

Collaborative Strategy Development between Chanthaburi Education Institutions and Chanthaburi Gems and Jewelry Center

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Abstract: *This qualitative study aimed at exploring the collaborative strategy development between Chanthaburi educational institutions and Chanthaburi gems and jewelry center. The research questions concerned characteristics of gems business at Chanthaburi, requirements for educational institutions collaboration, and a collaboration strategy model. The research interviewed 16 participants who were representative from educational institutions in the Eastern region, Gems industry, and government sectors in Chanthaburi province. The findings were that gems and jewelry at Chanthaburi was facing shortage of skill worker, lacking of modern technology, lacking of marketing knowledge, lacking of right attitude, lacking of regulation support and facing problem of graduate migration, and lacking of serious collaboration. The most important step for the collaboration strategy was preparation of human resource who has knowledge, being skillful in gems and jewelry craftsmanship, being designer, being self-trader, and being new business entrepreneur and business successor. The educational institutes in the region needed to train their students to have skill that meet industry requirements, to motivate local youth to attend the gems and jewelry educational program at their school to resolve graduates migration, instilling good attitude to their graduates, and transferring knowledge and technology to the industrial parties. The collaboration strategy model to build up gems business center or intermediary factory needed government support in many ways such as establishing a clear national policy, providing fund, tax exemption and making the gems and jewelry business a tourist destination. In conclusion, this research study provides information of collaborative strategy development to enhance Chanthaburi gems and jewelry business center capacity. The collaboration strategy model offers the business advantage for both the local and the nation. It suggests a new practice for educational institution to act as the leader in the collaboration.*

Keywords: Gems and jewelry, collaboration of educational institutions in the eastern region, Gems and jewelry center, Gems at Chanthaburi

Introduction

Thailand is one of ASEAN countries within AEC. The gems and jewelry business is becoming more challenging when ASEAN Economic Communities (AEC) is in operation in the region for the international and local competition. Thailand's jewelry segment has traditionally been a major export revenue earner and ranked third in terms of industry export value and comprised over 5% of Thailand's gross exports. (GIT trade review, 2016). According to the Gems and Jewelry Institute of Thailand, the export value of gems and jewelry products increased 29.60 percent from USD 10,993.35 million in 2015 to USD 14,247.60 million in 2016. (GIT trade review, 2016). The Thai government remains a strong partner of the gems and jewelry industry. Thai government aims to stimulate continued growth and innovation. To promote Thailand as an international gems and jewelry trading center, the Thai government has issued new legislation. Ministry of Commerce, through the Department of International Trade Promotion (DITP), is driving Thailand towards becoming the world hub of gems and jewelry industry. In line with the government's strategic roadmap. (National Industrial Development Master Plan 2012-2031) The world's largest traditional center of the colored stone industry

especially deep red rubies which have been known as "Tab Tim Siam" or "Siamese Rubies come from Chanthaburi province. Chanthaburi's gems trade dates back centuries and is still the main center of gems trading in Thailand as well as in the Southeast Asia. At present, the business are facing shortage of raw materials, lack of quantity of gems and jewelry to meet the current demand as well as skilled labor.

In term of opportunity, the government has set up national and community policy to support the local gems business, continuously broaden the gems market on the international basis, and also established the gems market clusters in many places including Chanthaburi province. Regarding this, the educational institutions have engaged in supporting the business through developing the skills and knowledge of the local people and entrepreneurs through training and producing qualified graduates in the field of gems and jewelry in order to conserve and develop the local wisdom. Since Educational institutes are now expected to be pro-active in engaging in activities that make significant contributions to regional development (OECD, 2010b). Therefore, the collaboration between local educational institutes and the private sectors need implantation. Chanthaburi's four educational institutes, the main authority in response to the provincial and the national policies are faculty of Gems at Burapha University, Faculty of Gems at Rajabhat Rambhaibarni University, Chanthaburi Technical College and Chanthaburi Poly Technique.

Literature Review

The collaboration to reach the Gems center establishment in Chanthaburi policy is a must. Specifically the collaboration with the educational institute since collaborative learning takes place when students work together to "achieve shared learning goals" (Barkley, Cross & Major, 2005, p.4). The gems human resource in Chanthaburi needs to be a competent professional. The effective professionals require combination of functioning and relevant theoretical knowledge, skills, workforce development via training (Biggs; 2003, Tallantyre; 2008). Collaborations could take from internships, technology transferring, publications of research results, joint industry projects and research consultancies (Gulbrandsen and Slipersæter, 2007, Markman et al., 2008, Perkmann and Walsh, 2009, Nilsson et al., 2010)

In collaboration with government, industry and community leaders, educational institutes – have the potentials to being a vital part of domestic growth and development (Bergman, 2014) Recently, collaboration improvement in gems and jewelry business via transferring knowledge and skills related to gemstones were success in China (Bao, Wei and Chen, 2015; Lucas, Chapin, Lin and Jia, 2015). Many leading universities and art academies have formed their own jewelry design and manufacturing departments to serve an expanding market. Some also stated that the rapid increasing in jewelry and jewelry design for intermediate staff, and these staff is not trained sufficiently (Onder, 2012).

The purposes of the study

This research was aimed to support and develop Chanthaburi province business for better competition global markets in the future via collaboration of educational institutions, private party, and government to cover the whole of the industry and set up Gems and Jewelry Model Center. With the above purpose, the researcher has set three research objectives as follows:

1. To explore the characteristics and the needs of gems and jewelry business in Chanthaburi province.

2. To explore the contributions of Chanthaburi Educational Institutions to gems and jewelry business center development.

3. To develop a model for Chanthaburi Gems City.

The researcher has posted the following four research questions: 1. what are the characteristics of gems and jewelry business in Chanthaburi. 2. what are the needs of gems and jewelry business activity of Chanthaburi to get from Chanthaburi Education Institutions. 3. how can the four educational institutions namely; Faculty of Gems Burapha University, Faculty of Gems Rajabhat Rambhaibarni University, Chanthaburi Technical College and Chanthaburi Polytechnic College contribute to Chanthaburi gems and jewelry center development, and 4. how does the Chanthaburi Gems City Model look like.

Research Method

A qualitative research method was used in this study. The research paradigm for the study was social construction. The tool for the qualitative study was conducted utilizing in-depth interview. The participants for these studied were located in Chanthaburi province from three sectors: government sector, gem and jewelry business sector and higher education institution sector. Most of participants have work experience over 20 years. The researcher has collected the data by an in-dept interview with 16 participants. The interview questions involved characteristics of the gems business in Chanthaburi, the collaborative requirements from educational institutions, the collaboration strategy model. The interview data then were managed and analyzed qualitatively, through coding categorizing and theming to answer the research questions.

Data Analysis

The data analysis was undertaken by a manual coding technique and transcribed to analyzed using computer software ATLAS.ti version 7.5 and report the research result. Both data analysis and interpretation, validity and reliability are based on applying the ethics of qualitative research methodology and usage. As the results of the data analysis according to the research questions. It was that for the research question one, the research have found three categories and twenty four codes, research question number two having five categories and twenty four codes, research question number three having seven categories and thirty two codes and research question number four with one category and twelve codes.

The Trustworthiness and Rigor

The trustworthiness and rigor of this study involved three parts: Credibility, Audit trail and Triangulation.

Credibility refers to the honesty of the findings. According to Patton (1990), a credible qualitative research should leave the reviewer with assurance that the findings have value to those with a shared interest in the research. The researcher must show that the results are credible by having them approved by “a disinterested peer in a manner paralleling an analytic session and for the purpose of exploring aspects of the inquiry that might remain only implicit within the inquirer’s mind” (Lincoln 98& Guba, 1985). In this study, the researcher has shared the collected data and the preliminary interpretations with peer debriefing.

Audit trail from Lincoln and Guba’s (1985) conclusion, a research audit trail consists of six categories of information: 1. Raw data from written field notes and audio recordings, 2. Summary and theme identification of data reduction and analysis product, Data reconstruction

and synthesis items (e.g., categorizing of themes, interpretations, and final reports Process notes of methodology and trustworthiness, 4. Information about intentions and disposition (i.e., research proposal and personal notes), and 5. Instrument development of questionnaire design and interview questions.

For this research study, concerning audit trail, the researcher has employed the following practices: 1) keeping all information and data collection as soft folders saved on computer and external unit. 2) a sound recordings software from the interviews were logged on both computer and external device for the future usage and review, and 3) writing flexible notes for gathering both information working process, check, and recheck the researcher's emotions, thoughts, and comment in order to update and upgrade the research progress.

Triangulation from Lincoln & Guba's statements of "improving the probability that finding and interpretations will be found creditable" (Lincoln & Guba, 1985). There are four kinds of triangulation techniques: First, method triangulation, this technique is to check out the consistency of findings generate by different data collection methods, Secondly, Triangulation of source, this technique is done by checking out the consistency of different data sources with the same methods, Thirdly, Analysis triangulation, this technique is done by setting multiple analysis to review findings, and lastly, Theory/ Perspective triangulation, this technique means using multiple perspectives of theories to interpret data (Patton, 2002).

In this study, the researcher used the following triangulation technique:

1. The researcher used the document review, interview, and participant observational method and also strengthened both reliability and internal validity by using triangulation of multiple methods of data collection procedures in order to benefit from different perspectives of the creativity practices. For the accuracy of the analysis process, the key participants would secure and ensure reliability of the specific outcomes and valid interpretation by the interviewees themselves for further comments or suggestions after presenting them with their asking transcribed interviews.

2. Clarification of researcher bias would be described in the study for the further study of the same or related research topics.

Both data analysis and interpretation, validity and reliability are based on applying the ethics of qualitative research methodology and usage. The researcher has paid serious attention to this matter.

Findings and Discussion

In this study the researcher conducted an in-depth interview with 16 selected participants from gems and jewelry businesses in Chanthaburi province using purposive sampling and snowball technique. The profile of the participants included their gender, age, education, year of experience and type of business. The results showed that the most common demographic characteristics of the 16 participants composed of 3 females and 13 males, age between 30 to over 50 years, 8 under bachelor, 6 bachelor and 2 master graduate degrees. Most of participant age were over 50 years old, under graduate degrees and worked for over 20 years in gems section.

1. Characteristics of gems and jewelry business in Chanthaburi.

The results revealed that the characteristics of gems and jewelry business in Chanthaburi Province comprised to two characteristics which were: 1). Evolution of gems and jewelry business entrepreneurs in Chanthaburi province comprised of two tracts. The first was those who developed themselves from self-learning in gems development process after gaining the

expertise they became the entrepreneur. The second tract was that the young generations continue their family business, getting successful then became the owner. The two distinctive characteristics have helped Chanthaburi become well known in gems and jewelry business. This notion is supported by the report from the Customs Facilitation Office (2006) that wrote Chanthaburi exporting the gems and jewelry to the world market as a results of qualified the gems treatment and cutting skills. This achievement has made Chanthaburi become famous and the leading center for the gems treatment and production. 2). Skill and attitude development toward the business, the self- learning entrepreneur had the attitude that they do not want to share their knowledge and skill to other just to prevent the others to compete with them, while family business grown entrepreneur had the opposite attitude.

2. The contribution of Chanthaburi educational institutions to the gems and jewelry business.

The participants commented that the educational institutes in Chanthaburi should develop their students by focusing in student skills that meet the market requirement, learning by doing, participating the real gems processing and designing. The educational Education institute should emphasis on developing ethics and the foreign language. Though, the available programs at the educational institutes cover the subjects that are essential in gems and jewelry business, but the students could not implement or apply that knowledge to the job. They are also lacking of basic skills. They should concentrate in business sectors collaboration for training and practice as well as technology knowledge transfer. This greatly benefits both students and businesses. In addition, educational institutes should change student's attitude towards gems and jewelry business including enhancing their ability in thinking, responsibility. The educational institute should also motivate and urge agency to develop more program either short course or full time programs specially for Chanthaburi's origin that settle there. The fact was that the educational institution in Chanthaburi comprised of different levels of education ranging from vocational certificate, higher certificate and bachelor degree. The collaboration among the local educational institution came in a form of networking. This could be done in collaboration with private sector that has skillful worker as the trainer or coach for their students. This finding was supported by the Ministry of Education policy (2014) that wrote the three level of education should collaborate through network as well as cooperating with different organization at both national level and local level. Skill is the essential tool for this handcraft business. Both educational institutes and the gems association must support the business. From the participant responses can conclude that students relate to gems business are not Chanthaburi origins but from other provinces. Then they did not have enough motivation and moved out after graduate. Educational institute should provide students motivation, knowledge and skills as the learning resource. Other related requirement that most of the participant agreed in the similar opinion were marketing knowledge and analysis, new market high quality products trends, production cost and sustainable public relation as the tourist destination. Gems and jewelry business owners need new generation workers to have enough knowledge, skills to create value added to traditional business. In addition, entrepreneurs need to take course to learn about details of gems business. The institutes and gems and jewelry association must provide courses to support as required. Even bachelor graduate need regular practice to gain better skill as professional. Therefore, academic could provide training programs and certify the attendants. Meanwhile government sectors should provide funding for the programs. Thus, knowledge, technology and marketing should be work on in the same time with collaboration form educational institutions, private sector and government in all aspects. One interesting point is Chanthaburi province is one of the well-

known gems market tourist destination, so educational institutes would have some leader role in this issue. The other importance replies were about Chanthaburi gems and jewelry center set up model. The educational institutes need to be the leaders to push Chanthaburi as the center of gems and jewelry business and government need to support funding. However, the obstacles are individual organization policy and regulation that need discussion.

3. The collaborative model for educational institutes.

From these all research questions and responses from participant involved in 3 sectors, Chanthaburi province has potential to become Gems City. Many respondents would like to see a Chanthaburi gems and jewelry center model. Since Chanthaburi has her own resources i.g. gemstone, craftsman, knowledge, technology including natural resources on hands already. Moreover, Chanthaburi province located not far from the Bangkok, own gems resources and existing well-known gems trading as tourist destination.

When the second generation begins to participate in the family business, several factors changed. These include material supplies that has higher costs and hard to find in the local areas, skilled labor, trend of products, economic crisis and more competitors. These business inherits possessed the right idiosyncratic knowledge for running the family firm in the most profitable way. They were seeking for new market, new design and technology as well as new affordable supplies. New graduate with theoretical knowledge could not effectively work in gems and jewelry business as they had inadequate skills and good attitude of this business. The educational institutes had to find ways to adequately prepare students so that they could successfully enter gems and jewelry industry after graduate. However, despite technology, the craftsmen should maintain a traditional style by simply maintaining their existing skills and integrate new technology to the works.

Development of soft skills needed to be integrated into curricula more explicitly. All the programs need to be updated regularly according to the market trends and demands. Education institutional could support this business by not only provide theoretical knowledge but skills and new innovative technology that applicable and benefit the business. The education institutes have to incorporate the requirements of gems and jewelry industry in their curriculum while developing a holistic graduate.

At present, this industry is facing labor shortage, un-skilled labor, lack of marketing knowledge and analysis. A significant number of skillful workers are older workers who have few (or no) academic but high work experiences. Research analyzed that complex skill shortages are longer-lasting and associated with graduated migrate out of Chanthaburi. For example, in sales and marketing, customer primary expects about product knowledge and service ability of sales personnel. These skills require lengthy period to be trained not only acquired through coursework that provide few benefits to job performance. Thus, professional knowledge in gemology is extremely critical for jewelry boutique personnel and thus its acquisition should be considered a necessity (CP Bao *et al.*, 2015). However, the main reasons were graduate were not Chanthaburi origin and want to work in big city for better job opportunities, higher incomes and living standards. Massey *et al.* (1998) argues that migration conceptualize causal processes on very different levels of analysis such as individual, family and national that they are not compatible. This similar to Leporte and Lu (2013) reported that almost 60% increasing in inter-provincial migrants from 2004 to 2009 to growing economic activity to bigger provinces which paid higher rate. Expected income is an important determinant of cross-province and interstate migration in the U.S. and Thailand (Yang; 2004, Kennan and Walker; 2011). For Chanthaburi graduated, the single most important cause of skill shortages, however, is a requirement for

specialized skilled. Graduates in the future will need to be highly technical, adaptable, good communicators and lifelong learners. It is vitally important for Educational institutes to support both local and nation by introducing training into curricula to support industry and supply graduates with the required knowledge and skills. Similar concepts was mentioned about industry oriented training in New Zealand that has been successfully applied to Bachelor of Applied Technology in New Zealand (Qi, 2012). Intelligent or good skills workers should be provided with adding-on of specific technical skills and business passion to lure in more students. Graduate students were from the other province not Chanthaburi citizen then, after graduate they migrate back to their hometown or other locations not staying in Chanthaburi resulting in the shortage of the gems and jewelry skill worker shortage. This finding is similar to other studies that indicated when student graduated they have tendency to go back to their home oorigin (Gierzynski; 2015, Lehner; 2016)

Then, educators and industry need to motivate graduate student who ready have knowledge to live and work at Chanthaburi to support local business that also benefit local social and economic. To retain knowledge and skilled labors, sectors should cooperate promote relevant short training program, job-match, provide more job opportunities, wage and welfare benefits. Another priority job that educational institute could provide in collaboration.

In this research, collaboration implies a partnership which refers to educational institutions combining their expertise, affordable resources in the delivery skilled graduate student to support industry. Meanwhile, the GIT strategy plan for year 2016-2020 in collaborate and coordinate center for all the Thailand ministries and international shows important issues for gems and jewelry industry. For example, increase efficacy towards to entrepreneur requirements, establish specialist incubation center and promote research to cover industrial demands at international level. The results of this study provided information to development of a model of collaboration between educational institutes and industry. Collaboration between autonomous institutions within a region should: 1) improve responsiveness to local economic and social needs; 2) encourage progression pathways for students; and 3) facilitate academic interchange and exchange of ideas. 3) create gems world center for gems production, exchange and production center.

The Chanthaburi Gems City Model is shown in figure 1



This showed that although the association is a major element of the cluster, it extends to many other organizations and agencies that do not produce gems, but which are important to the success of the gem industry and set up center model and sustained gems and jewelry industrial growth. These should be influenced in a pro-active way by either local or national governors. The study also recommends that academic programs should focus on preparing students for knowledge and skills according to industry requirements. Moreover, university level program for product design and gems knowledge should be revised to meet the requirement of Chanthaburi gems and jewelry business. Meanwhile, vocational level should add more gems and jewelry knowledge in addition of skill training. In addition, program need to provide language communication skill, attitude and responsibility to their student. This will improve employability for their graduate students. Besides, the academic should motivate Chanthaburi local to study these gems and jewelry program. Unfortunately, after graduate non local student will migrate out of Chanthaburi. Furthermore, all these sectors need to enhance Chanthaburi's competitiveness, expressing their commitment to collaborate and share resources to undertake agreed upon activities.

There are potential mutual benefits of university-industry collaboration. This collaboration provides the opportunity to access specialized expertise, the latest knowledge in relevant disciplines, and potential future employees (students). Universities might benefit from additional funding for research, graduate training and facilities. Their students also benefit from the opportunity to work on real-world problems faced by industry, presenting ideas that may stimulate their study agendas, and students with valuable experience. Moreover, students gain experience and build contacts that can be valuable upon graduation. Industry and the association sectors also should consider ways in which the new generation or newly graduate can contribute to skill development through increased opportunities in workplace learning and professional learning activities or internship with earning in return to motivate them. Firms also benefit from the outputs of such partnerships, in the form of additional knowledge that feeds into their own innovative processes, improved products and processes, and from technical solutions for their problems. For Government sector, they need to create flexible policy that allow more trading accessible, world market information and sustainable public relation as the tourist destination. This might use Bangkok jewelry center as a model. Since Bangkok Gems is now becoming a world exhibition event was organized by the government and passed over to the Thai Gems & Jewelry Traders Association to manage for many years since then.

Implementation

This research could be used as information for collaborative strategy between Chanthaburi educational institutions and industry sector under government support. As Chanthaburi is significant contributor to the national economy. The research conducted with 16 selected respondents in 3 sectors as educational institutions, industry and government. The results revealed that each party gained new knowledge from their participation in collaborative ventures and transferred that knowledge into their organizations for its benefit. The most important step for this collaboration strategy is preparation human capital who has knowledge, skillful in all requirement to become craftsman, designer, self-employ trader, new business entrepreneurs or business successor. In recent times, the major problems faced by gems and jewelry are unskilled labor, modern technology marketing knowledge and regulation support. Such collaboration can occur with government, customers, suppliers and competitors. Academics supported the model as it bridged the theory–practice gap while meeting compliance standards.

Industry welcomed the model as it provided opportunities for recruitment and meeting national skills imperatives. If skillfully handled with motivation and according to gems and jewelry demand, the model seem to be possible. However, this collaboration model need government support in many way such as policy, fund and tax assumption. Addition advantage is the community that will transform from traditional way to be competitive trading. The gems and jewelry center collaboration model will support a constant dynamic interaction with larger external environment such as the social, political, economic system of the culture. The elite of this research demonstrated that the key strategic benefits of the increasing collaboration are business growth, enabling inadequate skill graduate, ways of doing business, build up gems and jewelry center, Central Factory and Chanthaburi Gems City. The latter is seen as both being vital and an opportunity, adding quality of life to all involved and creating mutual benefits. The positive strategic benefits of collaborating contribute to the high levels of collaboration amongst the sample's stakeholders. The key enablers are relationship building, interpersonal skills and business facilitation. These encompass commitment, reciprocation, trust and communication in addition to aligned values and common goals. Not far from dream that Chanthaburi will become Gems City. From these point of view not only Chanthaburi that gain economic benefit but the nation as well.

Recommendation for further study

The authors believe that there are several significant opportunities for future research based upon this study. Among the most pressing and promising are the developing questions from another methodological perspective or adopting a different interview style may have yielded contrasting responses. More, in-depth collaborative strategy of the Chanthaburi gems and jewelry industry would benefit both academics and entrepreneurs alike. Further collection of data on the age and size of the enterprise may provide insights into the specific issue or skills requires. Beside, utilizing different research approaches, such as a case study to obtain rich data on the collaborative venture might urge the government and more party. This exploratory study limitations arise from the research method and the process of collection of the primary data, including the choice of selected respondent. The research is limited to a small sample of respondents when compared to the population in the Chanthaburi gems and jewelry industry. Being an elite sample that has been assured of confidentiality, this risk may be reduced. The future study need more sample such as educational institutions lecturer or management levels and graduate student to share their opinion of the collaboration strategy.

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