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New way to finance a Public-Private STP: The Project of Ribeirao Preto's Technology Park

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New Way to Finance a Public-Private STP: the Project of Ribeirao Preto's Technology Park

Executive Summary

One of the biggest challenges faced by Science and Technology Parks (STPs) implementation is to raise the required funds. The challenge seems to be harder in developing countries like Brazil, where public resources are very restricted and the private sector still feels skeptical about investing in STPs. Then, a question emerges: what are the financing mechanisms that the public-private partnership STPs management institution can make use to the phases of implementation of this kind of enterprise?

This paper presents the **new way structured to finance the implementation phases of the Ribeirao Preto's Technology Park**, a public-private partnership, which is supported by the Brazilian Science and Technology Minister, the Development Commission of Sao Paulo State, the STPs System of Sao Paulo, the Innovation Agency of Sao Paulo University, the Ribeirao Preto City Hall and private investors.

Key-words: Financing STPs; Ribeirao Preto's Technology Park.

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1. Introduction

The intense competition of the globalized market in which firms and countries are inserted, demand from them a constant search for innovation. Among the habitats to stimulate innovation that have several initiatives around the world, including Brazil, there are the called Science and Technology Parks (STPs).

The Science Parks aims to strengthen the dissemination of the knowledge by the greater interaction among the companies, universities and research centers. These interactions improve the capability of the companies to compete in the local and global market.

In this paper, STPs are described as **planned real state ventures**, managed by a **institutionalized company**, that aims to promote innovation through **technology transfer mechanisms**, and are placed in a **delimited geographical area** inside, or near, a University campus, with which it creates a formal relation. The STPs accommodate technology based companies incubators, innovative/technological based non-incubated companies and R&D firms, related to a specific or multi industrial sector, and other support enterprises and services, as cooperative laboratories, research centers, banks, mail posts, gym academies, green areas, etc.

One of the biggest challenges faced by STPs to accomplish its implementation is to raise the required funds.

The challenge seems to be harder in developing countries like Brazil, where public resources are very restricted and the private sector still feels skeptical about investing in STPs. What makes the risks bigger, in case of developing countries, is that the public resources can't be taken as the most important way to finance the SPT, as it includes a political approach, that can vary, at least every four years with the changes in each new election, and also the risks that the required resources, and the few amount available (not sufficient to finance all the structure that should be financed by the public government), may cause the change of resources distribution between the industry development (what includes the innovation policies) and the basic services offered by the public sector, putting in risk the implementation of STPs.

In case of private resources, as the risk of investment in structures to innovation in developing countries is higher than the same kind of investment in developed countries, there is more awareness about the private investors to put money in this kind of enterprise, because of the risks involved with the sustainability of the project. In this way, the private sector feels more comfortable to invest in partnerships with the public sector, mainly when this last actor has already invested resources to the first phases of the project.
Therefore, because of the spillover effects produced by STPs, and the need to establish a strategic way to accommodate the objectives of all the partners involved in the project, the STPs, mainly in developing countries, tend to be establish as public-private partnership enterprises. Koh et al. (2005, 231) says that "in many science parks, knowledge spillovers are sometimes more important than physical infrastructure as a source of attraction for potential tenants".
According to Gower and Harris (1994, p. 8) "the funding and subsequent development of science parks may, however, be seen to conform fairly consistently to a norm of partnership, or even a series of partnerships; and hence there is a complexity of motives at work behind the funding of this form of property development. Such complexity may even lead to conflicts of interest, which in turn may heighten private sector investors' disquiet as to the investment qualities of science parks and thus further entrench their reticent nature".
Then, a question emerges: what are the financing mechanisms that the public-private partnership STP management organization can make use to the phases of implementation - planning, deployment and maintenance- of this kind of enterprise?
This paper aims to present a **new way structured to finance the implementation phases of the Ribeirao Preto's Technology Park**, a public-private partnership, which is supported by the Science and Technology Minister, through the Brazilian Industrial Development Agency, the Science, Development Commission of São Paulo State, the STPs System of São Paulo, the Innovation Agency of São Paulo University, the Ribeirao Preto City Hall and private investors. Also, the milestones and facilitators of the finance project are described in this article.
Aiming to generate a basis to a benchmark, the paper also presents an analysis of the financing experiences of the follow STPs: Tecnopuc (Porto Alegre/ Brazil), Sao Leopoldo Computer Science Pole from (São Leopoldo/Brazil), Sapiens Park (Brazil), Taguspark (Lisbon/ Portugal), Biocant Park (Coimbra/Portugal), Technology Park from Barcelona (Barcelona/Spain), Technology Park from Andalucia (Malaga/Spain), Cartuja 93 (Seville/ Spain), Bizkaia Technology Park (Bilbao/Spain), and Alava Technology Park (Alava/Spain).

2. The implementation phases

In this paper we consider three implementation phases:

a) Planning: involving studies of the local competences, both business and technological; definition of the park concept; establishment of intention agreements among the project players; definition of the legal structure and constitution of the park management organization; construction of the urban project; preparation of business plan, with detailed technical, economical and finance assessment; formal announcement of the entrepreneurship; other activities that support the deployment phase;

b) Deployment: building of the infrastructures and facilities as:
   - basic infrastructure: basic structures, as electrical energy, water, sewer, telephony, wire and wireless connection, public transport, etc; areas to the installation of the companies;

- business infrastructures: facilities designated to the park 's management organization (Central Office of the STP management, with auditorium, rooms for meetings, training, etc), Enterprise Center, Companies Incubator, etc.;
- technological infrastructures: facilities designated to provide technological services, management and technological training and advice, intellectual property and technology transfer services, etc;
- social area: areas designated to social conviviality and personal services, as sport and leisure spots, gym academies, day care center, restaurants, coffee shops, etc; areas to service companies (gas station, bank agencies, mail posts, traveling agencies, etc.).

c) Operation: consolidation of the park with the installation of technology based companies; start the supply of technology services and the technology management of the park; maintenance of the infrastructures and facilities.

The operation phase includes a wide range of services that aims to promote the intensification of the relations between companies and researchers, which is generally promote by the park management organization.

3. Benchmark analysis

As Portugal and Spain have a large experience in setting parks, and considering that they have the closer context, among the European countries, from Brazil, there was made an analysis of the follow experiences: Tecnopuc (Porto Alegre/ Brazil), Sao Leopoldo Computer Science Pole from (São Leopoldo/Brazil), Sapiens Park (Brazil), Taguspark (Lisbon/ Portugal), Biocant Park (Coimbra/Portugal), Technology Park from Barcelona (Barcelona/Spain), Technology Park from Andalucia (Malaga/Spain), Cartuja 93 (Seville/ Spain), Bizkaia Technology Park (Bilbao/Spain), and Alava Technology Park (Alava/Spain).

It can be said that in most cases examined, especially international, in the planning stage the source of resources has public nature, whether coming from universities or the federal government, state, provincial (in case of Spanish parks) and municipal, directly or indirectly. The investment at this stage by enterprises has been found only in Taguspark, the financial institution Banco Comercial Portugues and Companhia Portuguesa de Radio Marconi; such investments, made in the phase of highest risk of the venture, seems to have been made more in terms of a political issue than in terms of a prospect of finance return to the venture.

In the deployment phase, the public funds were the major investors in international parks, because there were a large availability of such funds: in Cartuja 93, 100%, in Biocant, 73% (but it mention in this case the public investment allowed the venture obtain the other 27% of bank loans), and in Taguspark, in a smaller extent, but it should emphasized that private initiative, banks and businesses, according invested at this stage primarily because of the opportunity to obtain a land with significant discount.

In national parks studied, it appears at this stage a large participation of private universities, structuring the parks almost like extensions of the university; public resources appear in lower amount in national parks, except in Sapiens, which is planned by its administrators to receive a major public contribution. Private investment effectively done at this stage, in national cases, was limited to the experience of Tecnopuc, where the financing done by the companies allowed the construction of buildings without the input of resources by Universidade Catolica of Rio Grande do Sul (PUCRS).

During the operation phase, the parks that the university plays a important role, as Tecnopuc and San Leopoldo Pole of Computing, they receive investments made by the university, in function of the indirect benefits that the park generates in terms of image, attraction of students, scholarships, etc.

Only in two parks is possible to observe the absence of the public sector in financing their operation: Tecnopuc where PUCRS is responsible for funding this phase, for reasons already commented, and in Taguspark, which owns properties that allows it to fund the managing organization and the expansion of the park. In other ventures, public funding varies in intensity: an agreement with the SEBRAE / RS to maintain partially the activities of the Computer Science Pole incubator, and the possibility of applications for the European Community funds of Biocant; to a more significant dependence, as in the case of Sapiens, which depend on this nature of funding for the maintenance of public anchors, strategic for the development of enterprise, to a more radical level, where almost the entire operation is financed by public funds, such as Cartuja 93. It emphasized that the need for public funding for the operation of the parks can turn in a threat in the long term, because there is always a risk of changes in the political landscape that could undermine the venture.

As seen, public funding was used by all the parks studied, is a first moment for the investment planning, in a second moment to generate the inertial motion deployment of the park, or even participating in financing the operating of the venture.

According to Gower and Harris (1994, 11), "the task of achieving this [turn the park a desirable place] has consistently fallen to the public sector which effectively seeks to "pump prime" the development of science parks to induce private sector funding and investment at a later date".

So when structuring a complex venture as a SPT, it should be to seek conjunction with public entities willing to invest in studies necessary for designing and detailing the project, since hardly private initiative will be willing to invest in this type the project in its phase of highest risk.

It's to be emphasized that the private sector participated in the financing of enterprises, basically, through the deployment of its own buildings. Only in Taguspark can we observe private companies that invest in managing organization, but they also seem to have been attracted by the guaranteed benefit by such participation in the payment of lower values for the right to ownership of the land surface.

What is perceived is parks that have public input in the deployment of infrastructure, buildings or infrastructure technology that remained under the ownership of the park management organization, could finance its operation with low, or no need for, input of public resources. This fact becomes relevant because the technology park, to maintain their characteristics, needs a dedicated team which should not depend on the political intention to their continuity.
It's possible to verify in all the analyzed cases is that, besides presenting managing organizations, actors and differentiated structures, the finance of the implementation phases wasn't made only with public or private resources, but also through partnerships. Moreover, it was verified that the differences saw in the financing models can be attributed mainly, to five factors (FIGLIOLI, 2007):

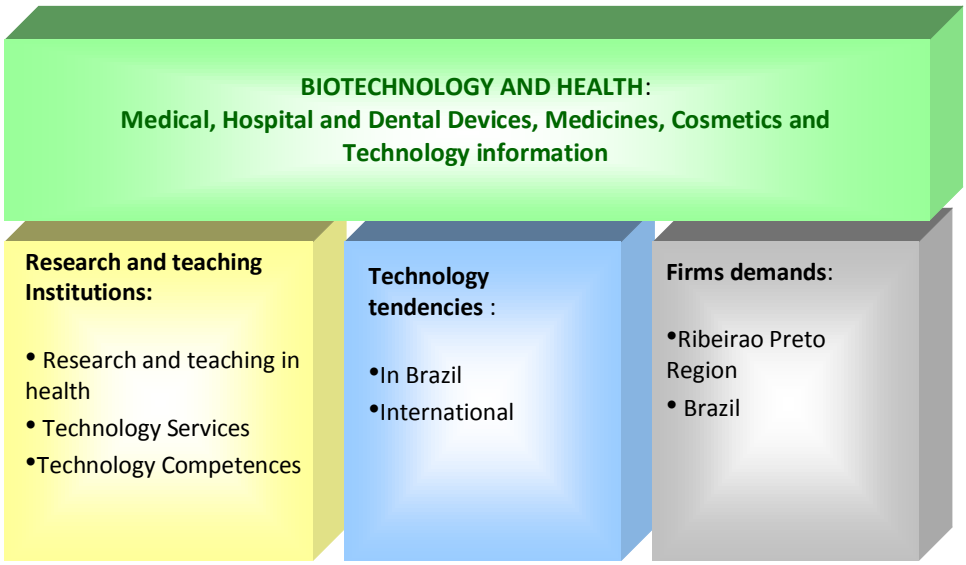
a) Participants of the park's management organization;
b) Legal model adopted by the park's management organization;
c) Park's management organization ownership of real state in the park;

d) Attraction of technology infra-structures and anchors enterprises;
e) Availability of public funds to technology and economic development promotion.

4. Ribeirao Preto's Technology Park

The enterprise intends to be an innovative habitat for Health and Biotechnology sectors, what is support by (figure 1):
a) Research and teaching institutions: the major institution in the region is Sao Paulo University, that is known as center of excellence in the health sector because of the quality of the researches, graduate and pos-graduate courses offered in this area, what assure critical mass to the region. The researches from this university have achieved relevant results in biotechnology research;
b) The technology tendencies, Brazilian and international, in health: that allows the structure of relevant technology services that attend the expectation of innovative firms;
c) Firms demands: the Ribeirao Preto's region has a relevant medical device industry and services concentration and many of then requires technology services to grow and intensify its competitiveness. Ribeirao Preto is a national reference in the health services sector, because of the several hospitals, wide doctor offices net, laboratories and the Ribeirao Preto Blood Center Foundation.

Figure 1- Ribeirao Preto's Technology Park focus areas



The enterprise aims to:

a) promote the interaction among university, research centers and firms, and the intensification of technology and knowledge transfer;
b) stimulate economic and technology development of the region, mainly by attracting innovative firms of the health and biotechnology areas;
c) strengthen the local industry of dental, medical and hospital articles and devices and the other industries related to the research areas of the university and research centers placed in Ribeirao Preto and region.

The projected area to the park installation is about 1,1 million square meters, of which 300 thousand are public areas from the University of Sao Paulo and the other 800 thousand are private area from just one farm.

There are a set of anchors (facilities that aims to attract firms to the park) planned to the installed:

a) Business anchors:
   i. a Park Multifunctional Core Building, where the park's management organization, offices of grants agencies and companies associations can be placed in;
   ii. a Technology Incubator, that already has a unit in the campus of Sao Paulo University; and
   iii. a Business Center, where companies that doesn't intend to build a individual structure in the park can be located.

b) Technology anchors:
   iv. a Technology Center compound by specialized scientists, engineers and technicians, and a set of laboratories equipped with all necessary resources such as mechanic and electronic devices for the development of projects of technological products and services. The presence of a Technological Centre in a STP can represent a differential to the attraction of technology-based companies, local economy development and employs generation;
   v. a FATEC – Technology College – that offer courses of Projects, Maintenance and Operation of Hospital/Medical equipments, Precision Mechanics, and Electronic Components, Process and Materials; and
   vi. a Biotechnology Documentation and Information Centre.

Beyond that, the laboratories of Sao Paulo University complement the technology services that will be available to the companies.

The park will have two different organizations that will promote the managing of the venture:

a) a Science and Technology Management (STM): responsible for intensify the relation between firms and researchers, help companies to get grants to technology research and development, promote the protection of intellectual property, offer services referent to technology transfer, among others;
b) a Real Estate Management (REM): the private area will be managed by the owner of the land; the firms that intend to place a unit in the private land must to fit the features defined by the STM.

It's import to point out that the University land will be managed by the university itself, and every company that intends to be located inside the university will need to attend the required process of the institution.

The first studies and the beginning of the deployment has been under the responsibility of FIPASE, Ribeirao Preto Health Advanced Pole Institute Foundation, which is the potential STM of the park.

4.1 Financing the implementation phases

To develop the planning phase, as happened in the majority of the parks studied, FIPASE received public resources, that came from the (a) municipality, (b) FAPESP (Sao Paulo State Research Funding Agency), through the Sao Paulo Technology System, and (c) FINEP, an federal institution that offers grants to research and development of projects.
The deployment of the anchors, as the Core Building Office, Technology Center and the Company Incubator, will be funded by grants of public resources, from Sao Paulo government and the municipality. The anchors were planning to be finance sustainable by its own operations.
The income of university surface area right of use will be received by the university, that will manage it itself, without the interference of the STM or the REM. The university is responsible for the installation of the basic infrastructure in its area.
As a player in the park project, even with the implementation of the park, the private area will remain private. The owner of the private is responsible for the installation of the basic infrastructure in its area too.
According to ROWE (2005) "although capitol for property is the most visible cost, there is another important component of cost - the management of the Science Park".

In our case, the evaluation of the land, generate by the facilities installed with public resources, will be partially designated, by means of a contract, to support the activities of the STM.
The extra resources of projects developed by the STM will support actions that can improve the technological competitiveness of the resident companies, as courses, events and the upgrading of the technology services available.

5. Final considerations

As a complex venture, the STPs are complex to finance, mainly in developing countries.
According Gower and Harris (1994, p.8) "while the predominant objectives of the concept can be broadly accepted as falling within the perhaps rather more altruistic aims of "technology transfer", business creation and hence the generation of employment, there remains the fact that science parks are property-based initiatives and, thus must fulfill certain property performance criteria to survive and, in the long run, prove successful".
Our aim in this paper was to present, taken as benchmark experiences of brazilian, protuguese and Spanish parks, a strategy to finance the implementation of Ribeirao Preto Technology Park, that involves public and private areas and players.
The Ribeirao Preto Technology Park find out that the strategy to its implementation is to leave the project players perform the kind of investment, and activities, that will bring gains to all of them:
a) The municipality and State government promote the initial animation of the park;
b) The University intensifies its iteration with firms, allowing them to be installed inside its area;
c) The private investor, owner of the land, manage, sell and maintain the private real state part of the project.
In this strategy, the STM, extremely import in keeping the mission and the objectives of the park won't depend just on public resources, which makes it less vulnerable to politics interference.

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