DOI https://doi.org/10.30525/978-9934-26-597-6-95

ASSESSING THE GROWTH POTENTIAL OF A UNIVERSITY: APPLYING SYSTEMS ENGINEERING PRODUCTIVE APPLICATIONS

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Abstract

This study is devoted to improving the interaction that occurs between participants in the educational process. Special attention is paid to the issues of coordinating actions at the level of the university and its branches. The central moment of such coordination is associated with decisions regarding the timely implementation of effective programs for improving educational activities. We are talking about including in the programs proven mechanisms of organization adapted to regional conditions. The peculiarity of the mechanisms is not in the usual desire to find agreement among all participants in a newly created organization, but in establishing a system of norms and measures that allow promptly tracking the interests of each selected group and the entire organization as a whole. This is achieved in the course of selecting new proposals considered at the level of investment projects. The basis for selecting the means of fundamental analysis, allowing to find the key links in the educational process, which are the levers of potential growth of the organization. As a result, marketing activities are streamlined, investment costs and proposals are reduced.

Keywords: procedure, proposals, selection, contribution, cost, assets, growth

1 Introduction

The observed deficit in the effective application of the Systems Engineering (S_Eng) approach is due to frequent changes in the system content, the basis of which are proposals coming from customers. As a rule, such proposals, acquiring an innovative form, express the opinions of dissatisfaction of a certain group of users. Thus, the image side of the system environment is manifested. The system developers lose control over the system. Thus, the S_Eng property is violated, in which the influence of the external environment exceeds the reverse impact of the organization's managers. The means of influence usually consist of providing new projects that strengthen the company's reputation. In other words, the image of the

environment conflicts with the reputation of the organization. It should be noted that reputation can be positive or negative, but it cannot be changed as quickly as image. Therefore, most often, image refers to the product and trademark, and reputation – to the enterprise and organization. As a result, situations arise in which enterprises cease to function stably. Such situations cause financial difficulties, a narrowing of the contingent of consumers, the loss of business partners, and the outflow of highly qualified employees. It follows that, according to the provisions of S_Eng, the problem of the research is expressed in the following statement: "It is impossible to ensure the consistency of image and reputation in the absence of means for assessing the state of the enterprise, on the basis of which decisions are made to return the organization to a stable state." Such means are developed on the basis of the theory of full-scale assessment and include the fundamental technology of cost management of changes in assets, including intangible assets. The fundamental nature of the technology lies in its completeness. The degree of completeness is manifested in the application of the approach, on the basis of which the functioning of the system is ensured throughout its life cycle. In practice, Eng_S methodologies and the PLI principle are used as approaches. In this study, the PLI approach is the object of the study. Its purpose is to obtain the consistency of two mechanisms applied independently of each other. During the coordination, the reputational property is manifested, the disclosure of which is the subject of study.

The purpose of the study is to develop a procedure that ensures the assessment of the effectiveness of the organization in the context of agreed image factors and reputation symptoms. In accordance with the stated goal, the following tasks were formulated:

1. Develop a mechanism for current assessment aimed at identifying the organization's bottlenecks that negatively affect the organization's reputation.
2. Debug the algorithm for transforming the organization's weak links into the enterprise's strengths.
3. Consider the possibility of implementing a new proposal in the form of an investment proposal.
4. Conduct a diagnostic of the enterprise's image based on the results of superimposing an investment project on the model of an existing enterprise

In the course of solving the designated tasks, two points should be highlighted: the procedure for selecting new projects and the system support program.

2 New Proposal Selection Procedure

The procedure for assessing the consistency of the reputation and image of an enterprise includes six main stages. Fig. 1 shows a general diagram of the procedure.

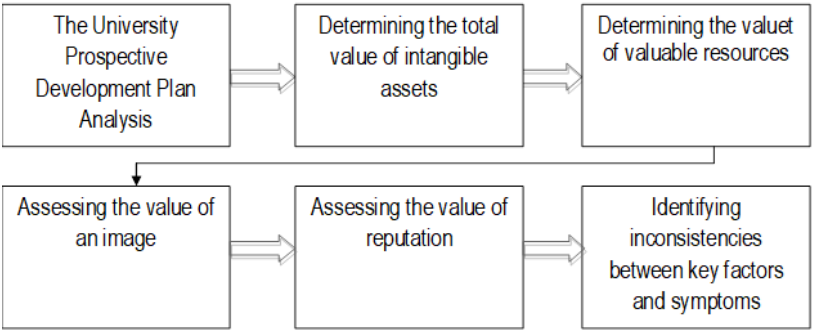

Figure 1. New project identification scheme

Each of the included stages is based on information from the sequential allocation of the value component of reputation from the total value of intangible assets. As a result, a link is identified that is the basis for forming a proposal that promotes potential growth. It should be noted that the assessment of the value of reputation and image was carried out in accordance with the PLI principle. Thus, using the system engineering approach, the required level of independence is achieved. At the same time, the new version of the system includes proposals that have passed the fundamental selection procedure. The procedure was tested as part of the system support program implemented at the University.

3 System Maintenance Program

Each new proposal is an investment project, which is part of the loyalty program implemented at the University. The essence of the program is to reveal the growth potential of the University, whose activities are related to the creation of branches in various regions. Ensuring the growth potential is due to the creation of a group that organizes marketing work before and after the next student intake, as well as accompanies the financial monitoring of the University branches for five years. The loyalty program was launched in March 2018. From that moment on, the enterprise was monitored for activity. The main results of the monitoring include the stage of collecting business information on improvement, processing user notifications, analyzing the

effectiveness of new versions of the program, diagnostics of the state for the period 2018-2025.

The implementation of the loyalty program as part of a well-established technology allows identifying bottlenecks in the entire chain of the organization, ensuring the adoption of reasonable improvements, including the selection of user notifications, which allows for a timely response to customer complaints and claims. An important place of the program is working with a genuine object, which is software tools for assessing the contribution of interested participants to the integral indicator of program efficiency. Financial flexibility combined with marketing research is aimed at increasing potential profit. The presence of software tools for supporting financial schemes used in the long term allows effectively imposing new approaches on the model of an existing enterprise. Thus, risks are reduced due to optimization of capital turnover cycles configured to determine the break-even point of each proposal to improve the University's activities. The mechanism described above is the implementation of the PLI principle at the level of three systems. Fig. 2 shows a large-scale scheme of its implementation for assessing the growth potential of the University.

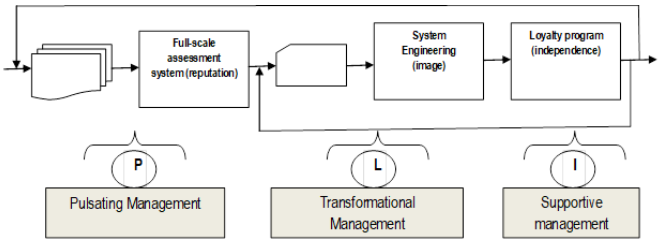

Figure 2. Scheme for assessing the growth potential of a university

This diagram includes systems engineering mechanisms configured to comply with the PLI principle, combining three management functions.

The first block, called "Pulsating Management", is designed to track and select intellectual investments that have passed in the context of effectiveness. It is based on reputation assessment algorithms.

The second block ensures the implementation of the transformation function, reduced to modifications of efficiency measurement algorithms. The mechanism is tested by checking the system property of emergence. In this case, the measuring tools are configured to analyze image factors.

The third block represents the implementation of the loyalty program. Within its framework, the interest of all participants involved in the educational process is monitored. If necessary, appropriate recommendations are issued, which are indicated in the diagram by two feedback loops. If it is

necessary to check a new proposal, a positive feedback loop is used. In cases of events that require corrective actions on a certain investment project, a negative feedback loop is used. As a result, the organization is transferred to a state of sustainable growth, the achievement of which is confirmed by specially developed tools. Thus, within the framework of the loyalty program used, both the assessment of the effectiveness of the University and its branches as a whole and the measurement of the effectiveness of each participant are carried out. At the same time, by means of supporting management, the branches of the University manage to abandon ineffective stereotypes, ensuring the implementation of development scenarios, thereby contributing to the growth program of the University. The proposed toolkit, combining the mechanisms of engineering systems with management, made it possible to coordinate marketing activities and the production of educational services.

4 Conclusion

The developed approach, configured to maintain independence in relation to reputation assessment tools and image measurement, represents a complete set of measures that have a systematic and planned impact. It should be noted that a positive reputation invariably leads to an increase in tangible assets, which causes an increase in the degree of trust from the internal and external target audience. All this has a positive effect on the structure of the organization and causes an increase in the number of students and business partners, the formation of business networks, the expansion of consumer groups and the influx of highly qualified teachers and employees. The availability of assessment results forms an objective basis for the analysis of business reliability, stability, labor productivity. If necessary, reports are generated on profitability, liquidity, amount of income, the cost of the University and its branches, as well as their contribution to the development of the region. The developed performance assessment system makes it possible to assess the growth potential of the University in the long term. The developed analytical reports contain information on the reputation that has been formed in the context of managing the educational process, which allows you to be aware of all the innovations introduced in the conditions of the local mentality. In this aspect, the degree of influence of branches from the standpoint of business partnership on such parameters as: reliability, stability and responsibility is assessed. After identifying significant criteria, a specific organization is positioned taking into account the assessment of the expectations of the external target audience. The presence of growth programs not only forms the levers of effective management, but also contributes to improving the quality of the assessment toolkit. Thus, the application of systems engineering approaches are effective mechanisms for assessing and developing solutions that contribute to the development of the organization.