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Evaluation of Technology Parks: Possibilities of Transferring Good Practices from Poland to Uzbekistan and Bulgaria

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Оценка на технологичните паркове: възможности за трансфер на добри практики от Полша в Узбекистан и България

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Abstract: *A review of good practices dedicated to evaluation of activities of technology parks (TPs) and science and technology parks (STPs) indicates that all countries are struggling with the problem of measurement and hence the problem of evaluation of individual effectiveness of each (S)TP and in its comparison to those best ones. Realisation of the main aim set in this article serves partially to fulfil the need for facing the problems with creation of evaluation tools for (S)TPs and possibilities of mutual benchmarking among them in various countries. This aim is to the following question: are there any good practices for managing (S)TPs in Poland contributing to evaluation of aims set by them in the best possible way, and at the same time, giving possibilities of their implementation in (S)TPs located in various countries?*

Realisation of the aim mentioned above required a prior review of effectiveness measurement tools, including financial and non-financial indicators, existing in Poland and in other countries. However, regarding the aim of the article, our research attention was being focused on activities which were to select tool sets of the most universal character among those existing in Poland, and which could be additionally improved in the future. The results of reviewing indicators used by other (S)TPs in other countries are, in turn, shown as a direction for further scientific research on tools for evaluation of (S)TPs in terms of their application in Poland and Uzbekistan. The review of experiences in this regard is a necessity to be able to compare the effectiveness of (S)TPs in various countries.

Key words: *evaluation, effectiveness, science and technology parks, technology parks, management.*

INTRODUCTION

During the last several years the production of computer components such as single-chip A dynamic increase in public expenditure on establishing and developing technology parks (TPs) and science and technology parks (STPs) indicates the need for evaluation of their functioning and identification of major development problems as well as risks related to allocation of public funds in this regard. The analysis of popularity of documents about good practices for evaluation of (S)TPs shows that there is a growing interest in such initiative in various countries. Each (S)TP has its own set of such rules which are constantly modified and adjusted to changing market challenges (hence there are so many effectiveness measurement tools). The aim of this article is to answer the following question: are there any good practices for managing (S)TPs in Poland contributing to evaluation of aims set by them in the best possible way, and at the same time, giving possibilities of their implementation in (S)TPs located in various countries? It has to be noted that the sets of good practices for evaluation of activities of (S)TPs are also being prepared at the international forum, for instance, by the World Bank, the OECD, the European Union. This means that the problem undertaken by us is significant. Having the set of such rules is perceived positively by the market and stakeholders of (S)TPs, as well as gives evidence of well-considered policy on evaluation of (S)TPs; and this is particularly important for such organisations. Also noteworthy is that in most countries good practices are being formulated through wide consultations in different milieus (investors, regulators, managers of (S)TPs) in which the voice of (S)TPs is as equally important as the voice of their owners. Such process is intended to provide understanding of the needs for recording these rules along with tools for measuring the effectiveness of (S)TPs elaborated by each of the interested parties participating in discussions, legitimising them by the milieus, and then, respecting them by (S)TPs. From this point of view, good practice recommendations serve as an

example of self-regulation [1]. These recommendations are directed, on the one side, by (S)TPs as their both co-authors and executors; and on the other side - by their stakeholders. That is why, (S)TPs take an active part in elaborating tools for measuring their activity to raise its standards. Along with the development of (S)TPs in various countries, good practices begin to include a wider scope of their activities. Nowadays, the number of good practice recommendations on evaluation of (S)TPs (which additionally include national differences in economy, culture, applicable law, as well as legal and organisational forms of (S)TPs) is quite impressive. However, due to many differences, it should be taken into account that good practices for evaluation of (S)TPs being formulated worldwide refer to the same aspects. Periodic evaluation of activities serves as a transparency basis for conducting open and wide information policy by (S)TPs. According to good evaluation practices, (S)TPs should inform about their financial situation (reports), but in confrontation with the evaluation of additional benefits gained by their stakeholders. All this information should be easily accessible via the website for investor relations, translated into several foreign languages, including the English one. One of the issues relating to good practices, which requires a comment and is under consideration in this article, is the question about the effectiveness of (S)TPs. What is more, the research problem in the empirical part of this article will be limited only to the application of benchmarking in technology parks.

1. RATIONALES FOR ACTIVITY EVALUATION OF TECHNOLOGY PARKS (TPs)

There are [2] three main reasons for evaluation of TPs in the literature. The first of them is growing popularity of technology parks, and the second one – spending more investment on their establishment. The third reason, in turn, is a resultant of the two latter ones and concerns the activity and the need for providing clear evidence and arguments on justification for making such investments. For instance, expert L. Sanz – Director General of the International Association Science Parks (IASP), clearly states that (...) public institutions should be shown what science and technology parks provide for people in return for public money (...). The same opinion is shared by M. Winkowski – Vice President of the Board of Wrocław Technology Park, who believes that (...) a majority of technology parks are supported by public funds and therefore the effectiveness of their spending should be measured (...). However, there is a huge discrepancy among experts on how to analyse the effectiveness of technology parks. Different opinions became visible during a panel discussion entitled Measuring the effectiveness of technology park activities, organised during the conference Inno(moti)ventions [3].

Some more specific rationales can be distinguished from the third above-mentioned reasons, namely:

- the need for presenting to the world the effectiveness of TPs and their impact on development of regional economy in a more transparent way;
- the need for gaining credibility in order to attract enterprises with a high development potential, talented people suitable for managing TPs, as well as highly-qualified personnel to work in tenant enterprises;
- The need for providing (public or private) investors with a justification for spending or returning funds invested.

2. USE OF BENCHMARKING IN EVALUATION OF TECHNOLOGY PARKS (TPs) IN POLAND

Benchmarking of technology parks in Poland is a summary of the information gathered during expert visits in TPs involved in the research, as well as presentation of conducted analyses. The aim of benchmarking is to determine strengths and weaknesses of TPs as well as opportunities and threats to their activity and development [4]. That is why, the

benchmarking results are often formulated in the form of recommendations for the organisation being analysed. Subsequent editions of benchmarking research conduce to a diagnosis of development of TPs in Poland and elaboration of recommendations for improving their management. Over the years, the methodology has not changed significantly. The research is conducted according to the same principles and methodology in 4 key perspectives and 8 fields. In total, the methodology requires an analysis of several dozen of indicators. This allows for observing any changes over time. The basis for realising the present benchmarking research was “Technological Park Benchmarking Methodology in Poland” elaborated in 2010 [4]. This document precisely indicates the scope and type of research as well as essential analyses to be carried out by experts. The research is then followed by analysis of the obtained data and formulation of conclusions which are published not only in reports dedicated to each individual TP, but also in the so-called general research report. The general research report consists of several parts. In the first part, the experts explain the essence of benchmarking, its aims and benefits possible to obtain at present and in the future. In the second part, they present the research phases and types of analyses carried out within benchmarking, and successively describe the methods used. The following parts present the results of all analyses conducted within the entire research. The research report presents: analyses of technology park life cycles, results of opinion survey of tenant enterprises, analyses of values of benchmarking indicators, analyses of strategic groups, evaluation of location of parks, evaluation of websites. The indicators based on the model “Balanced Scorecard Collaborative” modified to the needs of TPs constitute the core of the entire benchmarking research. The research report is finished with the identification of development directions of technology parks in Poland, which is based on previously determined strengths and weaknesses of the analysed TPs, as well as recommendations for further improvement and good practices.

3. GOOD PRACTICES OF TECHNOLOGY PARKS (TPs) IN POLAND

The interviews conducted by the experts during visits in technology parks allowed for identifying some good practices in the analysed TPs. Identification of good practices shows how different perspectives help to strengthen the position of TPs and, at the same time, achieve satisfaction by their stakeholders (tab. 1)

Table 1. Good practices for evaluation of TPs in Poland

No.	A good practice in different fields of management of TPs is:
I.	making efforts for building human capital with high relational abilities. Noteworthy is that any relationship is being established by people on both sides of the system, and the activities of TP managers should be aimed at retaining competent employees.
II.	creating a well-functioning network of cooperation with research units.
III.	having abilities to build efficiently good relations with tenant enterprises.
IV.	operational managing of funds allowing for maintaining financial liquidity and continuing investments efficiently while preserving profitability ratios and effectiveness of enterprise at the appropriate level.
V.	conducting innovative activities although uncertainty of their results.
VI.	creating funding opportunities for tenant enterprises of high-risk ventures.
VII.	providing good care for tenant enterprises, which should contribute to the success of TP measured by the number of tenant enterprises, low

	rotation ratio of tenant enterprises and, as a result, high rate of occupied space in TP.
VIII.	having specialisation.
IX.	implementing a quality management system which conduces to achieving high management standards in TP.
X.	internationalising activities by building a network of contacts and participating in international projects.
XI.	integrating all people and entities cooperating with TP.
XII.	providing sustainable development for TP (extending proper infrastructure, using the operational programmes, taking care of proper number and structure of tenant enterprises, improving human resources, using the space of TP buildings as well as other infrastructure and equipment in an optimal way).

Source: own elaboration based on: J. Hołub-Iwan, A.B. Olczak, K. Cheba, Benchmarking of Technology Parks in Poland: Edition 2012, Polish Agency for Enterprise Development, Warsaw 2012 (retrieved in an electronic form from the Polish Innovation Portal <http://www.pi.gov.pl/>), pp. 79-83.

Good practices in Poland pervade various fields of management of TP(s). Beginning from the sphere of human resource management, in which recruitment of personnel with qualifications suitable for the specificity of TP is significant; and ending with the sphere of management of fixed and current assets in order to make them a basis for creating high-quality proinnovative services in the offer of TP. Good practices identified in the Polish TPs may also be treated as an addition to recommendations for further improvement.

CONCLUSIONS AND FUTURE WORK

The experience shows that those TPs which are co-authors of good practices on evaluation assessment of their activity apply the formulated rules of measurement. Therein lies the conviction (proved by numerous empirical research studies and effects of control by the Polish Supreme Chamber of Control) that those TPs which show longer above-average activity in this field are perceived better by investors and their tenant enterprises. It is worth mentioning that the reputation of concrete TP in the market is of extreme importance. As a result, TPs as well as STPs should be evaluated by virtue of their functions as those which protect not only their own interests, but also the interests of their stakeholders. According to the research studies conducted in numerous countries (the USA, European markets), (S)TPs which follow good practices have better results and are of a greater value for their stakeholders. Initiatives on good practices on evaluation of the activity of (S)TPs should have followers in the groups of not only (S)TPs, but also regulators, researchers and other stakeholders; even though the concept of good practice itself seems to be nothing new nowadays. Managers and stakeholders of TPs are currently raising the need for facing the problems with evaluation of TPs and possibilities of their benchmarking. All of these is moving towards not only good, but the best evaluation practices. Therefore, both in Poland and other countries [5] there are many discussions on developing or implementing not only good, but also the best practices in this regard. Effectiveness of TPs can be evaluated from at least four perspectives: city and region, research centres, private investors, tenant enterprises. Each of these entities will evaluate the effectiveness of TP by means of different indicators. Indicators useful for one entity may be useless for other ones. That is why, the criteria for measuring the effectiveness of TPs should be set before creating further effectiveness measurement tools. Then, the new criteria should be verified whether they are universal or have limited applicability. These characteristics decide about a very wide or, on the contrary, very limited possibility of their transferring among TPs. This may definitely

expand or conversely limit their usefulness. Hence there are many ongoing activities aimed at filling the gap (need) for evaluation of (S)TPs and possibilities of their benchmarking.

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