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Strong Value-added services

Attractions of Technology Parks in developing countries

1. Introduction

Technology parks have come nowadays to be recognized almost universally as the quintessential element of technological and economic development. As IASP puts it in its definition of parks, they are means of wealth generation. Recent studies indicate increasing attention and resources devoted by local and national governments to the development of STPs. This claim is borne out by the rather steep rise in new park developments during the '60s and '70s estimated to be around 2% to an annual rate of 18% in the year 2000. The strategies adopted by STPs for their enhancement varies with the socio-economic situation in which they operate. The same is true with their executive and procedural methodologies employed in the advancement of their activities. The most important strategies include:

- Real-estate management of STPs;
- Creation of strong value-adding support services;
- Procurement and provision of special services and financial supports for tenant companies;
- Creation of a working atmosphere based on lavish and strong installations and facilities; and
- Development of an international marketing system to internationalize tenant companies.

Within the framework of a real-estate management approach, the development of the park takes place according to and in line with a predefined master plan as the target goal advanced into full-scale operation as the required initial capital is realized and as the demand by tenants increases. According to this approach, the infrastructural development of the park in terms of its installations and urban facilities is the prerequisite to the establishment of the park. Other components such as company buildings come into existence once the park becomes operational and tenants are admitted. Thus, the park management will have to define general guidelines and requirements for admission of potential tenants along with civil works requirements. These are then used to identify or screen applicants to settle in the park. The applicants may include technology-based companies in addition to service companies expected to serve the former group. The entailments for park management in this model will be little or no involvement in real construction work within the park after an initial stage is completed, vital attention paid to larger and corporate companies, and a simple real-estate business by the park manager. Many STPs in industrialized countries have basically adopted this model.

The second approach, or strategy, involves the creation of a set of strong value-adding support services as the requirement by the park management to respond adequately to the service needs and demands of the tenants. This will be typically identified as the key to the sustainable development of the park and its tenants. Although providing building space within the park is a value-added service that cannot be neglected, especially given the high appreciation rate in developing countries, it should not be regarded as a major drive for the management but only one of a series of plans and strategies that includes provisions for the more basic support services that are lacking in the world outside the park for fledgling knowledge-based companies.

In adopting the third strategy, a park normally commits itself to the physical development of the park. This is in sharp contrast to the first strategy above in that here the management is seriously and primarily involved in the construction of buildings and erection of installations that will be leased to tenants. The serious drawback with this model is the heavy capital investment required prior to the commissioning of the park.

Venture capitalists and financial resources are usually challenges against park managers who embark on acquisition of financial support for their tenants. There are few parks, however, which have formed their mission around attracting investors, angels, and venture capitalists inside the parks. This strategy is rarely ever used as an independent or the sole strategy to run a park and in cases where it is, it is usually to help the growth of SMEs.

The last strategy depends on international marketing for tenant companies. Here, the management dedicates efforts and resources to internationalizing products, services, or brands of the tenant companies through competent marketing consultants.

The above strategies are not island strategies with distinct boundaries. Whatever the basic strategy, any successful park will have to adopt some or all of the other strategies in one form or another in conjunction with the mainstream strategy. However, our discussion in this paper revolves around the priority list and prioritization of strategies. The valid question every park manager should ask him/herself at initial stages of park development is which strategy to select as the pivotal one. To answer this question, s/he must be able to identify and characterize the socio-economic situation in which the park is to evolve and operate.

This paper will try to examine the compatibility of each of these strategic models of park development with the socio-economic conditions in a developing country like Iran. The compatible model can be later replicated in similar situations with minor adaptations. As the model evolved through the establishment of Sheikh Bahai Technology Park seems to provide a basis for testing the viability of the thesis in this paper, the experience in developing this park will also be reviewed.

2. The socio-economic structure

Most developing nations are run by central governments which have omniscient knowledge and power over almost every thing. This includes the economic infrastructure and the major industries. The private sector is non-existent save in minor industries which are typically insignificant in the total economy. Entrepreneurs fail to develop ideas into mature businesses as they fail to find almost everything essential: business and tax regulations, competitive domestic markets, fair and easy flow of information, the assortment of consultations required, and financial resources. The public sector lacks the desire and will to help the private sector, let alone sharing with it.

Universities are equally problematic in these countries. They normally educate the youths at internationally acceptable standards but with no incentive or motivation for research, resulting in a vicious circle of increasing the consuming population in a consumer society. Scientific production leads to economic productivity and industrial production. This does not mean that individual skills, talents, or knowledge are missing in any way. University graduates usually find good positions abroad in industrialized countries in the so-called process of brain drain. The brain recirculation never occurs in return, or at least has not yet taken place. Thus, technology transfer occurs in a fruitful way neither in university-industry transactions nor in internationally with academic and technology development centers around the world. Import and installation of turn-key industry is the plague in most developing countries.

One socio-economic ailment in developing countries like Iran is the attraction of investments to land and landed property

for the great appreciation rate they have. As the private sector does not and can not play a vital and beneficial role in industrial development, it is naturally attracted toward non-productive but profit-making investments. As a rule, this must be the case with societies moving towards industrialization.

The special situation of land and landed property must be seen in any park development enterprise. It has its own adverse effects and we will take up the issue later.

3. Which strategy or model is compatible?

3.1. The real-estate model

Although concentration on land value and appreciation may seem to be a tantalizing attraction for companies to settle in technology parks, and thus strongly suggest a real-estate model to be adopted, the following negative impacts must be given due consideration. The first will be the shift from admission of knowledge-based companies in quest of technological development and commercializing scientific findings to encroachment of trading and investment companies after easy benefits. This might even plague knowledge-based companies such that they gradually change their activities to real-estate deals. This will not only increase the number of such businesses in the local economy but deviate parks from performing their mission and from attaining their objectives. Apart from this major drawback, knowledge-based companies in their true sense cannot be attracted to parks for the sole reason of value-added commodities such as landed property. They typically need services that help their real business to grow. Lack of such services in parks is tantamount to lack of interest in parks on the part of companies. These considerations should suffice us to claim that a real-estate management model cannot and should not meet the basic requirements for the establishment of STPs and, thus, must be refuted in favor of a different model.

3.2. The financial support model

Economies spiced with little or no private sector typically lack venture capitalists. Investments, therefore, can only be made through high interest loans with considerable collaterals beyond the means of SMEs. There are few, if ever, private sector investors who would be willing to invest on a technological idea. Moreover, private companies in these economies are usually based on family relations which try to keep their relations within a closed circle unless external conditions force them to require loans from external sources. In the absence of drastic changes in the socio-economic structures and relations, the model in question will not be expected to render any satisfactory results. The only outcome would be government financial supports in the form of seed money, which has already been and should be exploited as ancillary service in the creation of incubation programs.

3.3. The facilities model

This model heavily draws upon large capital costs to build the park as a unit whole. Shortages of funds or delayed allotments slow down the development of the park and may endanger the success of the park. In countries like Iran where there are numerous capital-intensive projects and schemes on the national agenda and as there are few chances for foreign investment, the model seems to be hopeless.

3.4. The international marketing model

More often than not, parks may boast of their capabilities in internationalizing tenant companies. To realize such aspirations requires competent international marketing consultants, who are fewer than satisfactory in developing countries. Moreover, greater risks are associated with internationalization of young companies mainly due to the global competitiveness requirements, undefined regulatory bases, and strong rivals in the international scene. STPs in developing countries cannot base their development schemes on this shaky foundation as the chances are flimsy. However, they can only promote such schemes as ancillary support services which are, indeed, quintessential as well.

3.5. Strong value-adding service model

Under the socio-economic scenario in developing countries described above, this model or strategy for park development heavily depends on the type and level of services to be offered. Certain services such as technical labs considerably increase the overall costs of support services, thus reducing their feasibility rate. However, the vast range of services that can be developed and offered and the possibility for sharing a large number of services among peer organizations in addition to the possibilities for creating tele-service types (outreach services) are among the advantages that make this option feasible under the particular conditions discussed in this paper. STPs in developing countries can start from whatever they have handy to develop these services from their own financial, software, and hardware assets plus what they can get from sharing and networking with other organizations. Given the fact that most STPs in developing countries use public money and rely on public support and that STP management teams are normally civil servants, it seems that the model is a viable one as these scattered resources can be gathered under one umbrella within the STPs.

Evidently, the orientation in this paper is favoring the last model described above. In the sections below, we will develop a model for the formation of the support services. We will finally conclude with a reference to a particular experience by the authors in establishing a technology park called Sheikh Bahai Technology Park at ISTT.

4. How to go about it

As elsewhere in human experiences, there is no silver bullet in park development. However, restricting the conditions under which a park is to operate, or more precisely, identifying the limiting factors, will shed light on what road(s) to be taken. The considerations so far not only refute a real-estate model of park management in developing countries in favor of models which incorporate strong value-added support service systems, but also capture in a most revealing way the challenges encountered in doing so. The first challenge lies in whether the model is going to be feasible at all.

Suffice it to say that in the absence of support services under the conditions characterizing a developing country, there remains no justification for the establishment of a park. If companies are to suffer from poor consultation services, if they continue to fail to gain access to technical labs and academic support, if they are to be deprived of coaching and mentoring services, if the companies are not backed up by legal advice, not supported by regulatory provisions, and if ..., then no fun no school. The fact is that these companies do not exist outside the four walls of STPs in developing countries simply because they do not find these same services at whatever price they might be willing to pay. Failing to develop and offer these services fails them in one crucial respect and fails STPs in achieving their defined objectives of technological and economic development. One must be cautious not to confuse mere profitability with overall, national commitments that must be fulfilled with public money. Failure to observe these basic observations is simply missing the point and the result is the predominance of the real-estate management of the park facilities. The relationship between the tenants and the park boils down to the lessee and the lessor relation.

Having said that, the management is no longer responsible merely for the erection of the physical entity as a park; i.e., the buildings and equipment plus procedures and organizational set up. The park is in fact considered a success when SMEs can be nurtured on an array of services provided by the park or entities within the park to make it attractive to client entrepreneurs.

We begin then with an evaluation of the tenants and their potential needs. A useful distinction must be made at this junction between what tenants need and what they demand. It is hard for tenant companies to clearly distinguish between what solves their problems and what seems to be the proper backup at every moment. A training course may seem as absurd to a tenant as it is meaningful and essential to the park manager. The difference lies in what the park managers foresees that the tenant cannot. Thus, it is essential to enumerate a list of the requirements for companies growing under the peculiar conditions of a developing country. Moreover, priority weights must be assigned to each service to allow for availability of services at the time they are needed and the shortages of resources within the park. Adequate planning and management can prevent many failures to respond to client needs and demands.

The companies must also be trained to grow self-sufficiently. They cannot infinitely depend for their existence and sustenance on too much care by the park or too much of services. A reasonable pricing system must be developed in terms of escalating prices as the companies mature and the stage at which each particular service can be offered. Privatization of

support service systems by private companies supervised and monitored by park management is also a desirable measure that must be considered in the course of time.

The point made earlier regarding gaining financial support for tenants as a limiting factor for the success of parks in developing countries is a real consideration. However, as an ancillary strategy, it must be adopted without reservation as most companies fail to possess the collaterals or assets required for bank loans. STPs rising from public money are in a position to facilitate financial support as one of their very dear support services to their tenants. Ties within the government and their appraisal of the business idea as a criterion for the admission of the companies in the first place will be enough guarantee that the company will be able to perform its financial commitments ensuing from loans.

The above exemplary services and planning for them should lead us to a thorough understanding of what a service-based model means and how it should be developed. The next stage is that of implementation whose initiation is defined as the time it takes for the park to reduce its financial contributions to zero. However, before the ground level is attained, losses for service providing are to be compensated for from the park resources. In other words, the park will solely start a support service from its internal funds but at a later stage, the service is to become self-sustaining subject to demand. When a service fails to gain any demand, it should be discontinued as it is uneconomical in the long run.

5. Sheikh-bahai Technology Park

The model proposed in this paper has been evolving in the course of establishing a general technology park at ISTT, called Shiekh-Bahai Technology Park. The socio-economic conditions in Iran and the rather low level of technological development with poor private sectors which normally takes the least interest in establishing knowledge-based companies were considered and the model has been witnessing adaptations at every twist and turn of its development to suit the conditions or client demands.

The park is one of three technology parks established within the framework of ISTT's phase I development over an area of 80 hectares. ISTT is located in Isfahan Province, central Iran over an area of 520 hectares with great academic and industrial potentials in the province. The establishment of the park started in 2002 when the first incubator was established at ISTT. Currently, a number of multi-tenant buildings exist in the park and land is being given on lease or sold out to companies to build their own facilities. The park occupies an area of 30 hectares located and hosts over 80 companies. A strong support service system is developed for the park. Beautiful architectural design and equipped office, workshop, and lab spaces; office and administrative services, including typing, secretarial services, Xerox, personnel management; consultation services, including management, marketing, legal, and technical consultation services; technical services, including lab and workshop services; information services, including the Internet and library services are among the most fundamental support services already in place.

The park is a promising experience and the level of activity is scaling up. The attractions and the promised synergy among companies has attracted six of the most powerful companies in the region to join the park. What's more, over ten applications from large companies have been received. An interesting observation is the number of laboratories owned by government departments and industries which have applied to establish their own service facilities within the park. All these indicate the success of the model adopted for the park.

Conclusion

Many environments can be found in which STPs operate. However, the mission of STPs in helping technological development, local economic development, and wealth generation is a priority in any model developed for their management. Doubtless, developing countries require their own models given their special socio-economic conditions. From among the various models examined in this paper, the strong value-added support service-based model of park development and management seems to be better suited to the peculiar conditions in countries like Iran. The initial experience at Sheikh-Bahai Technology park seems to confirm this claim. Caution must be taken not to push the analogy too far and park managers must be ready to respond to exigencies of their time and place.

REFERENCES

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