2. Boston Consulting Group (BCG) matrix – basic information

The Boston Consulting Group (BCG) matrix is used for portfolio analyses. This method is used to identify the company's strategic position indicating, at the same time, its possibilities of development. The idea of the BCG method consists in such planning of the production portfolio or the service portfolio so that it is possible to maintain a balanced relation between products/services in the long term characterized by high competitiveness and profitability as well as new products/services often being in the stage of development which are not characterized by high competitiveness and profitability (Jurek-Stepień, 2007). The BCG matrix makes it possible to determine which products should be withdrawn from stock and which should bring a higher profit in the future (Figure 1).

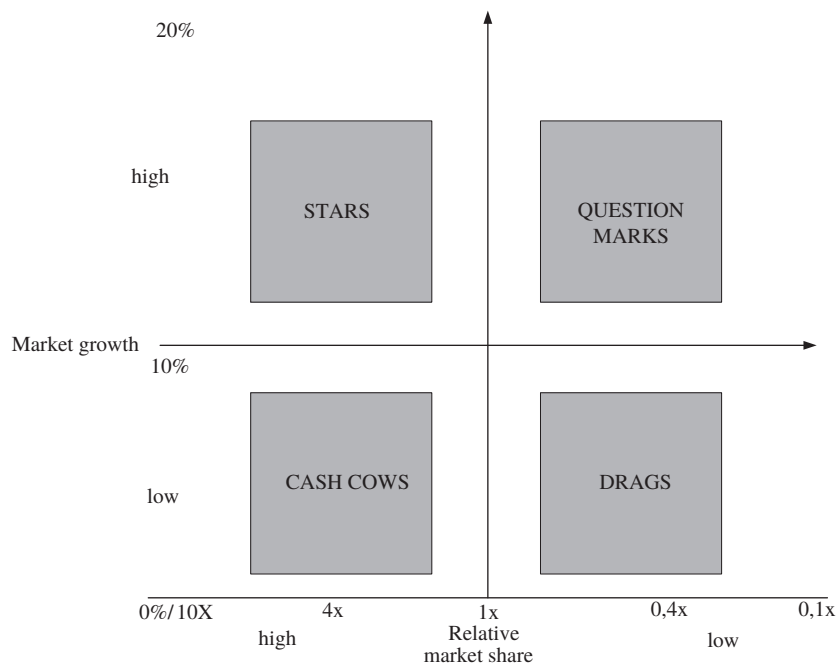


Figure 1.
BCG matrix

Source:
(Ryńca, 2014).

As is shown in Figure 1, the BCG matrix is based on two variables – relative share in the market and market growth. The relative share in the market makes it possible to assess the degree of a company's competitiveness. The second dimension applies to the attractiveness of the market in which a company functions (Jurek-Stepień, 2007).

In order to effectively manage a company, its management should consciously shape the company's diversification degree so as to shape flows in order to achieve competitive advantage. This requires organization the production portfolio in a sustainable manner, namely having products/services with a diverse competitive position as well as a diverse market growth rate. Products and/or services within the area of high market growth usually require high investment expenditures. Thus, they should be financed from the surplus generated by units positioned in fields with a low growth rate which usually do not require high investment expenditures. It thus seems necessary to balance the production portfolio in such a manner so as to achieve competitive advantage over competitors by greater possibilities of financing and development for these units which may decide the company's position as compared to its competitors in the future (Jurek-Stepień, 2007).

As it was mentioned previously, the BCG matrix consists of two dimensions. The market's attractiveness is measured with the use of the market growth rate which is measured from the perspective of several years. In brief, the higher the market growth rate, the more attractive the market for investors, indicating large opportunities for the company's development and acquiring new customers (Jurek-Stepień, 2007).

At the turn of the 1960s and the 1970s, when the BCG method was presented for the first time, the border point between high and low market growth pace was determined at the level of 10%. Currently, changes taking place on markets as well as conditions in which companies function differ from those in the 1960s and the 1970s. The literature on the subject often contains a suggestion that currently this boundary reaches the level of approx. 5%. Due to the fact that the demand dynamics, ways of competing and risk on the market with a high or low growth are completely different, other strategies of operation should also be used (Jurek-Stepień, 2007).

The second dimension – the relative share in the market, makes it possible to assess the competitiveness of products and/or services. This index, due to its specific nature, indirectly takes into account competition and, as opposed to the market growth rate, is measured from the current perspective. "The relative share in the market" makes it possible to compare a company's competitive position to its greatest competitor (Ryńca, 2014).

Products/services which in Figure 1 are on the left side of the border equal to 1 reached the position of market leaders. Share equal to 4 means that the sales of a given product are four times greater than its greatest competitor (Drażek, 2003).

The BCG matrix includes four groups of products. The first group are "Stars".

Stars are product groups being leaders on a dynamic market. They require high investment expenditures to maintain the leader's position.

“Stars” just like “question marks” do not generate high positive cash flows (Jurek-Stepień, 2007), (Penc-Pietrzak, 2003), (Ryńca, 2014). As it was mentioned previously, they require substantial investment expenditures. Therefore, it is necessary to subsidize them from other sources – usually from profits coming from the sales of profitable products. They are a favorable investment and grant good prospects for the future. As a result of the sector’s transition into the maturity phase, they are transformed into “cash cows”(Ryńca, 2014).

The second group of products are **“question marks” (also referred to as “dilemmas”)** characterized by an unknown future. Just like “stars”, they are present on a market characterized by a high growth rate. Market attractiveness, a high return rate as well as low entry barriers make competition stronger. This situation requires high expenditures in a competitive struggle, including marketing activities. A small share in the market may be the reason for a later introduction of these products into the market. “Question marks” are also unprofitable products, requiring financing from other sources (Drażek, 2003), (Penc-Pietrzak, 2007).

The third group of products are the so-called **“cash cows”** (also referred to as “earners”). This is a group of profitable products with a well-established competitive position generated by a financial surplus which may be used to finance other groups of products (in particular, those which are currently unprofitable but present chances for development in the future). A low market growth rate makes the market less attractive for new investors. A company has great freedom in determining prices and quantities of manufactured products, does not bear high expenditures for the modernization and improvement of products as well (Gierszewska, 2003).

The last group of products are the so-called **“drags”** (also referred to as “dogs” or “ballast”). “Drags” do not generate a high financial surplus. They do not require substantial investment expenditures as well. They are usually characterized by low profitability. They are non-developmental and do not bring the expected profits (Drażek, 2003), (Penc-Pietrzak, 2007).

The BCG matrix presented above makes it possible to indicate the position of the company’s particular products/services on the market. It may also be helpful when planning marketing activities as well as optimizing the production portfolio” (Penc-Pietrzak, 2007).

It indicates perspectives for development in the long period of time to the organization, by financing fields with a high market growth rate from surpluses obtained from profitable fields which do not promise any hope for a strong development (Jurek-Stepień, 2007).

The further part of the article presents suggestions for using the idea of the BCG matrix in managing a university.

3. Suggestions for using the idea of the BCG matrix in managing a university

As it was mentioned previously, the BCG method is used for a portfolio analysis during the assessment of a company's strategic position. Its idea may, on the other hand, be used in operational management at a university. In particular, it may be useful during the assessment of faculties (eg. Faculty 1 –Law, Faculty 2- Management etc.) , courses being realized at the university or during the assessment of projects being implemented at the university. This study only presents suggestions for using the idea of the BCG matrix in managing a university, in particular during the assessment of the university's faculties.

Figure 2 demonstrates the faculty management model on the basis of the idea of the BCG matrix.

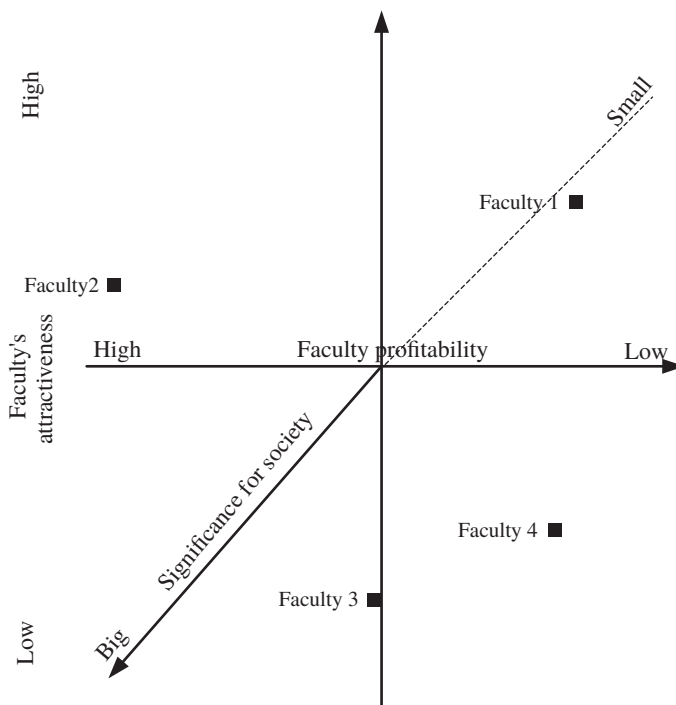


Figure 2.
Faculty management
model on the basis
of the idea of the
BCG matrix

Source:
(Ryńca, 2014).

The author believes that a balanced assessment of faculties at a university may take place on the basis of three main criteria. The first criterion – faculty profitability, may be particularly significant for the university's management, the second criterion – attractiveness, significant for students or scientific-teaching employees. The third criterion is related to the social responsibility of universities, namely to widely understood benefits which society may have from the functioning of a given faculty (Ryńca, 2014).

The faculty's **attractiveness** would be assessed with the use of random sampling. Random sampling makes it possible to assess faculties taking into account various assessment criteria and weight between the criteria. An example of using random sampling is presented in the further part of the article. Figure 2 shows that a university may have faculties of various level of attractiveness from the perspective of the assessing persons, with various degrees of profitability as well as ones which may have various significance for the society.

The faculty's profitability could be determined on the basis of activity based costing. The literature on the subject has numerous publications on this topic (Klaus-Rosińska, 2009). There are also works by the article's author – for instance see in: (Kuchta et al., 2009), (Klaus-Rosińska et al., 2007) and (Klaus-Rosińska and Ryńca, 2012). With information on revenues generated by a student as well as costs per a student at a given faculty or major, it would be possible to determine the faculty's profitability, in consequence, where the border point between positive and negative profitability would be the faculty's unique profitability border. The author is aware of the fact that determining profitability should not be difficult in non-public universities (students pay tuition and determining revenues generated by a student should not generate problems, but public universities in Poland with a subsidy from the state budget on teaching, which is divided on the basis of a number of criteria, assigning it to a student of a specific faculty or course may not be easy.

The faculty should also be assessed in terms of the number of benefits, objectives significant **from the point of view of the society**. The strictly financial aspect, especially significant for university owners, should not be the most important one, according to the author. In many cases, universities are public benefit institutions the main objective of which is the society's development, in particular preparation for life in a democratic society, shaping civil attitudes as well as activities for the local community. The literature on the subject increasingly emphasizes the social role of the organization (corporate social responsibility – CSR), (Wals et al., 2003), (Caroll, 1999) also of the universities (Leja, 2008).

A similar position is presented in research conducted in Poland by Ernst & Young in cooperation with the Institute of Research on Market Economics indicating the fact that the essence of the university's functioning should include: (Raport: Raport cząstkowy...)

- stimulating creativity, equipping with knowledge and skills in using modern techniques enabling a conscious and efficient operation in a complex world,
- creating skills in adapting to changes taking place on the job market,
- developing students' personalities, creating the ability of unassisted acquiring and supplementing knowledge throughout the entire life as well as critical thinking,

- cherishing culture and national heritage as well as developing the Polish language and the Polish culture by creating a sensitivity to the natural environment,
- creating openness to the world and sensitivity to culture, popularizing science and disseminating the awareness of its importance for the knowledge society,
- creating the ability to cooperate based on mutual trust as well as skills,
- contributing to the development of regions and modernization of the country,
- shaping rational, ethical and involved civic attitudes.

As is shown above, except for financial benefits related to the university's functioning, benefits of an intangible nature, largely associated with the university's social responsibility, may also be significant. Such approach to the faculty's assessment which would take into account the expectations of various stakeholders largely resulting from the university's mission would be, according to the article's author, more reasonable.

Using the idea of the BCG matrix in the discussed model is associated **with the attempt to maintain a balanced faculty portfolio**. The author believes that the suggested model of faculty management on the basis of the idea of the BCG matrix could be useful in optimizing "the faculty portfolio". It would thus make it possible to indicate (like the BCG matrix) unprofitable faculties in which rationalizing actions should be undertaken as well as these which due to the special nature of majors are, for example, highly expensive but significant from the strategic point of view for the university (or have a large significance for the society) which could be "financed" from profitable faculties.

For instance faculty in Figure 2 shows a low profitability. This means that this faculty may bring losses in terms of cash. It may turn out that this faculty should be maintained and financed from the university's other funds because its functioning may have "a positive" effect on the university's social environment (the university's image, highly qualified graduates etc.) which cannot be assessed directly in terms of cash (Ryńca, 2014). For instance, the faculty of chemistry which generates substantial costs (expensive apparatus, reagents etc.) and is unprofitable as compared, e.g. to the faculty of economics, should be maintained due to conducted scientific research (highly significant for the society), high quality of teaching (very significant from the point of view of future graduates) as well as the university's prestige (significant from the point of view of both graduates and candidates).

The further part of the article presents an example of applying the suggested model in managing faculties at a university.

4. Case study

This chapter presents an example of applying the suggested model. It presents how the level of faculty attractiveness, the level of profitability as well as the faculty's assessment from the point of view of benefits for the society were determined. The audit was conducted on a small, non-public university in the Dolnośląskie voivodship. The university consists of seven faculties.

4.1. Faculty attractiveness assessment

The starting point during the assessment of faculty attractiveness was the identification of factors essential for the group of assessing persons. Table 1 presents selected factors of faculty attractiveness which were identified on the basis of a pilot study on a group of 250 students from various faculties. The weights of criteria were assigned by the university's management on the basis of student preferences. Random sampling was used to assess faculty attractiveness (Table 1). Random sampling consists in assigning weights to particular criteria in order to maintain the comparability of results received at various faculties. In the further stage, particular criteria were assessed by students. Each factor was assessment in a scale from 1 to 5 where 1 – poor grade, 5 – very high grade. The comparison of courses, faculties makes sense only when the same set of criteria is used for assessment. Faculty attractiveness was tested on a group of 300 student at various faculties. Table 1 presents criteria for the assessment of the faculty's attractiveness (column 1). Averaged results of the attractiveness assessment conducted by students at the faculty of management and marketing are also presented (column 3 in Table 1).

As is shown in Table 1, students at the faculty assessed the teaching personnel particularly highly. They assessed their skills and qualifications especially highly as well as their preparation for classes, the level of requirements and the manner of conducting classes. Service in the dean's office and the size of classes were assessed on the lowest level (we may assume that classes are too numerous). The condition of library infrastructure at the faculty was also assessed poorly.

Similar calculations were conducted at other faculties. Detailed calculations will not be presented. Table 2 presents only collective results (rounded up to full values).

As is shown in Table 2, the Faculty of Management and Marketing was assessed as the best in terms of faculty attractiveness for students. The Faculty of National Security was assessed equally highly. The purpose of studies at the faculty is to provide knowledge regarding problems related to modern management in the public sector in the event of a crisis as well as interdisciplinary knowledge regarding social sciences as well as the ability to use it in professional work [2].

Factors of faculty attractiveness	Criterion weight	Criterion assessment (1–5)	Weighted grade
1	2	3	(2*3)
Technical condition of scientific-teaching equipment used at the faculty	2	3.2	6.40
Skills and qualifications of teachers	3	4.00	12.00
Using active forms of teaching at the faculty	3	3.30	9.90
Size of classes at faculties	2	2.25	4.50
Proper way of conducting classes matching students' needs	3	4.13	12.39
Number of course hours in the form of practical classes	3	3.6	10.8
Wide offer of courses	4	3.85	15.4
Level of requirements from the teacher	3	4.21	12.63
Support during studies (substantive assistance during conducted classes)	4	3.21	12.84
Good preparation from the teacher	5	4.43	22.15
Possibility to develop one's own interests at the faculty	5	3.66	18.30
Professional perspectives after graduating	6	3.32	19.92
Service in the dean's office	3	2.21	6.63
Infrastructure of the faculty library	4	2.33	9.32
TOTAL	50	–	173.18

Table 1.
Using random sampling for assessing the attractiveness of the faculty of management and marketing

Source: prepared by the author.

Faculty	Weighted grade
Management and Marketing (ZiM)	173
Law (P)	95
Transport (T)	165
Philology (F)	152
Architecture and Urban Planning (AIU)	121
Computer Science (I)	59
National Security (BN)	171

Table 2.
Faculty attractiveness assessment – weighted average

Source: prepared by the author.

4.2. Assessment of faculty profitability

The assessment of faculty profitability was conducted by the university's management. Bearing in mind the fact that this is a small, non-public university where tuition from students is the main source of the university's revenues. Determining the profitability was not very difficult.

The assessment of profitability was determined according to the following diagram presented in Table 3. Due to financial data, this article does not present detailed information regarding the profitability of particular faculties.

Profitability R	Criterion assessment (0–5)
$R < a$	1
$a \leq R < b$	2
$b \leq R < c$	3
$c \leq R < d$	4
$d \leq R$	5

Table 3.
Method of assigning
the profitability
assessment

Source:
prepared by the
author.

Depending on the obtained profitability level at the faculty, a grade ranging from 1 to 5 was assigned where 1 means a very poor profitability, 5 – very high profitability. In the discussed case, the faculty profitability assessment is shown in Table 4.

Faculty	Assessment of profitability
Management and Marketing (ZiM)	4
Law (P)	3
Transport (T)	2
Philology (F)	5
Architecture and Urban Planning (AIU)	3
Computer Science (I)	2
National Security (BN)	1

Table 4.
Faculty profitability
assessment

Source:
prepared by the
author.

4.3. Assessment of benefits from the point of view of the society

The third stage consisted in the assessment of benefits significant from the point of view of the widely understood society. Benefits (of a non-economical nature), largely associated with the university's mission, were assessed.

The assessment criteria were largely the effects of education determined at particular majors of faculties. The total assessment of benefits for the faculty was determined as the sum of the weighted average of particular criteria. Using random sampling was helpful in this respect, as in the case of the attractiveness assessment (Table 5).

Criteria for assessment of the faculty of management and marketing from the point of view of benefits for the society	Criterion weight	Criterion assessment (1–5)	Weighted value
1	2	3	(2*3)
Prepared to communicate, persuade and defend his views in order to achieve common objectives.	5	3.20	16.00
Prepared to initiate changes at the workplace and participate in planning and implementing them. Able to think and act in an enterprising manner.	8	4.11	32.88
Able to analyze causes and dynamics of phenomena in an organization and its environment. Able to identify and analyze typical management and substantive problems in an organization and in its functional areas.	5	3.81	19.05
Able to individually use various Polish and foreign language sources of information, in particular professional literature, integrate acquired information and use it in order to deepen specialized knowledge and expand own language competences.	4	4.23	16.92
Organizes and systematizes basic knowledge from various economic sciences. Distinguishes and characterizes basic types of economic systems and their elements.	5	3.67	18.35
Has basic knowledge of methods and techniques of diagnosing and improving particular areas of organizations' functional areas as well as selected methods of examining the company's environment.	8	3.83	30.64
Able to properly define priorities in his own work and in cooperation with others in connection with performing various organizational roles.	2	4.12	8.24
Able to use indicated methods and tools (including mathematical, statistical, IT) to identify, analyze and solve typical management and substantive problems in an organization and in its functional areas.	10	3.31	33.10
Able to improve acquired knowledge and social skills; able to inspire and organize the process of learning for other people; open to new ideas; enters into interaction with other participants of the learning process; undertakes challenges of creative thinking.	3	4.45	13.35
TOTAL	50	–	188.53

Table 5.
Assessment of the faculty of management and marketing from the point of view of benefits for the society

Source: prepared by the author.

While the assessment of profitability was conducted by the university's management, the assessment of benefits from the point of view of the widely understood society was conducted by 300 graduates. Table 5 demonstrates average assessments from graduates of the faculty of management and marketing. The assessment criteria included the graduates' skills as well as social competences obtained after graduation. Various criteria were assessed at faculties, due to various majors and thus a different knowledge and acquired skills. The same number of weights was maintained at all faculties in order to ensure comparability between faculties [3] Weights at criteria were determined by the faculty's management. Similar calculations were conducted for the remaining faculties (Table 6).

Faculty	Weighted grade
Management and Marketing (ZiM)	188
Law (P)	123
Transport (T)	134
Philology (F)	189
Architecture and Urban Planning (AIU)	81
Computer Science (I)	78
National Security (BN)	68

Table 6.
Assessment of
faculties from the
point of view of
benefits for the
society – weighted
average

Source:
prepared by the
author.

5. Preparation of the matrix of faculty profitability and attractiveness as well as benefits from the point of view of the society

Figure 3 presents the matrix of faculties from the point of view of profitability, attractiveness as well as benefits for the society.

For decision-making needs, the university's management determined a border between high and low profitability as well as high and low faculty attractiveness as well as small and large benefits for the society at the level of 50% of the maximum attainable size (namely 125 points out of 250 for attractiveness and benefits for the society and 2.5 when assessing profitability). The author believes that determining the border between high and low attractiveness (similarly, between high and low profitability and large and small benefits) would depend on the university's management decision-making needs, the type of university and its nature.

As is shown in Figure 3, the university has faculties with a various degree of attractiveness for students as well as various degrees of profitability and benefits for the society. For instance, the Faculty of Computer Science (I) requires an improvement in attractiveness for students. It would be recommended to undertake the following activities at the discussed faculty:

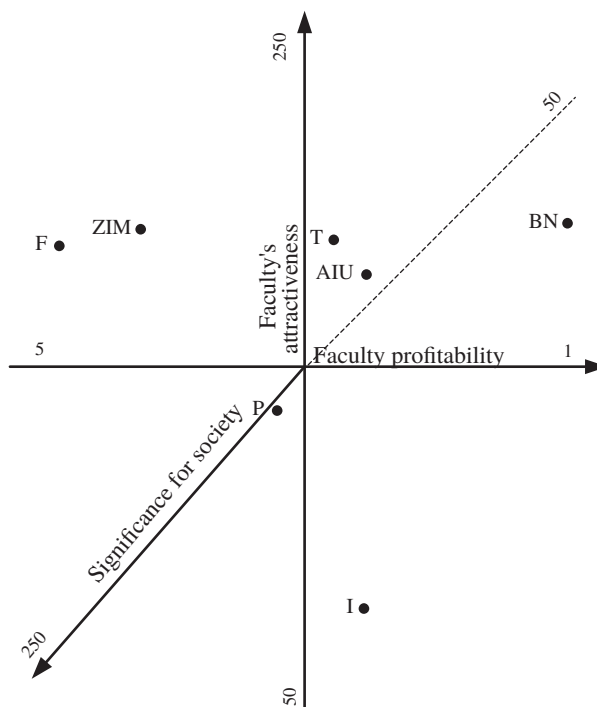


Figure 3.
Matrix of faculties

Source:
prepared by the
author.

- Improve the quality of services provided in the dean's Office;
- Introduce flexible hours of classes and work;
- Introduce various forms of examinations;
- Increase the access to lecturers during consultation hours;
- Guarantee a longer opening time of computer laboratories;
- Improve contact with the dean's office;
- Improve competences of the administration personnel;
- Introduce a year tutor in the dean's office;
- Enable access to scientific circles;
- Improve the quality of the teaching process;
- Purchase new teaching equipment.

It is also advised to monitor the faculty's attractiveness from time to time since this is a profitable faculty.

Within the Faculty of Management and Marketing (ZiM) and the Faculty of Philology (F) it is reasonable to maintain the present university management method due to the high attractiveness and profitability of the faculty.

Sample actions in the discussed scope would be, for instance:

- To increase the level of knowledge as well as practical skills in students;

- To maintain qualifications of the scientific-teaching personnel;
- To maintain the present level of service in the dean's office;
- To maintain the present opening hours of the library;
- To maintain the high competences of employees;
- To maintain the high level of quality of the teaching process.

The university should also undertake activities by which it would be possible to improve the profitability of attractive faculties but poorly profitable ones (for example, the Faculty of Transport (T)).

The author suggests that the following rationalizing actions be undertaken in the case of the Faculties of Architecture and Urban Planning (AIU), Computer Science (I) and National Security (BN):

- Improve knowledge and skills regarding solving management problems of the faculty's management personnel;
- Renegotiate remuneration conditions in order to improve profitability;
- Employ "cheaper" lecturers, e.g. ones with PhD degrees instead of expensive professors;
- Reduce teaching costs through a rational use of the scientific-teaching apparatus;
- Undertake actions in order to increase the number of graduates successful at a professional level;
- Improve marketing actions in order to acquire a larger number of students;
- Provide an appropriate tool supporting faculty management.

In the case of the Faculty of Computer Science (I), it would be justified to increase profitability and attractiveness, e.g. by optimizing the size of classes, ensuring an appropriate number of seats for candidates at the faculty, improve marketing activities and improve (if possible) the widely understood teaching infrastructure which is very significant from the point of view of the faculty's attractiveness for students. The improvement in profitability would also apply to the Faculty of National Security (BN) and Transport (T).

The author is aware of the fact that, due to the special nature of certain faculties, the improvement in their profitability may be very difficult. In particular, this may apply to faculties in which the methodology of teaching is highly expensive, often implemented in the form of laboratories but the form of which is necessary from the point of view of the teaching program. Bearing in mind the above, and with information on faculty profitability, the university's management could undertake actions the purpose of which would be to maintain faculties highly expensive, unprofitable but significant from the point of view of the teaching process (graduates, from the point of view of the society). These faculties could be financed from other faculties the functioning of which brings profits. For instance, the Faculty of Management and Marketing (ZiM) and the Faculty of Philology (F) in Figure 3 could allocate their financial surplus on the

development of other faculties. As a result, it would be possible to improve the profitability and attractiveness, e.g. of the Faculty of Computer Science (I) and the profitability of the Faculty of National Security (BN).

The author of the article believes that the presented tool would make it possible to maintain a balanced portfolio of faculties. It would also make it possible to assess the attractiveness of faculties from the point of view of various entities (the discussed case focuses only on the assessment of faculty attractiveness for students but it would be reasonable to assess the attractiveness also from the point of view of, e.g. university employees or other stakeholders – this issue is the subject of the author’s current research). The presented method makes it possible to indicate criteria for the assessment of the faculty’s attractiveness and criteria significant from the point of view of the society which were assessed poorly, which should be paid attention to in the first place to undertake rationalizing actions. The author is also aware of the weaknesses of the presented tool. In particular, it may prove difficult to identify factors affecting the attractiveness of faculties as well as criteria significant from the point of view of the society. The identification of such factors may turn out to be labor-consuming. Consulting the management of various faculties in order to standardize the weights at attractiveness factors may also be time-consuming. Managers may also encounter difficulties in assessing the profitability of faculties – in particular, in the case of public universities which, as it was mentioned previously, largely face the problem of the lack of professional information (no information about costs attributed to a student, information about costs of faculties (various aspects may be taken into account when calculating costs at faculties). Determining the border between high and low profitability (as in the case of attractiveness as well as benefits for the society) is, to a large extent, conventional which may also make the selection of a given action strategy for faculties more difficult (Ryńca, 2014).

6. Conclusions

Changing conditions under which Polish universities have to function require changes in their previous management methods as well as the use of modern methods and tools due to which it would be possible to improve their competitive position on the market. The author believes that using the tool presented in this article could also be helpful for the university’s management. It would make it possible to focus on managing faculties in terms of their attractiveness for students. It would indicate which areas require rationalizing actions due to which it would be possible to improve the functioning of the faculty in the eyes of its various stakeholders.

It would also make it possible to maintain a balanced faculty portfolio (faculties highly expensive or very important from the strategic point of view of the university’s functioning, significant from the point of view of the teaching

process or attractiveness for students or employees would be “financed” from profitable ones or “optimized” regarding resources held by the university (from other faculties) in order to achieve the assumed effects of education [4].

Notes

- [1] For example using the Balanced Scorecard. See (Kaplan, Norton, 2001).
- [2] Information from the website of university X.
- [3] A similar principle is used in the case of the SWOT analysis where, due to introduced weights, it is possible to maintain the comparability of obtained results. See in: (Jurek- Stępień, 2007).
- [4] R. Ryńca, *Metody zrównoważonej oceny szkoły wyższej wspierające poprawę efektywności*, Raporty Inst. Organ. PWroc. 2012., Ser. PRE; No. 4.

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