Small communities' community purchasing – case science park in Thailand

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Abstract

Various studies propose that companies in science parks seldom cooperate although the commercial cooperation among companies has been emphasized being one of the main outcomes. The communities can commercially cooperate to develop their suppliers to bring sustainable benefits to their community. Several studies propose that small communities enhance the cooperation between the companies. Science parks form small communities and, therefore, it was interesting to gain further knowledge why the science parks did not generate business networks between the tenants as companies in small communities are reported having. In this study, I focused on more details why the cooperation did not occur and why the joint development efforts missed. I interviewed fourteen companies in a science park next to Bangkok in Thailand. The companies were selected based on the discussions between the companies, science park organization and this researcher. The companies' backgrounds varied from being an affiliation of a multinational company located abroad or in Thailand to being located in the science as a Thai start-up. From those fourteen companies three, companies explained having cooperation with other companies in that science park. I found out several categories why the cooperation did not take place. As many of the companies emphasized the reason not being business related I further investigated among the companies how they preferred to be business related. One of the recommendations of this study is to select companies in the science park as follows: (1) have mutual interests being either part of the same supply chain, (2) focusing on mutual technologies, (3) employing the same technology platforms in their product development , or (4) sharing common vision and long term intent. If the companies in a science park do not have these qualities, the focus of the science park organization should study to find to gain these qualities between the companies.

Introduction

Companies' cooperation in purchasing in small communities is relatively scantly discussed. Some studies exist on consortium purchasing but those articles do not specifically address the purchasing in a community. The topic is essential to understand how companies commit jointly to develop the business together with their suppliers. The survival of the companies and the community can depend on how the companies collaborate in purchasing to gain critical know-how or technology effectively they need from their suppliers. Therefore, it is important to study how the community purchasing works.

Science parks form small communities, in which companies are expected to cooperate with other tenants and to build commercial relationships. However, it seems that the cooperation among the tenants in science parks represent rather an exception than a rule. The tenants in a science park seldom form any kind of supply chains that help deliver a solution to their customers. According to many studies, it is highlighted the benefits of the cooperation of the tenants in a science park, however, also according to as many studies the cooperation is reported not to happen (Salvador et al., 2013).

In this study, we focused on Thai Science Park located next to Bangkok metropolitan area. The Thai Science Park is located closely to the many universities and research institutes. In this study, I took a close look on the reasons why there is no cooperation although there is physical proximity of the companies in geographically limited area.

In this study, I employed case study methodology. I interviewed totally 15 companies in 2014 and 2015.

Literature study

Anderson et al. (2007) describe how geographically a small market advances the social interactions inside a firm, between firms, and in a broader social context. They refer to the evolution of a small Scottish town named Aberdeen, which is known nowadays as the 'Oil Capital of Europe'. O'Donnell et al. (2002) found that small companies exchange information relating to their customers' behaviour, sharing overload, supplying resources, and assisting each other although they are in competition. However, there seems to be a dearth of studies on how these companies interact and share information on purchasing. Nonetheless, profound cooperation in the Scottish town resembles what is written about partnerships with open communication and collaboration.

Ruokolainen (2014) divides the community purchasing behaviour in four classes based on the vertical and horizontal integration that can be presented in a 2x2 -matrix. The community purchasing differs from co-operative (Gobbi & Husan, 2013) or enterprise purchasing (Keuogh, 1993) by seldom being centrally formally coordinated: it is based group tacit knowledge that develops in a community in a long run. DeLeuze (1988) describes this kind of cooperation as rhizome cooperation that is not centrally led or without having a control centre. The actors of a community do not own a centralized power structure and they create new connections dynamically.

Purchasing in a community can vary drastically in its various industries. In the same limited area, several variations of the community purchasing can exist. For example, Phuket's tourism industry's community purchasing was well developed with active sharing information and long term commitments to suppliers without formal agreements

(Ruokolainen, 2014). On the other hand, in Phuket it obtained an industry that did not see any benefits from cooperation in purchasing or cooperation generally as they did not share the same technologies. In Ruokolainen's (2014) paper, a 2x2-matrix corner describes that that the companies in a community do not integrate into either dimension. They execute their purchasing solely in a community with an arms-length approach to their suppliers. In enterprise purchasing Keuogh (1993) called this mode of purchasing as a factory only or a clerical purchasing. The aim is to just satisfy the need for the material in the production.

In order to understand this part of the phenomena further it was decided to investigate it in a science park. Science parks provide an excited example of the small community with close cooperation with nearby universities, other research institutes and having tenants from various industries. The UK Science Park association defines science parks as follows (Massey et al., 1992, p. 14):

- having formal operational links with a university;

- encourage the on-site formation and growth of knowledge based businesses; and

- manage the transfer and of technology and business skill to the on-site businesses.

Phillips and Yeung (2003) write that some of the organizations prefer less limited definition for science parks for example by accommodating wholly R&D-oriented organizations. Guy (1996) writes that the objective of science parks is to provide infrastructure that assists technically, administratively and logistically start-ups to gain a foot-hold in the market. Science parks are artificially created communities and in many times supported with governmental incentives including subsidies space, tax advantage, entrepreneurship trainings and closeness to laboratories and their devices.

Extant studies argue that high tech firms with similar characteristics and working in the same value chain create strong alliances and completing each other in science parks. It is argued that companies in science parks are more likely having a relationship with the close universities, but also by other companies in a science park. Other scholars write that technology firms hardly own any synergies with universities and other tenants in science parks and mainly limited to some transaction and social events. They continue that geographical proximity is not the driving force science parks (Vedovello, 1997).

In a science park, the proximity is proposed to play a central role as in small communities, and small communities are known enhancing innovative behaviour (Andersson et al., 2007; Markusen, 1996). The proximity is a multidimensional element as it can consist of social, cognitive, institutional and geographical proximities (Salvador et al., 2012). Ruokolainen (2014) proposes that the long term cooperation enhances community purchasing as it matures social, cognitive and institutional proximities. It can be proposed that non-geographical proximities can be related to group tacit knowledge and maturity level of it (Erden et al., 2008).

Methodology

In this study I employed case study research methodology (Yin, 1994; Eisenhardt, 1988). I employed mainly Eisenhardt's (1988) "within the case and across the case approach". I interviewed totally 15 companies and some of the companies were visited several times 2014 and 2015.

First the write-ups from two initial cases were written as it is advised by Eisenhardt (1988). These two initial cases helped with the start of the coding of the observations with the rest of 13 companies. The data was further coded based on the notes done during the interviews. In some of the cases, the companies were reinterviewed to further clarify the results of the earlier interviews. Semi structured interview protocol was used: some questions were repaired before the meetings, but mostly I let the entrepreneurs to tell their stories.

Most of the interviews were conducted in Thai Science Park at the office of that company. The companies were selected to get a mixture of large companies' units, start-ups, Thai and foreign companies. Some of the companies left already Science Park and, therefore, we met the companies in their premises in the Bangkok capital area.

Data

Thai Science Park

Thai Science Park was established 2002 under Minister of Science and Technology. It consists of four national research centres namely MTEC, NANOTEC, BIOTEC and NECTEC. MTEC concentrates on metal and material sciences and NECTEC on the electronic and computing sciences. Thai Science Park offers attractive tax benefits for local and foreign companies planned to establish their subsidiaries into Thai Science Park. Thai Science Park is located next to Thamassat University which is one of the major universities in Thailand. Asian Institute of Technology is also located nearby. More than 60 companies are located in Thai Science Park with various backgrounds: being a Thai company, coming overseas and various sizes from start-ups to well-established companies' subsidiaries.

Descriptive data of the sample base

Totally 15 companies from Thai Science Park were interviewed. Table 1 describes the descriptive statistics of interviewed companies. Table 1 shows that there was a mixture of different kinds of companies starting from start-ups to well-established foreign companies.

Table 1: Descriptive data of the companies interviewed

2014/2015	Start-Up	Subsidiary or department	Origin in TSP	Foreign	Thai	Technology area
Comp1		X			X	Cosmetics
Comp2	X				X	Nano
Comp3		X	X		X	Enzymes
Comp4				X		Food
Comp5					X	Rubber
Comp6	X		X			Medical
Comp7	X				X	Mechatro
Comp8	X		X		X	Position
Comp9		X			X	Food
Comp10		X			X	Paper
Comp11		X	X			Mechanics
Comp12		X		X		Rubber
Comp13		X		X		Tooling

Comp14		X		X		Food
Comp15		X		X		Standard.

Case stories

Next, the two company cases' write-ups are introduced. The write-ups describe the history and thoughts of these two entrepreneurs. The phenomena that were observed from these two cases were the starting point to investigate the topic further in the 13 other company cases in Thai Science Park.

Company Case Innophene

The company, Innophene, was established in 2011 to investigate conductive ink, which originally was developed by in NSTDA research institute. The conductive ink is based on the use of graphene material, which is a Nano particle. The company got a large amount of capital injection to start their work on the top of the technology came from NSTDA. In 2011, the company had about 8 people. The company owner felt at the time of the first interview that he was strongly supported by Thai Science Park as the initial technology came from there, and the company was able to use NSTDA's facilities in Thai Science Park. However, he felt that his business was not related to any of the other companies in Thai Science Park. He expressed that some other companies should employ the company's conductive ink to develop new innovative products. He decided also to produce some conductive ink products by himself. His approach was similar with the thought having a cluster of companies inside in the park to learn and to jointly develop end products and new ideas. He explained that the big companies from his point of view were too rigid and bureaucratic. He explained also the government organization was inflexible in its budget planning. In 2013, Innophene as it run out of the capital started to minimize its operations. The owner of the company in 2015 told that he had problems with the product itself as some of the formula's components didn't exist anymore in the market and they needed to redevelop the formula.

Company Case Flexoresearch

The company, Flexoresearch, was established 2003 and it moved in Thai Science Park 2006 right after it was established. The first product was an enzyme for recycling laminated paper. The enzyme was the first of its kind and rather innovative and it got plenty of interest also from overseas. The company has several products nowadays including making protein from insects and asphalt mixed with rubber. The company is now active in incubating Thai entrepreneurs and it has steady incomes from licenses. The owner explained that he got a lot of help from Thai Science Park with the form of education to marketing and book keeping. He explained that the use of the facilities of Thai Science Park including NSTDA's laboratories was a great benefit for starting his business. He explained that in technology wise he was not getting any help, as there was not that kind of knowledge in Thai Science Park that could have helped him. The explained that his company was not business related with any other companies in Thai Science Park. He developed egg trays from recycled paper and try to offer them to one of the companies working in the food sector in Thai Science Park in 2014. However, in 2015 he worked directly with egg farmers and insect farmers to whom he sells his egg trays.

Coding and categorizing

The first plan was to create a map of the relationship between companies. However, it turned out soon the map would very be limited due to the fact only in a few cases there were cooperation between tenants. It was clear that there were a lot of activities on going between NSTDA research institute and tenants at various levels. Thai Science Park was also active in supporting the technology start-ups with marketing, book-keeping and searching for finance and educating them. As there were only a very limited number of cooperation cases between the tenants, the focus was shifted to understand why there were no co-operations. From tenants, it was asked the reasons. The given reasons are coded and classified in Table 2.

Table 2: No cooperation reasons among the tenants in Thai Science Park

No cooperation reason	**Ground**	**Number of answers**
No intent	Use all benefits only	1
No interest	No one else has knowledge	1
No or scare knowledge of tenants	Not been informed	2
Maximizing profit	Building business case	1
Not allowed	Everything controlled by the head office	2
With same wavelength only	Big companies inflexible	1
No time	Need to mind my own business only	3
Not business related	No direct or short term interest	8

Especially the foreign companies controlled their subsidiaries tightly in Thai Science Park not leaving space to co-operate with local or other companies. Some of the companies were not very well aware of the other companies' activities in Thai Science Park. They were usually surprised about the information on the companies working in the same technology sector as they did. In some of the cases, the large companies focus was only to gain tax and business benefits that Thai Science Park gave to the companies in the park. It might that these tax based benefits were the driving force for many of the large companies to join Thai Science Park. Some of the small companies complained about the difficulties to deal with large companies. In several cases, the companies said that are not business related with other tenants. I decided to further open the topic and I asked what they meant by that. The companies had various understanding on the meaning of the 'business related'. Table 3 describes the categories that the companies gave.

Table 3: Meaning of business related.

Business related means	**Ground**	**Source**
Sales driven	More sales	Comp3
Product development driven	R&D support	CompN
Cluster driven	Suppliers involved	Comp2
Opportunities driven	Creating partnering for future business	Comp9
Explorative driven	Testing new ideas actively and learn	Comp1
High level commitment and trust driven	Share long term vision	Comp13

Platform driven	New platforms for products	Comp9
Technology driven	Common core technologies	Comp10
Business case driven	Minimize expenses and maximize benefits	Comp4

In the technology driven case in Comp10 a researcher told that she had high hopes with a new tenant especially because both had the same basic component in their products. However, the cooperation never occurred, as they were busy with their own tasks. One of the foreign companies explained that the interest was to create high-level commitment and share long-term vision with Thai companies and government representatives prior to the cooperation. One of the small companies explained that they were keen on working with other companies to create to test and learn together. However, this did not occur yet. One large Thai company, case company Comp9 explained that they were ready to study various opportunities with other companies. Actually, this company was one of those rare ones having cooperation with some other tenants in Thai Science Park.

Discussion and Conclusions

This study describes some of the reasons why the cooperation, although the proximity of the companies in Thai Science Park, does not occur in small communities that could have led to cooperation in purchasing from each other. The proximity led to purchasing from NSTDA research institute as individual companies. From NSTDA's perspective, there might be less interest to generate co-operation between tenants, although it could leave more focused technology development in the new technologies. The same core technologies could be used more extensively in various product or product development cases. One can hypnotize that without the NSTDA's active role in this science park the companies could have learnt more from each other than from NSTDA. However, Thai Science Park would have existed hardly without NSTDA.

The topic can be also discussed from the perspective of the various proximities. The geographical proximity in Thai Science Park is well presented as all the tenants are located in the same campus next to NSDTA, Asian Institute of Technology and Thammasat University. Institutional proximity refers how the companies share the same rules, cultural habits and values. Although Thai Science Park was governed by a semi-governmental unit and the companies there were ruled with the same principles, it looks like the fact that the companies did not share the values of the science park as they didn't want to pull the same rope together to develop their businesses jointly. As many of the companies regarded not being interest in cooperation with each other, the social proximity among the tenants was pretty low, although Thai Science Park arranged various events and activities to let tenants to learn to know each other. Cognitive proximity refers to what extent the companies can learn from each other: sharing the same knowledge base and expertise that can learn from each other. It may so that the largest gap was in cognitive proximity: companies highlighted in many cases that they were not business related. Learning, the same cognitive base, also was pretty low. However, social and cognitive proximities may increase in time being as the tenants may learn to know each other better.

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