PUBLIC AND PRIVATE PARTNERSHIPS IN STRENGTHENING VOCATIONAL EDUCATION AND TRAINING

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ABSTRACT

Title of Dissertation	Public and Private Partnerships in Strengthening Vocational Education and Training
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This paper draws on the theoretical concepts from Inter-organizational relations theory, public governance, and public and private partnerships (PPPs), which are incorporated with the conceptions learned from the two cases of PPPs in technical vocational education and training in Singapore and the U.S. As a result, an initial conceptual framework was developed to guide in the understanding of the public and private partnership phenomenon. The framework includes a broad conceptualization of public and private partnerships, consisting of the following domains: initial conditions and motives, structure and governance, the partnership process, and partnership capabilities.

The objectives of the study include: 1) identifying the motives of the collaborating actors in initiating public and private partnerships for vocational education and training; 2) exploring the institutional settings of the PPPs in terms of governance and structure; 3) identifying the factors critical for sustaining successful public and private partnerships for vocational education and training; and 4) developing a conceptual framework in order to understand and assess public and private partnerships for vocational education and training.

The author has chosen the case study research method, an inductive, case-oriented process of theory development, to investigate the in-depth phenomenon and rich context of public and private partnerships, which are regarded as a new topic area within the organizational theories arena. The unit of analysis for this study is the partnerships among relevant partners agreeing to implement an initiative in strengthening vocational education and training. The multiple case study approach

was used as the research design. Therefore, the author collected the data and analyzed them within the cases and compared them across different cases with different contexts.

In this study, the author selected three cases of leading vocational education and training implemented in Thailand. They are: 1) the Automotive Human Resource Development Academy, 2) a Work-Integrated Learning program, and 3) German-Thai Dual Excellence Education. These three cases are different in terms of the combination of partnering agencies, sponsoring organization, and key players contributing to the success of the partnerships. The collected information included qualitative data derived from documentation, archival records, participant observation, and in-depth interviews with the 24 key informants selected from the three cases.

The conceptualization of the public and private partnerships is presented in two stages, before and during PPP formation. Prior to the PPP formation, vulnerable strategic conditions existed. The convener of the PPP, who is highly regarded as a respectable figure with access to resources, assembles potential partners, agreeing that urgent action is needed to address the issue. They all shared common values in treating the shared goals of public interests as a high priority. The contingencies of reciprocity and effectiveness are prompted by these shared benefits. During PPP formation, the convener or the party with higher political power will influence how the partnership is structured and governed. The contingency of asymmetry leads to the formation of partnerships, which is usually influenced by the partner with superior negotiating power. It is essential that this coordination unit possess cooperative capabilities, especially regarding relationship management skills, in order to effectively liaise with the partners to undertake the planned activities successfully.

The author has proposed four strategies to forster successful public and private partnerships in order to efficienty synergize resources for tackling public issues. These strategies include: 1) building awareness of public and private partnerships and a collaborativeon mindset; 2) engagement of the private sector as part of the governance of public service delivery; 3) promotion of PPPs through a funding and incentive mechanism with government oversight on the quality control of the awarded programs; and 4) building government capacity regarding cooperative capabilities.

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CHAPTER 1

INTRODUCTION

1.1 Statement and Significance of the Problem

Public and private partnerships (PPPs) are being used in many countries to improve public service efficiency, to enhance transparency and accountability, and to strengthen engagement by stakeholders as part of democratic governance. The definitions of public-private partnerships are broad ranging from subcontracting to joint development or provision of products or services. According to Hodge, Greave and Boardman (2010: 4), these partnerships are defined as "cooperative institutional arrangements between public and private sector actors". The approach varies depending on the goals, context, and formal structures (Dingwall, Hoffman and Staniland, 2013). The goals of PPPs include provision of a wide range of goods and public services ranging from education, infrastructure, health care, energy, telecommunication and utilities.

In Thailand, improving the quality and efficiency of education has been considered a key priority for the government for the past decade. As a consequence of the rapid industrial growth especially in the manufacturing sector such as automotive and energy development, Thailand has suffered from shortages of skilled workers as well as a mismatch between the skills of new graduates from educational institutions and the demands of employers. New graduates often lack the knowledge and skills required by new production technologies, which are regarded as critical to enhancing the competitiveness of the country (Wongkolkitsilp, 2015). Moreover, the majority of students graduating from vocational education lack problem-solving skills. This deficiency is reflected in the average scores of Thai students on vocational national educational tests (V-NET); in 2014, only 24.71% met the standard in mathematics (Yongyuth Chalamwong, 2014).

In 2014, the Ministry of Labor disseminated questionnaires to 40,431 companies registered with the Social Security Office in 29 industrial sectors in Thailand. In terms of workforce shortages, the statistics presented in figure 1.1 indicate that almost all industrial sectors, except hospital and health services, reported shortages of skilled workers, with over 70% of them requiring educational levels lower than a bachelor degree. This was especially the case in the automotive/auto parts and petrochemical industries, in which the shortages of labour graduating with vocational and higher vocational/associate degrees accounted for 41 and 23 percent respectively.

	Workforce Shortage														
Type of Business	Lower than 9th Grade		9th Grade		12th Grade		Vocational Degree		Higher Vocational /Associate degree		Bachelor		Higher than Bachelor		**Total**
	Persons	%	Persons	%	Persons	%	Persons	%	Persons	%	Persons	%	Persons	%	
Food and animal feeds	2,136	32%	1,078	16%	420	6%	850	13%	1,361	20%	815	12%	16	0.2%	6,676
Chemical	368	17%	539	25%	363	17%	236	11%	242	11%	433	20%	16	0.7%	2,197
Rubber products	331	44%	321	43%	30	4%	35	5%	24	3%	10	1%	0	0.0%	751
Electrical and electronic parts	66	3%	423	20%	565	27%	300	14%	550	26%	177	9%	0	0.0%	2,081
Automotive and auto parts	291	6%	388	7%	366	7%	2,143	41%	1,205	23%	813	16%	12	0.2%	5,218
Logistics	613	21%	501	17%	393	13%	110	4%	703	24%	614	21%	4	0.1%	2,938
Hospital and health services	44	8%	24	4%	71	13%	38	7%	46	9%	293	55%	19	3.6%	535
Petroleum	87	15%	128	22%	187	33%	84	15%	46	8%	39	7%	0	0.0%	571
Petrochemical	0	0%	1	0%	100	22%	102	22%	124	27%	133	29%	0	0.0%	460
Mine and coal	134	38%	37	10%	17	5%	73	21%	68	19%	22	6%	2	0.6%	353
Total	4,070	19%	3,440	16%	2,512	12%	3,971	18%	4,369	20%	3,349	15%	69	0.3%	21,780
As of 12 December 2013 (PMANP Database System, Ministry of Labor)															

Figure 1.1 Workforce Shortage by Industry Classified by Level of Education in 2013
Source: Ministry of Labour, 2014.

These numbers do not match the supply of the students graduating from the education system. Figure 1.2 shows that students graduating from vocational and higher vocational education account for only 29% of the output of the system.

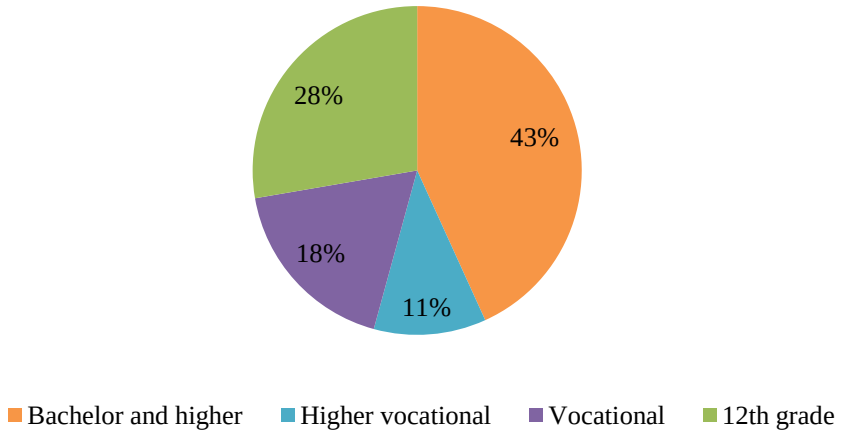

Figure 1.2 Number of Student Output by Level of Education
Source: National Science Technology and Innovation Policy Office, 2011.

The challenge of skill gaps and mismatches has been identified by both the World Bank and the Thailand Development Research Institute (TDRI); both institutions have made recommendations to involve the private sector in alleviating the problem. In the World Bank's recent study "Leading with Ideas: Skills for Growth and Equity in Thailand (2012)," the authors recommend that Thailand strengthen workforce skills and enhance innovation through private sector engagement in order to move toward a more knowledge-intensive, innovation-driven economy that would produce higher incomes and promote greater equality. The study has identfied the likely causes of these skill gaps and mistmatches as weak incentives and capacity in the education and training systems in producing skills that are relevant to employers as well as weak incentives for students in committing to programs in science and technology. The study recommends increased involvement by the private sector including offering advice on curriclum development, providing student internships to encourage on-the-job learning in the workplace, as well as appointing industrial practitioners to the staff of educational institutes. Their recommendations are aligned with the findings of the TDRI which were presented in its 2012 annual seminar "Revamping Thai Education System: Quality for All". The TDRI researchers recommended that the mismatch of skills in the workforce needs to be addressed by initiating work-based learning programs. The TDRI noted that these programs require

the involvement of the private sector to help participants develop skills matching private sector needs.

Public private partnership initiatives to improve vocational education and training (VET) have been widely implemented in many countries for many decades. Career academies in the United States and Brazil, the dual VET system in Germany, the Netherlands, and Hungary, and the polytechs in Singapore exemplify programs resulting from collective effort by public and private actors aimed at improving skills development for the workforce. In Thailand, the challenge of reducing skilled workforce shortages also are being addressed by private companies and government agencies through public-private-partnership initiatives. These iniatiatives are intended to build the skills of students to qualify them to enter the workforces of the participating industries. In Thailand, these partnerships intended to improve basic vocational education and skills training are in their infancy. These initiatives are mostly formulated as implementation partnerships, defined by Snape and Stewart (1996) as relationships focused on specific, mutually- beneficial projects. To date, these partnerships have been formed under bilateral agreements between individual manufacturers and educational institutes. The contributions by manufacturers include provision of paid internships and machinery and equipment for students to use to develop and practice technical skills. During the past several years, a new form of partnership has appeared in clusters of similar industries such as the petrochemical or automotive sectors. These clusters share similar shortages of skilled workers and face serious difficulties in recruiting qualified workeres. These partnerships have been initiated to raise both the quantity and quality of the skilled graduates available to the industries.

In spite of the growing use of these public-private partnerships, the literature related to them in education focuses more on the implementation of programs and less on the partnerships themselves, their institutional logic, the partners' roles and responsibilities and partnership evolution over time. It is important to explore how successful PPPs in vocational education and training are defined and function in different contexts. Moreover, examining how the key players interact and share resources to achieve common goals will provide lessons to guide new partnerships so that their resources are efficiently mobilized. Moreover, there are serious challenges

to the implementation of PPPs. For example, Greve and Hodge (2010: 156) pointed out that one of the major challenges for PPPs is their compatabiliy with the existing public governance framework. Therefore, this study will benefit policy makers and practitioners by providing guidance on how to set up succesful public-private partnerships, how to increase their effectiveness, and how to sustain them; these lessons will contribute to the maximization of resource mobilization for developing a workforce that will match current and future industry needs. This exploration will be useful not only for Thailand but for other countries whose interests can be strengthened by developing their vocational education and training to contribute their economic and social growth in a sustainable manner.

1.2 Objectives of the Study

The objectives of this study are as follows:

1) To identify the motives of the collaborating actors in initiating public and private partnerships for vocational education and training;

2) To explore the institutional settings of the PPPs in terms of governance and structure;

3) To identify the critical factors in sustaining succesful public and private partnerships for vocational education and training; and

4) To develop a conceptual framework in order to understand and assess public and private partnerships for vocational education and training.

1.3 Research Questions

In this dissertation, I explore the institutional settings and inter-organizational relationships of the organizations involved in creating PPPs in the area of vocational education and training with the following research questions:

1) What are the motives of the participating actors in initiating public and private partnerships for vocational education and training?

(1) How are PPPs initiated?

(2) Who initiates them? Who are the partners? How do the partners get involved in the partnerships, voluntarily or mandatorily?

(3) How are the shared visions of the partners formed? What are the mutual benefits expected by partners?

(4) How do the partners legitimate the partnerships?

2) What are the institutional settings of the PPPs in terms of governance and structure?

(1) How does the governance differ across countries in different stages of PPP development?

(2) What is the structure of the partnership team? What are the partners' roles and responsibilities? Are they clearly defined? Do they change over time?

(3) Is there supporting legislation promoting the partnerships? Is the legislation an initiating act or in response to field-initiated PPPs?

(4) What are the relationships among the partners? How do they vary? What is the partnerships norm?

3) What are the important factors for sustaining partnerships?

(1) What do partners undertake to nurture relationships?

(2) How different is the communication and interaction process across varied partnerships?

(3) How do partners judge whether to stay or withdraw from the partnerships?

1.4 Scope of the Study

This study focuses on the role of public-private partnerships in vocational education and training. In this study, the author focuses on how such partnerships in the area of vocational education and training are attempting to address the skill mismatches that are contributing to workforce problems in Thailand as stated in 1.1. The study focuses on the vocational education provided by formal education institutions as well as that offered by non-formal education programs in skill development institues or centers nationwide. It should be noted that within the vocational education arena, two government agencies are directly involved. They are the Office of Vocational Education Commission (OVEC) under the Ministry of Education (MOE) and the Department of Skill Development (DSD) under the

Ministry of Labour (MOL). However, other government agencies also are involved with strengthening vocational education such as the National Science Technology and Innovation Policy Office (STI) under the Ministry of Science and Technology (MOST).

Therefore, in this study, the public agencies of interest are in the central government and are directly related to managing vocational education and training; these include the OVEC, DSD and STI as mentioned above. The study scope is limited to these agencies because education management in Thailand is highly centralized; key educational components are defined and managed centrally. These include strategic planning, budgeting, standards and curriclum development, professioanl development for teachers, career guidance, internship, and testing and assessment for teachers and students. Therefore partnership initiatives involving these agencies will have greater impact on how vocational education and training can be improved and on how these improvements can be scaled up.

Regarding the second dimension, the study will focus on the partnerships between public agencies and private organizations. This mean that the partnerships of interest are among mutiple organizations from both the public and private sectors. The scope of the study is limited to these partnerships because of one of the primary goals of vocational education and training is the preparation of workers to meet the demands of the private sector. Therefore, collaboration of government entities with various players from the private sector creates an environment in which different needs can be identified, analyzed, and addressed through collective action. Influences affecting the various players can be studied in terms of political, economic and social aspects. In terms of public agencies, the study will explore programs at both the formal and non-formal education levels. This will include both the Office of Vocational Education Commision (OVEC) and the Department of Skill Development (DSD), which are the two main agencies in managing vocational education and skills development respectively. The OVEC oversees all vocational institutes nationwide while the DSD directly manages skills development programs administered by provincial centers located in every province in Thailand. The OVEC institutes provide vocational education for students in grades 10^{th}-14^{th} and prepare them to enter the workforce. Students earn vocational education degrees after succcessful completion of

three years of study and higher voational education degrees upon 5 years of study. The DSD institutes offer short-course training for students that are preparing to enter the workforce or that are currently employed. The interaction between these two public agencies together with other relevant agencies such as the National Science Technology and Innovation Policy Office (STI) will be explored. By including multiple public agencies in the scope of the study, the author is able to examine the interactions among executives and institutional settings, and resource mobilization and knowledge sharing among agencies.

For the third dimension, the study will focus on those partnerships that are currently active or in the process of development. Finally, the partnerships of interest are focused on building the capacity of vocational education or training, not simply addressing infrastructure, making donations, or offering scholarships. This capacity building involves assisting agencies responsible for delivery of vocational education and training and helping them to undertake their missions more effectively and efficiently. These partnerships are involved in some of the following processes: strategic planning, competencies identfication , budgeting, standards and curriclum development, professioanl development for teachers, career guidance, internships and employment service testing and assessment for teachers and students. In this way, the study of partnerships involving multiple players from both the public and private sectors provides an opportunity for the author to examine the attributes of leadership, institutional settings, resource mobilization, and knowledge sharing and management associated with successful PPP's.

1.5 Benefits of the Study

The aim of this study is to develop a theoretical framework for public and private partnerhships related to vocational education and training. This will provide a frame of reference for analyzing the inter-organizational relationships across multiple agencies, both public and private. The core dimensions of the framework include the initiation process, governance, power and influence among partners, the implemenation processes of the partnerships, and the mechanisms aimed at building the capacities of public agencies. It is expected that this study will benefit those policy

makers and practitioners that perceive the involvement of the private sector in improving public services as consistent with democratic values. Moreover, it will benefit that are interested in strengthening vocational education and skill development in order to create the human resources needed to support the sustainable growth of the nation.

As Thailand is at an early stage of developing public and private partnerships in vocational and training, there are only a limited number of cases to be studeid. This limits the warrant of the findings and the generalizations that can be made. Nevertheless, this study will be useful in the following ways:

1) The conceptual framework developed in this study can be used to explain and analyze the partnership process and to identify the factors associated with building and nurturing sucessful partnerships, and these insights can be applied to other areas of development besides vocational education and training.

2) The study will benefit that are involved in developing public-private partnerships program by providing guidance on how they can improve the partnership process to meet their goals and objectives and to nurture the partnerships to evolve and sustain them in the long run.

3) The study can provide guidance for policy makers and practioners in setting appropriate policies and defning program implementation procedures in order to increase the likelihood of creating fruitful partnerships with the private sector.

1.6 Organization of the Study

This dissertation is divided into seven chapters as follows:

Chapter 1 introduces the significance of the topic of study, its ojectives, research questions, the scope of the study, and the benefits and organization of the study.

Chapter 2 covers the context of the public and private partnerships being studied, which includes the background, definitions, players, and benefits. In addition, the educational context in relation to public-private partnerships in Thailand is discussed.

Chapter 3 provides a review of the literature related to PPPs, including theories of public and private partnerships and inter-organizational relations (IORs). The author uses these two theories to develop the conceptual framework for examining public private partnerships in vocational educatoin and training.

Chapter 4 covers the research approach, the unit of analyis, the research design, data collection precedures, data analysis methods and execution plans.

Chapter 5 presents three case studies of PPP's in Thailand: 1) the Atomotive Human Resource Development Academy (AHRDA); 2) the Work Integrated Learning program (WIL); and 3) German-Thai Dual Excellence Education (GTDEE).

Chapter 6 analyzes the partnership framework and success factors in evolving and sustaining these partnerships drawn from within-case analysis and cross-case synthesis.

Chapter 7 presents the implications of the findings for PPP policy and process recommendations, as well as suggestions for future research.

CHAPTER 2

BACKGROUND OF VOCATIONAL EDUCATION IN THAILAND AND SELECTED COUNTRIES

2.1 Vocational Education and Training Background in Thailand

2.1.1 Related Policies, Plans and Strategies

Human resource development in Thailand is the purview of several different ministries, which include the Ministry of Education, the Ministry of Labour, and the Ministry of Industry. The Ministry of Education has the largest government budget for this purpose, about 20.5% of the total allocated in 2014 (OEC, 2014). The current national education policy and plan for the years 2013-2016 is intended to cope with changing social and economic factors at the national, regional, and global levels. It aims to achieve the following objectives:

1) Promote human development in all aspects in order to contribute to sustainable development

2) Nurture Thai society with a learning environment for embracing values of ethics, respect for local wisdom, and the promotion and creation of innovation and continuous learning amidst the emerging influence of ASEAN and global communities

3) Promote and support the social environment in achieving a society with highly regarded values of ethics, local wisdom, innovation and continuous learning.

The Ministry of Education, with frequent changes in leadership, has undergone multiple reforms. UNESCO (2011) has stated that the Ministry of Education of Thailand has defined areas of strategic reform in the higher education and vocational education and training (VET) sub-sectors to promote workforce development in response to the need to create a knowledge-based economy. The

reforms aim to address three critical issues: 1) a declining birthrate leading to reductions in the available workforce; 2) the emergence of an ageing society; and 3) a high demand for highly- skilled technical workers. The government target for the ratio of students entering the vocational track compared to the general academic track has been set to increase from 40:60 to 60:40 in the next 10 years.

Regarding skill development and training, public-private partnership committees have been established to ensure that common approaches are undertaken across agencies, In the Ministry of Labour, the National Committee on Labour Development and Vocational Training Coordination has been established to improve efficiency and to foster collaboration between education and labour development. Similarly, the Ministry of Education under the Office of the Vocational Education Commission has set up 26 PPP committees aimed at coordinating efforts between educational institutions and employers.

With respect to the nation's skill development framework, four strategies were approved as stated in the cabinet resolution dated 3 September 2013, which included:

1) Raising the competencies of the Thai workforce to meet international standards;

2) Developing professional standards, labour standards, and competency standards;

3) Developing a workforce database system to support the workforce market, and the requirements for skilled workforce development and network development; and

4) Establishing a human resource development institute targeted at medium to high skilled workers for the auto industry

In the vocational education arena, with its mission to increase the economic competitiveness of the nation, OVEC has implemented a number of policies and strategies for implementing vocational education and training. The policies and strategies relevant to the topic of this study include setting up PPP committees for technical vocational education and training (TVET), developing competency standards to guide curriculum and testing development, establishing a network of vocational institutions to share resources, capacity building for VET teachers, and developing a national qualifications framework to link education qualifications levels and competency requirements set by industrial clusters (Siriphan Choomnoom, 2015).

National public and private partnership (PPP) committees have been recently set up to foster collaboration between public institutions and companies to upgrade the quality of vocational education. Currently, the government has formed a total of 26 PPP committees organized by clusters of industries such as automotive, logistics, ICT, energy, petrochemical/petroleum, food and agro-industry, jewelry, hotel and tourism, and so forth. These committees are chaired by prominent industrial leaders and heads of relevant agencies. In order to address skill shortages and workforce quality, multiple strategies were reinforced at the OVEC meeting held on 5 February 2015. Major strategies include engaging participation of the private sector and civil society in manpower development in order to meet the workforce demand, setting up public and private partnership committees, expanding dual education and cooperative education to implement factory school model, and developing pay systems according to competency in order to raise awareness of technical careers with a fair pay system. These strategies focus on promoting partnerships with the private sector in the process of developing technical and vocational skills for students public-private partnerships that the quality of education can be improved.

In summary, it can be noted that in order to achieve the goal of developing a high-skilled workforce in response to the emerging demands pressed by the private sector, unified strategy and planning across different education and human resource development agencies are required. The unification of strategies should not be limited to only basic education but should extend to vocational education, higher education, non-formal education, and workforce development. Interestingly, there has been emerging interest by government agencies in deploying public-private partnerships as a mechanism in improving education. The joint committees are widely seen as a type of governance mechanism for stakeholders to collaborate in order to manage vocational education and skill development more effectively.

2.1.2 Related Institutions

Two main government organizations are responsible for educational and workforce development, DSD and OVEC. Other organizations whose missions are related to skill development include the Department of Non-formal Education and the Federation of Private Colleges of Technology and Vocational Education of Thailand.

However, apart from the above mentioned institutes, other organizations also provide skill training to meet the goals of the National Economic and Social Development Plan. One such organization is the Department of Industrial Promotion Ministry of Industry. Moreover, there are private training institutes and associations that play important roles in developing the skills for adults for employers in various industries.

In 2013, the DSD spent 1,862 million baht to upgrade the skills of 243,327 employees to meet industrial demands, 4,339,399 employees in companies and 25,521 disadvantaged employees in the non-formal employment sector. The Office of Vocational Education (OVEC) received an operational budget of 3,260 million baht in 2013. More details about these two organizations are presented below.

2.1.2.1 Department of Skill Development

The Department of Skill Development has set its goal as workforce development with world-class competency. With its 12 regional institutes and 65 provincial skill development centers spread throughout Thailand, it has been able to undertake its key mission of developing the workforce through collaboration with employer networks. Besides the above factors defined as a wide reach of recipients and strong collaboration with private employers network, according to the TDRI (2011), the DSD's internal strengths include enactment of the skill development promotion act 2002 which enables its collaboration with the private sector together with the important role of undertaking skill testing that ensures that the workforce possesses appropriate skills required by employers.

It primarily focuses on strengthening workforce development networks and developing the skills of laborers. Four offices have missions directly related to skill development, standards and testing development and promoting collaboration with employers. These offices include 1) The Office of Instructor and Training Technology Development with a mission to promote the use of advanced training technologies for both the public and private sectors, to develop training curricula to provide training sessions for laborers, and to provide various types of professional training for the trainers; 2) The Office of Skill Standards and Testing Development with a mandate to conduct research on skill standards, to implement skill assessment for laborers based on national skill standards, and to organize labor skill competition with public and private sectors; 3) The Division of Laborer and Entrepreneurs

Development with its responsibilities of conducting research on laborer and entrepreneur development, to promote entrepreneurship, and to enhance the skills of people with disabilities, young people and female laborers; 4) The Division of Skill Development Promotion with its mission to conduct research on the promotion of skill development, to support the establishment of a skill development center as well as to be a center for knowledge or databases related to the promotion on skill development.

With its skill development centers spread over 77 provinces, the DSD centers have been a linkage between the employers all over the country and the workforce. Its key mission has been fostering collaboration with various employers in transferring technical skills directly to the workforce. However, in spite of its strengths in providing access for the workforce and partnering employers, its weakness, as per the TDRI (2011), is defined in term of its inadequate trainer skills and facilities. This main weakness has led to an important strategy which the DSD has later seriously undertaken in collaboration with the private sector in tackling skill shortages. This has led to the formation of a new unit called the Automotive Human Resource Development Academy, which is a unit directly overseen by the Director General and managed by board members mainly from executives from the automotive parts industry.

2.1.2.2 Office of the Vocational Education Commission (OVEC)

The Ministry of Education is the largest government agency with the largest allocation of the national budget. Over 56% of the total number of ministry workers or 484,479 staff members work for the OBEC, whereas 21% or 183,274 accounts for OHEC personnel. It is interesting to note that only 5% of all Ministry personnel are administered under the OVEC as shown in Figure 3.

Vocational education is managed by the OVEC. The office sets policies and strategies for vocational education. Presently, it manages a total of 424 vocational colleges nationwide with total personnel of 41,600 and 675,000 students. However, 461 private vocational colleges oversee another 330,000 students with 16,000 personnel (OVEC, 2015).

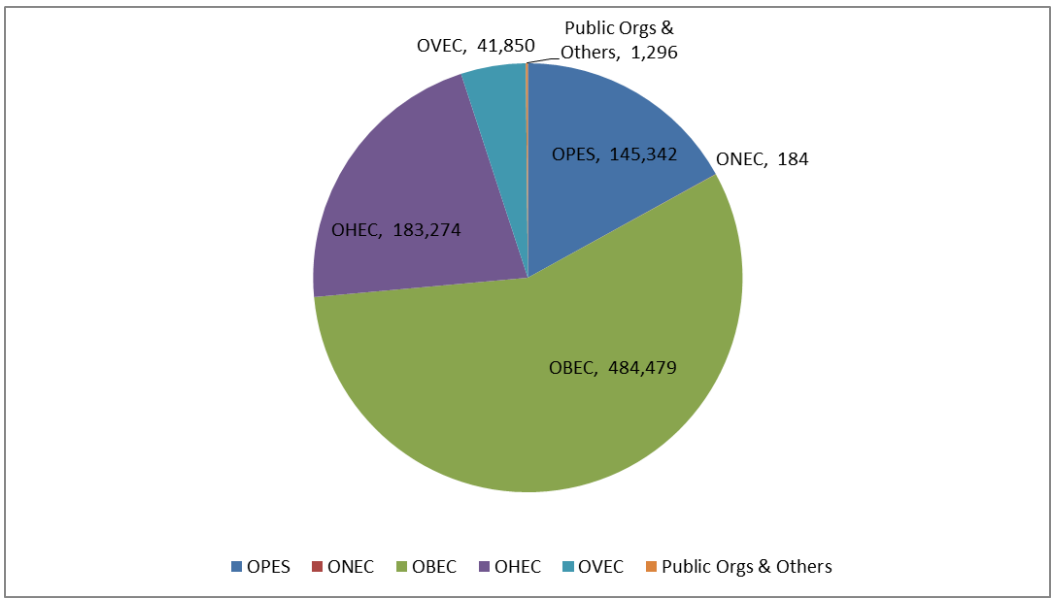

Figure 2.1 Personnel Distribution within the MOE in 2008

Source: MOE, 2008.

The OVEC's top leader is a Secretary General assisted by a Deputy Secretary General. They are advised by experts in policy planning and each of the major industry areas. The OVEC institutes offer vocational, higher vocational and bachelor degree education. Moreover, short-course skill training is also provided to upgrade workforce skills. Its key mission includes the promotion of quality vocational standards, upgrading vocational education manpower to meet international quality and standards, as well as strengthening cooperation networks and partnerships.

The key strategies implemented in the 2015 were expanding the public-private partnership committees to 26 professional groups, introducing a competency-based curriculum as well as merging administration of public and private vocational institutes to enhance unity and investing in the Science-based Technology Vocational College in order to strengthen science-subject areas.

Currently, the OVEC has been facing serious skilled trainer personnel shortages and mismatches. It has invested 19 million baht in upgrading a total of 1,010 teaching personnel through externships with over 310 factories and employers. Moreover, a scheme to recruit new vocational teachers through flexible teaching licensing regulations is introduced.

It can be noted that strategies related to fostering wider collaboration with the private sector have been introduced to address the skill gap in the private sector. Moreover, upgrading the skills of teaching personnel has been considered a priority when considering improving its organizational performance.

2.1.2.3 The Department of Non-formal Education

The Department of Non-formal Education has the main objective of organizing non-formal vocational education through short training courses to develop skills in entrepreneurship or to prepare out of school youth to enter the workforce; for example, a mushroom planting course, a hairdressing course, an agricultural product processing course, or a bicycle repair course. In 2012, 1,197,053 students enrolled in the general track of informal education and 47,848 in the vocational track (OEC, 2014).

2.1.2.4 The Federation of Private Colleges of Technology and Vocational Education of Thailand

This Association acts as a coordination and capacity building agency for up to 461 private vocational colleges (OVEC, 2015). While collaborating with the government, it aims to promote private vocational education and to enhance the effectiveness of vocational education management among its members. Financial aid is secured by the Association for both faculty and students. Most importantly, it initiates activities and programs to raise the quality of its member institutions.

2.1.2.5 Ministry of Industry

The Ministry of Industry focuses on promoting and developing the capacity of the industries in Thailand. The ministry has three mission groups: the industrial economic cluster, the production process and supervision cluster, and industrial and the entrepreneurial promotion cluster. The industrial economic cluster includes the Office of Industrial Economics and the Office of Cane and Sugar Board. The production process and supervision cluster includes the Department of Industrial Works and Department of Primary Industries and Mines. The industrial and entrepreneurial promotion cluster includes the Department of Industrial Promotion and the Thai Industrial Standards Institute. In addition, the ministry oversees public-private networking institutions such as the Thailand Automotive Institute, the Electrical and Electronics Institute, the Iron and Steel Institute of Thailand, the

Management System Certification Institute, the National Food Institute, the Thailand Productivity Institute, and the Thailand Textile Institute Bangkok.

2.1.2.6 Institutes and Associations

There are multiple institutes whose roles are relevant to the development of skills for the workforce. Selected agencies are listed below:

1) The Thailand Productivity Institute provided productivity training courses to 4,000 employees in 2008.

2) The Thai-German Institute organizes capacity training courses and shares high- level manufacturing technology, serving up to 4,000 employees in the 2008.

3) The Technology Promotion Institute (Thai-Japan) organizes trainings and seminars to develop the quality and capacity of technology and employees in automotive industry. The target number was 2,000 employees in 2008.

4) The Thailand Automotive Institute (TAI) provided human resource development training for 3,000 employees in 2008.

2.1.3 Vocational Education System

An overview of the Thai education system is worthwhile, as it has a unique management system with oversight by multiple agencies under different bureaus and various ministries.

2.1.3.1 Overall Formal Education System

Thailand's formal education is organized by grade level with oversight of three main bureaus within the Ministry of Education, the Office of Basic Education Commission, the Office of Vocational Education Commission, and the Office of Higher Education Commission. The OBEC oversees basic education covering pre-school education, for children aged 3 to 6 years, primary education serving students aged 6 to 12 years, lower secondary education for students aged 13 to 16 years, and upper secondary education targeting students aged 16-19 years.

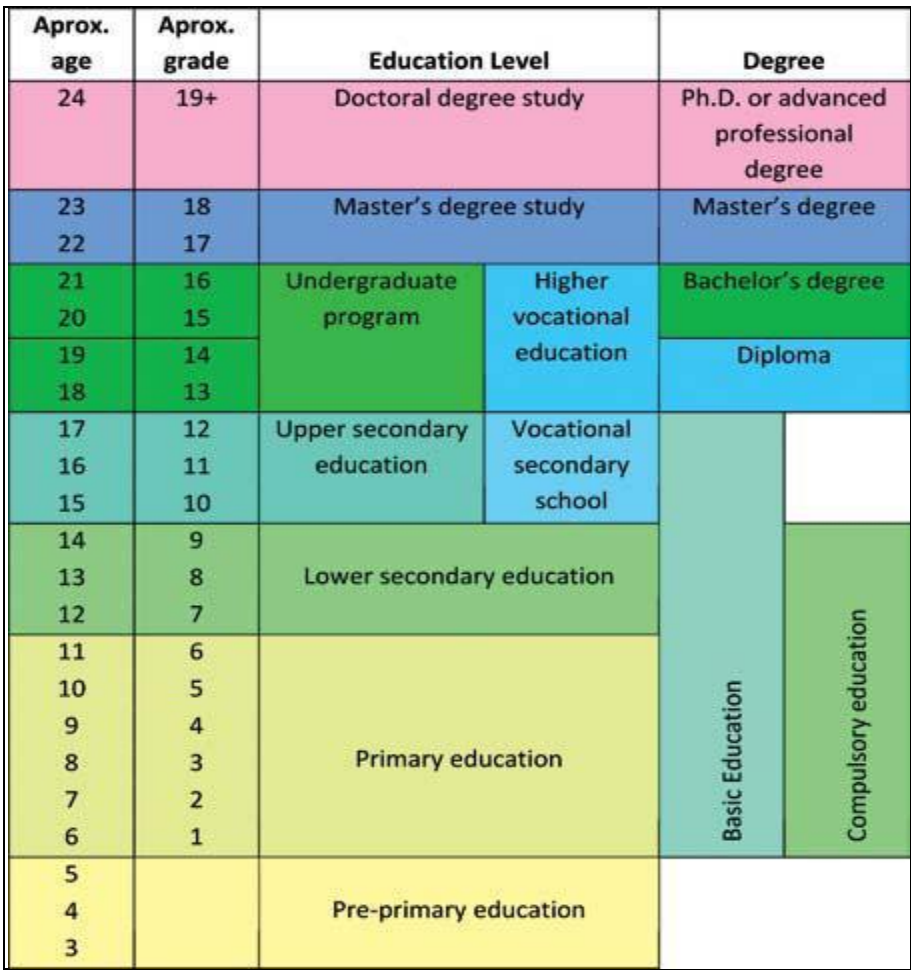

Figure 2.2 Thai Formal Education System Structures

Vocational education is administered by the OVEC with three levels of education offered, a certificate in vocational secondary education, a diploma in higher vocational or technical education, and a bachelor in vocational or technical education after the students enroll into a 2-year program following a diploma in vocational or technical education. Other degrees (bachelor's, master's, Ph.D. and professional degrees) are administered by the OHEC.

Formal education is divided into two levels: basic education and higher education. The formal basic education system can be further divided into three levels: 3 years of pre-primary level, 6 years of primary-level, and 6 years of secondary level (with 3 years of lower secondary and 3 years of upper secondary education) (see Figure 2.2).

In 2002, compulsory education was increased from 6 to 9 years. Upon the completion of lower secondary, students can choose to pursue a general academic track program in science, math or languages or the vocational track. Higher education comprises three segments: a lower bachelor's level, a bachelor's level, and graduate education. There are also systems of non-formal education, informal education, and education for those with special needs under the administration of the Ministry of Education.

2.1.3.2 Vocational Education System Structure

The vocational education system structure is presented in figure 2.3; students enrolled in the system are able to receive a vocational education certificate after successfully completing three years of study. After that they can advance their study to obtain a technical diploma after further study for two years in higher vocational education. A higher technical diploma or bachelor degree can be obtained after another two years.

Under vocational education, there are three types of administration. The first one is formal vocational education, in which students are enrolled in vocational institutes with defined courses of study and assessments as requirements for graduation. In contrast non-formal education offers flexibility for educators and learners in defining learning objectives with customized programs and courses to suit individual groups in different contexts. Thirdly, dual education is initiated under agreements between vocational institutes and employers, which can be either private or government entities that collaborate on designing and managing vocational education courses. The program is designed to include internships in the workplace as well as academic courses at the colleges as part of the course requirements.

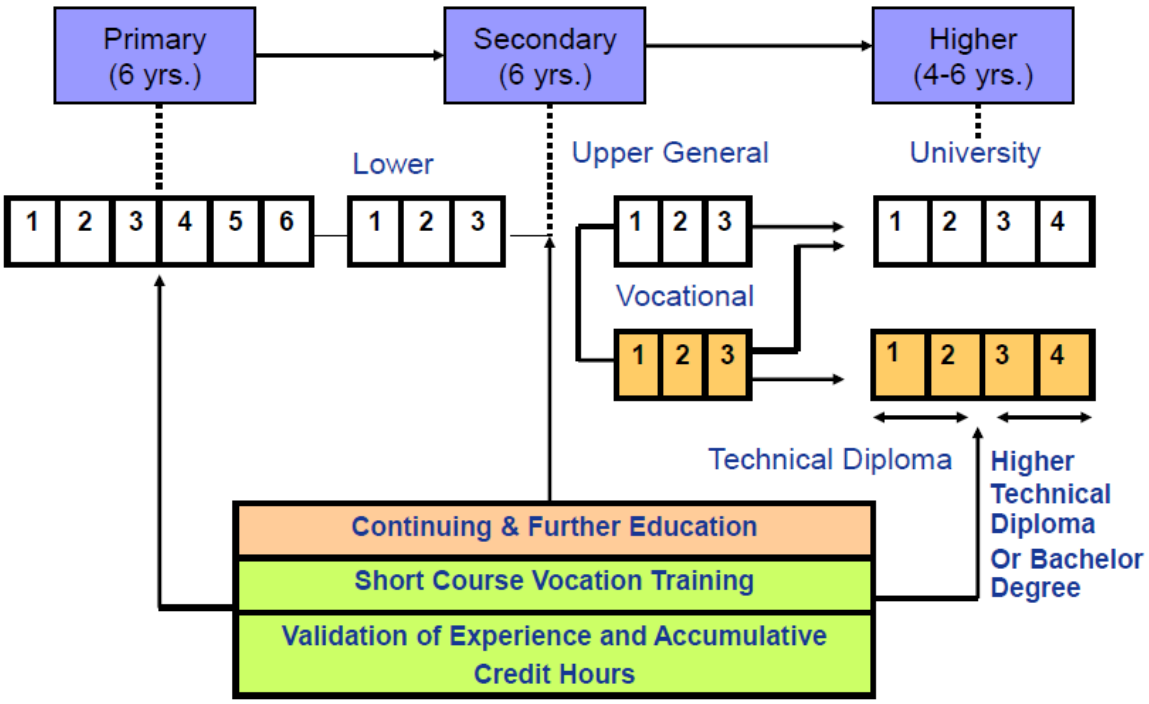

Figure 2.3 Vocational Education System Structure

2.1.4 Public and Private Partnerships for Vocational Education and Training in Thailand

Public and private partnerships in Thai vocational education have been initiated by a number of partnership networks and implemented with different approaches. They have been initiated by government agencies, companies or industry associations.

2.1.4.1 Dual Education Administered by the Office of Vocational Education Commission

Dual education is defined as one type of vocational education. According to the Vocational Act 2008, dual education entails collaboration initiated between vocational schools or institutes and employers in the area of curriculum development, instruction and assessment. These programs require that students spend some time studying in the educational institutes and also spend time being trained in the workplace of the employers. Benefits for employers that participate in dual education programs include academic support or appropriate resources, recognition

for their contribution, an opportunity to recruit employees that are familiar with the work, and access to a continuous supply of motivated workers. To eligible for participating in the program, employers' trainers must be qualified as trainer with a minimum educational background of a bachelor's degree with training in vocational education or passing national skills tests or other qualification standards defined by the OVEC. The trainer must have expertise in special fields for at least three to five years.

The OVEC (2014) defines four models of dual education: A) a full form of dual vocational education in which employers are located near the collaborating educational institutes and students in every faculty are able to receive vocational training in the workplace; B) a full form of dual vocational education in which employers are located far from educational institutes. Students in every faculty are able to receive vocational training but with accommodations provided near the workplace and with faculty mentors assigned to oversee the students; C) dual education with some faculties; and D) dual vocational education for employees working in the workplace. The management and implementation process for these four types of dual vocational education including a readiness survey of both the education institutes and the employers, an MOU signing between the institute and the employer, an introduction of the program and provision of career guidance to students, and development of learning plans, student recruitment and agreement, student and parent orientation, implementation, monitoring and assessment.

Examples of companies that have entered into such agreements with vocational institutes on dual vocational education are Chevrolet's Automotive Service Education Program (ASEP) with 10 vocational colleges (Chevrolet, 2014), the Somboon Group with Maptabhud Technical College, and the BMW Service Apprentice Program and Kanchanapisek Mahanakorn Technical College and Chitladal School (Vocational track).

Jomphong Mongkhonvanit (2015: 10) found both positive and negative perceptions of Thai dual vocational education. For those holding positive views, dual vocational education enables an integration of theories and practices through collaboration of the educational institutes and employers. Students are given opportunities to develop the knowledge, skills, competencies, attitudes and personal

attributes required to meet the needs of the employers. Meanwhile, those that hold negative views contend that dual education allows employers to take advantage of student labor without attending to their practical training and to gain labor at a low cost. They argue that the problem is exacerbated in some institutes by weak monitoring of faculty and employer mentors, leading to low levels of training being offered to students together with an unfair wage being paid to them. This is clearly an area requiring careful monitoring and reporting.

2.1.4.2 Public and Private Partnership (PPP) Committee for TVET (Technical Vocational Education and Training)

PPP committees for TVET have been set up and chaired by the Minister of Education with members from 26 industrial groups (Chaipruek Sereerak, 2015). These committees are mandated to implement the following strategies including 1) Developing supply and demand databases classified by profession by collecting input from employers; 2) Recommending tax incentives for employers with an eligible reduction for vocational training expenses up to 300%; 3) Adjusting curricula in vocational institutes to align with the competencies, professional standards, and skill standards required by employers and 4) Raising awareness of the importance and potential of vocational education.

The central mechanism for improvement lies in competency-based curriculum development and in the testing system. In a notification by the Minister of Education dated 24 November 2014, the Ministry demanded that vocational education programs use the national qualification framework to define relevant educational qualifications at each level. And this mandate applies to dual education as well. Working on strengthening the linkages between standards for education qualifications and the levels of competency required by different industrial sectors represents significant progress for improving vocational education in Thailand (Siriphan Choomnoom, 2015). The following table represents the alignment of the qualification framework and the linkage between educational qualifications and the competency standards endorsed by industrial clusters set by Thailand Professional qualifications Institute and the national industrial skills standards defined by the Department of Skill Development.

Table 2.1 Mapping of Educational Qualifications and Competency/Skill Standards

Education Qualifications			NQF level	Competency/Skill Standards		
Basic Education	**TVET**	**Higher**		**TPQI**	**DSD**	**Industry**
		Doctoral	9			
		Master + Certificate	8			
		Master	7	7		
		Bachelor + Certificate	6	6		
	Bachelor	Bachelor	5	5		
	Diploma	Associate	4	4	4	
	Certificate		3	3	3	
Upper Secondary			2	2	2	
Lower Secondary			1	1	1	

Source: Siriphan Choomnoom, 2015.

According to Dr. Chaipruek Sereerak, PPP committees have been very strong and are key mechanisms for fostering close collaboration with employers to raise the quality of vocational education to meet the demands of the labor market.

2.1.4.3 Dual Education Initiated by Companies or Industry Associations

There are many dual education initiatives being implemented by companies in collaboration with vocational colleges. Two selected programs, the Vocational Chemical Engineering Practice College (V-CHEPC) and the Toyota Automotive Technological College are presented below due to their establishment and high recognition by the industry and by the government.

1) Vocational Chemical Engineering Practice College (V-CHEPC)

The Vocational Chemical Engineering Practice College (V-CHEPC) has been initiated by the Office of Vocational Education Commission (OVEC), the Petroleum Institute of Thailand (PTIT), the Suksaphat Foundation, and the petrochemical industry group, which includes PTT Global Chemical, SCG Chemicals, UBE Chemicals Asia, Dow Chemical Thailand Star Petroleum Refining, the Federation of Thai Industries and the National Economic Social Development Board (NESDB). The initiative aims to develop manpower at the technician or higher vocational education level in the petroleum or petro-chemical industry in response to the demand for skilled manpower by the industry. The program provides both academic study at Maptaphut Technical College and practical training at the companies. This program is intended to be a pilot model for other institutes.

(1) The Program Structure

The program is administered by higher vocational education institutes for 2 years. Students are required to participate in an internship program for 7-8 months during the course of study. The internship is organized into three periods. The first period begins during 1-15 September during the last year of lower vocational education and provides an orientation on organizational culture. The second internship lasts 2 months during the second semester of the second year of the higher vocational education program. During this second period, students learn about maintenance and production processes. In the last practicum, students receive training for five months from June through October in their second year of higher vocational study. This experience is followed by a project assignment. In addition, they receive training in English to prepare for The Test of English for International Communication (TOEIC).

(2) The Learning Approach

The program aligns its curriculum with the vocational educational curriculum standards in order for students to be eligible to receive a vocational diploma. Project-based learning is used to enhance students' analytical thinking skills and their capacity to apply classroom theory to practical tasks. Moreover, the industrial tasks and problems are translated into curriculum content and

classroom assignments for the students. The students learn in an environment that has equipment and facilities equivalent to the real workplace. Practical training in the workplace provides petroleum and petro-chemical industrial skills and experiences for students so they can acquire deep understanding of the industrial environment while developing the interpersonal skills needed for them to work effectively. Faculty members from King Mongkut's University of Technology Thonburi (KMUTT) and Rajamangala University of Technology Thanyaburi provide academic support for the delivery of both the theoretical and practical instruction. Apart from the universities, employers also provide competent trainers to assist in the instruction. Students that graduate from the program and that are subsequently employed in the industry are assigned to be mentors that provide coaching for later cohorts of students.

(3) Students and Benefits

In order to qualify for the program students must earn a minimum of a 2.75 GPA with good behavioral records. The program accepts only 30-40 students annually from a total pool of over 400 applicants. During the period of program enrollment, students receive scholarships with free tuition and are provided allowances with accommodation. Upon completing the program, students are employed by companies in the energy sector with a starting salary of at least Baht 15,000.

(4) Summary

The initiative has received significant investments from the industry to develop only 30 students per year. This effort by a consortium of companies in the petrochemical industry has demonstrated how cooperative endeavors by the private sector to upgrade the quality of vocational graduates can grow to become an important source of competent human resources for the industry.

2) Toyota Automotive Technological College

The Toyota Automotive Technical Skill Development Center was initially set up over 18 years ago in 1997. It aims to upgrade the skills of entry workers for the industry, especially for Toyota's distributors because the existing vocational education system does not fulfill the industry's requirements either in terms of the quantity of graduates or the instructional quality provided to them (Salaya Aksornmut, 2015). In order to cope with the expanding demand for personnel

whose skills fall between the semi-skilled and high-skilled levels of the workforce, the college was formally set up through the collaboration of the Office of Vocational Education Commission and the industry. The OVEC representatives joined hands with the college's personnel in developing the curriculum with the approval to operate the college offering vocational diplomas and associate degrees granted since 2001.

(1) The Program Structure

The program offers the following three areas of study: 1) automotive technology 2) automotive service technology and 3) body and paint service technology. Automotive technology faculty aims to offer training for high-skilled technicians that are capable of repairing Toyota cars upon program completion. Automotive technology provides students with skills in maintenance, management and customer service. They will learn how to identify car problems and appropriate parts repair. Graduated students from this faculty will work as automotive service advisors at Toyota service centers. The third faculty, body and paint service technology, prepares students in auto technology related to body frame and paint. They will be trained in auto body repair and painting.

(2) The Learning Approach

Students have to "board" away from home for two-years with only weekend breaks. They have to take a total of 1,300 hours of training with 830 hours allotted to practical training. Upon enrollment, students that have not taken any automotive technical courses will be provided with basic industrial and technical training. The college is well equipped with the latest technology for the manufacture of cars and parts. Students' parents will be notified if the students decide to go home during the weekends, and students are expected to comply with strict rules and attendance in order to avoid distractions.

(3) Students and Benefits

The eligible students are 12^{th} graders or graduates from lower vocational programs. Each year the college accepts only 40 students, but 800 students apply for the program. Students are responsible for an estimated expense of Baht 180,000 if they choose to take the course in automotive technology, 170,000 for automotive service technology and 300,000 for body and paint service technology. These expenses include tuition, meals, accommodation, equipment and work clothing.

Over 70% of students decide to work for distributors after graduation and most advance in their careers to become service center managers (Salaya Aksornmut, 2015).

(4) Summary

The Toyota Automotive Technical College is an excellent example of private sector investment in vocational education where the investing companies create a separate entity which they manage. The new entity requires little support or collaboration with the government, only participation in joint curriculum development at the beginning. The number of students benefiting is small; in this case, only 40 per academic year.

2.1.4.4 PPP Initiated by the DSD or Other Government Agencies

Other agencies besides the OVEC have initiated partnerships to provide vocational education and training. For example, the DSD has entered into relationships with numerous companies to enhance the skills of the workforce including Toyota, Yamaha Motor, and Goodyear; these partnerships have implemented technical skills development programs at industrial sites. The National Science Technology and Innovative Policy Office (STI) and the OVEC developed the Science-Based Technology Schools (SBTS) Program, which includes 5 vocational colleges in 5 regions with the support of local universities. The Board of Investment has collaborated with the Pradabos Foundation with additional support from the industrial education faculty at King Mongkut's University of Technology Thonburi to initiate a Workforce Preparation Program to develop skills in manufacturing, automotive, maintenance, and electrical and electronics mechanics.

In summary, there are public and private partnerships in vocational education and training in Thailand but they are scattered and fragmented, with a lot of small initiatives being undertaken by many partners. Even the central agencies that oversee this mission are under different ministries; the Ministry of Education, the Ministry of Labor, and the Ministry of Science and Technology are involved in the creation of PPP's but they lack a common approach, unified standards, and a coordinated plan.

2.2 Challenges of Public and Private Partnerships Regarding Vocational Education and Training in Thailand

Inefficient management of the current Thai education system is seen by many business leaders as one of the main obstacles to strengthening career technical education in Thailand. Inefficiencies have been identified in several areas: the lack of a unified human resource development plan to coordinate the efforts of different ministries; the inequitable distribution of educational resources across schools with small-to-medium-sized schools receiving inadequate resources while larger schools receive more; and a lack of accountability for outcomes which leads to too little attention being directed to the quality of teaching and learning.

Lack of collaboration and coordination among the responsible government organizations, especially in terms of education, skill development, and national industrial development, is a serious challenge facing the nation. The lack of coordination of workforce development policies and programs is reflected in the widening gap between the number of students enrolling in vocational education programs and the much larger numbers enrolling in academic programs; the ratio between the two streams is 35 to 65 in spite of the increasing demand for technical workers from emerging industries during the past decade. This gap is exacerbated by low social awareness among adults of the potential value of vocational education and the opportunities it offers, which discourages parents and students from pursuing vocational programs. The low value placed on vocational education is particularly evident among students attending the large schools operating under the Office of the Basic Education Commission, where students focus on being admitted to universities with minimal understanding of what careers they might want to pursue. Furthermore, many schools administered by the OBEC do not encourage students to pursue vocational education unless they are considered ineligible for academic programs due to poor test results or family poverty. Even in small extended opportunity schools or in medium-sized schools located in high poverty areas, many teachers do not encourage students to enroll in vocational education because they believe that these students will not have stable or productive career paths. As a result, most of the current collaboration between the OBEC and the Office of the Vocational Education

Commission schools comes from cooperation between school principals that are seeking to motivate students that are not interested in general academic education and have a high tendency to drop out.

Secondly, resources are distributed across small and medium-sized schools in an inequitable and inefficient manner. Schools serving fewer than 500 students are responsible for 54% of the students in Thailand. These primary schools and extended opportunity schools (offering kindergarten to grade 9) have inadequate educational resources in all areas including administrators, teachers, equipment and facilities. These schools face such serious obstacles that their principals often seek promotion to larger schools. As a result, they often lack the dedicated and sustained leadership required for school improvement. Many students that attend these schools come from families struggling with poverty and that working hard just to survive. Therefore, these students also often lack the parental support required to motivate them to learn. Some of these students pursue vocational study after finishing grade 9, and some principals in these schools voluntarily initiate collaboration with local vocational schools to encourage students who are not interested or that are judged able to pursue academic education to continue their study in vocational education.

Thirdly, teaching and learning in many primary and extended opportunity schools are heavily dominated by rote memorization and their curricula are only weakly linked to employability skills. Neither teacher training programs nor the available professional development introduce teachers to the pedagogical content knowledge and teaching practices needed to promote critical and analytical thinking for students. Furthermore, teacher incentives and the educational quality assurance system do not give sufficient weight to teaching practices which are directly linked with increased student learning and performance.

Ongoing Public-Private Partnership Initiatives

Despite the challenges mentioned above, a number of initiatives have been undertaken by educators and business leaders to address the skills gap. These initiatives fall into three categories: bilateral initiatives, multi-lateral initiatives, and networks. These patterns of partnership are defined with examples below:

1) Bilateral initiatives – one-on-one partnerships between a school or academic institution and a company. These partnerships may be initiated by either

party. One such partnership has been created by Isuzu UNT Co., Ltd. and Samutprakarn Technical College to develop automotive service skills for students.

2) Multilateral Initiatives – partnerships between more than one school or academic institution and one or more companies. This type of partnership is often initiated by a group of companies, for example; General Motors (Thailand) Co., Ltd. has collaborated with ten vocational colleges in Thailand to develop the Automotive Service Educational Program (ASEP), which aims to provide trainings for students at the higher-vocational education level as qualified technicians. Another such program is the collaboration between the Petrochemical Group consisting of SCG Chemical, PTT Global Chemical, UBE Chemicals Asia, Star Petroleum Refinery, the Federation of Thai Industries (FTIs) and the Maptaphut Technical College to develop the Vocational Chemical Engineering Practice College (V-CHEPC) targeting students for both vocational and higher-vocational education levels.

3) Networks - partnerships between public and private networks. Examples are the cooperation between the FTIs, the Thai Auto parts Manufacturers Association, the Department of Skill Development, and the Office of Vocational Education Commission to establish a program in automotive and auto parts workforce development. Fifteen vocational colleges are participating in this program together with a group of automotive and auto parts manufacturers led by Mr. Thavorn Chalassathien from Denso (Thailand) Co., Ltd. Moreover, there is a partnership between the National Science Technology and Innovative Policy Office and the OVEC to develop the Science-Based Technology Schools (SBTS) Program, which includes 5 vocational colleges in 5 regions.

Nevertheless, while concerned educators and far-sighted businesses have launched these and similar initiatives, their efforts are reaching only a small number of the countless numbers of Thai students that need employability skills and these initiatives have not yet led to the broader reforms needed to spread these policies and practices, such as making adjustments in the core subjects in the K-12 curriculum in order to more effectively meet the workforce needs of business and industry or providing more effective career guidance in lower secondary schools. At present, schools and other academic institutions do not have the flexibility they need to adjust their curricula to match the demand side. The existing partnerships are not holistic

systems that include all of the components required to ensure an end-to-end education to employment system. This would require establishment of a committee of advisors and a sub-committee for each industrial sector, an awareness-raising campaign and public relations to promote a more positive image of vocational education, policy planning by academic institutes for workforce development according to the demand from each industrial cluster, development of curricula and teaching materials for the actual jobs in each cluster, teacher development programs, assessment systems, internship programs in companies, a process of credit transfer among academic institutions, development of occupational standards and professional qualifications and aligned examinations, a recruitment and selection process, and an evaluation of the program.

2.3 International Experience of Public and Private Partnerships in Vocational Education and Training in Selected Countries: Singapore and the U.S.

The following section of the study presents an in-depth analysis of two cases concerning vocational education and training in Singapore and the U.S. Vocational education and training in Singapore and the U.S. have been selected as case studies because of their unique approaches to institutionalizing PPPs mechanism in two different settings. Singapore, a highly-centralized government, has successfully transformed technical education institutions to be world-class public organizations in developing high-performing talents. In this research, the Institute of Technical Education (ITE) has been selected for the case study due to its extensive level of PPP adoption. Its outstanding success is attested to by multiple awards such as the winner of the 2007 Harvard-IBM Innovations Awards in Transforming Government, the 2001 Public Service Premier Award in Singapore, and Public Service Best Practice Award in Stakeholder Engagement. The U.S. Career Academies program, implemented in a decentralized government system, has been able to successfully work collaboratively with local stakeholders, especially private sectors at state and district levels, to contribute knowledge and resources for the improvement of vocational and technical education. The program has been widely accepted among

international scholars for its highly rigorous longitudinal study. It is a 15-year random assignment study of students that participated in the program and have been employed for over 8 years after completing the program, which has demonstrated an impact on students' employment and earning-gains (Kemple and Willner, 2008). Therefore, it is interesting to explore how Singapore and the U.S. have developed strategies and have implemented successful PPP mechanisms in order to improve their public governance, which has led to significant impacts on program beneficiaries.

2.3.1 VET in Singapore

Since 1991, Singapore has succesfully turned around the image of vocational and technical education - from being the "last resort" for students that could not achieve academically - to the current position which attracts about 65 percent of the students. Of the 65 percent, 40 percent enroll in one of the five polytechnics: Singapore Polytechic, Ngee Ann Polytechnic, Temasek Polytechnic, Nangang Polytechnic, and Republic Polytechnic). The other 25 percent are enrolled at the Institute Technical Education.

In the polytechnics, full-time students usually pursue a diploma with a three-year progrm of study. At ITE, students pursue a two-year study for either Nitec (National ITE certificate) qualificaiton or a Higher Nitec qualfication. The Master Nitec or a two-year diploma program is offered for students with Nitec plus three yers of relevant experience with participating companies. There are three new diploma programs, firstly, machine technology, secondly, automotive engineering through collaboration with the German govenrment, and thirdly, culinary arts with an institute in France. This program is equivalent to a German meister qualification.

In Figure 2.4, At the secondary level in Singapore (years 7-11), students are streamed into special, express, and normal programs. The Normal (acadamic) program provides students with academic curricula and five years of study before completing their O-level examinations. The Normal (technical) stream caters to those students that are more inclined to pursue technical-vocational training for their post-secondary education. In post-seconday education in the polytechnics, full-time students usually pursue a diploma with a three-year program of studies.

At ITE, students pursue a two-year program for either Nitec (National ITE certificate) qualification or a Higher Nitec qualfication. The Master Nitec is a two-

year diploma program offered to students with a Nitec certificate plus three years of relevant work experience with participating companies. There are six main schools under ITE including the School of Applied and Health Science, the School of Business and Services, the School of Design and Media, the School of Electronics and Info-Communication Technology, the School of Engineering, and the School of Hospitality.

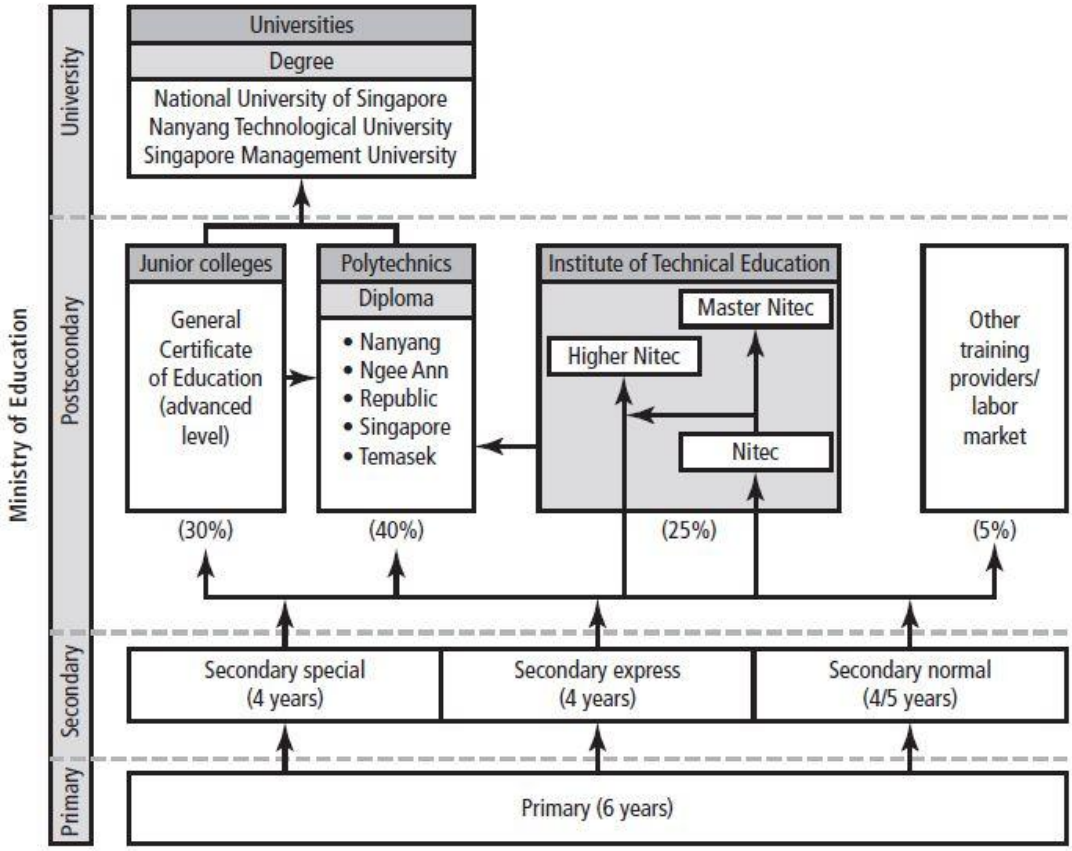

Figure 2.4 Singaporean Education System

Source: Lee, Boon, Fredriksen and Peng, 2008.

2.3.1.1 Singapore: ITE

The Institute of Technical Education (ITE) in Singapore was established in 1992 under the Ministry of Education. It is the primary provider of career and technical education in Singapore as well as the key developer of national skills standards and certification. Each year, about 25% of the students graduating from

secondary education or approximately 13,000 students, enroll in this institute. The students accepted by the ITE are the bottom quarter of the students in terms of academic performance. Based on ITE survey data, 80% of these students are from low-income families with an average monthly income of Singapore dollars (S$) 850 compared to the national averge of S$ 2,000. Within ten years of graduating from the ITE, about half of these students go back to a polytechnic for a diploma and some of them further their study at university afterwards or later on.

In January, 2014, ITE's enrollment was 28,742 and 84% of them graduated. Currently, it has a staff of 2,500 of which two-thirds are academic faculty. Besides its full-time programs, ITE also offers part-time students modular curricula.

The Singaporean government has made a large investment in building ITE's infrastructure and developing personalized learning programs that attract students. The three ITE campuses are located close to Singapore's major industrial parks so students can conveniently be transported to places of work. Its high success rate depends on collaboration with the companies that participate in governance, fund raising and program design at ITE. These three aspects of the partnerships can be summarized as follows:

1) Governance. ITE has a unique governance model. Currently chaired by the Chairman of Jurong Engineering Ltd., half of the 20-member board of governors represents corporate partners. Its three colleges each serve about 7,200 students. The ITE headquarters oversees policy formulation, curriculum development, student intake, examinations, quality assurance and the consistency of standards across the colleges.

2) Fund Raising. ITE has used a number of incentive strategies to attract funding from different entities in order to sustain its operations. It has set up the ITE Education Fund with the status of an approved Institute of Public Character (IPC), which is governed by a Management Committee. The Education Fund is authorized to issue donation receipts to contributors for tax deductions up to 2.5 times the value of the donations. A donation of above S$100 will be recognized via the ITE webpage while donation amounts over S$5,000 will be recognized on both the webpage and on the ITE Donors Wall located at the ITE headquarters. In addition, since 2010, the government of Prime Minister Lee Hsien Loong has provided matching grants for every dollar ITE has raised from private donors. Success stories

about the students receiving scholarships from different donors are featured in ITE brochures, which help attract additional donors. These strategies have enabled ITE to acquire funds from many stakeholders on a continuing basis.

3) Program design. ITE programs involve the private sector in many ways, which is illustrated in the following program components:

(1) Centers of Technology and Centers of Excellence: ITE collaborates with its industrial partners to set up centers and certification programs. ITE assures learners that the designed curricula are based on appropriate job analysis and are aligned with industry needs and standards.

(2) Traineeships: ITE partners with employers that are interested in recruiting secondary school graduates with appropriate skills training to enroll in ITE- designed and arranged programs that will lead to nationally-recognized ITE certification. The program includes both on-the-job training at a company's site and off-the-job training conducted by ITE or an ITE-approved training center on released days.

(3) Approved Training Centers: ITE provides opportunities for employers to be qualified as approved training centers and provides advice on facilities and equipment set up, course design, curriculum and testing development, assistance for companies' trainers on pedagogical and instructional skills, coaching skills, and planning and implementation of on-the-job training.

(4) Certified On-The-Job-Training Centers: ITE provides technical assistance to help employers certify that employees meet their on-the-job training standards.

(5) Industry Projects: ITE offers companies with services to develop new products or solutions using the latest technology and collaborating with ITE staff and personnel in its different schools.

(6) Career Service Centers: ITE supports its students and graduates with career guidance and recruitment services which help them match their skills and qualifications with the right market.

(7) Training Grant funding: companies investing in sponsoring on-the-job training or organizing off-the-job training at the company's approved training centers are entitled to receive 400% tax deductions/allowances of

up to $400,000 of expenditure per year. If the training is not accredited by the WDA or approved or certified by ITE, the maximum claim would be only $10,000 per year.

4) Success Factors. ITE's success stems not only from careful management of the institute but also from other factors that need to be taken into account in assessing vocational education and training in Singapore. In Mack Tucker's paper entitled "The Phoenix: Vocational Education and Training in Singapore", he identifies the key factors as follows:

(1) Good government: Lee Kuan Yew has developed Singapore's leadership by recruiting the best and brightest Singaporeans from among the highest potential high school graduates and providing them with government scholarships to study in the finest universities in the world under the condition that they return to help run the government. Moreover, these officials are highly motivated as they receive decent compensation. The top Ministers are paid a package of S$2 million a year. With such strong incentives, the government is able to retain talented individuals in the government and reduce the temptation of corruption. Through rotation from ministry to ministry, these leaders learn to work as a team with a shared vision. The high quality of Singaporean government officials is reflected in their shared strategic vision, careful decision-making, and the implementation of well-planned actions based on long-term and in-depth experience in their fields.

(2) Political stability: The leadership of the dominate party, the People's Action Party (PAP), has provided the country with a unified, long-term outlook in all development areas.

(3) Coherent planning: All of the relevant agencies including the Ministry of Education, the Ministry of Trade and Industry, the Ministry of Manpower, the Economic Development Board (EDB), the Workforce Development Agency (WDA) etc. work collaboratively to develop coordinated and coherent plans that are aligned with the overall national development strategy. Most importantly, Technical Vocational Education and Training is closely linked with economic development priorities as shown in the table below.

(4) A strong education system: Singapore has built a world-class compulsory education system. Even the graduates in the lowest quartile of performance that enter the ITE possess skills superior to the median level of performance of the OECD student population.

Table 2.2 The Strategies Aligned with National Economic Growth

Phase	Economic Strategy	General Education	VET
1. Low Cost, Low Skill Export Strategy 1945-mid-1970s	Offer low-skilled workforce to labour intensive industries with good industrial infrastructure and first-rate port facilities	Focus on improving adult literacy, increase primary education enrollment, expand secondary schools, send some officials to be trained overseas in leadership, create university.	Address the lack of technical workers. Government requires all secondary schools to offer 2 years of vocational education. Upper secondary industrial training centers and vocational institutions were built.
2. Capital Intensive, High Tech-High Skill Strategy mid-1970s to 1990s	"2nd Industrial Revolution" to provide high technology base for economy. Attract high value-added global firms with incentives. Produce home-grown senior and mid-level technical and scientific professionals to reduce the need for expats.	Emphasize quality. Streaming starts at Grade 5, raise standards for science, math and English. Radical upgrade of teacher quality. Keep students in schools beyond compulsory education. More choices and flexibity for students.	Economic Development Boards set up institutes with collaboration from France and Germany. Only 5% of cohort entered universities, 8 percent continued study in polytechnics. Number of research scientists and engineers increased by factor of five over entire period.
3. Creativity and Entrepreneurship Strategy/1990s to Present	Raise to the top of the value chain: world-class producer of highly-innovative, high-valued, R&D driven products. Develop local companies with regional and global reach. Position Singapore as regional hub for economic, education and R&D.	Shift schooling from rote memorization to critical thinking and creativity. National Institute of Education develops world-class teacher education programs. Schools are given more autonomy with wider choices for students	Shift vocational education to post-secondary education with state-of-the-art insitutions with high-quality infrastructure and physical facilities. Strengthen factory school model and continue apprenticeship program.

Source: Tucker, 2012.

(5) The “Factory School” model: By basing the TVET system on this model, Singapore is able to offer state-of-the-art training that meets industrial standards and offer students challenges similar to those that they will face in the real workplace.

(6) Strong linkages with business: Singapore requires faculty members at the ITE to work periodically in a company operating in the same field as their teaching disciplines; this allows them to update their knowledge and skills to the level required by the industry. Moreover, by involving employers in TVET goal-setting and program design, setting of occupation standards, assessment of candidates for certification, and supply of contemporary equipment and technology for instruction and training, Singapore maintains the excellence of its TVET programs.

(7) Rebranding of TVET: By making a large investment of resources and carefully planning and executing public relations campaigns, Singapore has shifted the image of its vocational education. Once perceived as the “dumping ground” of education, TVET is now regarded as a valued and respected option for students.

(8) Meritocracy and support: Even students that show the least academic potential are valued and provided with high-quality opportunities. The Singaporean government shows that it values their potential and invests in their development to help them reach national standards and expectations.

(9) A commitment to implementation: The Singaporean government is committed to translating policies into well-planned actions. Government officials are perceived as hard-workers that ensure that plans are efficiently executed.

In summary, the context in Singapore is different from Thailand in many ways. The size of its population is one of the major differences. However, we should not ignore its remarkable success and the basic principles that underlie it; many countries including Thailand have not yet achieved the strong leadership and effective public administration which has led Singapore to achieve its goals and to become a global leader in economic and social development.

2.3.2 CTE in the US – The Career Academy Model

The United States has not had the kind of systematic success in improving TVET that Singapore has experienced, but the Career Academies model launched in the US over 40 years ago has demonstrated its effectiveness. Career Academies have improved student outcomes during and after high school. By 2010, there were over 7,000 career academies in the US with over 1 million students enrolled.

According to the National Center for Education Statistics (NCES) a Career Academy is "a multi-year program in which the curriculum integrates academic and career/technical education courses, organized around one or more broad career themes."

2.3.2.1 Program Structure

Academies were first introduced to reduce student drop outs and to provide better vocational preparation. However, they have taken on a broader mission, preparing students for enrollment in four-year colleges as well as the workplace. The designs of Career Academies vary widely, depending on the interests of the employers that are partnering with the schools, the job opportunities in the community, and the interests of the student population. The program funded by the state of California, for example, requires three academic courses each year in grades 10 and 11 and one to three academic classes in grade 12, together with career-related courses each year. The National Academy Foundation, a non-profit group that helps communities develop academies, usually focuses on the curriculum in grades 11-12, but some individual NAF academies that have added 10^{th} grades. And, there also are career academies that include community college partners and offer programs from grades 10 to 14.

Among the unique characteristics of career academies is that they offer students an introduction into promising career fields—health, engineering, technology, law enforcement, and so on—as well as continuing their academic development. Career academy programs are usually developed in occupational fields that are attractive to students and that also attract support from local employers in the field. In order for a career academy to be successful, employers must be willing to provide financial and technical support as well as serve as sponsors and advisory committee members and provide speakers, mentors, internships, field trips, and

sometimes faculty for the programs. The selected field should be in an emerging and healthy industry that is creating jobs. This ensures that some students will be able to find job opportunities after they graduate from the program while others may continue postsecondary education in the particular field.

Program breadth is another important aspect of successful career academies. If the career field is too narrow, the career choices for students will be limited; if the field is too broad, there may be problems in curriculum design and identification of relevant and interested employers. Effective career academies find a balance between the opportunities created for students and the needs of a local industry.

2.3.2.2 Funding Through PPP Mechanisms

Career academies vary in their sources of funding. According to the US Department of Education's Small Learning Communities (SLC) Awards Database, some SLC grants have been used to support career academies. In California and other states, career academies have received state funding to cover development costs, and many career academies, perhaps most, have received public funding from local school districts. However, most career academies have received support from local employers or business groups. For example, the Philadelphia Academies mobilized contributions from corporate funding and resources to support development while the city school district supplies oversight and supplies teachers and classrooms.

Federal legislation also has been passed to support the replication of the career academies, including amendments to the Perkins Act, which supports vocational education. It is worthwhile to explore how the Perkins Act has encouraged states and local school districts to implement high-quality programs. Brand (2009) notes that career academies were endorsed by the Carl D. Perkins Career and Technical Education Act or Perkins Act when it was renewed in 2006 to emphasize the linkage between academic and career-technical instruction. This act is the primary vehicle through which federal support for vocational-technical education is distributed to states, local school districts, and postsecondary institutions. The Perkins Act promotes high-quality career and technical education programs with the following expected features:

1) The funds that states receive have to be divided, with 85% for use by local actors and the remaining 15% going to states to implement local activities under leadership and administration categories that benefit the CTE program.

2) The grants funded by states should go to consortia of local education agencies (LEAs), post-secondary institutes and employers. These stakeholders have to be involved in the development of a plan which states have to submit to the Secretary of Education detailing how they will use the Perkins funds. At least one LEA which serves a high-concentration of students from low-income families must be included. The post-secondary institutions included must offer two-year degrees. Other partners could be employers, industry associations, labour organizations, public-private workforce entities, and other institutions, including research universities.

3) To receive Perkins funding, each state must raise private sector resources to meet a matching requirement. This matching requirement could be cash or in-kind resources such as equipment, training facilities, start-up capital, and technical assistance.

4) The distribution of the Perkins fund must be based on competition, and allocated to those consortia which demonstrate the ability to implement high-quality CTE programs for high-growth industry and for high-demand occupations identified by the state and that are available for all students, regardless of background.

5) The state should provide technical assistance to the consortia in order to ensure equitable opportunities in accessing the funds. Moreover, program data collected at the state level should enable the use of performance-based funding, in which the awarded consortia demonstrate their programs impact on student outcomes and their ability to close performance gaps across student sub-groups. By setting up this kind of funding mechanism, states can encourage local actors to implement programs that have higher impacts on student outcomes and contribute to equitable access to quality career technical education programs. Moreover, it helps to create a results-based culture, which leads to continuous improvement of CTE systems.

2.3.2.3 The Implementation Process

It is interesting to observe that the implementation of career academies involves private stakeholders at different levels. They play significant roles in ensuring that the programs meet the workforce demand of the engaged employers while aligning the programs with the development needs defined by the state. These processes of participation may include forming an advisory board, identifying/ preparing academic staff, coordinating the academy with the high school, developing curricula, recruiting and selecting students, preparing facilities and equipment, planning motivational activities, business speakers and fieldtrip programs.

In sum, there are lessons to be learned from the how career academies have evolved over 40 years of implementation in the U.S. Apparently, the success of career academies is connected to the decentralization of education in the US, and the empowerment of states and local school districts. However it is apparent that the strong involvement of relevant local stakeholders—public and private—has been shaped through a well-planned federal funding scheme that defines the conditions that contribute to the development of high-performing programs together with supporting technical assistance by states. This cannot happen without good information management systems with data aggregated at the state level, which enables state officials to monitor performance of the awarded programs over time.

2.3.3 Lessons Learned from the Two Cases: Singapore's ITE and U.S. Career Academies

The above two cases offer multi-facet insights into how effective programs are implemented and what contributes to their success, leading to an impact on beneficiaries. A comparison of the cases together with how we can apply what has been learned to Thailand is presented below.

2.3.3.1 Comparison between the Two Cases: Singapore's ITE and U.S. Career Academies

Both cases have been proven to impact student achievement. Its success has been accounted for by major common factors shared even in different contexts, as presented below.

1) Efficient management with strong leadership: ITE has been operated under a highly-centralized system while career academies run by

decentralized governance. Both programs are well structured and efficiently managed with unified strategies across government units. There are long-term strategies and ongoing implementation to ensure that sustainable impact exists in both programs. Leaders responsible for both programs have been able to foster collaboration w

2) Focus on underserved population: Both ITE and Career Academies programs aim to provide quality education to student groups that are at the bottom of their social classes. Their leaders put effort into allocating resources and designing programs to ensure access by these target groups. An equitable allocation of resources with vast amounts of investment is shared with underserved students that are at risk of dropping out of school because of low motivation or lack of financial resources to continue their study and retain formal education.

3) Collaboration with the private sector: Both programs place high importance on fostering collaboration with the private sector. The level of collaboration in Singapore has been adjusted to the stage of their level of adopted knowledge by the local government. The more technical transfer that the country needs, the deeper is the level of collaboration, know-how transfer, and the more the government engages their private partners. Once government capacity has been established, the role of the private sector is focused on advising and on capital and profit sharing. However, the expertise of government officials has been very crucial to the successful implementation of the program. For U.S. programs, the collaboration with the private sector has been well structured through committees at the state level. The engagement by the private sector has been integrated with the entire process of educational management. People's participation has been very unique in the US's decentralization and is regarded as a foundation to support the implementation of public and private partnership mechanisms. Private partners have been involved in the entire cycle of education management demand analysis, curriculum development, teacher development, student internships and employment processes through governance structures, which are reinforced by state-funding criteria.

2.3.3.2 Application of the Lessons Learned to Thai Vocational Education and Training

When comparing the case studies of Singapore and US with the situation in Thailand, it is obvious that Thailand is at an early stage of implementing public-private partnerships to strengthen vocational education and training. Both

selected cases from the Singapore and the U.S. share meaningful lessons for Thailand. Even though Thailand has a context from those two countries, it is worthwhile learning how we can reform Thai vocational education and training and prepare the country for sustainable development with quality human resources. The following lessons have been learned from these two cases and below are some of the implications for the reform of Thai education management:

1) The governance of a workforce development system requires long-term planning and dedicated implementation. Both centralized Singapore and the decentralized US have demonstrated that the success of workforce development planning relies heavily on the continuous involvement of partners, especially from the engaged employment sectors. The governing board of ITE in Singapore and the state and local boards of education in the US play critical roles in developing strategies for skilled workforce development direction at the national and state level respectively. These governing bodies are advised by committees of employers. In Thailand, a committee has been established, according to the national committee on workforce development and skills training coordination under the regulations of the Office of the Prime Minister B.E.2542. This national committee is chaired by the Prime Minister with the Minister of Labor serving as the vice chairman. Membership includes the permanent secretaries of 14 ministries and representatives from significant agencies and organizations, such as the National Economic and Social Development board, TDRI, the Chamber of Commerce, the Federation of Thai Industries, etc. Moreover, the Director General of the Department of Skill Development serves as the secretary of the committee. This committee aims to coordinate all government efforts to promote and to align them with national policies and the economic and social development plan. Sub-committees have been set up for major industries to formulate strategies and to implement a plan at the industry level. In addition, provincial committees chaired by the governors have been established to ensure that implementation is carried out. These existing mechanisms are an important first step, and could be leveraged as the platform for ongoing collaboration between the public-private sectors to strengthen workforce development policies and programming.

2) Strategic planning for human resource development must be in alignment with the development stage of the nation. In both the Singapore and U.S. cases, priorities are placed on upgrading people from the bottom of the economic pyramid to be better off. Both ITE and career academies are used by their governments to make serious and continued efforts to address inequities by targeting low-performing students and upgrading their skills to improve their long-term livelihoods. In Thailand, the human resource development budget has not been equitably allocated to serve the majority of the people. The Department of Skills Development and vocational education institutes receive less than five percent of the total national budget allocated to basic education, vocational education, higher education, and workforce development combined. In particular, only 1,495 million baht was allocated to the DSD, which has the critical mission of upgrading the skills of a workforce of more than 38 million people. Interestingly, higher education which serves more affluent students was allocated nearly 25% of the budget. It is necessary to review these allocations and to determine how the education and human resource development budget can be used efficiently to reduce poverty. Gaps in access to training might be addressed by monitoring budget allocations and spending and focusing on investing where there are proven results and impacts.

3) The planning should be driven by both social goals and industrial demands aligned with the national economic development strategy. This national strategy has to take into consideration the direction that Thailand wants to pursue. Based on a speech given by the Minister of Science and Technology at the National Reform Council meeting on 27th April, the Thai government has made considerable effort to move the country out of the middle income trap in which the majority of the workforce possesses low and medium levels of skills. It is essential that the government invest in upgrading the workforce through multiple channels. Moreover, multiple industries which require highly-skilled workers need more support. Resources must be shifted from preparation of workers for labor-intensive industries to those requiring highly-skilled workers. New incentive schemes must be implemented to promote industries that have long-term plans to upgrade the skills of their workers to drive the country into an innovation-driven economic development stage.

4) Decentralization of decision-making and the empowerment of local public agencies to work with the private sector are essential steps in this process. By allocating funds to incentivize public-private partnerships for skill development programming, the central government can promote more efficient and effective use of resources. Government agencies have used this approach in both Singapore and the US. In Thailand, education funding has not been decentralized to the provincial level. Based on in-depth interviews with education stakeholders in the provinces, although there has been some decentralization of government decision-making through provincial local administrative organizations, the provincial budgets are largely spent on infrastructure development rather than on human resource development and education. Therefore, changes in regulations or laws to encourage higher spending on education and the engagement of the private sector are needed. Moreover, it is important that the national committee with its multi-sector engagement oversee such spending and program implementation and serve as the check and balance mechanism to ensure accountability and transparency of the provincial programs.

5) Thailand must invest in the long-term capacity development of government agencies. Based on the Singapore case, technology and knowledge transfer has been accomplished through step-by-step use of joint investments in institutions utilizing well-planned knowledge transfer. Singaporean leaders have engaged experts from different countries such as Germany, France and Japan to provide technology and knowledge transfer to develop high-quality training institutions. With a well-planned approach to capacity building, government officials have learned about the latest technology through technical assistance provided by overseas experts from these governments. Eventually, they were able to step up and lead the new training institutions. Based on in-depth interviews with Thai government officials, when it comes to using public private partnerships in the VET, due to the higher levels of technology and expertise in the private sector, public officials need to make a difficult transition from program operators to facilitators, regulators, and consultants. It is important that they shift their role from delivery of training to the workforce to one of quality control and consultants on work productivity improvement.

6) Thailand must place greater importance on recruiting highly-talented people into leadership roles and gaining their commitment to the development of the nation. This is of the utmost importance for the long-term growth and sustainability of the nation's economy. Singapore's officials have been highly recognized for their transparency and its 2014 corruption perception index was ranked 7th in the world compared to Thailand's ranking of 85th (the better ranking denotes higher transparency). Singaporean government officials are highly paid and well-trained. According to in-depth interviews at Thai government agencies, personnel development budgets are very limited. Moreover, the equipment available in technical and training institutes is outdated. With these limitations, it is difficult for government agencies to develop the leaders they need to provide quality public services that meet the changing needs of the emerging economic and social environment.

7) Thailand's leaders must develop a mindset and a culture of empowering local actors in order to create and nourish partnerships for public service delivery through grant making and fund matching. Both Singapore and the U.S. are good role models for making strategic utilization of funding to encourage cooperation among private actors and civil organizations in the creation and implementation of VET programs. Thailand has always been dominated by central authorities that set priorities, develop plans, spend budgets through their activities, and try to implement the plans on their own. It is critical for government leaders and civil servants to instill a fresh mindset that recognizes that stakeholder engagement is essential to sustainable development, especially in the skills development area where the private sector has advantages due to its leading-edged technology, know-how, and expertise. The study of the two cases has reinforced the importance of the leadership role of the private sector in developing strategic plans and in implementing effective partnership programs. Therefore, developing a culture of public and private partnerships requires a shift in the mindset of Thai leaders so that they recognize that through partnerships, public services can be improved and expanded through a synergy of public and private efforts and expertise.

8) More attention needs to be given to evidence of what works. By employing evidence-based policies and practices, the US's Perkins Act exemplifies how government policies can play an important role in developing a

culture of evidence-based practice by providing grants that require the use of evidence to support the policy and program decisions. In Thailand, policies usually rely on the preferences of political leaders, not on evidence of how such policies and programs impact potential beneficiaries. To change this, the mechanisms for budget and project approval need to be changed. Use of multi-year budgeting with regular outcomes and impact monitoring and evaluation will help. Moreover, support for independent evaluations and policy research is necessary to develop rigorous policy research to guide development work. One barrier to the promotion of this culture is that professional advancement of educators is determined by the generation of research papers, which are not tied to practice and student outcomes but often to superficial theories which lack evidence supporting their impact on teaching and learning.

CHAPTER 3

LITERATURE REVIEW

Increasing global competition and advancement in technology have pressed businesses to change the way they operate, resulting in a wide variety of governance arrangements, inlcuding collaborations (Madhok, 1997). This chapter presents a literature review of PPPs and explores the Interorganziational Relatoinship (IOR) theory, which was the underlying theoretical conception to guide qualitivative research on public and private partnerships in this study.

3.1 Public and Private Partnerships

Networks or other forms of inter-organizational activities have received attention from policy makers and scholars as key elements of governance (Agranoff and McGuire, 1998). Since the 1980s, Public-private partnerships have been promoted by international development organizations such as the World Bank and the OECD (Verger, 2012). In the UK, half of local authorities deploy partnerships for the supplier relationship management (Birch, 2001), and PPPs have been widely implemented in the field of infrastructure, energy, construction, and water supply.

Two key drivers of PPPs are private funding raised from the private sector, and the emerging interest of implementing e-government by most countries have encouraged governments to pursue partnerships with private companies in order to access the ICT expertise needed for implementation (Bovaird, 2004). PPPs have been deployed as the mechanisms to address the inefficiency, access, cost-effectiveness in public education delivery, especially in those countries with a low-income context. The concepts of PPPs in education have been highly influenced by transnational educational policy networks and international organizations (Verger, 2012). The Millennium Development Goals (MDGs) have been implemented worldwide with an improvement of access to quality education, which is problematic in the current

education system. Therefore, PPPs are regarded as alternative governance to address the complex public challenges (Bryson, Crosby and Stone, 2006) that involve the private sector in providing more political, economic, and legal support (Verger, 2012).

In this part, the definition of PPPs from various perspectives, the benefits of implementing PPPs, PPPs types as well as key components of PPPs are explored.

3.1.1 Definition of Public and Private Partnerships

The definitions of Public and private partnerships defined by scholars vary. Bovaird (2004: 200) defined PPPs as "working arrangements based on a mutual commitment (over and above that implied in any contract) between a public sector organization with any organization outside of the public sector." Verger (2012: 114) defines PPPs as "a form of relational contracting between the public and the private sector for the organization and delivery of services which involve risk sharing and mutual learning between the parties involved." Stadtler (2015: 407) summarizes them as collaborative arrangements in which partners from the public, private, and civil society sector join their efforts in addressing social concerns with public goods and services.

Another term used for public-private partnerships is cross-sector collaboration. Bryson, Crosby and Stone (2006: 44) define cross-sector collaboration as the partnerships involving different sectors, including "government, business, nonprofits and philanthropies, communities and/or the public as a whole." The partnerships are aimed at "linking or sharing of information, resources, activities and capabilities by organizations in two or more sectors to achieve jointly and outcome that could not be achieved by organizations in one sector separately."

Similar definitions of PPPs are presented by key international development organizations. OECD (2011: 3) defines a PPP as "a long term agreement between the government and a private partner where the service delivery objectives of the government are aligned with the profit objectives of the private partner." The European Commission (2003: 15-16) defines a PPP as "a partnership between the public sector for the purpose of delivering a project or a service traditionally provided by the public sector." The World Bank (2009: 31) defines PPPs as "a contract that a

government makes with a private service provider to acquire a specified service of a defined quantity and quality at an agreed price for a specified period."

All of the above defintions share common features, including involving multi-sector parties, shared purposes, moblizattion of resrouces, and expertise regarding common public goods.

3.1.2 Benefits of Public-Private Partnerships

PPPs are perceived to benefit public governance in many ways both at policy and implementation levels. McQuaid (2010) defines the benefits of partnership and interagency cooperation as follows, in terms of: 1) providing flexible and responsive policy solutions to complex and multi-dimensional social and economic problems; 2) sharing of knowledge, expertise and resources among multi-sector stakeholders; 3) synergy and pooling of resources brought by partners; 4) improving efficiency and accountability across all partnering agencies; 5) capacity building for implementing agencies and disadvantaged groups; 6) increasing legitimization and the buy-in of the community through their involvement. Some key factors in parterships involve a clearly-defined strategic vision, leadership and support, trust and legitimate role of all partners, institutional capacity and flexibity to engage in mutual decision-making and resource-sharing, organizational complementarity and co-location, mututal benefits and reciprocity, and a result-oriented approach aimed at intended outcomes and impacts.

Bovaird (2004) presented the idea that PPPs can be used as a vehicle for engaging members from the public, voluntary, and private sectors for policy design and planning, coordination, monitoring, evaluation, implementation and service delivery, and resource mobilization and resource management. The advantages of PPPs are additionally presented as providing economies of scale, economies of scope, and opportunities for mutual learning resulting from resource sharing and exchanges of knowledge and expertise among partners. USAID conducted an evaluation of its Global Development Alliance programs, a PPP model, in 2008. The benefits perceived by different stakeholers are described below:

1) The model introduced a continuous dialogue among the stakeholders, especially in those countries where multi-sector alliances are still in their infancy.

2) The model offers a mechanism for tapping business interests, goals, processes, assets and capacity which contribute to an increased development impact.

3) Business partners value the partnerships as they strengthen their creditability and open doors for them, especially with government offficials and agencies.

4) Business partners are attracted by a fund matching model. They appreciate that the pooled resources allow for larger initiatives and contribute to maximium impact.

5) Partners learn about good practices through knowledge and experience sharing. Corporate partners are data-driven and stress reliance on robust monitoring and evaluation to demonstrate program impacts. Their strengths in data collection and project management contribute to the success of the project. NGOs' strengths in designing development indicators and building stakeholder engagment are considered complementary values for the projects.

6) The leverage offered by use of local expertise and networks is seen as central to the model's success.

7) Private sector partners regard the alliances as contributing to higher impacts and greater sustainability in comparison to conventional philanthropy.

8) When the model is related to corporate core business interests that are matched with development goals, the alliances are more likely to be sustained.

To summarize, PPPs are used as a mechanism to mobilize resources and expertise from the non-government sector in order to improve public service delivery in terms of engagement from stakeholders as part of good public governance, cost reduction, increasing efficiency, and enhancing the quality of public service. Through resource mobilization and knowledge sharing, all of the partners contribute funds, expertise and best practices to the alliance projects. In this way, they learn how to implemnt projects in a more impactful and sustainable manner.

3.1.3 Types of Public-Private Partnerships

Snape and Stewart (1996) identifies three forms of inter-agency partnership in social-inclusion policy: facilitating parterships,, which are involved in strategic policy issues; coordinating parterships, which manage and implement policy, and implementing partnerships, which are directly involved with specific projects.

Bovaird (2004: 202-203) suggests a variety of PPP typologies based on different aspects as follows:

1) Sectoral basis – partnerships with business, civil society, associations, etc.

2) Relationship bases – defined by loose networks, collaborative, power-sharing, and contracts

3) Economic basis – defined by the type of business relationship, defined as supply-side, demand-side or mixed demand/supply-side partnerships

4) Policy area – classified by policy objectives of partnerships such as addressing social inclusion, empowering the disadvantaged; and

5) Scope – represented by vertical, horizontal. and mixed partnerships

The European Commision (2003) identfies different types of PPPs depending on the extent of the risk and responsibility transferred from the public to the private partners through the Build-Operate-Transfer (BOT), Design-Build-Finance-Operate Consession, and Build-Own-Operate (BOO) type of partnerships. In education, The World Bank (2009: 31) specifies the range of services to be offered by PPPs to include "education services (management, maintenance, and support services like transportation); operation services such as pure management; and infrastructure". Regarding PPPs in education, the World Bank categorizes them according to the financial source and the provision of services, such as vouchers, charter schools and contract considered as a kind of educaitonal service provided by the private sector but funded by the government.

In the developed countries that are members of the OECD (Organization for Economic Co-operation and Development) countries, the governments have spent over one-fifth of the educational expenditures on the provision of subsidies or vouchers for households in order to pay school fees and private tutoring. Twelve percent of the education budgets in these countries are spent on private institutions (The World Bank, 2009: 3). In the United States, academic tutoring is funded by the governemnt but provided by private companies. In addition, privately-managed charter schools and contract schools are being widely implemented in 40 US states (National Association of Charter School Authorizers, 2009). In several developing countries, governments subsidize private schools through teacher salaries, textbooks

or per pupil grants. Besides the provision of educational services, PPPs are being used for infrastructure development such as construction and maintenance of school buildings.

Like the European Commisssion (2003), The World Bank (2009) contends that PPPs have some advantages over traditional public delivery, particularly in education. The claimed benefits are that the use of PPP's contributes to higher effectiveness in resource utilization and in manging education, which leads to higher educational quality. Additionally, contracting with PPPs is a better way to engage the private sector rather than pursuing privatization, which is more controversial and attracts higher criticisim.

The World Bank (2009) has classified PPPs in education by the level of private engagment in delivering the services while assuming that the public sector is the main source of funding. It can be observed that the classification of PPPs in education made by The World Bank (2009) is similar to the PPP classifcation used by the European Commission, shown in Figure 3.1, as both use the level of responsibility for the service as one dimension of classification. Figure 3.1 shows that low or weak enagement of private partners leads to partnerhships in which the public sector finances and runs the schools, while the high engagment of private partners results in PPPs where the schools are managed by the private sector and most of the funding is the responsibility of the government and sometimes the funding follows students, as in voucher systems.

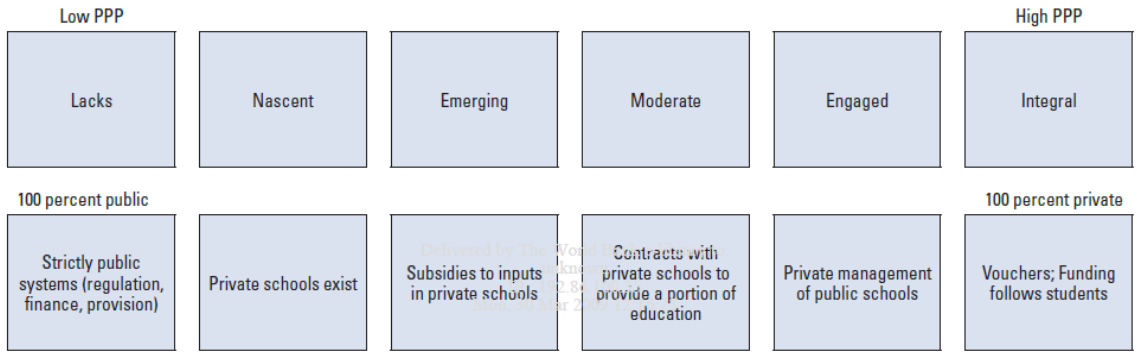

Figure 3.1 The Continuum of the Public-Private Partnership in Education

Source: The World Bank, 2009: 16.

3.1.4 Components of Public Private Partnerships

Partnerships are not simple ventures. There are challenges for the partners to deliver what is expected (Bryson, Crosby & Stone, 2006; Huxham & Vangen, 2003) in the alliance. These challenges include balancing the efficiency and engagement of the beneficiaries. Existing PPP research primary focuses on leadership, shared-vision, and trust-building with less focus on governance and structure design (Das and Teng 1998; Cullen, Johnson & Sakano, 2000; Bryson, Crosby & Stone, 2006). However, multiple scholars have explored the diverse dimensions of PPPs. Stadtler (2015) introduces PPPs according to four main perspectives: company, structural, boundary, and broker. The company perspective represents the company's interest alignment, structure covers the appropriate choice of governance and coordination, boundary covers how the PPPs manage their interfaces with alliances, beneficiaries, and the wider environment, and the boundaries and broker perspective is supported by third parties. In this study, similar aspects of PPPs are introduced which include motives, governance, and the structure and partnership process.

1) Motives

Policy makers tend to consider policy alternatives when the existing ones cannot address the social issues that are considered as crises (Bryson, Crosby & Stone, 2006). Eisenhardt and Schoonhven (1996) provided a social and strategic explanation for alliance formation. They argued that an alliance arises when firms consider that the alliances will help them obtain the resources they need or when firms with strong social positions can capitalize their assets. In addition, firms enter an alliance when they are in vulnerable strategic positions (Eisenhardt and Schoonhven, 1996; Bryson, Crosby & Stone, 2006). These positions stem from either highly-competitive or emerging industrial environments or their pioneering attempts to implement technical strategies. Moreover, scholars have provided supporting factors—that firms form alliances when they are led by top management with strong social profiles such as experience and good connection. This has led to important logic when the alliance is formed, including strategic needs and social opportunities.

(1) Strategic Need for Cooperation

Eisenhardt and Schoonhven (1996) have referred to the strategic need for cooperation as the vulnerable strategic situation relevant to a difficult market

environment or undertaking costly and risky strategies. Therefore, an alliance could provide critical resources such as financial resources or expertise as well as legitimacy and market power (Baum and Oliver, 1991; Hagedoorn, 1993) to enhance the strategic position of firms. In addition, an alliance could enable cost sharing, leading to increased margins as well as obtaining differentiated technologies for new product improvement.

Eisenhardt and Schoonhven (1996) tested the developed hypotheses and confirmed that vulnerable strategic positions, which are defined by emergent markets, innovative technologies, and high competition, lead to a greater rate of strategic alliance formation. It is interesting to find that growth-stage markets have the lowest rates of alliance formation. One rationale provided is that organizations in a growth market need to respond to product development while speed and alliance might not be the solution to respond to the demand requiring speed.

(2) Social Opportunities for Cooperation

Gulati (1995) presented the idea that social networks and strategic interdependence influence partners to form alliances. Social structural effects cover both direct and indirect ties among firms. The findings from his study confirmed that formerly-allied firms tend to extend further alliances. Over time, partners accumulate information about partners and gain increased confidence among the alliancing partners. Moreover, interdependent firms are more likely to enter alliances. Eisenhardt and Schoonhven (1996) shared similar findings regarding the social factors in alliance formation. They refer to the strong social position in the alliance formation as a social advantage, for example personal relationships, the status and the reputation of firms, and the key individuals in those firms. An extensive personal network enables the awareness of potential alliance opportunities while the status and reputation of the firms attract partners that want to be associated with high-status partners. Scholars have tested the developed hypotheses and discovered that the social factors that contribute to the formation rate of the strategic alliances are a social advantage of senior executives in the alliance, which is demonstrated by large, well-connected, and high-level top management teams. The conclusion drawn by the scholars suggests that the determining factors of alliance formation are the strategic and social position of the firms and industry factors. The logic is presented below.

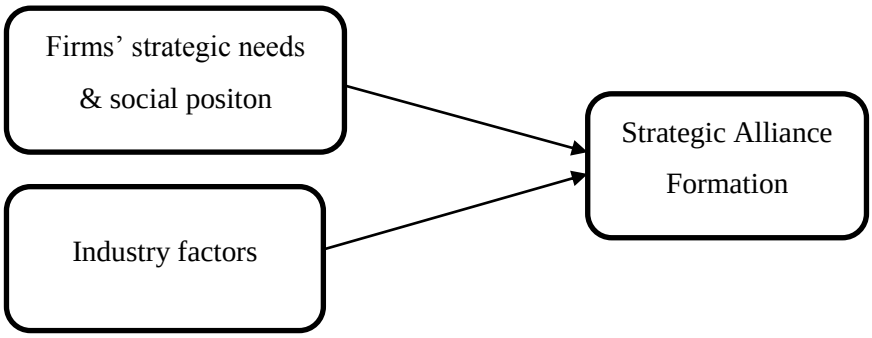

Figure 3.2 Determining the Strategic and Social Factors of Alliance Formation
Source: Eisenhardt and Schoonhven, 1996.

2) Governance and Structure

Multiple scholars have shared their insights on innovation in governance related to public and private partnerships. Benington (2000), Newman (2001) and Lynn (2006) for example indicated that administrative practices have shifted from hierarchical govenrment towards networked governance. This shift indicates that governments reach out to private associations and private individuals to accomplish public purposes. The case of New York City's Parks, which involved citizen groups in voluntarily contributing direct resources to the parks was raised as an example to support innovation. Rhodes (1996) argues that networks are the third form of organization after markets and hierachies, and that governance can be defined as networks.

From this perspective, governance consists of self-organizing, inter-organizational networks. These networks are characterized, first, by interdependence between organiztions. Changes in the role of the state mean that the boundaries between the public, private, and volunteary sectors are shifting and are opaque. Second, there are continuing interations between network members cuased by the need to exchange resources and to negotiate purposes. Third, these interactions resemble a game with actors' behavior rooted in trust and regulated by rules that are negotiated and agreed by network participants. Finally, the networks have a significant degree of autonomy from the state; they are not accoutnable to the state but are self-organizing. (Bevir and Rhodes, 2003: 53)

Through this network form, partnership and interagency cooperation between the govenrment, public agencies, private companies, and the third sector has been used as a strategy in promoting social and labour-market inclusion at the national and international level. (OECD, 2008) A wide range of stakeholders have been involved in the design, planning, and delivery of policies. Key actors, the structure of the partnership, and partnership processes and activity implemenation processes are considered to be critical factors for effective partnerships (McQuaid, 2010).

PPPs require tailored support to guide the operation, communication, and coordination with corporate engagement. Bovaird (2004) introduces the concept of public governance for the strategic management of PPPs. The partnership concepts as presented in table 3.1 aim to shift from stakeholder control towards joint decision and complex adaptive systems. The approaches to how partnerships are governed are based on the following principles:

1) Shared accountability and decision-making among partners and networks. To enable this goal, Bovaird (2004) suggests that trust-building and capacity building have to be undertaken to ensure that partners in the PPP network have the capability to act on the expected roles.

2) Coordinated and integrated goals and plans among partners. It is recommended that the shared long-term goals be reinforced and aligned with the activities implemented by stakeholders throughout the partnerships. This approach will help emphasize the long-term reciprocity in the community rather than short-term outcomes.

3) Focus on relationship contracting rather than in-house provision or transactional contracts with external providers. Collaborative working partnerships are encouraged rather than clear divisions of labor for the actors' approach.

4) Joint strategic change management. All partners are expected to jointly design a change management process expected for the partnerships or network.

Table 3.1 Partnerships from a Governance Perspective

Governance principles	Transactional contractual relationships	Collaborative partnerships
Citizenship engagement	Consultation with citizens and stakeholders	Participation and decision-making from citizens and stakeholders
Transparency	Limited access to only necessary information and strictly confined to "commercial confidentiality"	Open-book work
Accountability	The contractor is accountable to the purchaser for performance reporting in line with financial control.	Partners are accountable to each other and to stakeholders for their performance and partnerships.
Equalities and social inclusion	Included in some contracts	Treated as core values among partners
Ethical and honest behavior	Staff must comply with the code of conduct and set laws.	Regarded as core values among partners
Equity	Accommodation to target group with priority set in the contract	Treated as core values among partners
Willingness and ability to collaborate	Not essential	Regarded as critical success factors among all partners
Ability to compete	Treated as success factors for the provider in the contract taking into account both cost and customer-orientation	Treated as critical success factors by all partners taking into account both cost and customer-orientation
Leadership	Focus on contract management	Focus at all levels of the partnerships as a whole
Sustainability	The contractor must comply with sustainably criterial set out in the contract.	Treated as core values

Source: Bovaird, 2004: 210-211.

Regarding international development practices, Herzberg and Wright (2004) conducted a review of competitive partnerships between the public and private in order to improve the investment climate in 40 countries. It was seen that informal mechanisms and formal structure offer both strong and weak aspects. Most formal structures may offer higher organization, creditability, and greater longevity but less dynamism, while the informal and ad hoc mechanisms can be useful in the short-run. However, a broad range of partnerships has been summarized as follows.

(3) Secretariats and Working Groups

The secretariats can be hosted within any partnering alliance or they can be free-standing or newly set up with funding from one or more partners. It requires dedicated personnel to organize meetings, set agendas, and engage members in all channels of communications.

Working groups is another common setting found to be successful for competitive partnerships. Working groups are usually led by a head that deals with other working groups and the secretariat. These working groups are arranged by industry cluster (agriculture, manufacturing, etc.) or according to policy issue (infrastructure, labor, etc.) or by geographical region.

Herzberg and Wright (2004) suggest that competitive partnerships can be effective if they are integrated into the existing government structure. This setting will help reduce the resistance to any proposed changes or new initiatives by the authorities within the existing structure, who tends to follow a clear line of command.

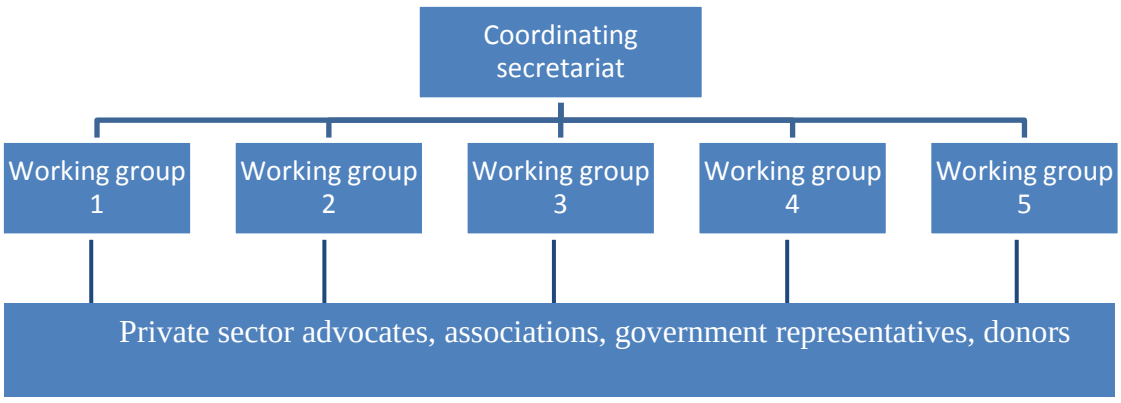

Figure 3.3 Secretariats and Working Groups—Partnership Structure

Source: Herzberg and Wright, 2004: 17.

In some countries, a coordination committee and technical committees take similar roles as the coordinating secretariat and working group respectively. The coordinating committee then reports to the council of Ministers. Regarding the regional level, some partnerships are organized in regional committees which partner with the emergency reform units for each government jurisdiction. A coordination unit undertakes the monitoring and regulating process as well as liaising with international organizations.

3) Partnership Process

Multiple scholars have defined partnerships differently according to their scope, stage or dynamic process. Bolland and Wilson (1994) classify three major types of collaboration: planning, administrative, and service delivery activities. Planning activities refer to agenda-setting related to problem identification, solutions formulation, and decisions. Administrative activities involve resource sharing such as staff, funding, facilities, and technical expertise. Service delivery in their study was defined by the client referral system which helps clients transfer across agencies. The type of collaboration which is prone to conflict is the system-level planning activities that are involved with the public policy process, whereas those activities related to service delivery will receive greater cooperation compared to administrative activities. Similarly, Agranoff and McGuire (1998) defined three types according to the purpose of the partnerships: formulating and implementing policies; seeking, acquiring, and sharing resources; and project-based, which involves the exchange of technical expertise.

Multiple scholars have explored how partnerships evolve through different processes. Ring and Van de Ven (1994) conceptualize the development cycle of cooperative IORs according to a repetitive sequence of negotiation, commitment, and execution stages. Each stage is assessed under the aspect of efficiency and equity. The stages might occur simultaneously or go through different pacing dependent on the level of trust and the role of the relationships of the parties. At the negotiation stage, partners develop joint expectations about their intention, the commitment of resources, and the forecast of uncertainties of the business ventures that they are jointly undertaking. They go through a bargaining process regarding the desired choices of alternative partners, terms, and conditions, and the procedures within a

potential relationship. Underlying this process, the relationships are assessed under the aspect of efficiency and equity. At the commitment stage, structure and governance are established. The parties pursue either a formal or informal contract, which is regarded as psychological among the partnering parties. Similar to the prior stage, it depends on the level of trust and foreseen risk which determine the level of commitment, leading to informal or formal contracting.

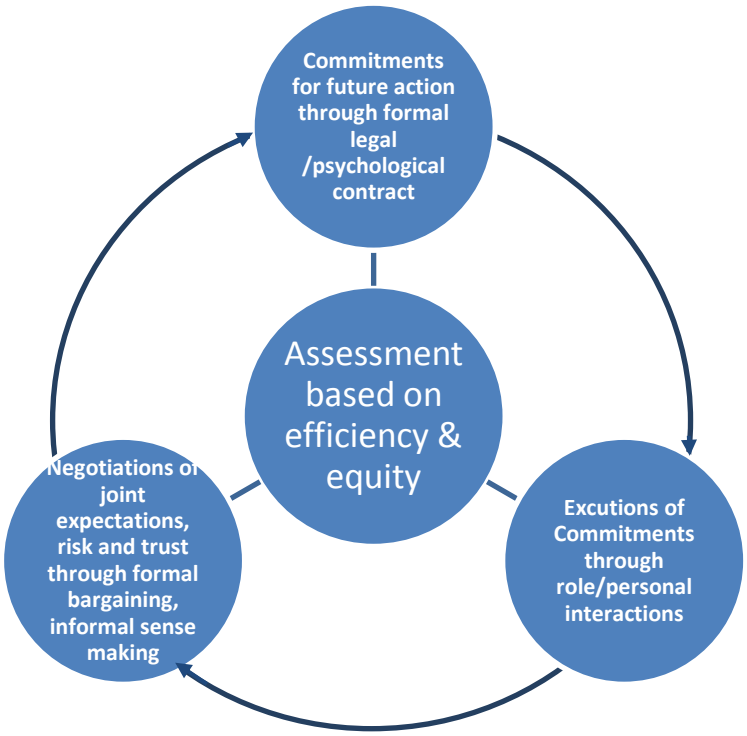

Figure 3.4 Process Framework of the Development of Cooperative IORs
Source: Ring and Van de Ven, 1994: 8.

At the final stage, clearly-defined roles enable a clear allocation of tasks executed by the partnering members. Moreover, designated role behaviors reduce uncertainty and bring about predictable interactions among parties. These continued interactions increase the familiarity among partners and interpersonal relationships gradually grow throughout this period.

The demise of the relationships can result from the completion of the collaboration project or can be a consequence of a relationship failure, a breach in an agreement, etc.

Ring and Van de Ven (1994) emphasize that the sustaining process in the relationships is a cyclical process, not sequential, which requires maintenance of the formal and informal processes of relationship management.

The trustworthiness and legitimacy of key stakeholders are regarded as important factors when partners decide on pursing the partnerships (Bryson, Crosby and Stone, 2006). If relationships among the partners do not exist, the partnerships tend to grow slowly and begin with interactions that do not require much trust (Ring and Van de Ven, 1994; Gulati, 1995). Therefore legitimacy and trust building are regarded as essential factors in the partnership process.

(1) Legitimacy Building

Human and Provan (2000: 328) introduce the concept of legitimacy as the perception by network members that actions, activities, and network structure are desirable and appropriate. They proposed three critical dimensions of network legitimacy: the network as form, the network as entity, and the network as interaction. It is emphasized that at the beginning when the network is formulated, it is important that the form of network be legitimated. The next stage of network legitimacy is to develop the network to be recognized with identity. At this stage, the challenges are to reach out to new partners and existing alliances in order to seek support. The findings presented the idea that the lead organization takes a critical role as the administrative organization in attracting support from alliances. The final dimension of the network as interaction emphasizes that the relationship among the network partners needs to be established and sustained. The willingness by members to interact and maintain a norm of cooperation stems from the realized benefits for themselves and for the network as a whole. They presented from their findings five different stages of network evolution and critical factors for the network legitimacy-building process at each stage, as shown in the table below.

Table 3.2 Stage of Network Evolution and Critical Factors for Legitimacy Building Processes

Stage of network	**Critical factors for the legitimacy building processes**
Pre-network	Legitimacy of cooperation in the organizational field Legitimacy of the industry locally and its organizational field Internal and external key stakeholders playing a leading role in supporting the group
Network formation	Focusing on the legitimating network as form and the network as entity Emergence of different strategic orientations for legitimacy building
Early growth	Clear differences in legitimacy building by a network administrative organization (NAO)
Emerging legitimacy deficiencies	Overemphasis of internal or external strategic orientation for network legitimacy building
Sustainment or demise/ Continued legitimacy deficiencies	Need both internal and external strategic orientations for network legitimacy building

Source: Human and Provan, 2000: 342-343.

(2) Trust Building

Trust has been widely explored by researchers. Partners build trust by sharing information and expertise on a continual basis (Bryson, Crosby and Stone, 2006). Barney and Hansen (1994: 176) state that when parties trust each other, "they share a mutual confidence that others will not exploit any adverse selection, moral hazard, hold up, or any other vulnerabilities that might exist in a particular exchange." Cullen, Johnson and Sakano (2000) develop a dynamic model of trust and commitment which impacts the performance of the strategic alliance. They referred to Coleman's (1990) relational capital as the key aspects of the alliance. It involves the

facilitation of relationships on a day-to-day basis to enable the effective functioning of the partnerships. The authors referred relationship capital to norms of reciprocity, information exchange, and cultural sensitivity. In order to achieve this, trust and commitment are essential enablers.

Credibility trust is the rational component of trust defined as the confidence that the partner intends and is able to contribute and deliver as promised to the alliance. Benevolent trust is the emotional side of trust defined as the belief that a partner will behave with good will and will not hurt the alliance (Ring and Van de Ven, 1994; Cullen Johnson and Sakano, 2000).

Commitment is the level of effort put forward for the relationship to succeed. There are two types of commitment defined by Cullen, Johnson and Sakano (2000): calculative commitment and attitudinal commitment. Calculative commitment refers to the rational and economic side of the commitment, where managers realize the potential returns from the partnerships. Attitudinal commitment concerns the willingness to nurture and care for the relationship with pride to associate with the partners which goes beyond contractual obligations.

Trust and commitment building depend on the partners' trust-signaling process. Such signals include delivering beyond partners' expectations, undertaking relevant tasks with quantity and quality as promised, sharing information, consistently sharing expertise and resources, and nurturing the relationship. Trust signaling is an important process in reinforcing trust when interacting with partners. Treating partners with openness, flexibility, fairness, and discretion are considered essential for nurturing trust. In the model below, credibility trust is the starting point of the trust/commitment cycle. Credibility trust is earned by being reliable and able to deliver beyond expectation the promised quantity and quality. Then benevolent trust is developed and commitment will follow. A model of the trust and commitment process is presented below.

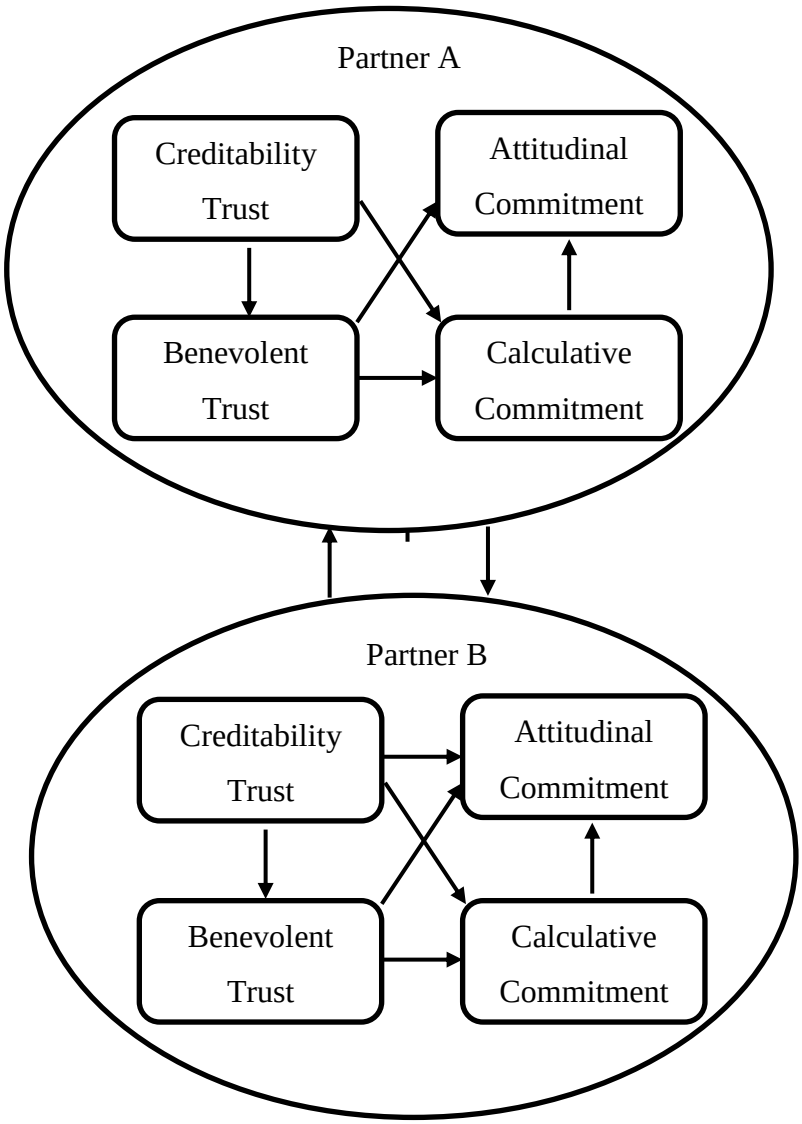

Figure 3.5 The Reciprocity of Trust and Commitment

Source: Cullen, Johnson and Sakano, 2000: 233.

Vangen and Huxham (2003) present trust building loops according to different phases as initiation and sustaining. During initiation, it is important to build trust through developing a common understanding about the shared goals, roles, and responsibilities required by partnering organizations and to build trust by ensuring that the alliance will result in the partners' interest. During trust sustaining, continuous attention to the dynamics of the initiative is needed once there is a change in the alliance membership or conditions in funding, etc. Moreover,

management of the power balance among partners with trust building activities is essential for nurturing trusting relationships.

Table 3.3 Trust Building Activities

Phase	Key activities	Required tasks
Initiation	Forming expectation, agreed-on shared objectives, managing risks	Identifying partners, common goals, roles and responsibilities each partner is expected to contribute to the alliance, understanding the complexity of the goals agreement, partners' agenda and power relationships
Sustaining	Managing dynamics, power imbalance and nurturing collaborative relationships	Continuous attention to the dynamics of the collaboration such as change of members, maximizing shared power, engaging partners in ongoing trust-building activities

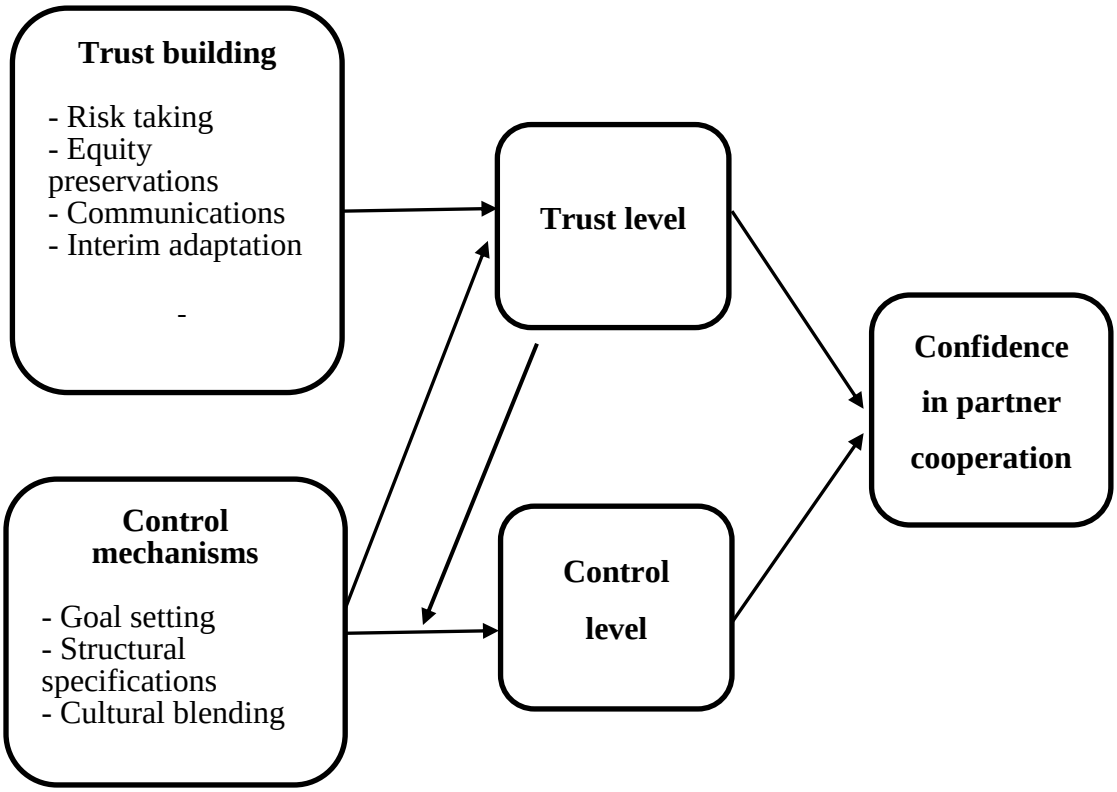

Figure 3.6 Trust and Control in Strategic Alliance

Source: Das and Teng, 1998: 497.

Das and Teng (1998) introduce the concept of trust and control by claiming that the interaction of these two constructs influence partners' confidence in the partner alliance and its cooperation. Partner cooperation is defined as the willingness of a partnering firm "to pursue mutually compatible interests in the alliance rather than act opportunistically" (Das and Teng, 1998). However, this cooperation among partners is a paradoxical situation (Das and Teng, 1998; Hansen, Hoskisson and Barney, 2008) because firms tend to pursue their best interests while maintaining an effective alliance with competing partners. Confidence in partner cooperation has been defined as "a firm's perceived certainty about satisfactory partner cooperation." (Das and Teng, 1998: 493) They indicate that the source of confidence in partner cooperation is an adequate level of control, and level of control is defined as "the degree to which one believes that proper behavior of the other party is ensured." (Das and Teng, 1998: 493)

This concept is different from the control mechanism, which has been referred to as “the organizational arrangements designed to determine and influence what organization members will do.” (Das and Teng, 1998: 493) Das and Teng (1998) presented a model as shown in figure 3.6 of the impact of trust and control on confidence in the partner cooperation in the strategic alliance. Moreover, they suggest that trust building strategies include risk taking by partners as a trust-earning process, equity preservation, on-going communication among partners, and interfirm adaption to ensure the working alliance. Another contributing factor on the trust and control level is control mechanisms. The authors recommend several strategies, such as goal setting among partners, structural specification, and cultural blending as ways to increase trust and control level.

3) Partnership Capabilities and Performance

In order for firms to tap the highest potential of each partner when collaborating, multiple competencies related to alliance management are needed. Aulakh et al. (2009) develops a concept of alliance portfolio management capability which includes the following three organizational process dimensions: portfolio formation, the relational dimension, and the coordination dimension. The portfolio dimension includes organizational routines to discover and pursue alliance-formation opportunities. The relational dimension refers to the governance of the portfolio which promotes partnerships among the partners. Finally, the coordination dimension relates to the ability to coordinate knowledge, strategies and activities across partners in the portfolio. The impact of these capabilities is measured by the formal structure, referred to as the alliance function and portfolio diversity. The evidence from the study by the scholar indicates that the variance of organizations in process-based capabilities for managing alliance portfolios can explain the difference in alliance performance across firms. In the paper, the scholars measure alliance performance using the term “alliance portfolio capital” by adapting the social capital concept. The term has been defined as alliance competiveness, characterized by reputation in the market, the competitive strengths of the alliance network, and the relationship strengths with the alliance partners. The following definitions of the above-mentioned three processes are presented below:

Table 3.4 Process Dimensions of Alliance Portfolio Management Capability

Organizational process	**Definition**	**Source of strategic advantage**
Partnering proactiveness	An organization's deliberate efforts to discover and act on new alliance opportunities	Fist-mover advantages in imperfect factor market for partners
Relational governance	An organization's engagement in activities for the development of informal self-enforcing safeguards in their collaborative relationships	Lowering contracting and monitoring costs and increasing incentives for value-creating initiatives by alliance partners
Portfolio coordination	An organization's engagement in integrating and synchronizing knowledge and activities across their alliances	Increasing knowledge flows and brokering information across the portfolio of alliances

Source: Sarkar, Aulakh and Madhok, 2009: 587.

Another interesting finding derived from the study suggests that the alliance function could contribute to the coordination of external alliances. Alliance functions which focus on internal processes do not directly impact the alliance portfolio. However, the center of competency facilitating the organizational learning and championing the alliance initiative within the firm does directly impact organizational performance. Moreover, the effectiveness of coordination the process is diminished by the formal governance of the alliance function. The researchers interpret that formalization might limit innovation and non-routine tasks and reduce the value of informal knowledge flow. Another key finding was that relationship management skills have a stronger impact on a firm's alliance portfolio capital as

diversity increases, while the value of integrating the knowledge flows, strategies, and activities increases when the portfolio is focused.

Barney et al. (2008) present a similar concept of partnership capabilities called "cooperative capabilities," which are grouped into three categories. They include the ability to identify combinations of complementary assets with economic values, the ability to assess partners' cooperative capabilities and trustworthiness, and the ability to manage the alliance with relations to both contractual and relationship management. The scholars hold the assumption that organizations with high levels of cooperative capabilities are likely to use the strategic alliance as a mechanism to conduct exchanges. The conclusion drawn from findings is that key qualities of organizations considered as critical for successful alliances to pursue the alliance governance in the form of gain maximizing are the partnership relationship management and the perception by the partners of the alliance partners' trustworthiness.

Herzberg and Wright (2004) introduce the idea that partnership capabilties contributing to competitive partnerships can be defined according to four dimensions: 1) public Sector or Government with capacity, poltical will and leadership for engagement; 2) private Sector or business with an organzied body, leadership that is secure and courageous about speaking up; 3) champion or sponsor with creditability, expertise, and the abilty to attract media; 4) and Instruments or logistical faciltiies and seeding funds.

Alliance performance can be determined by the alliance's longevity (Beamish, 1987), profitability (Reuer and Miller, 1997), and achieving agreed objectives (Dollinger and Golden, 1992; Thomas and Trevino, 1993). Das and Teng explore alliance performance in terms of the matching and aligning of resources that are integrated in the alliance. They further define the level of resources similarity and resource utilization for achieving shared goals as factors of performing and non-performing resources. Then four types of resource alignments are identified: supplementary, complementary, surplus, and wasteful.

In summary, public-private partnerships can be explored from a new public governance and resource-based view. However, the theory of inter-organizational relations has been regarded as the basis when studying public private partnerships.

3.2 Inter-Organizational Relations

The formation of inter-organizational relationships has dramatically increased in terms of variety and governing designs in recent years. The typology of relationships defined by equity and non-equity no longer covers the arising complexity and variety in designs and practices (Mahdok, 2007). Inter-organizational relations are based on the assumption that organizations are in an open system where they can interact with the environment, make rational decisions, and are interdependent based on scarce resources they mutually treat with high importance, regard as competitive actors, and strive to achieve their own goals and interests (Laumann, Galaskiewicz and Marsden, 1978; Schmidt and Kochan, 1977; Aiken and Hage, 1968). Powell (1990: 303) defines the assumption of the network relationship where one party is dependent on the other's controlled resources and they all benefit from resouce pooling.

Organizations struggle for limited resources, seek power figures and take ligitimate actions in order to survive. When organizations enter into a relationship, they usuall go through different stages of the relationship, formation, establishment, and sustainment or withdrawal, as shown in Figure 3.7. Varied factors including trust, resource exchanges, power, legitimacy, structure and context affect how the relationship is formulated, established, sustained, or withdrawn (Galaskiewicz, 1985; Oliver, 1990; Powell, 1990; Provan and Milward, 1995) This chapter will explore the key factors affecting each stage of network relationships.

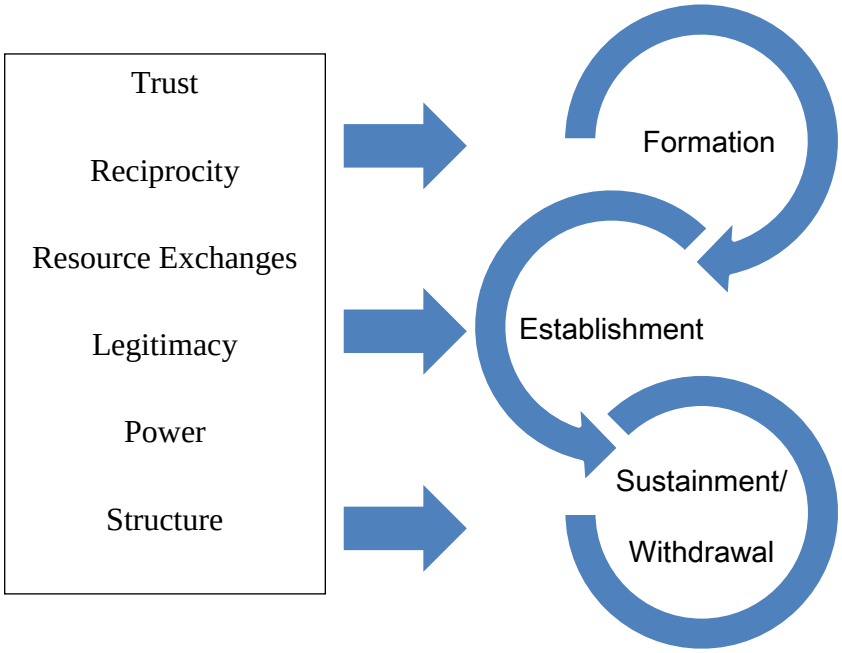

Figure 3.7 The Varied Factors Affecting Organizational Relationship at Different Stages

3.2.1 Formation Stage

Galaskiewicz (1985) stresses that inter-organizational relations tend to take place in three different arenas: resource procurement and allocation, political advocacy, and organizational legitimation. Similarly, Oliver (1990) classifies the driving forces that motivate organizations to enter into IOR into five contingencies. These contingencies include reciprocity, efficiency, stability, asymmetry, and legitimacy. There is an overlap between these contingencies and the three arenas identified by Glaskiewicz, which is shown in the comparison in Figure 3.2. The author grouped the first three contingencies under the motive of resource procurement and allocation.

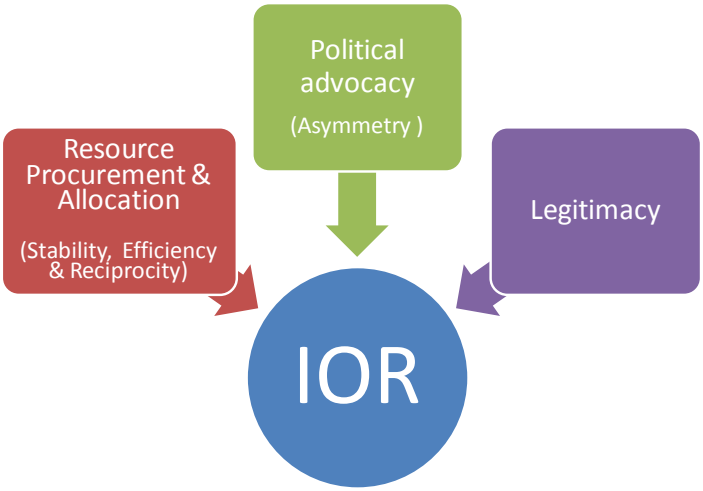

Figure 3.8 Driving Forces of Inter-Organizational Relationships

3.2.1.1 Trust, Control, and Coordination

Trust serves as a key factor in relationships. Mellewigh, Madhok and Weibel (2007) presented the following model, where trust serves as a moderating variable that influences the direct relationship between control and coordination concerns and contract complexity. Trust will be a substitute for contracting regarding control concerns, and a complement of contracting, regarding coordination concerns. The level of trust impacts how contractual complexity is interpreted. In a low-trusting environment, an increase of contractual complexity is viewed as controlling, while in a high-trusting environment, such a contractual complexity increase is viewed as enabling coordination. The findings have shifted the focus of contractual mechanisms away from control to a balance of control and coordination.

Direct Effects: Type of Governance Concerns Moderating Effects:

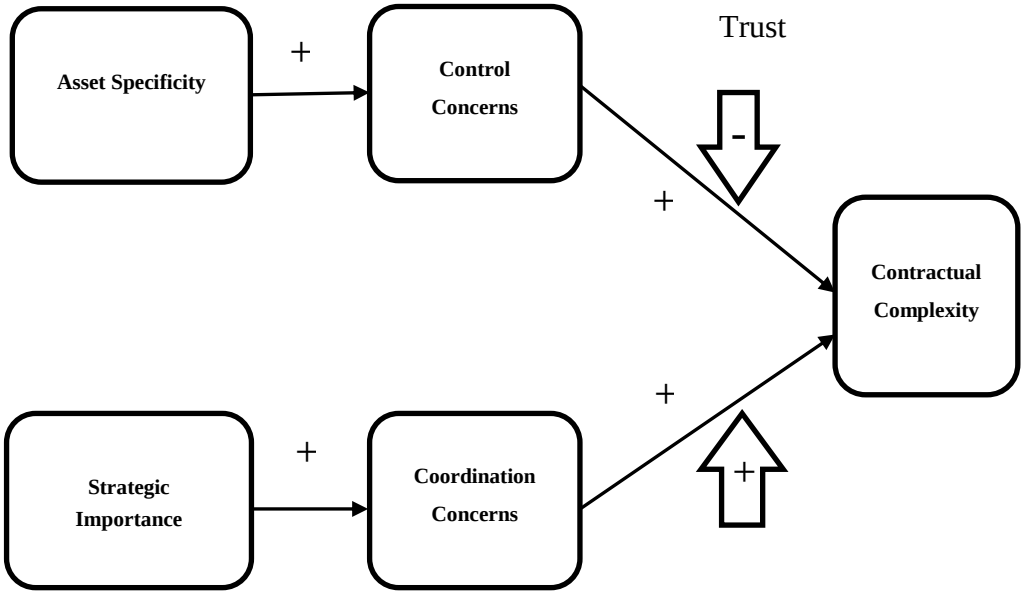

Figure 3.9 Trust and Formal Contracts—Substitutes and Complements

Source: Mellewigh, Madhok and Weibel, 2007: 835.

3.2.1.2 Power Symmetry, Trust, and Goal Congruence

Cuevas, Julkunen and Gabiriclsson (2015) discovered from a study of two cases in the retail and astronomy industry that goal congruence is a prerequisite for developing trust, which is not dependent on whether or not symmetrical power exists or not. Similarly, Dhillon (2015) conducted quality research on effective partnerships which suggests that trust and shared goals are two key characteristics of effective partnerships.

They defined power according to its contributing factors: organizational, individual, and relational. Organizational power relates to the market environment, which includes the degree of competitiveness, brand awareness, and the strengths and dependency of the buyer-seller relationships. Individual factors contributing to power are the skills, knowledge, and personal profiles involved in the relationships. The relational factor is dimension is described by interaction and outcomes. They argue that "interdependence is based on resources which partners possesses and can be understood as investments that have an important impact on the costs of the future

transactions between them." Understanding the interaction between managers across organizations is essential for learning about relationship dynamics and opportunities in order to influence and access the partners' resources, initiatives, and innovation.

In the retail case, goal congruence has evolved from shifting the self-interests of the individual partner to a commonly-shared goal of putting the consumer first in all new initiatives. The refocus of the task division, the development of the retail chain, all serve the shared purpose of serving the best interest of consumers,, leading to a new business model. In spite of the power asymmetry among partners, trust has been strengthened in the new business chain model. Contrastingly, goal alignment does not exist in the aerospace case. Partners in the relationship were engaged in their roles serving self-interests. This lack of goal congruence led to mistrust among the parties, despite the symmetry of power across the two partnering organizations. The relationship between power symmetry, goal congruence, and trust is shown below.

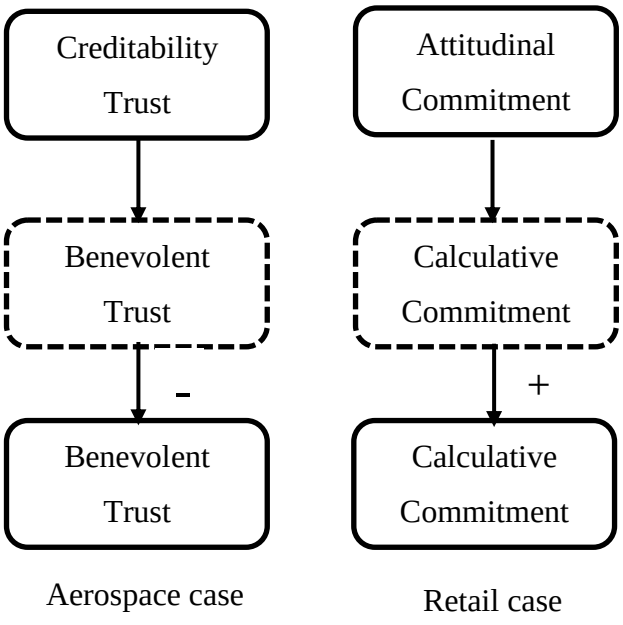

Figure 3.10 Empirical Findings on Power Symmetry and Trust in Two Cases
Source: Cuevas, Julkunen and Gabrielsseon, 2015: 155.

3.2.1.3 Resource Procurement and Allocation

The conception of resource procurement and allocation is based on the following motives: power dependence, managing uncertainty, improving efficiency, securing stability, and achieving reciprocity (Ulrich, 1984; Oliver, 1990). Organizations enter into an IOR because of power dependence. Power dependence predicts how more or less dependent actors will act in different situations in order to acquire the desired resources. They develop IOR both vertically and horizontally to cope with uncertainty. The formation of relations has been interpreted as an adaptive response to environmental uncertainty with an attempt to economize on transaction costs in order to secure higher stability. With common goals shared and pursued, the IOR intends to bring about mutual benefits and interests.

3.2.1.4 Political Advocacy

Organizations enter into collective action in order to control the resources they value and cannot get elsewhere. Scarce resources prompt organizations to seek, exert power over, and influence or control organizations that possess such resources. Such relationships lead to concerns about loss of automony from the other side, resulting in an assymetric relationship. This assymetry is reflected by the desire for control and the reluctance to relinquish control (Oliver, 1990).

3.2.1.5 Legitimacy

Organizations are motivated to demonstrate or improve their image in congruence with the norms or institutional environment. As Suchman (1995: 574) stated, "[l]egitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions." Legitimacy then has been regarded as another significant motive for organizations to interconnect (Oliver, 1991). They are pressured by the institutional environment to justify their activities. The forms of interconnection vary from having members of pretigious organizations to sit on their organizational board of directors to developing corporate social responsibility programs to enhance their organizational reputation.

The above three arenas are considered necessary for the formation of organizational relationships.

3.2.2 Establishment Stage

Powell (1990) compares different forms of economic organizations including the market, hierarchy, and the network with different key features as presented in table 3.5. Reciprocity is regarded as the embedded norm for the network form of organizations in leading to trust and resources exchange. It is reflected in how the network form is orgnized and managed with a climate of open-ended and mutual benefits. Members interact based on interpendent and mutual interests, complimentary strengths, as well as concerns for reputation. The author emphasized that "reciprocity is enhanced by taking a long-term perspective. Security and stability encourage the search for new ways of accomplishing tasks, promote learning and the excahnge of information, and engender trust." (Powell, 1990: 305)

Table 3.5 Comparison of Key Features Among Different Forms of Organizations

Key Features	**Market**	**Hierarchy**	**Network**
Nomative Basis	Contract- Property Rights	Employment Relationship	Complimentary Strengths
Means of communication	Prices	Routines	Relational
Methods of Conflict Resolution	Haggling – resort to courts for enforecment	Administrative fiat – Supervision	Norm of reciprocity – reputational concerns
Degree of Flexibility	High	Low	Medium
Amount of Commitment Among the Parties	Low	Medium to High	Medium to High
Tone of Climate	Precision and/or Suspicion	Formal, bureaucratic	Open-ended, mutual benefits
Actor Preferences or Choices	Independent	Depedent	Interdependent
Mixing of Forms	Repeat transactions (Geertz, 1978)	Informal organization (Dalton, 1957)	Status Hierarchies

Table 3.5 (Continued)

Key Features	Market	Hierarchy	Network
	Contracts as hierarchical documents (Stinchcombe, 1985)	Marketlike features: Profit centers, transfer pricing (Eccles, 1985)	Mutliple partners Formal rules

Source: Powell, 1990: 300.

Powell (1990) further adds that table network form of orgnizations offers a means of exchanging competencies, whether they are knowledge or skills, as well as technological innovation. This is most common in the settings in which members share a common background—ethnic, geographic, ideological, or professional. Over time, the sharing of critical information leads to the development of trust and common values. Trust is claimed to be one of the significant factors in sustaining such a network. Moreover, a legal system and national policies which promotes research and development through linkages with higher learning institutions and industries are considered important conditions that promote the network.

Adaption to the dynamic changes in circumstances by network members is regarded as critical for establishing and sustaining the network. This adpative quality stems from the ability to interpret information and quickly translate it into appropriate action. A mutual orientation, which Powell (1990) defines as "knowledge which the parties assume each has about the other and which they draw in communciation and problem solving," is estalbished witin the network relationship. The interaction among members with complimentarity and accommodation is treated as the success factors for productive networks.

3.2.3 Sustainment/Withdrawal Stage

Provan and Milward (1995) presented a network effective model by conducting a study on the health delivery systems in four U.S. cities. Multiple data

collection methods were used, including surveys, interviews, documents, and observations. Network effectiveness was assessed by measuring the outcomes from samples of clients, their families, and their case managers. Data were collected at multiple levels of individual, organizational, and network levels of analysis. The authors used the quantitative method to develop a theoretical model and used the qualitative method to testify the model. A primary theory of inter-organizational network effectiveness is presented with the following model.

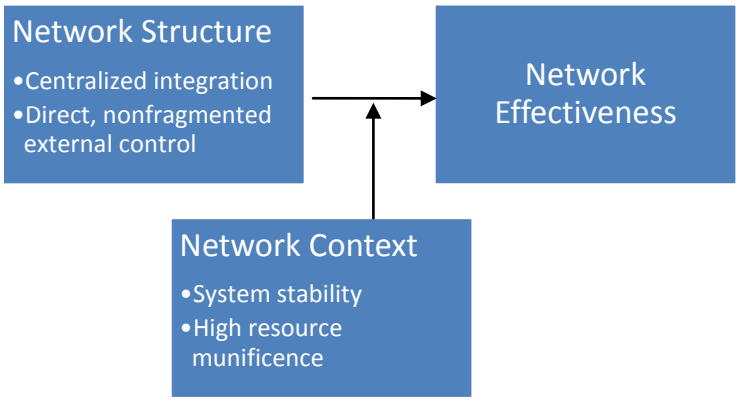

Figure 3.11 A Preliminary Model of Network Effectiveness
Source: Provan and Milward, 1995: 24.

The authors drew the conclusion that if the network is integrated and centrally coordinated through a single core agency, it is likely to be more effective than when it is cooridnated in a decentralized manner. Moreover, the monitoring and control activities undertaken by this core agency are enabled through such a centralzied system. In addition, adequate funding is considered as another significant factor in client service delivery.

Similarly, Human and Provan (2000) introduce the notion that administrative entity is an essential feature of multi-lateral networks. This entity is established to perform some degree of planning and coordination. More importantly, it ensures that the partners in the network are linked through continued interaction. Provan and Kenis (2005) suggest three types of network governance: 1) self-governing with informal interactions among members; 2) a structure with an organization leading coordinating activities and decision making; and 3) a structure with an administrative

organization set up to oversee network administration. They proposed that trust and network size are two determinants for identifying forms of networks.

3.3 Initial Conceptual Framework

The author has incorporated the concepts from the above literature review in public and pratnerships as well as inter-organizational relations into an initial conceptual framework to guide the understanding of the public and private partnerships phenomena. This iniital framework is set to determine the important varibles relevant to the literature. However, they represent a broad concept of the study subject in order to avoid bias and to limit the findings. The concept can be adjusted or changed during the course of the research.

Inter-organizational theory in combination with the public and private partnerships concept have been used as the basis for the initially-develpoed conceptual framework. By adding the aspect of public governance to internorganizational relations theory, the author has come up with this initial conceptual framework.

In order to serve as a guide in the understanding of public and private partnerships, the initial conceptual fraemwork was developed as presented in figure 3.12. The framework includes the following components: 1) initial conditions and motives, 2) structure and governance, 3) the partnerships process, and 4) partnership capabilties.

In order to study public and private partnerships, there are four components requried, as defined in the conceptual framework. First, identfication of partners is the first step. Who are the members of the the studied parterships, government, private sector, or non-government organizations? Then the partnership motives have to be explored. What are the driving forces or environmental factors affecting the partnership initaiton? How have they been initiated? What are the purposes of the partnership? Another aspect to be analyzed is the structure and goverannce of the partnerships. This component can be explanied by the format of the partnerships and how it is structured. Then the partnership process can be explored in terms of how legitimacy and trust are built, nutured and sustained. Lastly, the partnership capabilties will be explored. What are the partners' key competencies that contribut to successful partnerships?

This conceptual framework was not specified in detail in order to prevent predominant theories prior to the data collection. The data collected from the research will guide the theory development in order to understand the concept of public private partnerships. Therefore, this initial concept will be later adjusted and improved during the course of the study.

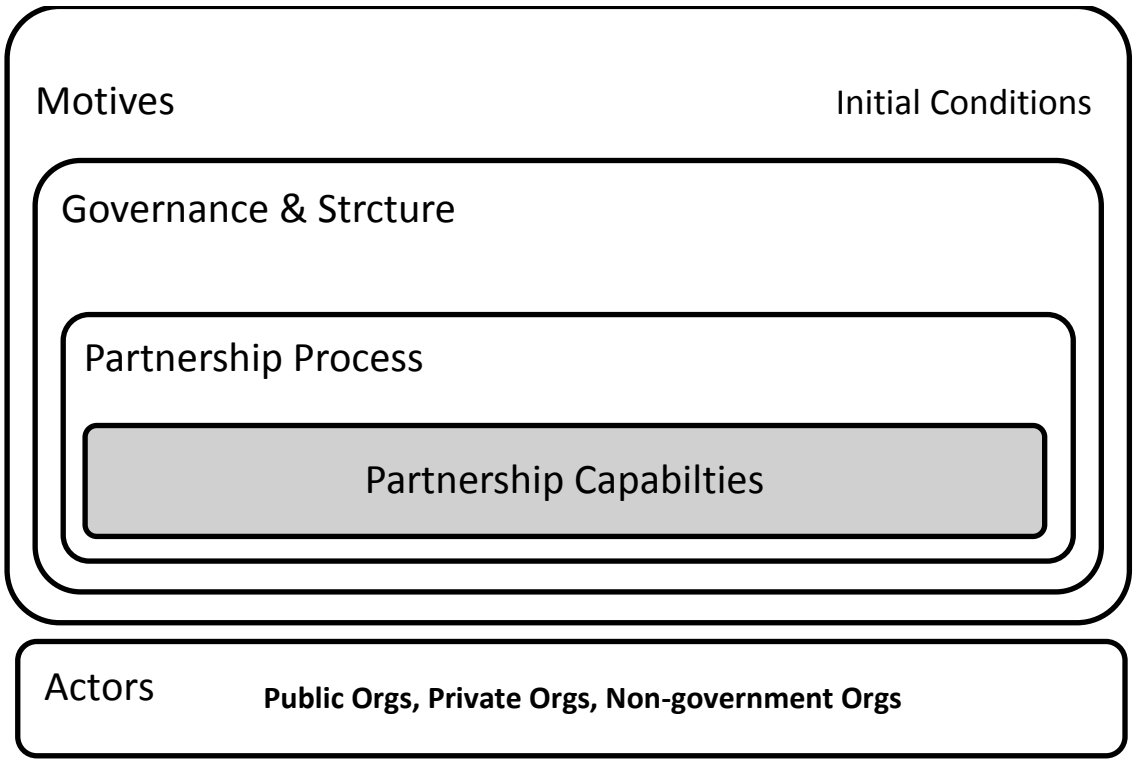

Figure 3.12 Initial Conceptual Framework

3.4 Summary

The literature review in this chapter provides an overview understanding of public-private partnerships, and includes the definitions and key components of partnerships. Inter-organizational theory was used to provide a broad framework for the data collection and to not dictate any fixed variables which would limit the study.

CHAPTER 4

RESEARCH METHODOLOGY

This chapter describes the research design and methodology of this study. The first section introduces the case study research design, and the approach, case selection, data collection, and analysis and interpretation process.

4.1 Research Approach

The author has chosen case study research, an inductive, case-oriented process of theory development, to investigate the in-depth phenomenon and rich context of public and private partnerships, which are regarded as a new topic area within the organizational theories arena. (Eisenhardt, 1989; Yin 2009, 2014) Yin (2014: 2) emphasizes that case study research is a preferred method when the main research questions are involved with “how” and “why,” when the event cannot be contolled by a researcher, and when the study is a contemporary pheonomenon. The multiple-case approach was selected because it offers contrasting situations which support theoretical replication compared to a single-case study. (Yin, 2014)

For this study, public private partnerships were the topic of interest, which lacked a theory to directly suport or provide an explantion. Therfore, the author has selected case study as the research method to build a theory related to this area of study.

4.2 Unit of Analysis

The unit of analysis for this study is the partnerships among relevant partners agreeing to implement an initiative in strengthening vocational education and training. Therefore, the analysis covers governance, management, and process of the

partnership. The level of analysis will be involved with organizations, which are identified as key partners as well as the individuals that play an important role in undertaking activities in such initiatives.

4.3 Research Design

4.3.1 The Linkage between the Objectives, Questions, and Methods of the Research

The multiple case study approach was used as the research design. Therefore, the author collected the data and analyzed it within the case and compared it across different cases with different contexts. Descriptive case study was deployed to describe the motives of the partnership, the structure and how partnerships are managed, the process of linking multiple partners, as well as the leadership exercised by key players. The final outcome was a synthesis of different constructs based on the cases in order to develop a theoretical framework to explain the public and private partnerships for vocational education and training.

Table 4.1 The Linkage between the Research Objectives, Questions, and Methods

Research Objectives	Research Questions	Research Methods
1. To identify the motives of the collaborating actors on initiating public and private partnerships for vocational education and training	What are the motives of the participating actors in initiating public and private partnerships for vocational education and training?	Descriptive case study method with individual and cross-case analysis
2. To explore the institutional settings of the PPPs in term of governance and structure	What are the institutional settings of the PPPs in terms of governance and structure?	Descriptive Case Study Method using individual and cross-case analysis

Table 4.1 (Continued)

Research Objectives	Research Questions	Research Methods
3. To identify the factors critical for sustaining successful public and private partnerships for vocational education and training	What are the important factors for sustaining partnerships?	Descriptive case study method with individual and cross-case analysis
4. To develop a conceptual framework for understanding and assessing public and private partnerships for vocational education and training	How to understand the phenomena of public and private partnerships for vocational education and training	Descriptive case study method using cases synthesis of cross-case analysis and theory development

4.3.2 Case Selection

In this study, the author selected three cases of leading vocational eduction and training being implemented in Thailand. They are 1) the Automotive Human Resource Development Academy (AHRDA), 2) a Work Integrated Learning program (WIL), 3) German-Thai Dual Excellence Education (GTDEE).

The case study of the above three projects were selected based on the following criteria:

1) The projects are focused on strengthening vocational education and training. The strengthening activites have to include capacity building porgams, which include one of the following activies: strategic planning, competencies identfication, budgeting, standards and curriclum development, professioanl development for teachers, career guidance, internship, employment service, testing and assessment for teachers and students.

2) The projects are initiated under the partnerships between public agencies and private organizations, not a dual relationship. The public agencies are

central agencies, not invidual schools. The private organizations are either companies or trade associations. In addition, the partnerships formulated need to be among mutiple organizations from both the public and private sides.

3) The projects are being implemented and are still ongoing. The above three cases were selected because they offered different perspectives as follows: The first case, Automotive Human Resource Development Academy (AHRDA), has been initiated with partnerships among the Federation of Thai Industries (FTIs), the Thai Auto parts Manufacturers Association, the Department of Skill Development, and the Office of Vocational Education Commission . Fifteen vocational colleges are participating in this program, together with a group of automotive and auto parts manufacturers led by Mr. Thavorn Chalassathien from Denso (Thailand) Co., Ltd.

The second case, the Work Integrated Learning program (WIL), has been initiated with partnerships among the National Science Technlology and Innovation Policy Office (STI), Rajamangala University of Technology Lanna (RMUTL), and private companies in collaboration with 5 universities in offering students development of both academic and practical skills while they work in the assigned factories.

The third case, German-Thai Dual Excellence Education (GTDEE), has been initiated with the Thai-German Chamber of Commerce, the Office of Vocational Education Commission, and the Federation of Thai Industries.

These three cases are different in terms of the combination of partnering agencies, sponsoring organization, and key players contributing to the success of the partnerships.

4.4 Data Collection

The information included qualitative data. The focus of this study is centered around the initiaal conditions, motives, the goverance and structure and the partnerships capabilties, as well as the success factors of the partnerships.

Table 4.2 Type of Data to be Collected, Collection Objectives, and Methods Data Collection

Expected data	**Objectives**	**Data collection method**
1. Project general information	- To describe the nature and context of the partnership	- Documentation - Archival records - Participant-observation - In-depth interviews
2. Partnerships structure and governance	- To analyze - To provide an explanation	- Documentation - Archival records - Participant-observation - In-depth interviews
3. Motives and partnerships process	- To analyze - To provide an explanation	- Documentation - Archival Records - Participant-observation - In-depth interviews
4. Partnership capabilities and success factors	- To analyze - To provide an explanation	- Documentation - Archival records - Participant-observation - In-depth interviews

4.4.1 Source of Case Study Evidence

Multiple sources of evidence, four of the six commonly used in doing case study research, as noted by Yin (2014: 105), were employed in this study as listed below:

4.4.1.1 Documentation

Many forms of documentation information were collected as part of this study. These forms include legal acts, announcements, memoranda, meeting minutes, presentations, a program brochure, a program report, news clippings, and news articles.

4.4.1.2 Archival Records

Organizational records, program participant record, and statistical data available to the public were used in combination with other sources of evidence.

4.4.1.3 Participant-Observation

Participant-observation provides an opportunity for researchers to percieive reality from an insider viewpoint rather than external to it, which is invaluable experience in accurately protraying a case study phenomenon (Yin, 2014: 117).

In this paper, the author participated in many meetings, seminars, round-table discussions, focus-group meetings, and conferences at both national, organizational, and program levels. They provided opportunities for learning about staekholders' insights and the perspectives communcited by different stakeholders at those events which complement other sources of evidence in confirming the findings derived from the cases.

4.4.1.4 In-Depth Interviews

The main data collection method was in-depth interviews. These in-depth interviews resemble guided conservations and sometimes are called intensive interview or unstructured interviews (Yin, 2014: 110).

The following were the informants for the data collection:

1) Public Agencies: The executive level of the government agency, the project manager, the project coordinator, and other project staff

2) Private agencies: The executive level of private agency, the project manager, the HR manager, the HR officer and the volunteering staff that were invovled in the partnership project

3) Universities: The faculty members that were involved in the project with regards to curriculum development, teacher professional development, mentoring teacher, etc.

4) Schools: principals, teachers, students, and parents were considered as key informants.

The study collected data from these 24 informants from three selected partnerships. At least 1-2 persons for each role were interviewed as shown below.

Table 4.3 Key Informants to be Interviewed for Each Case Study

Case	Informants
(1) Automotive Human Resource Development Academy (AHRDA)	1. Director General of Department of Skill Development (DSD) 2. Deputy Director General of DSD 3. DSD's professional-level officer 4. Training manager of DSD 5. Vice president of the Federation of Thai Industries 6. Training manager of participating private company 7. Senior official of Office of Vocational Education Comission 8. University researcher from King Mongkut University of Technology Thonburi (KMUTT) who assisted in developing the strategic framework 8. Principal of Vocational College 9. A learning specialist from Somboon group
(2) Work Integrated Learning program (WiL)	1. Deputy Secretary General of National Science Technlology and Innovation Policy Office (STI) 2. Project Manager of Michelin 3. President of Rajamangala University of Technology Lanna 4. WIL project Director (College dean of Rajamangala University of Technology Lanna 5. Faculty member of RMUTL 6. Site Director of WIL 7. Vocational student 8. School principal
(3) German-Thai Dual Excellence Education (GTDEE).	1. Executive Director of German-Thai Chamber of Commerce 2. GTDEE project manager

Table 4.3 (Continued)

Case	Informants
	3. Director of vocational college #1 4. Director of vocational college #2 5. President of the Federation of Private colleges of Technology and Vocational Education of Thailand 6. Student 7. A private company

Besides the interviews with the above-defined informants, the author participated in numerous events and meetings listed in the table below.

Table 4.4 Participant Observations Conducted at Multiple Events and Meetings

Program	**Event**	**Host/ Initiator**	**Author's role**	**Venue**	**Date**
AHRDA & WiL	Focus Group meetings with automotive industry	Kenan	Facilitator	STI office	3 Sep 2014
AHRDA	Board meeting	DSD	Observer	DSD	8 May 2015
AHRDA	Executive forum on Workforce Development Preparedness	DSD	Participants	Chaophraya Park	27 May 2015
AHRDA	Meeting with AHRDA on partnership opportunity	Kenan	Facilitator	FTI	3 June 2015

Table 4.4 (Continued)

Program	Event	Host/ Initiator	Author's role	Venue	Date
AHRDA	Meeting with AHRDA on partnership opportunity	Kenan	Facilitator	AHRDA	14 July 2015
AHRDA	Meeting with FTI and AHRDA on partnership opportunity	Kenan	Facilitator	FTI	15 July
WiL	Brainstorming Seminar "STEM Education: Proactive Approach for Human Development in Science Technology & Innovation	National Committee with the Institute for the promotion of teaching & learning	Participant	Parliament House	27 April 2015
WiL	Meeting with RMUTL and stakeholder team on partnership opportunity	Kenan	Participants	RMUTL, Chiang Mai	16 July 2015
WiL	Meeting with STI and RMUTL on Partnership opportunity in	Kenan	Facilitator	STI office	27 Aug 2015

Table 4.4 (Continued)

Program	Event	Host/ Initiator	Author's role	Venue	Date
	strengthening Vocational and Education Model				
AHRDA & WiL	Seminar and Round-table meeting on vocational education and training with STI, DSD, RMUTL & stakeholders	Kenan	Facilitator	Sofitel Sukhumvit Hotel	1 Sep 2015
WiL	Education Reform: Career Academy VS WiL	Quality Learning Foundation	Participant	Miracle Grand Convention	7 Oct 2014
GTDEE	Partnership meeting on Thai-German Vocational Education	Thai Embassy in Berlin	Participant	Ministry of Foreign Affairs	9 Jun 2014

4.4.2 Construct Validity

Based on Yin (2014: 120), the author took the following steps to increase the construct validity:

1) Defined constructs using specific concepts of study which ere related to the original objectives of the research.

2) Used data triangulation through multiple sources of data. By using multiple sources of evidence, researchers are able to develop converging lines of inquiry which will lead to a higher level of persuasiveness and accuracy of the study. In this study, the author collected data from multiple sources, documents, archival

records, and participant observatoins and interviewes. Both interviews and participant observation methods provided acesss to information and insights from different stakeholders, from the Minister level down to operational staff. The findings of the study were derived from the multiple sources of evidence, as shown in the figure below.

4.5 Analyzing Case Evidence

The author relied on the initial conceptual framework earlier defined to guide the case study analysis. This framework led to the questions to be answered during the collection of the data and in analyzing case evidence. Along with this strategy, multiple analytical techniques were used—logic models, event listing, event flow analysis—and explanation building was used for within the case analysis. For the cross-case synthesis, a comparison of similarities and differences is presented as the analytic strategy for the data collected from the multiple case studies (Yin, 2014).

For each case studied, the author narratively reported the case descriptions as follows:

1) The partnership descriptions, the objectives of the partnerships, and what the partnerships aim to achieve. The target beneficiaries: Who are the target beneficiaries of the partnership initiative?

2) Background and context. What is the current situation, setting, and background that led to partnerships?

3) Imitation. How were the partnerships initiated? Who was involved in the initiation? How were the partners invited or selected for the partnerships?

4) Structure and governance of partnerships. How were partnerships constituted? Actors: what are the roles and responsibilities of the actors?

5) Capacity-building process. What weare activities undertaken for strengthening vocatoinal eduation institutes?

6) Factors in sustaining partnerships. What were the mechanisms used in nurturing and sustaining the partnerships?

For the cross-case syntheses, the following aspects were derived:

1) Actors: Who are the key players in the parterships?

2) Initial conditions and motives: What were initial conditions influencing the partnership formaiton? What were different conditions affecting the way in which they were initiated? How were shared missions formed and agreed on?

3) Institutional settings: how are the partnerships structured, governed, and managed?

4) Partnership capabilities: What is the skills set for the partners to sustain and manage the partnerships?

The cross-case analysis led to an elaborated conceptual framework for public and private partnerships including the enabling conditions for sustaining the partnerships. Then policy recommendations were made to propose how public partnerships could be widely adopted in order to strengthen public management in the area of technical vocational education and training.

CHAPTER 5

CASE STUDIES REPORT

In this chapter, the three case studies are individually reported on at the beginning. Then a synthesis of the cross-case results is presented. These three cases are 1) the Automotive Human Resource Development Academy (AHRDA), 2) the Work Integrated Learning program (WIL), 3) German-Thai Dual Excellence Education (GTDEE).

Each case will be reported on with the following topics:

1) The partnership description, objectives of the partnerships, and what the partnerships aim to achieve. The target beneficiaries: Who are the target beneficiaries of the partnership initiative?

2) Background and context. What is the current situation, setting and background that lead to partnerships?

3) Initiation. How were the partnerships initiated? Who were involved in the initiation? How were the partners invited or selected for the partnerships?

4) Structure and governance of partnerships. How are partnerships constituted? Actors: what are the roles and responsibilities of the actors?

5) Capacity-building process. What are the activities undertaken for strengthening vocatoinal eduation institutes?

6) Factors in sustaining partnerships. What are the mechanisms used in nurturing and sustaining partnerships?

5.1 Automotive Human Resource Development Academy (AHRDA)

5.1.1 The Partnership Description

The Automotive Human Resource Development Academy (AHRDA) is a newly-set-up public private partnership entity under the Department of Skill Development (DSD), the Ministry of Labour. It is a public organization directed and

led by representatives from the Federation of Thai Industries (FTI) appointed as board members. The AHRDA has been initiated through a long-process active participation by leaders of the Federation of Thai Industries (FTI). The partnership has contributed to: 1) the establishment of the AHRDA, a new form of PPP unit; 2) resource mobilization from multi-stakeholders; and 3) the capacity building of government agencies in delivering skill development and training.

The establishment of the AHRDA has been driven by the demand of the industry. With a strong will to address a serious problem relevant to skilled workforce shortage faced by the automotive and auto-parts industry, the FTI has collaborated with the government sector in developing a workforce development strategy framework for the industry. In the framework, an establishment of an institute for human resource development was identified as one of the key strategies. Then under an endorsement by the cabinet, the AHRDA was established in 2014.

With respect to resource mobilization from multi-stakeholders, the partnerships have resulted in the synergy of resources contributing to strengthening the public sector in improving its service delivery through joint strategy planning, resource sharing, personnel development, and the improvement of workforce development process. Private partners have pooled resources from their network which would not be usually accessible by the government sector throughout the entire process of workforce development. This is to ensure that the quality of the future and existing workforce is strengthened and heightened to support the industrial growth.

Not just mobilizing resources, but private partners have introduced new processes of capacity building for government personnel and for workforce development. Proper expertise has been brought to assist in improving national industrial skills standards, providing training and development for vocational teachers and skill-development trainers, as well as designing student assessment for competency certification.

It can be noted that the AHRDA was initiated from proactive participation by the private sector in order to fill the workforce skill gap and to provide for the emerging demand of high-skilled personnel in the automotive industry. With an attempt to resolve this workforce issue, the private sector has learned to work collaboratively and strategically with public agencies. Through the partnerships, the

private partners influence government partners to develop a strategic plan and to implement the plans that better serve industrial growth as well as build implementation capacities in order to improve the quality of public service.

5.1.2 Background and Context

Since the AHRDA has been set up to address the needs raised by the automotive industry, the following shares the background of this industry and the pressing demand of workforce development as a result of serious skills shortage. The information in the following part of the present study was gathered from slides presented at the conference that the author attended, the industry master plan.

5.1.2.1 Industry Settings

The automotive industry is one of the leading industries with a significant contribution to the Thai economy and employment. It consists of the automotive manufacturing and automobile and motorcycle parts manufacturing parts industry. Since 1961, Thailand has implemented policies to support the development of the industry. During 1977-1997, Thailand imposed a free trade policy, taking part in the World Trade Organization (WTO) and the ASEAN Free Trade Area (AFTA). Fourteen of the world's major carmakers are operating in Thailand, including Toyota, Honda, Nissan, Mazda, Mitsubishi, Suzuki, Isuzu, Hino, BMW, Mercedes, Triumph, Volvo, General Motor and Ford. In 2012, Thailand has moved into the top 10 auto manufacturing countries in the world in terms of sales and production records. (Outerson, 2013) For ASEAN, Thailand has been ranked as the largest car manufacturer with an annual output of 2.5 million cars manufactured in 2013. Fifty-eight percent of this number was exported, with the remaining sold domestically. Total exports and domestic sales account for 10% of the gross domestic product. The industry employs over 600,000 personnel with 100,000 in the auto services industry and over 500,000 serving in the auto parts industry (Sub-committee for establishing a workforce development strategy framework in the automotive and auto-parts industry, 2015). The industries have set a target of the manufacturing of 3.5million car units in 2020 compared to 2.2 million units produced in 2012, or almost a 60 percent increase.

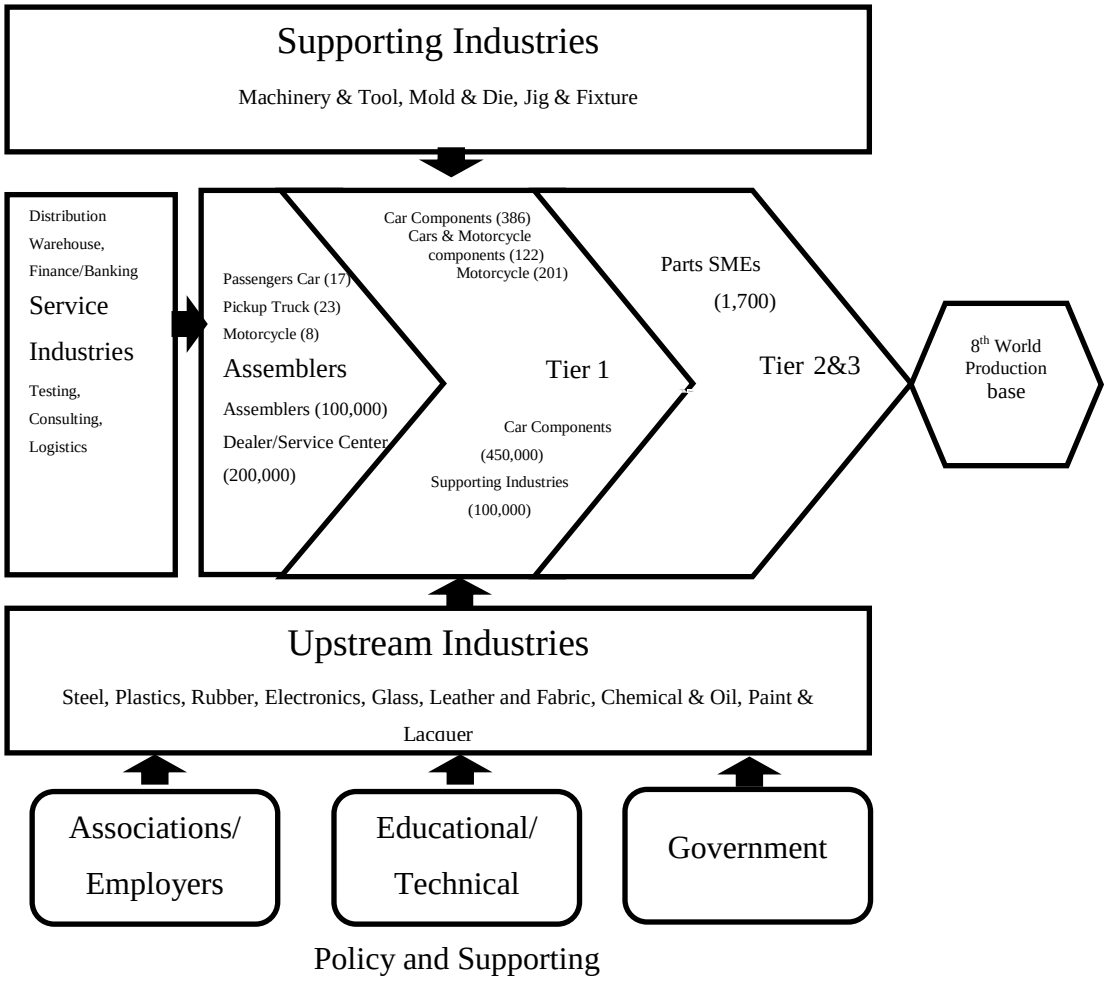

Figure 5.1 Cluster Structure and Supply Chain of the Automotive Industry

Source: Sub-Committee for Developing a Workforce Development Strategy Framework in the Auto and Auto-Parts Industry, 2012: 3.

5.1.2.2 Pressing Demand by the Industry

Mr. Thavorn, Vice president of the Federation of Thai Industries, has made an argument addressing the urgency to develop a skilled workforce in auto-parts manufacturing as follows:

> In order for the industry to reach a production goal of 3.5 million cars per year, assuming the same level of productivity, we need a total workforce of 900,000 persons. Compared to the existing workforce of 650,000 persons, it is very difficult for us to achieve the set target considering Thailand's declining birth rate. This leads to the only

> solution, increasing productivity from an average of 3 manufactured cars per person per year to 4.5 units per person per year. To achieve such increased productivity, it is crucial that intensive personnel development has to be implemented to upgrade workforce capabilities to meet the advanced technology demanded by the industry" (Thavorn Chalassathien, Interview, August 26, 2014)

His remarks are aligned with the FTI's announcement about the aggressive targets for the industry to achieve in 2020. These targets include an increase in production value, export value, local content value, and productivity which leads to an upgrade of workforce structure. The aggressive target of the automotive industry has led to an aggressive demand of the workforce to be fed to the industry. Based on the information on the workforce demand collected by the Ministry of Labour shown below, it is expected that from 2013-2017, the workforce demand of this industry will total 124,010 persons. With this number, the workforce with a level of education of no higher than the 12th grade and vocational education accounts for 47 percent and 40 percent respectively. Therefore, the industry has sent this critical message to the government through the FTI— that workforce development for technical skills is necessary for the survival and competitiveness of the industry.

Table 5.1 Workforce Demand Forecast in the Automotive and Auto-Parts Industry (2013-2017)

Year	Number	Workforce Demand		Educational Level					
				Lower than G12th		Junior/Higher Vocational		Bachelor and above	
		Number	%	Number	%	Number	%	Number	%
2013	637,895								
2014	666,667	28,772	4.51	14,961	52	10,646	37	3,165	11
2015	700,000	33,333	4.99	16,333	49	13,000	39	4,000	12
2016	731,707	31,707	4.52	14,585	46	13,000	41	4,122	13
2017	761,905	30,197	4.13	12,683	42	12,985	43	4,530	15
Total		124,010	19.44	58,563	47	49,630	40	15,816	13

Source: Sub-Committee for Developing a Workforce Development Strategy Framework in the Auto and Auto-Parts Industry, 2012.

5.1.3 Initiation

In response to the aggressive production target mentioned above, the industry has been in high demand for skilled technician and engineers to drive its operations. The serious skilled shortage in the sector has driven the urgency to find an immediate remedy. As a result, a group of private sectors from the automotive industry under the leadership of Mr. Thavorn Chalassathien, Chairman of The Human Capacity Building Institute, The Federation of Thai Industries, and senior vice-president of Denso (Thailand) Co., Ltd., has agreed upon a common vision to upgrade national capacity to move up the value chain of the auto-parts industry.

> The emerging countries such as Myanmar or Vietnam will become an important market and production base for the region. I hope that Thailand will strive to maintain its leadership in the field. Certainly, these emerging countries will eventually emerge as manufacturing base for automotive and auto-parts industry. And Thailand needs to upgrade our capabilities through a higher positioning in the value chain. We have started from manufacturing simple components but now we have to progress towards manufacturing sophisticated parts. Thailand should aim to manufacture machinery which produce these parts and components and advance itself to manufacture high-tech machinery with superior reliability and accuracy which serve more sophisticated level of components. This positioning was how Japanese manufacturers treated us (Thavorn Chalassathien, Interview, August 26, 2014)

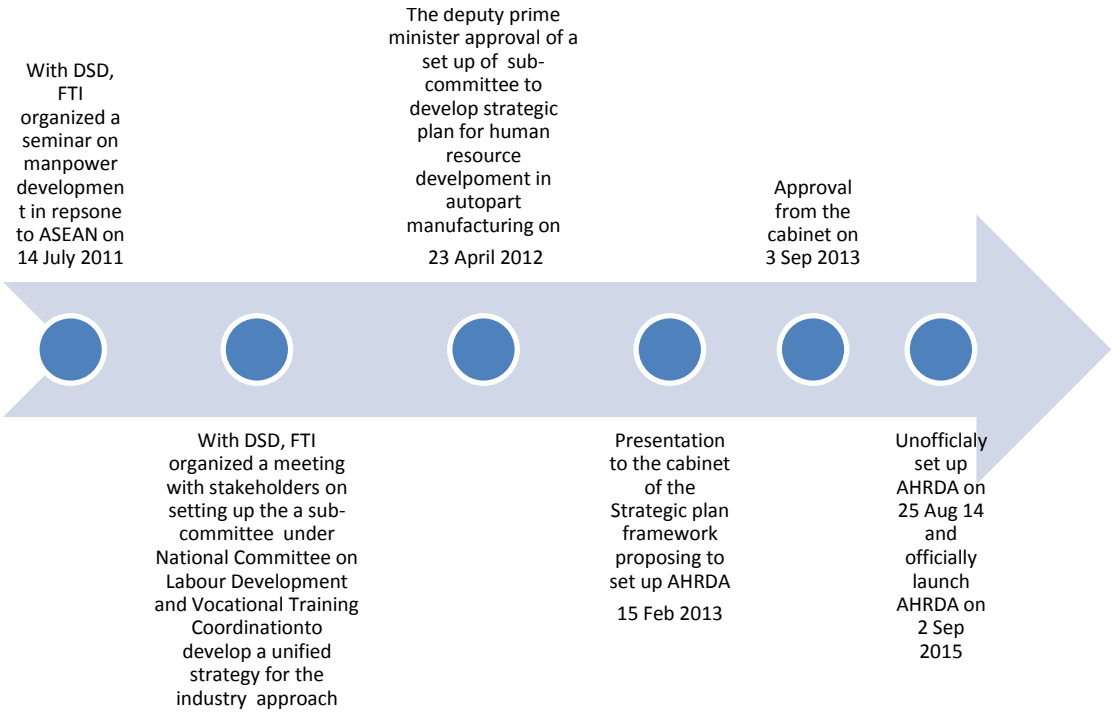

Figure 5.2 Partnership Activities in Setting up the AHRDA

As presented in Figure 5.2, Mr.Thavorn has entered into a long-process interaction with the Department of Skill Development in establishing a public private partnership institute called the "Automotive Human Resource Development Academy (AHRDA)." The establishment of the AHRDA resulted from dedicated efforts of partnerships fostered through long administrative processes before the AHRDA was officially launched on 2 September 2015.

5.1.3.1 Involving Top-Level Government

Endorsement by the National Committee on Labour Development and Vocational Training Coordination

A number of actors have been involved in the establishment of the AHRDA and in evolving this partnership entity. Upon the initiation phase as presented in figure 5.3, the National Committee on Labour Development and Vocational Training Coordination chaired by the prime Minister plays the an important role of the approver of the strategy framework. The vice chairman is the Minster of Labour with the Director General of the Department of Skill Development appointed as the secretariat. This national committee includes members from public

and private stakeholders, including the education, workforce development, and industrial sector in the auto and auto parts sector, as shown in figure 5.4. This workforce development sub-committee was chaired by Mr. Thavorn Chalassathien, with the vice-chairman and board members appointed from members of the Department of Skill Development.

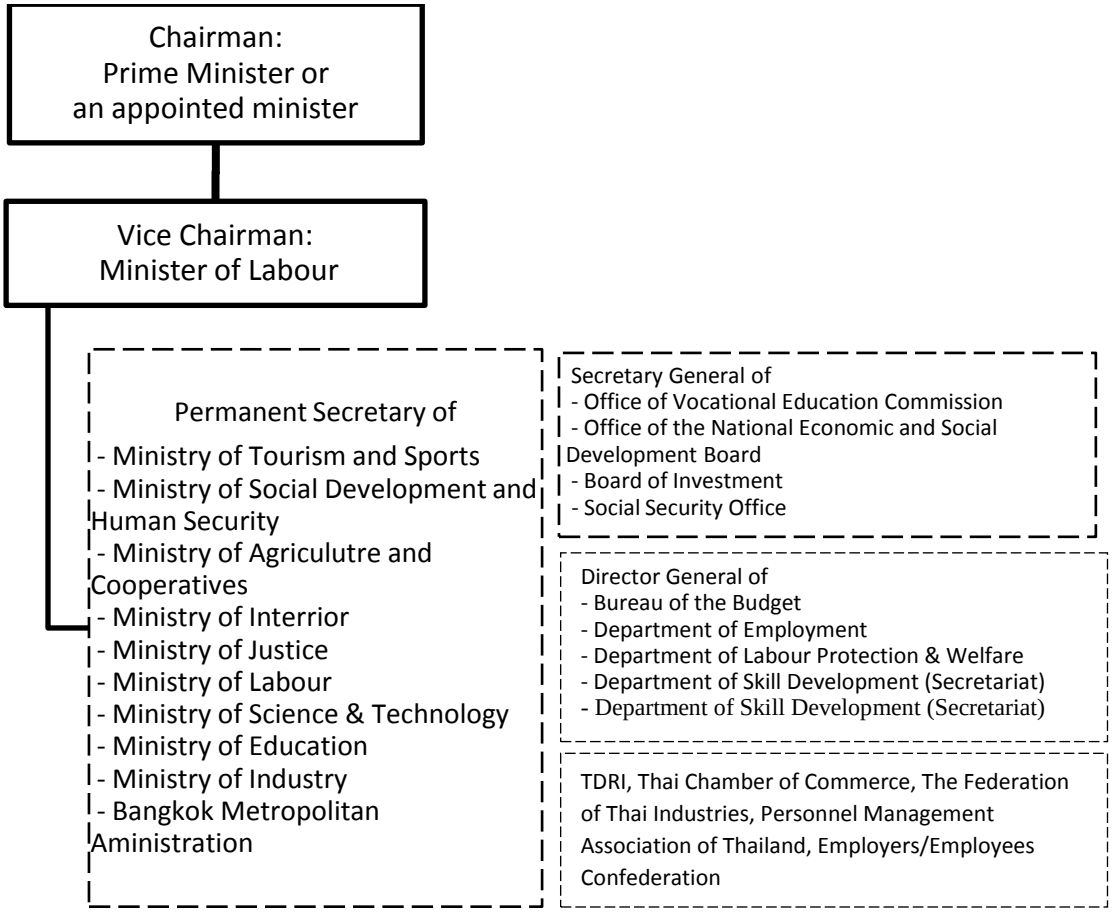

Figure 5.3 Governance Structure of The National Committee on Labour Development and Vocational Training Coordination

Source: Puntrik Smiti, 2015.

The National Committee on Labour Development and Vocational Training Coordination has been set up to seek input from the education, workforce development and industries for policy development and to make proposals to the cabinet for approval. The diagram below represents such a mechanism.

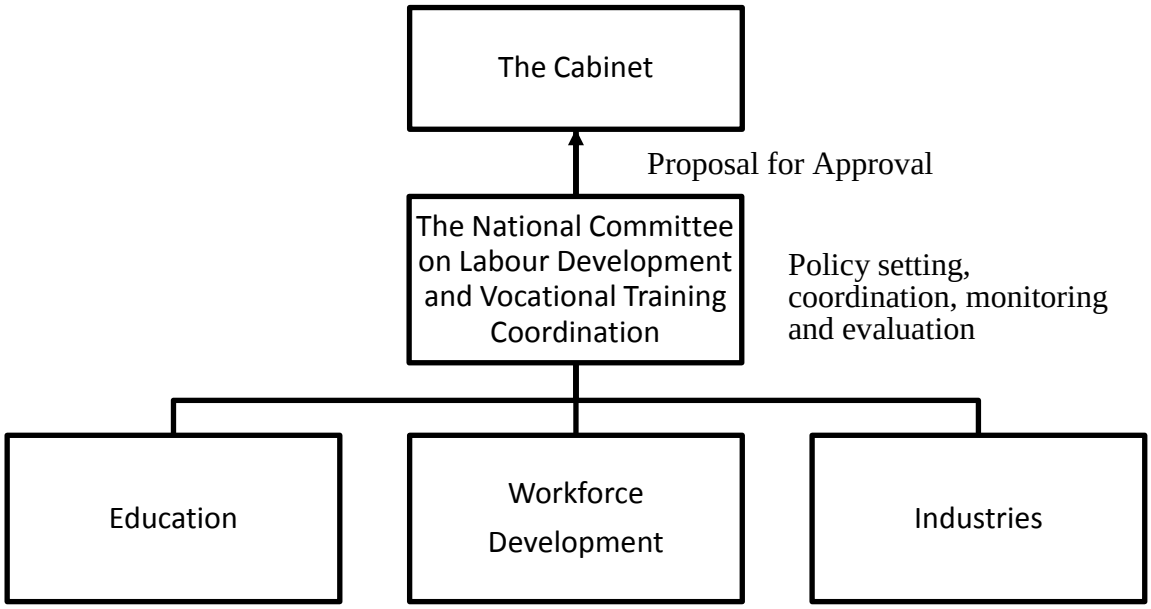

Figure 5.4 Reporting line of The National Committee on Labour Development and Vocational Training Coordination

Source: Puntrik Smiti, 2015.

The FTI has been working closely with the DSD in approaching the national committee on Labour Development and Vocational Training Coordination. This national committee was established under the regulations of the Office of the Prime Minister announced on 1 October 2009 with the objective to improve efficiency and to foster collaboration between education and the labour development systems. The committee aims to undertake the following roles and responsibilities:

1) To guide the policy and direction of labour development and vocational training coordination

2) To coordinate the human resource development between the two different systems: education and labour development

3) To coordinate the policy planning of both labour development and vocational training from all government and private sector units

4) To monitor and evaluate the implementation of the policy and the plan

5) To provide recommendations to resolve problems and obstacles related to labour development and vocational training coordination

The DSD's Secretary General shared the idea that "this national committee was approached because it oversees the national level of the labour development and vocational training policy. Moreover, this national committee has been set up under regulations of the Office of the Prime Minister; therefore, it is an established entity which would stay in spite of the political leader change" (Puntrik Smiti, Interview, April 16, 2015). This channel can help coordinate with the vocational education unit whose mission is related to skill development. By approaching this national committee channel, the sub-committee for formulating a strategic plan related to human resource development in automotive and auto-parts manufacturing was set up. In setting up the sub-committee, the FTI in collaboration with the DSD went through several processes to address the urgency of the sub-committee set up.

First, on 14 July 2011, the FTI collaborated with the Department of Skill Development in organizing a seminar on workforce development for the automotive and auto-parts industry in response to the ASEAN free labour movement. This seminar led to a meeting on 25 January 2012 targeting automotive and auto-parts stakeholders. The purpose of the meeting was to brainstorm among stakeholders how to address the skilled shortage within the industry. They came to a consensus that it was necessary to set up a sub-committee for developing a unified strategic plan. This idea was proposed to the National Committee on Labour Development and Vocational Training Coordination. After the national committee approved a setup of the sub-committee with a mandate to develop a strategic plan framework for the automotive and auto-parts industry during the period of 2013-2020, numerous steps were taken before the framework was finally approved.

The development of the strategic plan framework went through a considerable number of procedures before it was approved by the cabinet, which lasted for over 16.5 months. Since the sub-committee was approved to develop the strategic plan framework on 23 April 2012, it took the sub-committee about 2 months to finish the strategic plan framework, which laid out the human resource development strategy for the automotive and auto-parts industry during 2013-2020.

This strategic plan framework was approved by the national committee on 21 Jun 2012. Then the sub-committee undertook three workshops for formulating action plans, projects, and indicators before conducting a public hearing on 27 September 2012. The sub-committee received input from three workshops and public hearings in order to revise the plan. The final plan was presented to the cabinet on 15 February 2013.

5.1.3.2 Setting Shared Long-Term Goals

The Development of the Strategy Framework on Labour Development and Vocational Training in the automotive and auto-parts industry

The matching needs between the public and private sectors were echoed by the Deputy Director General of Department of Skill Development, Mr. Somphob Pingta. He shared the notion that "for manpower development, private sector cannot work alone anymore. They need to seek support from the government. Meanwhile, the government sector had trouble in developing the workforce to fit the demand of the private sector" (Somphob Pingta, Interview, (May 22, 2015).

Besides the matching needs between the DSD and FTI, which entered into collaboration, the strategic plan framework developed and endorsed by the cabinet has been aligned with the industry needs. Multiple processes in terms of data collection, seminars, interviews, and data synthesis were undertaken in order to gather input from relevant stakeholders from the chamber of commerce, vocational and higher education institutes, professional qualification institutes, boards of investment as well as individual employers. The input was incorporated into the plan before being presented at a public hearing. After that the revised plan was presented to the national board before it was approved by the cabinet. These processes were to ensure that the plan incorporated input from key stakeholders as part of the participation process. Moreover, it also ensured that the plan aligned with the national plan of the industry.

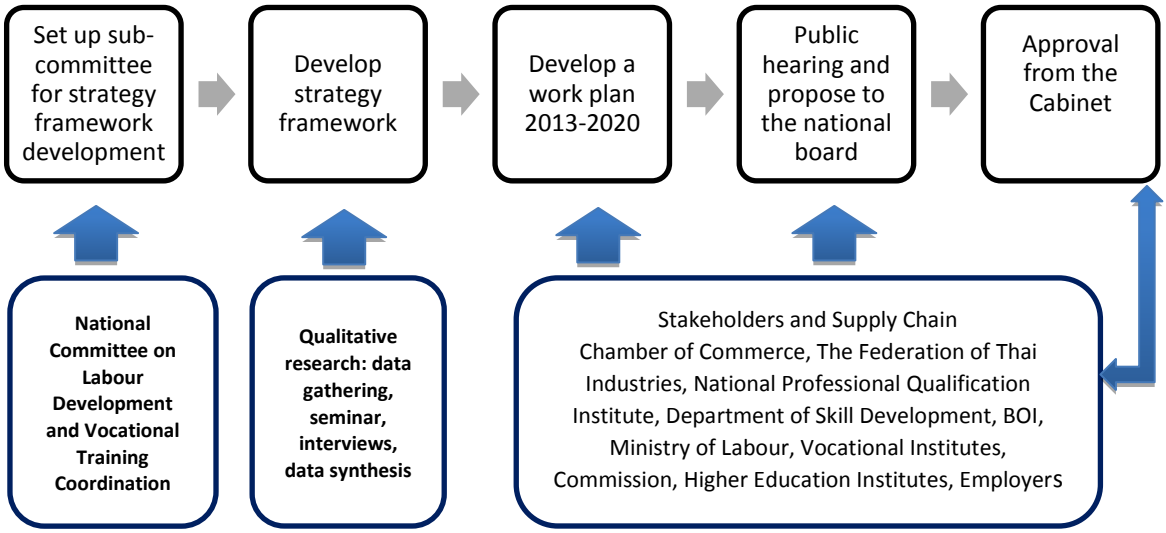

Figure 5.5 Approval Process for Strategy Work

Source: Sub-Committee for Developing a Workforce Development Strategy Framework in the Auto and Auto-Parts Industry, 2012: 5.

As per the Thai Autoparts Manufacturing Association's executive, the industry pressed the government to set up a strategy sub-committee to formulate a strategic plan for auto-parts manufacturing aiming to address the skill shortage. In April 2010, the National Committee on Labour Development and Vocational Training Coordination approved a setup of the subcommittee to develop a strategic framework on Labour Development and Vocational Training in the automotive and auto-parts industry. The process for developing a strategy framework was presented by the sub-committee on 27th September 2012 as shown in Figure 5.5 above.

In the strategic plan framework, four strategies were approved as stated in the cabinet resolution dated 3 September 2013. These strategies included:

1) To raise the competencies of the Thai workforce to meet international standards

2) To develop professional standards, labour standards, and competency standards

3) To develop a workforce database system to support the workforce market, the requirements for skilled workforce development, and network development

4) To establish a human resource development institute targeting a medium- to high-skilled workforce for the auto industry

It can be noted that by working in harmony with the industry, the fourth strategy specified above of working toward human resource development was aligned with the industrial master plan shown below under the human resource development strategy box in the diagram in figure 5.6, which specifies the setup of a human resource development institute in the automotive and auto-parts industry.

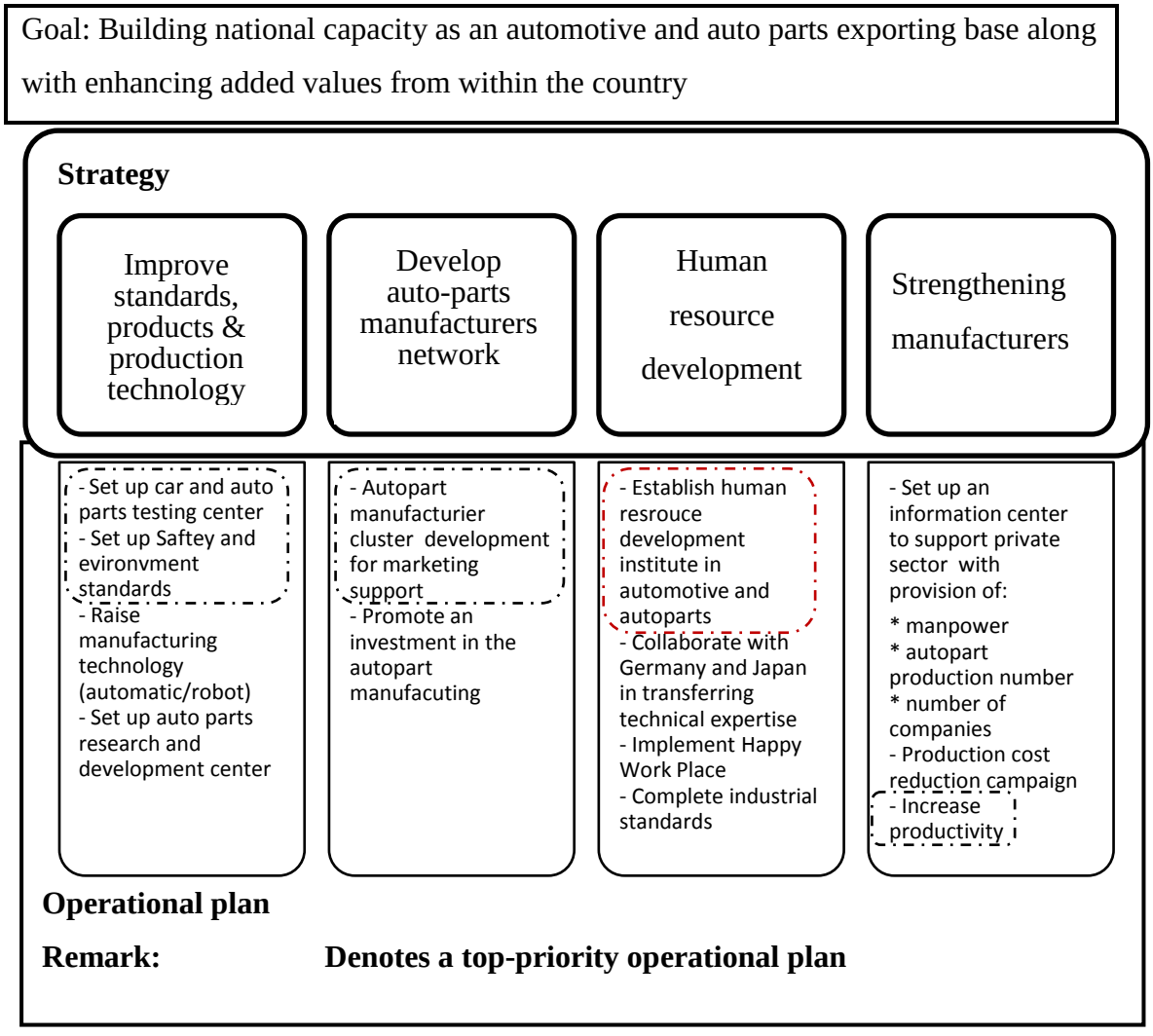

Figure 5.6 Industrial Goal and Operational Plan in Automotive and Auto-Parts Industry

Source: Sub-Committee for Developing a Workforce Development Strategy Framework in the Auto and Auto-Parts Industry, 2012: 5.

It is evident that setting up a human resource development institute in the automotive and auto-parts industry has been treated as one of the top-priority operational plans for the industry.

In terms of individual companies that were invited to join the AHRDA as board members, there is a common vision that they share, which is developing a skilled workforce for the auto-parts manufacturing industry:

> The participating companies are usually large with adequate machinery, qualified trainers and shared mission of social contribution. For example, Dr. Wichai Srimavan, Vice President of Somboon Learning Academy, has been very keen in strengthening vocational education. He studied in vocational education and would like to see an improvement in vocation students. Due to his approaching retirement, he would like to contribute more to the country. (Kiattisak Niyomlarp, Interview, May 22, 2015).

The shared organizational culture observed by participating companies was the social contribution and willingness by the staff to help and develop young adults as part of the future workforce development. The Somboon group shared the idea that "our organization culture has been very supportive for young students who join the apprenticeship program. Even before the company joined AHRDA, we have been implementing multiple apprenticeship programs with vocational colleges. And our staff provide full support in mentoring vocational students in order to help them learn" (Kiattisak Niyomlarp, Interview, May 22, 2015).

5.1.4 Structure and Governance of Partnerships

The AHRDA was unofficially established on August 25th, 2014 on the same premise of the Institute of Skill Development Region 1 in Samut Prakarn Province. The office is located on the 2nd floor of the 12-story building at the institute. Mr. Somphob, the Deputy director general of the DSD, shared his ideas about the governance of the AHRDA: "It is a special entity with both public and private members siting on the board but the majority of the board members are appointed

from auto-parts manufacturing companies. Even with its own director of the institute, the director position is governed by the board. This unique structure enables AHRDA to be more responsive to the employers' needs. Board members plays important role of formulating the policy while the director will implement those policies and plans. With this structure, the private sector can help propose solutions when the government unit gets stuck with rule and regulations" (Somphob Pingta, Interview, May 22, 2015).

After a "soft launch" in August, 2014, there has not been any budget directly allocated to the AHRDA. According to Mr. Somphob, "it is not possible for a public entity to set up any budget before the organization is established. At the beginning, AHRDA was allocated a budget of 4 million baht from a mobilization of 20 million baht funding from Five Integrated Provincial Plan with Samutprakarn as one of the member province. Addition funding was raised from the Office of Vocational Education Commission (OVEC) and from private sector" (Somphob Pingta, Interview, May 22, 2015). A number of skill trainings for personnel in both the Department of Skill Development (DSD) and the Office of Vocational Education Commission (OVEC) were carried out. In 2015, the AHRDA was approved for a budget of 10 million baht to manage its 2016 operation with an acquisition of industrial equipment worth 49 million baht. This set of equipment was originally a donation from the Japan International Cooperation Agency (JICA) to the Thailand Automotive Institute (TAI) and was recently transferred to the AHRDA. The equipment is used for manufacturing skill training and certification systems for the automotive industry.

The AHRDA was set up with the following vision: "To enhance personnel capabilities in Thailand's automotive and auto-parts industry to be in alignment with the international standards" and the mission as follows: 1) to conduct study, analyze, monitor, and evaluate the workforce in the automotive industry; 2) to develop a financial and personnel development plan; 3) to deliver skill training for trainers and the workforce; 4) to undertake skill testing with relevant certification; 5) to enhance skill standards and training curriculum; and 6) to cooperate with public and private organizations. It can be noted that the mission identified in the sixth item focuses on facilitating the public and private partnerships.

The Automotive Human Resource Development (AHRDA) has been set up with the following structure. The Director General of Department of Skill Development sits as the chairman of the board, Mr. Thavorn Chalassathien, the vice-president of the FTI as the vice-chairman of the board, and executives from Somboon Advance Technology, Summit Auto Body Industry Co., Ltd. and Denso Thailand Co., Ltd. sit as board members. The Department of Skill Development assigned six officers to operate the AHRDA. This structure has been designed to ensure that the AHRDA's strategy is set up with input from the private sector and its operational plan is developed and overseen by key private stakeholders. Such a structure could not be set up without the trust between the DSD and Mr. Thavorn. The clear vision and missions were developed through continuous engagement and influence on the DSD executives and staff through his strong leadership and the respect earned by the DSD at all levels of senior management, management, and operational levels.

The AHRDA was established on August 25th, 2014 with the appointment of a board committee. Six staff members were assigned to work for the AHRDA on a full-time basis. The structure of the AHRDA is presented in figure 5.7.

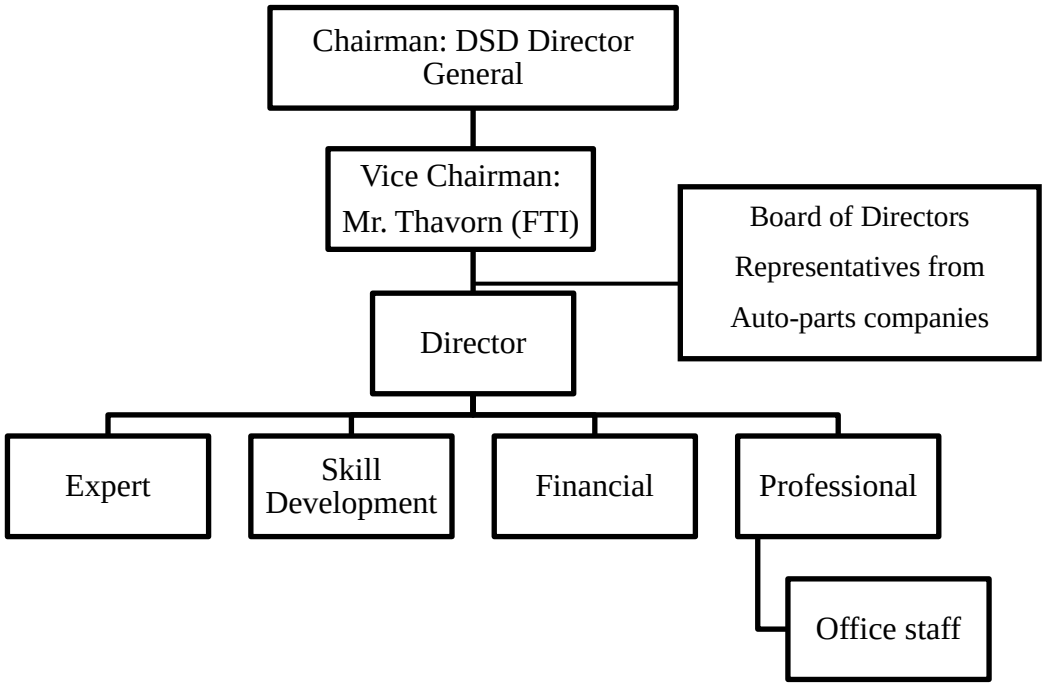

Figure 5.7 AHRDA's Organizational Structure

Source: AHRDA, 2015: 9.

During the work process, the AHRDA's board members from different companies will coordinate with their staff to mobilize trainer resources as the working group. This working group will work on proving feedback on improving the training curriculum (Kiattisak Niyomlarp, Interview, May 22, 2015).

5.1.5 Capacity-Building Process

Through a partnership mechanism, the AHRDA has benefited from multiple capacity-building activities with collaborative efforts driven by the FTI, DSD and other stakeholders as follows.

5.1.5.1 Strategic Planning

Under the board of directors' input, the AHRDA's road map for 2015-2019 has been developed to incorporate a short-term and long-term vision that aligns with the DSD's positioning shift from training operator to training certifier, regulator and consultants that provide technical consultancy services, as emphasized by the DSD's Director General:

> "DSD roles need to transition from training provider or operator towards policy advisor, facilitator and regulator. It needs to shift the skills of its personnel to be able to monitor and oversee" (Puntrik Smiti, Interview, April 16, 2015). This vision is reinforced by another senior executive and professional-level staff during the interview. "The necessity for DSD to shift from operator to advisor requires the personnel development to develop analytical thinking and monitoring skills. Moreover, adequate and advanced equipment is needed" (Somphob Pingta, Interview, May 22, 2015).

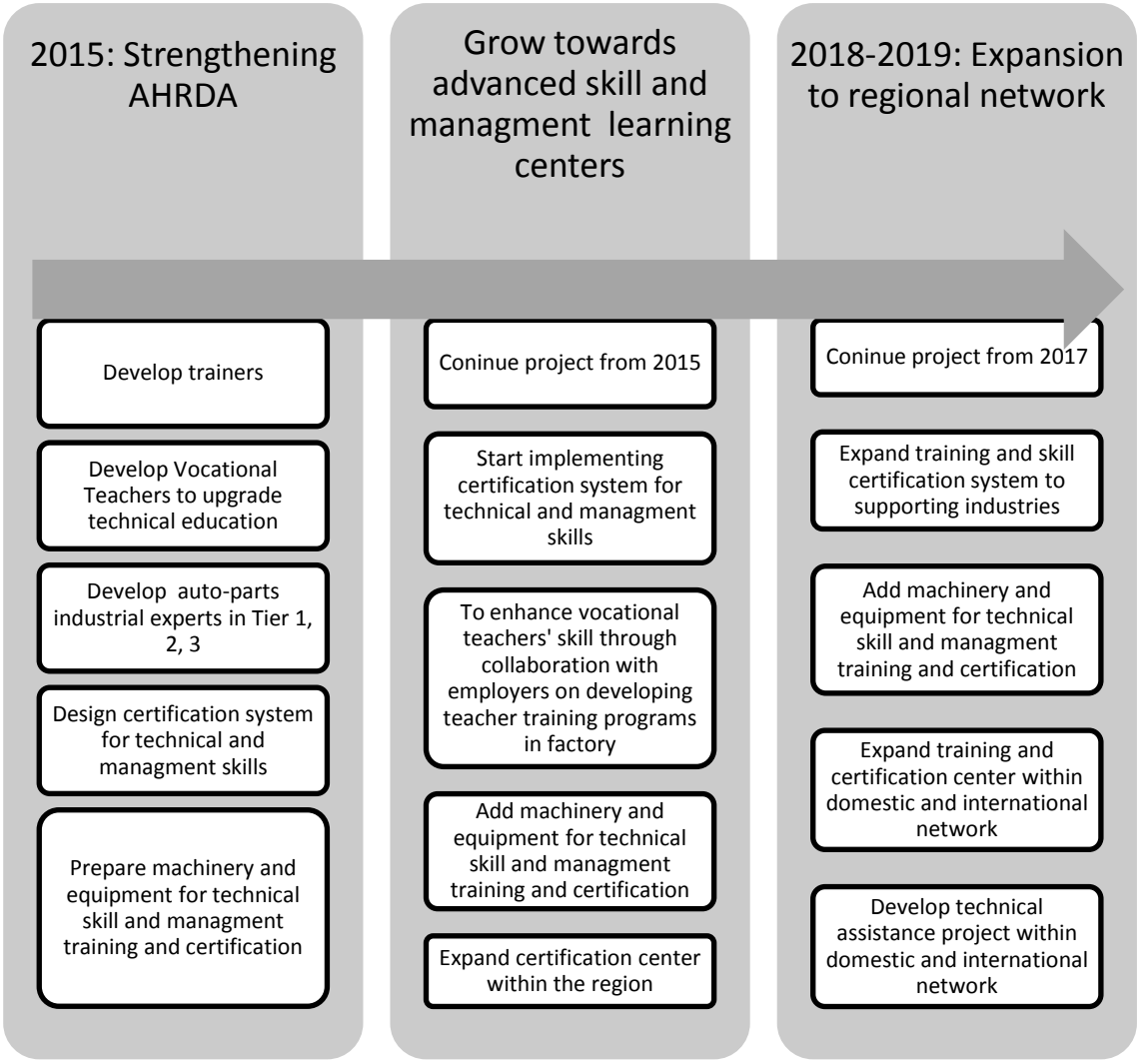

Figure 5.8 AHRDA Road Map 2015-2019

Source: AHRDA, 2015.

With the assistance of the FTI, the AHRDA's strategic plan presented in figure 5.8 was developed. It has incorporated the needs of the industry matched with AHRDA's missions. Taking into account AHRDA's weakness in their training personnel and equipment, it was planned that the machinery and equipment for technical skills training would be provided for the AHRDA in 2015. For other missions, providing skills training for the OVEC teaching personnel was also included in the strategic plan. The greater focus on providing industrial experts, especially for auto-parts manufacturing companies in tier 1, 2 & 3, was clearly specified as well as

the certification system design for the technical and management skills level. The above strategic plan outlines the growth plan for the AHRDA to expand its work in the region as well.

5.1.5.2 Capacity-Building Mechanism: Standards, Curriculum Development, Teacher Professional Development, Student Internships, and Skill Testing and Certification

The DSDs' Secretary General further shared the capacity building needs from the private sector. M.L. Puntrik Smiti stated the following: "The setup of AHRDA needs knowledge transfer from the private sector. A practice of trainers in factories is necessary. The training of DSD trainers and OVEC trainers is on the way. Moreover, collaboration between DSD and OVEC in integrating industrial competencies with educational curriculum is being developed in order to ensure that the graduates are qualified according to recognized standards set by the industry" (Puntrik Smiti, Interview, April 16, 2015).

The AHRDA under collaboration with the FTI has provided capacity building for relevant government stakeholders. The skills standards are designed with input from employers prior to presenting to Department of Skill Development and Thailand Professional Quality Institute. These standards will guide the teacher development program, instructional material development, and the basic equipment that students need to practice and learn from. In addition, the internship program provided for students' practical training in factories was supported by the employers. Upon the completion of the skill development program, students are awarded with a qualification certification which matches the industry skill requirements set in the standards.

The AHRDA has brought about change in the way in which the DSD and OVEC trainers are trained. On-the-job training with practical training in factories is implemented. Coordinated efforts through the AHRDA board members provide an opportunity for trainers to receive knowledge transfer directly from employers as well as use of the equipment and facilities in the real workplace. "A distinctive change in the work ethics was observed after the training. Trainers applied what they learned from employers to the institutes such as punctuality and keeping tools and equipment in their places" (Narong Kasetphibarn, Interview, May 22, 2015).

It was reported at the AHRDA board meeting on 8 May 2015 that 30 OVEC trainers received training through off-the-job, on-the-job, practical training in factories and training assessment for a total of 39 days. Then a certification was awarded.

There are two parts of the courses. Functional skills include the tooling skills for measurement tools, knowledge about tooling, cutting tools, and mole-die and manufacturing machines. Factory management covers a material flow information diagram (MFID), safety and quality fundamentals, the production process, work in process, the work station, standardized work, the Toyota Production System (TPS), Total Productive Maintenance (TPM), KPI control, daily control, abnormality, the operator training system, the HRD system, career path, and performance evaluation and the activity system.

5.1.6 Factors in Sustaining the Partnerships

The AHRDA has been considered as a public private partnership because of the following advantages and resulting impacts listed below.

5.1.6.1 Influencing Policy Leaders by the Private Sector

The AHRDA has been set up through proactive participation of the private sector in influencing government leaders to take action of setting up an institute to address the workforce shortage issue. This influence was undertaken through the strategy framework development. At this stage, input from the private sector was provided. The alignment of the industrial master plan and the strategy framework of workforce development in the automotive and auto-parts industry was created. Establishing a human resource development institute targeting a medium- to high-skilled workforce for the auto industry has been one of the recommended strategies in the strategy framework. This has led to the set-up of the AHRDA accordingly.

5.1.6.2 A Trustworthy Champion with Resource Mobilization Capabilities

Mr. Thavorn Chalassathien, is the champion that initiated the establishment of the AHRDA as well as mobilized resources from FTI from the beginning in order to influence government leaders and to assist in the process of

strategy framework development throughout the capacity-building process of the personnel in vocational education and training both inside the Department of Skill Development and in vocational schools. He is trusted by both high-level and operational-level officials within the DSD and OVEC and is highly regarded by companies in the industry.

In an interview Mr. Thavorn reported in Naew Nah on 14th February 2015 as follows: "As part of private stakeholders, we have to keep the government sector informed of the kind of workforce we require. Not only that, we need to get together and give them a hand in order to guide the workforce development towards the right direction and to match our demand. Or else, the workforce development will lose in direction. Imagine if we have high quality and capable workforce, the employers will benefit from productivity increase as well."

Government officials from different units at different levels that have worked with Mr. Thavorn reflect his strong leadership, commitment and trustworthy character in many ways. DSD's Director General shared that "He is highly admired by his dedication to upgrade workforce in the industry without any hidden agenda" (Puntrik Smiti, Interview, April 16, 2015). Another OVEC high-ranking official said that "Mr. Thavorn wears varied hats within Denso, FTI, OVEC and TPQI and is highly capable of working collegially with different government agencies. In addition, he has been able to bring together different agencies who never work together before to meet and resolve issues. (Siriphan Choomnoom, May 21, 2015).

Mr. Thavorn's leadership extends beyond the government leaders to cover the private sector in the auto-parts manufacturing community. He takes a leading role as the president of the Human Capacity Building Institute of the Federation of Thai Industries (FTI). His leadership was witnessed by a reflection from the Managing Director of a large auto-parts company during a meeting of project collaboration: "Mr. Thavorn represents the auto-parts industry and leads us. Whatever he says, I will follow him." A Managing Director of a large auto-parts company mentions."

His dedication to the skill development field was confirmed by a DSD official during an interview where he stated the following: "He is very direct and drives the work to happen. He seeks resources to deliver training and cooperate with

private sector in to help support the trainers' on the job at factories. He engages other companies to sit as board members" (Jittapong Poomsa-ard, May 24, 2015).

It is not only the government sector that trusts Mr. Thavorn, but the private sector also shares a similar trust, as shared by Mr. Kiattisak of the Somboon group: "Mr. Thavorn has a technical spirit. He places high priority on education and push for an improvement for the benefits of our next generation" (Kiattisak Niyomlarp, Interview, May 22, 2015).

Mr. Thavorn is cautious and tries to engage participation from the FTI when he represents the AHRDA. In a conversation with him when he was invited, on behalf of the AHRDA, at a meeting for project collaboration in strengthening vocational education, he stated: "I have to be careful not to mislead others that I want only Denso, to benefit, from the project. I will engage FTI representatives to join the meeting so that they participate and contribute their input into the project as well" (Thavorn Chalassathien, Interview, January 30, 2015).

5.1.6.3 Perceived Benefits by Stakeholders

The perceived key benefit from the collaboration with the private sector is the increased strategic fit with the industry. Mr. Somphob shared his ideas about this during an interview about this aspect, stating the following: "Earlier, when planning, we plan without private engagement which led to mismatching and outdated standards and training. Now through board structure, private stakeholders could help set policy, strategic plan for the operational team led by a director to implement" (Somphob Pingta, Interview, May 22, 2015).

Through the public and private partnership structure embedded in the AHRDA, public stakeholders have benefited from relationship bridging across public agencies, which usually operate without much synchronization. As a result of the collaborating efforts with other public agencies which are driven by the FTI, there is an increased coordination across units. This was reflected by a DSD professional officer: "FTI has been the powerful linkage between department of skill development and office of vocational educational office" (Jittapong Poomsa-ard, Interview, May 24, 2015).

Capacity building for training personnel on the private sector is another benefit that enhances the skills of trainers. This was reflected by Mr. Thavorn in the

following passage: “During the practical training at factories, some trainers never saw the facilities and equipment used in factories before. Even with small tools which are commonly used in the industry. Such training provides them with opportunities to be aware and learn about the technology and skills students and trainees should be developed” (Thavorn Chalassathien, Interview, January 30, 2015).

Apart from capacity building for vocational schools, a learning and development specialist of Somboon Advanced Technology shared the idea during the interview that “employers’ staff benefit from exchanging knowledge and skills among each other (Kiattisak Niyomlarp, Interview, May 22, 2015).

5.1.6.4 Supporting Legislation

The Department of Skill Development, Ministry of Labour of Thailand, has imposed tax incentives legislation called Skill Development Promotion Act B.E. 2545. The training expenses can be deducted from the corporate expenses for the amount of 200% of the actual value. The compulsory measure was applied to employers with at least 100 employees to provide training for no less than 50% of their total employees. If an employer fails to do so, contribution has to be made to the Skill Development Fund. In addition, tax benefits are applied to the machinery to be used for training, training expert fees, and expenses as well as other relevant utilities expenses such as water and electricity.

Such legislation will encourage employers to participate in all kinds training or internship offerings to students.

5.2 Work Integrated Learning Program

5.2.1 The Partnerships Description

The work integrated Learning (WiL) program is an initiative which promotes cooperative engineering education through integrating work for student leaning. The initiative was begun by Michelin Thailand to pilot collaboration with five leading technology universities, including King Mongkut’s University of Technology North Bangkok (KMUNB), King Mongkut’s University of Technology Thonburi (KMUTT), Kasetsart University, Prince of Songkhla University (PSU), and Rajamangala University of Technology Lanna. In addition to developing university students, the

program aims to develop technicians or students at the higher vocational diploma level. The model implemented is called the factory school model. Michelin engages in curriculum development, student assessment, and provides training facilities on the company's factory premise. In addition, Michelin sponsors salary and welfare, accommodations, and company mentors. The National Science Technology and Innovation Policy Office (STI) supports teacher development in order to implement this factory school model.

In this study, the program will focus on the initiative which has been implemented by RMUTL, which targets vocational students. RMUTL has entered into a partnership agreement with Michelin to develop skilled technician for a mold manufacturing plant. The program aims to develop students not only in their technical skills but also regarding their employability and analytical skills.

The first phase of the Work-integrated Learning program began its implementation on 1 April 2013 and ended on 30 June 2015. It targeted two groups of students. The first group was the engineering students in the final year of their study in the mechanical engineering department. RMUTL has applied lessons learned from Bochum University's cooperative engineering to the Work-integrated Learning as presented in Figure 5.8. Michelin has partnered with 5 universities and planned with them to take students for their internship during their last year. In the first semester, students will go to the factory as if they were employed engineers. In the second semester, they will study at the university one day a week. In total, they spend about 10 months attending these learning activities.

Another target group is the vocational students or 12^{th} graders interested in pursing a higher vocational track. A program called developing the mold production technican has been initatied. Aiming to develop industiral technologists based on the real work environemnt, the company in partership with RMUTL recruits vocational students students before the second semester to be granted a 2-year internship at the factory. Prior to relocation to the factory, students are trained at RMUTL on basic skills for 2 months. Each year, they are trained at the university for 3 months in general education and laboratory. The rest of the nine months, under close supervision by Michelin's industrial trainers, stduents join the job training program through an 8-hour work daily and attend a 3-hour study daily after work by RMUTL facilitators

assigned to be on site at the factory. During the 2-year period, students will study at RMUTL for 3 months per year in general education and laboratory. Each group of 5 students is assigned a mentor that is a 4th year engineering student from the first target group. These mentors will share what they learn about mahinery through the project-based approaach with their assigned mentees. Michelin supports tuition fees, salaries and accommodations, and the facilitators' allowance.

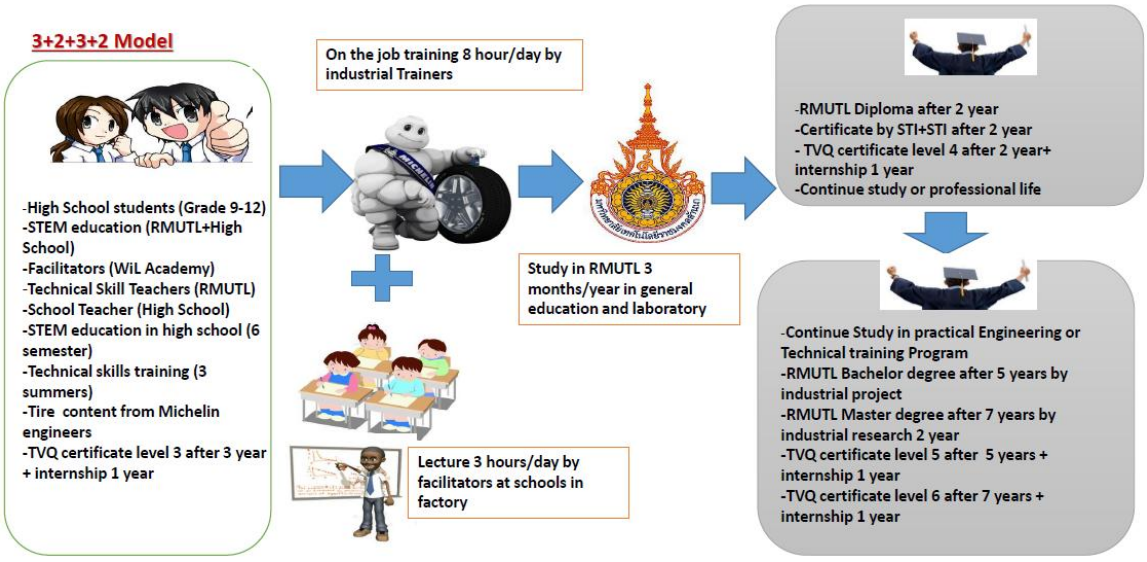

Figure 5.9 WiL Program Model

Source: Numyoot Songthanapitak, 2014.

Upon completion of the 2-year internship, students will receive an advanced diploma with a certificate by the RMUTL. If they continue their internship for one more year, they will be certified with Technical Vocational Qualification at level 4. At this stage, they can continue their study at the university or choose to work.

It is interesting to observe that the Work-integrated Learning model is a product of a model called cooperative learning which integrates project-based learning and practical skills training for students. From a presentation by Dr. Numyoot at the SEMEAO conference 2014, Work-integrated Learning was adopted from cooperative engineering education at Bochum University, as presented in Figure 5.9.

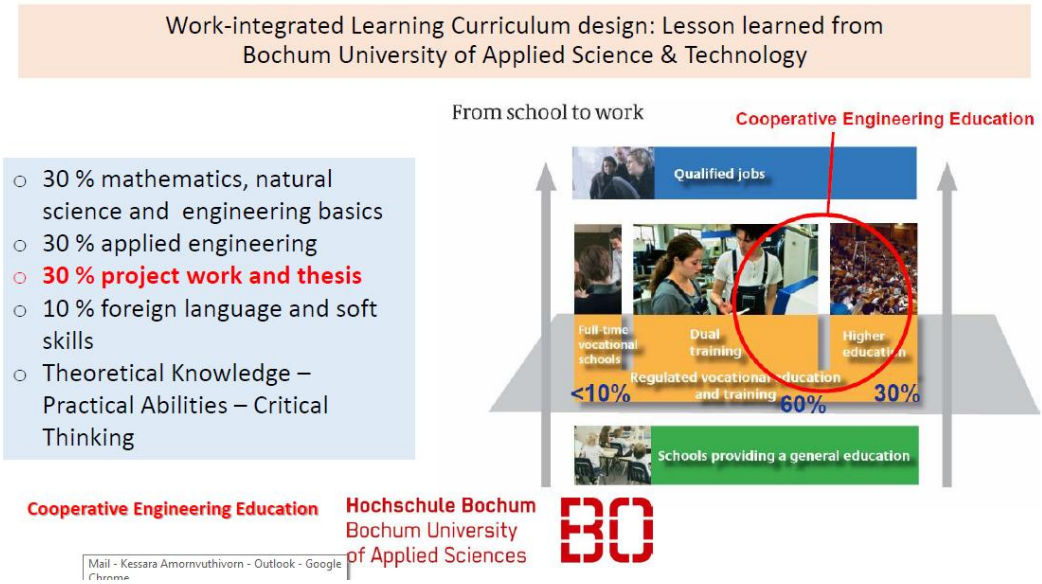

Figure 5.10 Lessons Learned from Bochum University's Cooperative Engineering Education Applied to the Work-integrated Learning Model

Source: Numyoot Songthanapitak, 2015.

In 2015, 58 and 22 students were assigned to particpate in Word Integrated Learning at Michelin factories located in both Chonburi and Rayong respectively.

5.2.2 Background and Context

5.2.2.1 Industry Settings

The mismatch between the supply and demand side in terms of technical personnel development has been summarized from the different stakeholders involved in this WIL program. Dr. Niwat Moonpa, Director of the College of Integrated Science and Technology, Rajamangala University of Technology Lanna, was invited to be one of the leaders to represent the technical college community in reflecting on how the education system related to STEM could be improved. Based on his presentation on the Work-integrated Learning Program delivered at a brainstorming session organized by the national reform committee on pubic communication, science, technology and information, the national reform committee on education and sports, on 27 April 2015, Dr. Niwat explained that Thailand has faced a serious problem regarding a workforce shortage in the following aspects. First, the current workforce lacks the

skills relevant to high-technology manufacturing, such as auto parts, aircraft parts, wheel tires, electronics, and high-precision machinery. Secondly, the current training in the factory focuses on skills without developing knowledge in technology, science or engineering for workers. Lastly, technicians are not well paid or promoted towards professional growth compared to the high demand for their skills and their hard work. This results in a high turnover of technicians after working for a while and realizing a lack of a promising career path.

However, he added that universities do not respond to the above issues. Problems continue to exist because the instructional approach delivered in higher education institutes does not meet the expected demand of the industry due to the following supporting reasons. First, the instruction currently delivered in universities under industrial technology or engineering is not relevant to the current manufacturing industry, especially one with high technology. Secondly, instructors lack knowledge about high-technology engineering such as auto parts, high-speed rail systems, aircraft parts, wheel tires, electronics, high-precision machinery, as well as skills and experience in modern production technology. Thirdly, educational institutes do not have appropriate machinery or production equipment to provide appropriate practical training for students to learn about the modern production process. And lastly, the internship at factories does not provide students with practical training.

He further summarized that universities do not provide the kind of workforce which matches the industry's demands while the employers hesitate to promote workers under the operator position to advance in their career in order to maintain the highest productivity.

5.2.2.2 Pressing Demand by the Industry

1) Skill Mismatch Problem Faced by the Industry

The skill mismatch problem is reflected by the Michelin Company. Its university project manager reflected that "Michelin has faced a serious problem in recruiting engineering graduates whose skills and qualifications are not matched with the advanced production technology. As a result, the company initiated a program to prepare students with career readiness activities so that they can transition to work with efficiency" (Banpot Horbanluekit, Interview, July 18, 2014).

Each year, Michelin has faced a high turnover of operators. Due to skilled shortages, they thought that if the project developed a potential workforce that could grow to include forepersons in the future, they would be able to retain some talents and grow them to be key talents in the organization in the long run, Dr. Banpot added.

From the government side, Dr. Somchai Chatrattana, Deputy Secretary General of the National Science Technology and Innovation Policy Office shared STI's mission in addressing the manpower development gap as discussed below:

> Existing education cannot fulfill the industry demand in meeting their manpower requirement with the right capabilities and expertise. Work-integrated Learning program has then been initiated to address this technician shortage, upgrade workforce quality and standards. This program will be a concrete and practical model to demonstrate how to develop manpower to match the industry needs as well as to establish a network of education sector and the industry (Somchai Chatrattana, Interview, May 21, 2015).

The university's viewpoint about the current vocational education system reflects the need for improvement. Dr. Numyoot shared the notion that the "the existing dual system needs a better management system to ensure the quality" (Numyoot Songthanapitak, Interview, August 1, 2015).

5.2.3 Initiation

5.2.3.1 Involving Top-Level Government

The STI under the leadership of Dr. Pichet Durongkaveroj, positioned as STI's Secretary General at that time, has recognized an urgent need in tackling the industrial problem regarding the skilled workforce shortage, especially in the area of technicians. Therefore, collaboration among the industrial stakeholders and universities has been initiated to address this urgent issue. Such collaboration includes curriculum planning and development, instruction, and project evaluation.

His leadership in fostering public private partnership and promoting Work-integrated Learning has been reinforced in many presentations and speeches that he has made during the past year. Part of the speech delivered at the Opening Plenary Session of the 11th Annual Meeting of the STS forum on October 5, 2014 in Kyoto, Japan stated:

> It tells us that a rational society needs scientific thinking. It tells us that an efficient administrative system also needs transparency for which technology solutions can play a part of. It also tells us that science and technology should not be confined to scientists and engineers or a single institution, like the Ministry of Science and Technology, but inter-Ministerial, public-private partnerships, outreach to citizens, and certainly to humankind through international collaborations.

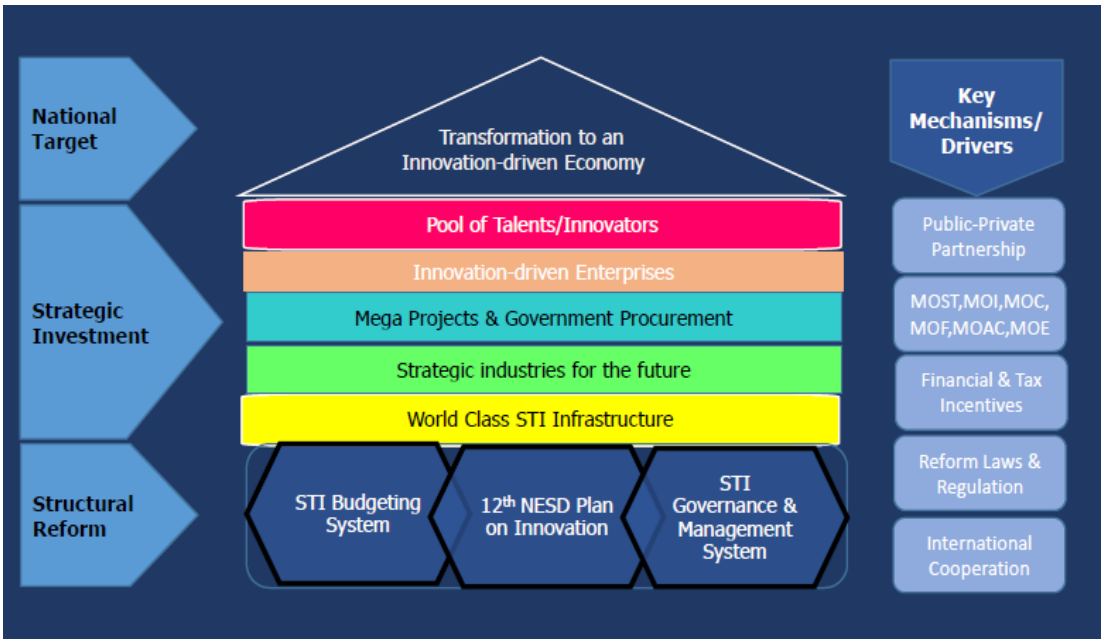

Figure 5.11 Conceptual Framework for Developing the Nation Through Innovation
Source: Pichet Durongkaveroj, 2015: 5.

In his presentation at the Intania Leadership Network or Chulalongkorn University's Engineering Alumni on 12th May 2015, as shown in figure 5.11, he addressed the idea that public-private partnership is the key mechanism to transform Thailand toward an innovation-driven economy. At the meeting, he used the Work-integrated Learning model as the case to strengthen the capacity of personnel in universities and educational institutes by working collaboratively with industries, as well as to develop students' science and technology skills that meet the industrial needs.

In a meeting the author attended during a project progress report, he emphasized that "[w]e could not change by working under the currently government system. Engaging private sector to work differently outside the system will help improve the current education system" (Pichet Durongkaveroj, Interview, April 3, 2015).

5.2.3.2 Setting Partnerships' Shared Long-Term Goals

1) Clear Mission driving WiL Program Implementation

During a meeting with the STI on Kenan's White paper development project in December 2013, the author learned about STI's priorities in promoting science and technology, as discussed below. The STI has listed the following key issues in STEM education and workforce that need to be urgently addressed. The first issue is related to the low percentage of students entering the science track: only 32% against 68% of students pursing the social science track. Moreover, low student achievements compared to OECD countries were seen in the PISA international test results in 2012. This first issue needs to be tackled by an increase in student motivation regarding entering the science track in order to heighten the number of members of the science and technology workforce. The second issue addressed concerned the low relevancy of the current skill development to the workforce demand. The solution to this problem was identified as encouraging the schools to work in partnerships with industries in order to build appropriate skills fit for the marketplace. The last issue was discussed in the context of the emergence of information technology which Thailand should utilize in order to enhance student learning.

Table 5.2 STI's Set Priorities in Addressing Top Issues

Issues	**Objectives**
1. The low percentage of Science and Technology graduates accounting for only 32% in 2011 while overall 2012 PISA ranking for Thai students was much lower than the OECD average and was behind China, Singapore, and Vietnam	1. Increase the proportion of S&T graduates to 60% by 2021 and increase the growth rate of STI labor productivity by 5% each year
2. Low relevancy of school/college education leading to a mismatch of graduate competency and what is demanded by industries	2. Fostering strong partnership between industries and schools to prepare students for future STEM careers
3. Information, media, and technology are regarded as the 21st century skills required to succeed in work and life. They are also considered as enabling tools in strengthening STEM education and training.	3. Expand use of ICT to enhance STEM learning and access

STI has addressed the above issues through the following three strategies in order to increase productivity and innovation capabilities. These three strategies of demand-driven, public-private partnerships, and ICT-enabled are aligned with the issues addressed above in order to reduce the skills gap by fostering collaboration with industries.

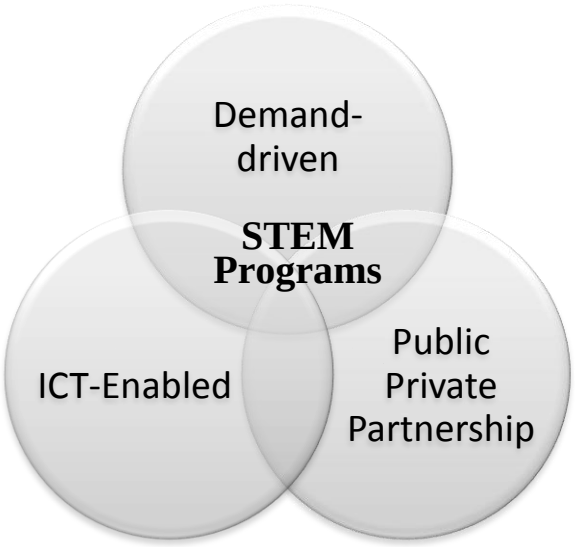

Figure 5.12 STI's Key Strategies
Source: STI, 2015.

The following policies and actions have been implemented to achieve the goal of increasing producitivity and innovation capabilities in the real sector.

Table 5.3 STI's Key Policies and Measures Being Implemented

Policy	Measures
1. Science-based Technology College (SBTC)	Development of Grade 10^{th}-12^{th} STEM module-based learning materials using backward-designed and active learning model Development of 7^{th} – 9^{th} STEM local-based, career-related learning modules targeting students in rural areas and establishment of STI Career Academy model Development of ICT platform and content for strengthening STEM knowledge and skills for workforce in the automotive and food sectors

Table 5.3 (Continued)

Policy	Measures
2. Science-based Technology College (SBTC)	Strengthening collaboration with the private sector to promote project-based learning for students at Science-based Technology Colleges
3. Work-integrated Learning (WiL)	Pilot projects for high vocational certificate and undergraduate education in collaboration with automotive and machinery sectors Development of Thai apprenticeship by promoting "train the trainer" system in the automotive and machinery industry Establishment of an office to support and promote the work-integrated learning model

Source: STI, 2015.

It can be noted that the Work-integrated Learning program has been set as a flagship program by the STI in order to address skill mismatch problem faced by the industry. RMUTL has been selected as one of the partners due to its shared mission, as defined below.

2) The matching mission of the program with the partner, RMUTL

With a focus on vocational learning and a hands-on learning system, "the university has shared mission in providing vocational skills for students using hands-on and practical learning approach" (Numyoot Songthanapitak, Interview, August 1, 2015). This statement was reconfirmed by RMUTL's written mission as follows: "Rajamangala University of Technology Lanna is Thailand's leading University in the field of vocational learning. The University develops students of an international quality, capable of using scientific and technological concepts in their professions. It accomplishes this through a hands-on learning system" (Rajamangala University of Technology Lanna, 2015).

A strong vision of reforming vocational eucation through implemenation of the Work-integrted Learning program has been championed by the university's president, Associate Professor Numyoot Songthanapitak. His presentation, edtitled "Work-integrated Learning (WiL) as a means of Reforming TVET in Southeast Asia: Thailand," was delivered at the SEAMEO Congress in 2014. The principle of engaing employers to enhance students' skills was reinforced. RMUTL's strong positioning as a University of Technology with employer engagment is reflected in the following slide presented at the conference.

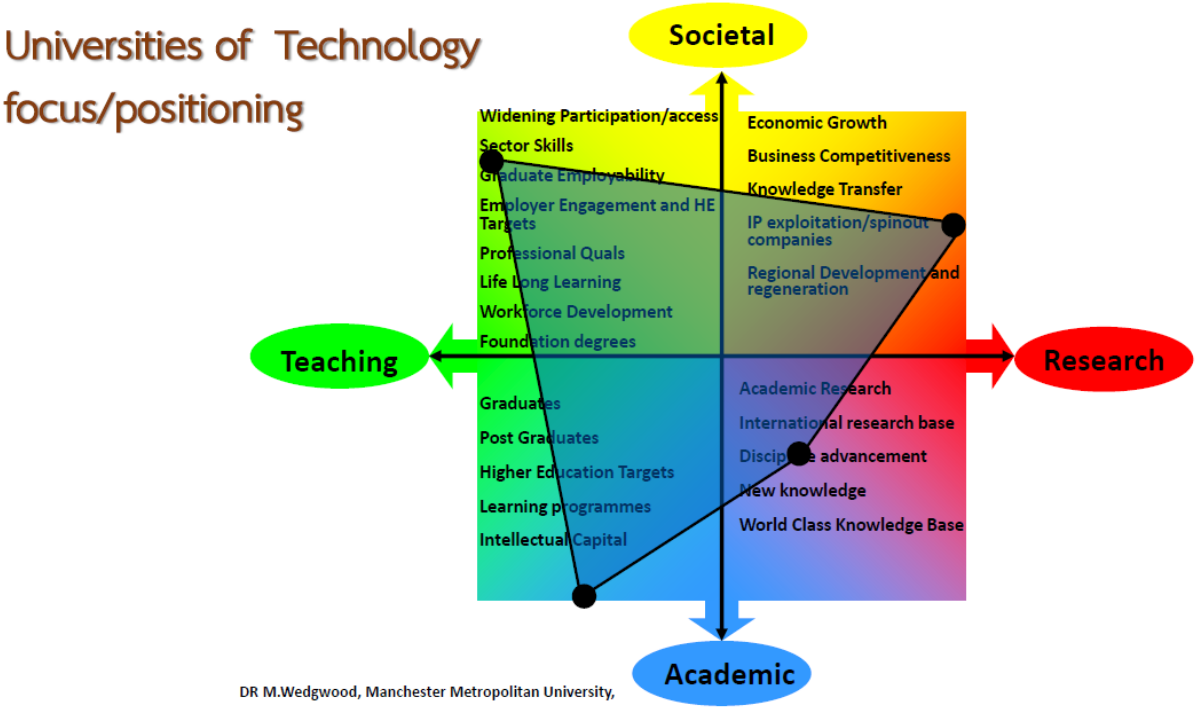

Figure 5.13 RMUTL's Strong Positioning of a University of Technology
Source: Numyoot Songthanapitak, 2015.

The College of Integrated Science and Technology, RMUTL, is the implementing unit of the Work-integrated Learning program with support from the Faculty of Engineering which offers a diploma and a bachelor degree in industrial technology as well as a bachelor degree in technical education – mechanical engineering and industrial engineering. According to a message from the college's

former director, Assistant Professor Wanchart Suwattee, in the annual report for the fiscal year 2014, he stated the following:

> The college was set up on 27th November 2006 to provide undergradudate education or lower using problem/project based learning and Work-integrated Learning. With its focus on developing practioners, it aims to develop students to excel in practical skills and to be competent in vocational expertise based on science as the college's motto - The moral guides the mind to create expertise leading to be a practitioner. Students are encouraged to be knowledgable about academic and vocational skills. This will help students discover their potential and are ready to apply their technologcial innovation skills at work or to further their higher education which will contribute to future technological innovation (Suwattee Wanchart, 2014).

The program offered at the college was focused on providing hands-on experience for students with close mentorships by 4th year unveristy engineering students. By assinging a group of 4-5 students per each mentor, students are closely supervised on how they can transition from student life to work life while they can maintain a close social life with their friends that share a similar background within the same group. In addition, students can earn an income while advancing their study to a diploma degree in higher vocational education upon finishing the two-year intership. Their monthly salary is 7,600 Baht, which covered tuition fee and accomodations.

To summarize, the program serves all parties' missions with the ultimate goal of developing a skilled workforce for the company. For STI, this program will be a pilot project for policy proposal. For RMUTL, it not only aligns with the university's mission in developing hands-on graduates with practical skills but it also contributes to universtiy faculty develpoment in industrial education. And lastly, for Michelin, the program benefits the company by developing appropriate skills for potential employee candiates with the skill set they are looking for.

5.2.4 Structure

RMUTL as an implementing agency

Under funding and support by STI, RMUTL acts as an implementation agency for STI. RMUTL coordinates with companies to arrange the recruitment and internship process. RMUTL will work and plan with the company in terms of skill requirements, career paths, training curriculum, as well as credit transfer requirements and degree advancement. A Site Director is assigned to oversee that the internship program is running successfully in terms of the academic program and practical training appropriate for the company business.

Based on Dr. Niwat's presentation at the national reform committee on pubic communication, science, technology and information on 27th April 2014, he summarized the role of RMUTL as the taining coordinator by liaising with companies and the STI. The curriculum design will be conducted between RMUTL and Michelin by adjusting the curriculum to fit with Michelin's requirements. For mentorship, both RMUTL and Michelin will provide mentors and trainers to supevise and train student while students are assigned at factories. Based on a project progress report developed by the STI in 2015, it says that in terms of allowance and accmmodations, Michelin will be responsible for all expenses relevant to students, including tuition fees, monthly allowance, accomodations, and health insurance and utilities. Another imporant expense related to the project management fees and faculty members' allowance will be supported by the STI for the first cohort of the students. In the future cohort, Micheline will be responsible for both tpyes of expenses.

Moreover, the Site Director has to be very flexible in tackling unexpected issues. He/she has to understand the university's extensive formality of the bureaucratic system against the lean processes and results-orietation of the private sector. When the university works with the private sector, it needs to adjust itself in order to fulfill employers' speed delivery demands.

5.2.5 Capacity Building Mechanism

WiL programs directly target developing students, not teachers in vocational schools. Mentored students with an engineering background are developed to be future industrial educational teachers working in vocational schools. Therefore the

capacity-building process is mainly for the end target, not existing teaching personnel in vocational schools. However, during the implementation process, WiL developed teaching skills for the 4th year engineering students that were expected to further their technical education program in their master degree program. Curriculum development and testing mainly served the purpose of allowing the students to meet the workforce demand.

The Program focuses on motivating students to enter the workforce while continuing their technical education for an associate diploma degree. Students are prepared with a 2-month technical training program prior to enter the workplace. Three-hour classroom training is provided daily while mentoring support is provided by 4th year students in the engineering faculty. Both vocational students and mentoring students are supervised by faculty members on site. Mentorship plays a vital role in this program.

1) Mentorship

One of the key components of WiL is mentoring activities. There are two layers of mentoring; one is provided by 4th year engineering students and the other by RMUTL's faculty members. Since these vocational students are young and mostly immature, it is necessary to closely supervise them to groom them in both soft and hard skills. A mentor shared his idea about the students that he had to take care of in the following: "These vocational students are still young; they need mentors for moral support. They are hardly away from parents. At factory, they are usually tempted by senior colleagues asking them out for drinks. It has been a big adjustment for them to work and study at the same time. Many of them are discouraged by the hard work expected. Therefore, as a mentor, I need to play both tough and soft role to ensure that they stay disciplined. With similar ages, I talk the same language as these students and we are able to easily fine-tune our thoughts" (Panupong Chaiyo, Interview, May 23, 2015).

Student mentoring is vital for program success, and mentors play a significant role in shaping the students' attitudes and efforts. The Site Director, who acts as a student mentor, added information about his role, stating the following:

> My role is to wear different hats, sometimes I had to train them, the others I play sports with them. However, I learn a lot in getting to work with others. I coordinated with Michelin's shop manager. Productivity records for each student was collected to monitor their daily performance. I provided technical support for these students to learn about efficiently operating the machine they were working with and about how to solve small technical problem such as when the cord is broken, etc. Students are usually home-sick. They want to eat and entertain. We need to train them to be disciplined. Reward them when they meet set expectation and punish if they are off tracked, such as run around the field (Nitipat Pantakankam, Interview, May 23, 2015).

5.2.6 Factors in Sustaining the Partnerships

5.2.6.1 Sponsorship by STI and Michelin

Under strong leadership in promoting public and private partnerships in strengthening the STEM workforce, the STI plays significant role in championing Work-integrated Learning program. Not only having been listed as a major program funded by STI, WiL has been promoted as a program that should be replicated and expanded. The ongoing flow of funding has contributed to the establishment and sustainment of the program up to the present. This championship can be observed at many levels—the Minister of science and technology, who formerly led the STI, Deputy Secretary General, Dr. Somchai Chatrattana, Dr. Kittipong Promowng, and responsible staff. Continued support for strengthening Work-integrated Learning is ongoing. Dr. Numyoot's viewpont on STI's championship was that "STI has been a key driver for implementing Work-integrated Learning" (Numyoot Songthanapitak, 2015, Interview, August 1, 2015).

Another key actor is Michelin by Dr. Banpot Horbanluekit, who was currently Michelin's university project manager. His passion to upgrade the technical skills of the operators and to grow them with long-term career paths is vital to the program direction. Besides initiating a program with the STI, he plays a significant role in developing ROI justification for the companies. In his view, this program has

to be justified by the lower cost of recruiting and retaining technicians as well as reduction in overtime costs due to work substitutions for unexpectedly-resigned workers. He stated that "we do not want to hire them because of the cheap labour, we need to develop them to be able to grow in their career. Therefore, it is essential that employers need to realize the benefits of this initiative to justify their investment in developing these young adults" (Banpot Horbanluekit, Interview, July 18, 2014).

5.2.6.2 Trusting the Relationships Among Partners

The relationships among the partners, STI, Michelin and RMUTL, had existed before the program was initiated. Dr. Niwat stated that "[he] and Dr. Banpot have known each other for long time. And Dr. Banpot was a student of Dr. Somchai" (Niwat Moonpa, Interview, May 30, 2015). It can be noted that the relationships were at an individual level among these three individuals. However, the relationships at the organizational level also existed since 2007 when RMUTL, under Dr. Niwat's leadership, helped implement an STI-initiated program called the Science-based Technology Vocational School (SBTS).

5.2.6.3 Organizational Capabilities

1) Dedicated Staff with the Right Mentality and Skills

The WiL program relies heavily on activities carried out in the field. Without a dedicated staff, from both RMUTL and Michelin, which designed the curriculum and provided mentorship for all students, the program would not yield successful results. Many actors play an important role in the success of the program. Dr. Niwat explained that the existing system does not encourage faculty members to work in a new system like WiL. He had to build a new team to deliver the program because the current faculty members work independently and are not fit for this kind of work. One of important roles is the Site Director, who designs the project, curriculum, travel planning, preparing students for the internship at the factory.

One of the WiL's Site Directors reaffirmed his inspiration in undertaking his role: "I have been inspired by Dr. Niwat that WiL program would develop graduates who are practitioners. University should develop graduates with technical skills to address industrial critical workforce shortage" (Niwat Moonpa, Interview, May 30, 2015).

He further elaborated that the coordinator needs to be able to work with both the private sector and with the government, and be skillful in up-front problem solving and more importantly (Nitipat Pantakankam, Interview, January 20, 2015). During an interview, an engineering student mentor explained his ideas about the mentor's character, that "we need to be good at managing young adults who sometimes needs to be strict with disciplines and responsibilities and sometimes we need to motivate them to work harder" (Panupong Chaiyo, Interview, May 23, 2015).

2) Flexible Management

WiL's Rayong Site Director commented about the management system that "the current administration in the university needs to be adjusted in order to effectively manage the program. For example, the reimbursement process of the allocated funding from the private sector needs to be adjusted in order to be liquidated in managing the project. A lot of memos for approval slow down the process" (Nitipat Pantakankam, Interview, May 23, 2015).

5.2.6.5 Perceived Benefits by Stakeholders

Companies, universities, and students all share benefits from the program. New companies join the program after learning about the success stories of Michelin. These new companies are Star Microelectronics, Sammitr Motor, Siam Kubota, VPF group, etc.

A Site Director reflected on the benefits perceived by Michelin and students as "the company perceives that productivity increases while loss and machinery damage decreases. For mentors, they are given opportunities to learn about world-class practices which they could not be easily accessible elsewhere. For students, they never knew what the industry expects from them; what the environment in factories is like; etc. The program provides them with great chance to learn from" (Nitipat Pantakankam, Interview, May 23, 2015).

A former school principal of Prao Wittayakom School provided the positive feedback about the program, as "students develop highly disciplined character with a hard-working nature. Upon internship completion, they are immediately recruited by employers due to their technical experience gained from the internship" (Nikom Thanomsieng, Interview, May 30, 2015)

I want to see an expansion of this program in order that we have more and more competent technicians, an engineering student mentor stated.

The impact of the WiL program is reiterated by the sponsoring agency, STI, as “After running a program for one year, the result is very promising. The work performance of the program interns is higher than those of the regular worker. This is because students are able to apply learning to direct experience.” An article by STI gave a one-year program summary at a meeting conducted on 6 March 2014.

5.3 German-Thai Dual Excellence Education (GTDEE)

With support from Germany’s Federal Ministry of Education and Research and German chamber worldwide network (AHK) for cooperative, work-based vocational education and training called VETNET, the German-Thai Chamber of Commerce set up the German-Thai Dual Excellence Education program in April 2013. The program adopted the dual vocation concept developed in Germany and successfully implemented it worldwide. The program has been driven and significantly involved by the private sector.

5.3.1 Description of the Partnerships

GTDEE is a two-year vocational education program where students studying at a vocational college will spend more than half of their time at a leading German/Thai company. The program intends to develop a skilled workforce with flexible qualifications. It is a “dual” vocation concept developed in Germany and has been well received by industries and has been successfully adopted in many countries. Presently, there are 6 piloting companies and 3 technical colleges. These companies include Amata B.Grimm Power, Mercedes Benz (Thailand), BMW Group (Thailand), Grohe Siam Thailand, Robert Bosch, Getabec Group. Participating technical Colleges are Kanchanapisek Technical College Mahanakorn, Eastern College of Technology (E-TECH), and Chonburi Technical College.

The main objectives of GTDEE are to implement best practices from Germany’s vocational training system in Thailand, which aims to raise workforce skills to match industrial demands in order to enhance Thailand’s competiveness.

Students will study the general and vocational knowledge and skills required by compulsory education. Lessons may be taught in schools for two months and four months in a company for convenient logistic arrangement. Demand-based training is designed to meet specific performance and support advancement. Seventy percent of the curriculum is the same as that used in Germany. Companies play active roles in the training process in order to be certain of the quality of the standards of the training.

During the training, professional mentors will guide students in an international work environment, who will receive basic allowance from the companies. Quality control will be carried out constantly and final examination will be undertaken to assess if the trainees are acquiring the necessary vocational competence.

5.3.2 Background and Context

In Germany, the Chamber of Industry and Commerce has played a vital role in the dual vocational education system there. It defines the curriculum, registration, and testing and certification for vocational graduates by gathering input from its industrial and trading members. The administration cost is covered by the membership fee. It is compulsory by law that every company be a member of the chamber of industry and commerce. In every state, there is state-level chamber of industry and commerce responsible for the operation of vocational training. Likewise, at the federation level, The Federation Labour Office oversees the national level of dual vocational education and the State Committees on Vocational Training in charge of state-level operations. Both the chamber of industry and commerce as well as the government act as intermediaries to communicate the vocational training needs provided by both industries and vocational schools respectively (Jomphong Mongkhonvanit, 2015).

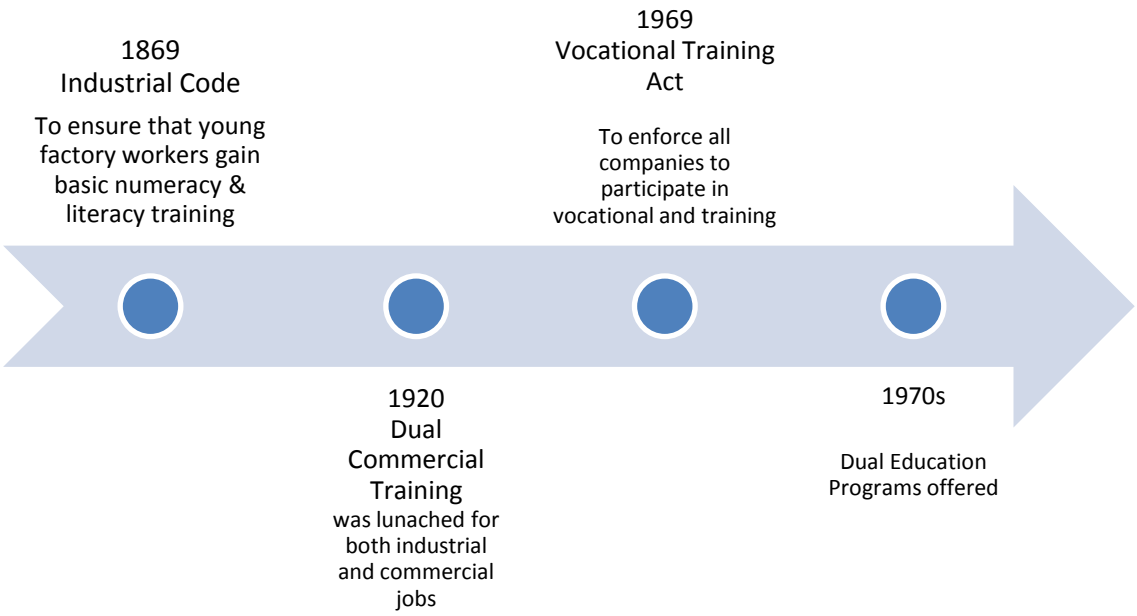

Figure 5.14 History of Public and Private Partnerships for VET in Germany
Source: Cedefop, 2007; Pieper, 2012.

Germany has implemented laws and regulations to ensure the quality of workforce development. It has undergone various stages of imposing laws to engage the private sector in contributing to employees. As presented in figure 5.14, the history of these PPP regulations dates back to 1869. A century later, the 1969 vocational training act was imposed. Moreover, companies are obligated to participate in dual education programs in order to upgrade the quality leading to the productivity of the workforce.

The partnerships between Thailand and Germany in strengthening Thai Technical vocational education were first established in 1959 with the setup of the Thai-German Technical School, which was later promoted to be King Mongkut's University of Technology North Bangkok (KMUTNB). Another big contribution by the German government regarding industrial training was a joint setup of the Thai-German Institute (TGI) in September 1992, which aimed at transferring advanced manufacturing technology to Thai industry. It was operated as an autonomous body outside the formal education system, supervised by the Foundation for Industrial Development and oversight by the Ministry of Industry (TGI, n.d.)

5.3.3 Initiation

Germany's automotive industry revenue of 361,000 million euros accounts for 20% of the national manufacturing revenue (http://www.thaibizgermany.com/de/ local- business/industry.php). In Thailand, there are a number of large German companies that have invested in the automotive and auto-parts industries. They include BMW, Mercedes-Benz, Robert Bosch, BASF, Continental, Draxlmaier, Bayer, and ZF Lemforde (Duangjai Asawachintachit, 2014).

In a study undertaken in 2013, over 500 members of the German-Thai Chamber of Commerce reinforced the critical issue of the skilled workforce shortage, heightened by the emergence of the ASEAN Economic Community (AEC). To maintain sustainable economic growth in the region, the German-Thai Chamber of Commerce and Embassy of the Federal Republic of Germany and German International Cooperation (GIZ), in cooperation with B. Grimm, BMW (Thailand) and Robert Bosch, launched the GTDEE program in April/May 2013.

5.3.3.1 Involving Top-Level Government

Prior to the establishment of the program, a Memorandum of Standing of Education Cooperation between the Thai Ministry of Education and Foreign Office of the Federation Republic of Germany was agreed on the 1st of October 2012 to commemorate the 150th anniversary of Thai-German diplomatic relations. This is part of the bilateral agreement between the Thai government and Germany, which includes a total of 11 initiatives of economic and environmental technical assistance in the area of business and financial services and eco-efficiency in industry, together with an international climate protection initiative. Three months later in January 2013, an MOU was created between the National Professional Qualification Institute (NPQI), a Thai public organization, and the German Chamber of Commerce and Industries.

Many events have been organized to seek a buy-in from national leaders from multi-sectors. The following activities were arranged in chronical sequence. A partnership meeting on Thai-German Vocational Education was organized on 9th June 2014, followed by a study trip during July 2014 on the German dual education system by vocational educators and business representatives. Later, a dual excellence conference was organized to create visibility in German dual education in Udon Thani during 7-8 October, 2014. One month later, on 17 November 2014, the German-Thai

chamber of commerce signed an MOU with the Office of Vocational Education Commission (OVEC) and the Mitr Phol group on developing a skilled workforce in the manufacturing, agriculture, and service sectors, as presented in the photo shown below.

Figure 5.15 An MOU Signing between the GTDEE and the Thai Government and Mitr Phol

The involvement in the vocational education and training was not limited to the vocational schools but also to the schools under the royal patronage, such as Chitralada Vocational School. On 30 June 2014, the BMW Group Thailand signed an MOU with Chitralada to initiate an automotive service program. Later, Chitralada Vocation School was upgraded to be the Chitralada Technical College. The college has been supported in terms of industrial training equipment from B. Grimm and BMW. On 15th January 2015, HRH Princess Sirindhorn made a study visit to BMW in Germany regarding its dual education system, which has been regarded as the original prototype of the German dual system. HRH Princess Sirindhorn emphasized the importance of a dual education system, which would strengthen the skill development of the Thai workforce.

5.3.3.2 Respect for the German Dual Education System

The high regard by Thai technical educators for the German dual system contributed to the initiation of the GTDEE program. The respect of the high quality of the German dual system has been supported by remarks made by many stakeholders at different levels, from national leaders to practitioners such as principals of vocational institutes. The following is a remark by Mr. Sakda Kongpetch, the Deputy Minister of education during his speech delivery at the Dual-Excellence Thai-German conference on dual education and dual studies during the 1st & 2nd of October 2012 to celebrate the 150th anniversary of Thai-German diplomatic relations: "The establishment of the Thai-German Technical School, as afterwards being promoted to King Mongkut's University of Technology North Bangkok (KMUTNB) featured in the first milestone in 1959. Since then, a considerable number of skilled technicians and qualified workforce have been produced, responding to the demands of industrial sectors and representing the achievement of German integrated academic studies and work experience, the Dual Education and Dual Studies scheme" (Sakda Kongpetch, 2012, Speech). His remarks align with Mr. Manoon's high regard of German dual education shared during the interview. He is the principal of the Thai-German Chuenchom Technical College, and he stated that he is "the product of the German dual education when it was Thai-German Technical School. The school provided students with strong foundation of technical skills. I recalled that the teacher assigned a group of students to fix the failing machine at Bridgestone. The study was linked to the real world situation; unlike the current engineering education which emphasizes on imagination" (Manoon Chuenchom, Interview, May 28, 2015).

The high regard for the German dual education in terms of an emphasis on practical training for students was indicated by the director of the office of vocational and professional standards: "German education places great emphasis on vocational education. Professional practitioners can advance in careers and set up their own business after gaining learning experience in factories rather than focusing only on theories and learn about operations from textbooks. Their dual system in vocational education and training is mainly driven by private sector. This is different from our Thai vocational education system which is dominated by government system. In German system, private sector led by chamber of commerce plays a key

role in setting up curriculum, training of trainers and teachers as well as providing certification for students" (Prachakom Chantarachit, Interview, May 29, 2015).

5.3.3.3 Setting shared long-term goals

The executive director of the German-Thai Chamber of Commerce reinforced the significance of the program, saying that "technicians are the backbone of the industry. It is important that we develop good technicians. It is a privilege for us to work with high-profiled companies on this project to strengthen the technical skilled workforce for Thailand" (Buck, 2014). The shared visions to achieve the common goal of strengthening Thai workforce was reiterated by GTDEE's private partners including BGRIMM, BMW and Bosch as stated in the following quotes given by the executives of these companies.

GTDEE program is another endeavor to reinforce the established vocational system in Thailand. The aims of GTDEE are to increase the skilled workforce to match the demands of the private sector and to unlock the economic competiveness of the county" Mr. Harald Link: Chairman of B.Grimm.

Working together for a bright future, GTDEE is a sustainable educational platform for practical and theoretical training. Our Objective is not only to strengthen Thailand's future workforce, but also to develop a benchmark in the dual vocational training program together with our founding partners." Mr. Matthias Pefalz, President of BMW (Thailand)

Bosch is committed to the promotion of education and is glad to be able to make a positive contribution to the vocational training system in Thailand. Germany is world-renowned for its high standard of vocational training." Mr. Joshep Hong, Managing Director of Robert Bosch Co., Ltd.

It can be noted that all three participating companies shared common views—that the program is treated as a mechanism to develop quality human resources for Thailand. They view participation as a contribution, not what they want to benefit from the program. Moreover, they believe in the quality of the program, which will help raise the quality standards of vocational education.

5.3.4 Structure

The GTCC was established in Thailand over 50 years ago. It is part of the worldwide network of the German Chamber of Commerce abroad, which represents

Germany's economic interests in over 80 economies worldwide. In Thailand, it has over 500 member companies with 30 employees with country market expertise.

GTCC Coordination Office: This coordination office plays the important role of a coordination unit between the companies and educational institutes. Similar to other chambers of industry and commerce worldwide, it positions itself as a competent body to advise and prepare stakeholders for the implementation of dual vocational education. According to Mr. Buck, it advises, monitors, and assures the quality of implementation as well as issues certificates of excellence for learners. In order to achieve this, it conducts screening of the companies and vocational institutes in terms of their readiness for the program (Buck, Interview, June 4, 2015).

A joint committee between employers and vocational institutes will be set up to agree on the curriculum framework and examinations. Pongsak Jaksuvej, Vice-president of B.Grimm Joint Venture Holding reaffirmed the partnerships between participating companies and the schools during an interview given to Prachachart on 11 June 2014.

1) The Program Structure

The dual-education program is divided into five areas: 1) Electronics, 2) Electronic Power, 3) Mechatronics, 4) Mechanics, and 5) Automotive. It is designed with 60% of practical training at the workplace and 40% of academic study at vocational colleges. Students study at the schools 1-2 days a week and at the assigned company 3-4 days a week. At the college, students study the general and vocational knowledge required as compulsory subjects according to the standards and the agreed framework. At the company, students will be offered specific skills training applicable to the work. The program is designed to develop analytical and practical skills for students. The mentor teachers at company sites will provide mentorships while students are placed in the workplace. Upon completion, students will take qualifying exams for technical certification issued by German-Thai Chamber of Commerce.

The director of E-Tech, Dr. Prasert Klinchoo, stated the following: "The uniqueness of the program is that the training is designed to be specific; not generic or too broad as offered by our education system. So students are able to analyze and synthesize appropriately." Along these lines reiterated by Dr. Prasert, students are

assigned to write a journal on their daily operational work and submit it to the trainer and mentoring teachers. This is a mechanism to assess whether the learners have achieved the vocational training set goals or not.

According to Dr. Prasert, students will receive a decent compensation, which varies according to the employer. Some pay 500 baht daily, some pay 7,000 baht per month and other relevant expenses.

Besides the apprenticeship for students, the program provides training for employers' trainers and vocational colleges' teachers. In addition, the capacity building is for the employers' trainers. A 6-day workshop is conducted for those employees that are assigned as the program trainers.

5.3.6 Factors Sustaining the Partnerships

5.3.6.1 Strong Belief and Embedded Norms in Dual Education

Large German companies regard their contributions to dual education as a key to successful workforce development. Dual education has been well established in Germany for many decades. It has been an established norm that large companies contribute to the development of young technicians through dual education.

Mr. Buck of German-Thai Chamber of Commerce reinforced this idea, saying that "[q]uality control is the center of the program. The program is designed with high quality standards. Qualifying exam assures that graduating students possess the skills and knowledge required."

Mr. Manoon supports the above claim, indicating that "in Germany, its chamber of commerce is very strong and its private sector greatly involves in development technical skills to meet the workforce demand. Its government plays a supporting role. Employers participate in vocational education especially in the area of developing trainers called MIESTERs to be qualified in delivering technical training. Because trainers are key to a successful system of technical education, that's why they significantly invest in developing qualified trainers. On the contrary, our technical trainers in most vocational colleges do not even know how to fix the machine. In that case, how could they train our students to deliver such practical tasks demanded by the industry" (Manoon Chuenchom, Interview, May 28, 2015).

Mr. Buck's strong positioning of public engagement in education was reflected in an interview given to The Establishment Post on June 12, 2013: "In the past industry was seen purely as a place of work and schools, institutes and colleges as a place of learning. Industry in Thailand has reached the point that it is now mature enough and financially strong enough to be not just seen as a place of employment, but a proactive partner in the education process also".

5.3.6.2 High Standards in Program Delivery

German's dual education has been highly regarded by many stakeholders, including the national leader.

Curriculum standards were developed in cooperation with the GIZ and all dual vocational training programs in Germany are aligned with these standards. Qualified mentors will guide trainees through German standards of personal and professional development. Companies are required to contribute based on strong criteria and strict requirements in order to participate in the high-standard program.

In addition to the high standards of equipment and facilities expected from participating companies, the GTDTEE ensures the quality of the dual training program through clearly-defined expectations where companies need to significantly contribute their resources and competent personnel to support 50% of education time for student apprenticeships. This means that companies have to fully participate for the entire course of two years using the curriculum framework set by the program. The participating companies have to assign qualified trainers and mentors to provide on-going support for students at a ratio of one staff member per five students. In addition, a training coordinator has to be assigned for liaising with the chamber of commerce and vocational institutes. Planning with technical colleges on a dual education timetable has to be arranged. In terms of compensation for students during the apprenticeship, companies have to agree on a fair contract with students, which covers allowances, scholarship fees, insurance, and number of training hours per day.

Not only does the program ensure the companies' high-standards, but it requires quality instruction provided by competent personnel regarding the equipped facilities of selected vocational institutes. Mr. Manoon Chuenchom, the principal of Chuenchom Thai-German College of Technology, one of the participating colleges, indicated that the college was selected because of the well-equipped facilities, with

adequate equipment, learning media, and technology. Moreover, his school, renowned for experience in dual education with large companies, has been another factor in being selected as one of the eight colleges joining the program. He further reinforced the strength of the GTEDEE program when compared to other typical dual education initiatives. He referred that the program is more systematic in the way that the apprenticeships are well planned and agreed between companies and the colleges beforehand. The training is based on competencies and is aligned with the German system which is highly regarded in term of its quality and reliability. It is not just assigning students to factories and become alternative labor. Students will receive a comprehensive training to build their practice skills with the machinery used in factories. Upon completion of the program, students need to take an examination to test their skills and competencies. If they fail, they have to practice and get a test until they pass. Mr. Manoon added that "Unlike our current education system, the certification by vocational institutes is not equivalent to the professional licenses. But for GDTEE, once passing the test, students will be certified with professional license by German-Thai chamber of commerce which is internally recognized by employers" (Manoon Chuenchom, Interview, May 28, 2015).

The high standards of the program are not limited to the skills training but also include instilling in the students the desired traits as part of the training. These traits include discipline and responsibility, which are considered as necessary for growing as competent workers. Mr. Manoon added that students are trained to check tool inventories and clean the place before leaving the workshop.

Mr. Manoon shared another important process of trainer development and certification—that the German system is very strict on qualifying trainers: "To qualify as a German dual education trainer, the candidate must have at least five-year experience working in the industry, receive a three-month training in special field and three months in training skills. I regard this process very critical for quality vocational education since these trainers have to transfer appropriate knowledge and skills for students (Manoon Chuenchom, Interview, May 28, 2015)

5.3.6.3 Perceived Benefits by Stakeholders

The GTDEE's advantages are perceived by employers and vocational institutes. When asked about how employers will benefit from this program, Mr.

Manoon reflected that “employers face skills shortage, the employees recruited do not possess the skills they look for. This leads to a design of the program which provides specific trainings which build practical skills for students” (Manoon Chuenchom, Interview, May 28, 2015).

For vocational institutes, both Mr. Manoon and Dr. Prasert, the head of private vocational colleges, stated that being selected as a participating college has given them pride in being selected as one of the eight colleges. It builds public awareness that the colleges have met German standards. Their teachers receive quality training from the program while the students will be certified with internally-recognized licenses. Both of them view that the program offers high-quality internship programs and equips students with the skills and experience that meet the needs of employers as well as providing them with a decent income. As Dr. Prasert elaborated, “Students receive high-pay during the internship together with welfare. They study in a highly equipped environment. Upon completion, they receive certifications to assure that students pass German industrial standards” (Prasert Klinchoo, Interview, May 22 2015).

The following are quotes from students that were presented in a promotional video on the GTDEE’s website. Most of them reflected that they had learned a great deal through the hands-on experience, which was not available from the textbooks or from the classrooms. A lot of equipment and technology were new for them. They learned to apply different skills in solving changing problems, and learned about discipline, honesty, and responsibility. They have become more mature after attending the program and have become keen in the technical job. More importantly, the mentors at the factories were all willing to share with them any knowledge they had without any reservation. They make them feel comfortable at work, like part of a family.

5.3.6.4 Organizational Capacities

The project management of the GTDEE under the support of the German-Thai Chamber of Commerce has been well equipped with know-how and good practices established for decades. Due to its good practices, which have been implemented worldwide, the implementation of the practices is well designed, with defined procedures ensuring success, as Mr. Manoon remarked: “At our college, we

fully adopt GTDEE's curriculum because we believe that it has been well testes internationally" (Manoon Chuenchom, Interview, May 28, 2015).

Another important factor for program success is the colleges' teaching personnel motivation and capability to nurture industrious skills for students. Dr. Prasert commented that "employers look for workers with discipline and responsibilities. It is important that schools have to nurture these traits for students. They have to be trained to be punctual, properly dressed, avoid cigarette and drug. Schools teachers need to closely monitor their behaviors. In our schools, we have over 500 close-circuited cameras to monitor both teachers and student behaviors. Teachers need to be a role model for students. To achieve that, they need to be well-paid if they work extra hours. At E-Tech, compensation for technical teacher ranges from 20,000-30,000 Baht. It is important that they are motivated to deliver quality instruction and high attendance to students" (Prasert Klinchoo, Interview, May 22, 2015).

Mr. Manoon indicated that in order for colleges to successfully implement the program, besides its commitment of resources, the college needs to be flexible concerning the curriculum. For private vocational colleges, they are highly flexible in adjusting the curriculum to fit the German dual education program. He viewed that the current curriculum standards are too rigid and contain too much content irrelevant to the real world. In most public colleges, they face the problem of lacking flexibility to adjust the courses to fit the market. Therefore, most students are distracted and become withdrawn from the class. He confirmed his strong support of dual education that "Dual education system will attract students by increasing their self-esteem through skill building which they can be proud of. Their competent and responsibilities lead to meaningful contributions to organizations which they feel belonging to. This is the way we should develop our young people" (Manoon Chuenchom, Interview, May 28, 2015).

5.4 Cross-Case Analysis

The public-private partnerships in strengthening vocational education and governance from three cases are different in many aspects due to the different agencies that initiated the partnerships, the combination of stakeholders, the sources

of funds, and the partnership structure and norms. In this chapter, a synthesis of the following dimensions will be detailed:

1) Actors detail key players from multi-stakeholders that take roles in leading, funding, supporting or implementing the initiatives

2) Motives which are defined with a shared vision, political advocacy, and legitimacy and trust

3) Institutional settings explained by organizational structure, governance, legislation, and norms of reciprocity

4) Capacity building described according to the contributions of public and private partnerships in the process of strategic planning, resource sharing and mobilizing, personnel development, standards and program development. together with student development.

5.4.1 Actors

The three cases vary in terms of roles and the combination of key players contributing to the partnerships, the structure and governance, as well as funding sources. As presented in the table 5.4, the AHRDA is a special kind of partnership which is driven by the private sector, the Federation of Thai Industries (FTI), under the leadership of Mr. Thavorn Chalassathien, Chairman of The Human Capacity Building Institute of the FTI. The partnership is newly created and is embedded in the Department of Skill Development. During the setup, the FTI had to go through a justification process by seeking endorsement from the national committee under the Prime Minister's office. However, the budget of the AHRDA is therefore allocated through the Ministry of Labour , which is considered the sponsor agency for this case. The target recipients that the AHRDA aims to serve are the trainers and the workforce or potential workforce for skill training. Therefore, the AHRDA works closely with two government agencies, the Department of Skill Development and the office of vocational education commission. The AHRDA is a unique agency, which has never existed in Thailand as it is a government unit but managed by the private sector. The FTI has engaged several board members to direct the policy and plan for the AHRDA while government officials implement the set plan.

Table 5.4 Summary of Actors Involved in the Partnerships for the Three Cases

Actor	**AHRDA**	**WiL**	**GTDEE**
Endorsing unit	Prime Minister Office	Ministry of Science & Technology	Ministry of Foreign Affairs through the Royal Thai Embassy in Berlin
Oversight unit	National level: National Committee on Labour Development and Vocational Training Coordination	Organizational- level: project committee appointed by STI	German-Thai Chamber of Commerce (GTCC)
Sponsoring agency	Ministry of Labour	National Science Technology and Innovation Policy Office (STI)	German Federal Ministry of Education and Research
Advising agency	The Federation of Thai Industries	KMUTT, STI, Ministry of Science and Technology	VETnet project (Vocational Education and Training Network)
Coordinating agency	AHRDA under leadership of leaders from private sector	RUMTL	GTCC Coordination Office
Partnering companies	More than 10 Thai companies: provide training facilities, trainers and mentors	Michelin: Provide training facilities, trainers and mentors	9 German & Thai Manufacturing companies: provide training facilities, trainers and mentors

Table 5.4 (Continued)

Actor	AHRDA	WiL	GTDEE
Funder	DSD as main funding source with mobilized resources from TAI, OVEC and industries	STI as an initial funding source. The later phase of the project is subsidized by partnering companies that benefit from the partnership.	German government subsidizes initial investment and ongoing fix costs while companies cover operational costs and management fees.
Recipients	- OVEC & DSD: professional standards, Instructional curriculum - Trainers of Vocational Colleges	- Vocational students and undergraduate degree - engineering students	- Companies' and schools' trainers - Vocational students

The Work Integrated Learning program has been driven by a government unit, the National Science Technology and Innovation Policy Office, under the Ministry of Science and Technology (MOST). The STI has engaged Rajamangala University of Technology Lanna to implement the program with support from Michelin company, which covers the operational cost. The program is overseen by a project committee set up by the STI that monitors and evaluates the project.

The third case, the German Thai Dual Excellence Education (GTDEE), is sponsored by the German government and is managed by the German-Thai Chamber of Commerce (GTCC). It is run by a coordination office established under the GTCC. The program is funded by partnering companies in terms of the operational costs of providing training for trainers and apprenticeships for students recruited from participating vocational schools.

To summarize, these three cases vary in terms of the key players that initiated the partnerships and that affect the funding sources, the funding amount, access to expertise and resources, as well as their experience in implementing similar initiatives in strengthening the workforce. Moreover, these key players identify the nature of the initiative in terms of the motives and governance, to be covered in the next topics.

5.4.2 Initial Conditions and Motives

During the partnership initiation process, the following five dimensions are regarded as important in a successful partnership.

1) Environment and initial conditions

2) Shared vision by both public and private stakeholders in achieving common goals

3) Political advocacy by both public stakeholders and private partners in order to retain a power balance through the partnerships

4) Legitimacy: perception by public authority or private community that such partnerships are appropriated and well received

5) Trust by all parties entering the relationships with confidence that such partnerships will add value to their organization and will lead them to their desired goals

For each case, the motives for initiating partnerships could be presented below.

5.4.2.1 Initial Conditions & Motives – AHRDA Initial Conditions

The AHRDA has been initiated due to the critical industrial environment in automotive and auto-parts manufacturing. The extent of the workforce mismatch and shortages has been high and has continued. This problem has become critical to the industrial development, where Thai manufacturers have set their goals to grow significantly in terms of productivity and production volume.

Besides the external environment, the manufacturers in this industry have been very cohesive. The nature of their business, with a large and long supply chain, has resulted in close business relationships developed in the community. With over 380 car component suppliers in the first tier, these companies have worked collegially for their supply chain management to cope with the industrial growth.

The active body that represents the industry community is the Federation of Thai Industries. With the strong leadership of Mr. Thavorn Chalassathien, Chairman of The Human Capacity Building Institute of the Federation of Thai Industries, he has been highly visible among government leaders in driving human resource development for the country. He has carried with him life-long technical experience and management expertise in a global company in auto-parts manufacturing. With both professional and personal qualification, his leadership has played a critical role in initiating the AHRDA.

1) Shared Vision

With shared visions from both public and private stakeholders, the Department of Skills Development and the Federation of Thai Industries have demonstrated the development of an automotive and auto-parts workforce strategy framework in the first stage. This strategy framework has been influenced by the FTI with the alignment of an industrial master plan for the auto industry.

The shared vision by the FTI and DSD in upgrading the automotive and auto-parts workforce by setting up a human resource development institute is identified in the strategy framework. This vision alignment by developing the strategy framework has been used as one mechanism to legitimize the setup of the AHRDA.

2) Political Advocacy

The Federation of Thai Industries' role is to negotiate for the resources to support industry growth from the government. Rather than investing in setting up an institute like many foreign training centers, such as Toyota, Nissan, the FTI uses its collective power of members to influence the government for the investment of an HR development institute to support the industry. This exertion of power is aimed at accessing the scarce personnel resources that need long-term investment in order to enhance industrial competiveness. It can be noted that the framework has been contributed to by the input from the strong and unified vision of the industry stakeholders concerning how the automotive and auto-parts industry would grow towards the world's 8^{th} largest manufacturer. The industrial vision that contributes to the economic growth has been used to justify the setup of the AHRDA.

In the meantime, the Department of Skill Development has agreed to assist in coordinating the efforts pursed by the FTI in order to maintain

power control in skills development, which is its key mission. Moreover, the access to expertise from manufacturing is another value added considered by the DSD. The contribution to economic development is used by the FTI when exerting its influence on the government.

Political advocacy has been evident in the AHRDA, which is the interplay of the FTI and DSD in maintaining a balance of power and control of shared resources.

3) Legitimacy

The AHRDA has been able to engage multiple public and private stakeholders in the establishing of the partnerships. The strong leadership from the public sector is represented by a formalized National Committee on Labour Development and Vocational Training Coordination, which is under the regulations of the Office of the Prime Minister, which creates high legitimacy for the governing bodies.

Moreover, the setup of the AHRDA serves as the big picture of economic development to which the industry will contribute; the justification for the setup is legitimate. Due to a lack of funding to support the operation of the partnerships, the strategic framework has to be developed to justify the establishment of the AHRDA. Therefore, the framework has recommended that the setup of the AHRDA is necessary.

The establishment of the AHRDA could not happen without strong private stakeholders under the leadership of Mr. Thavorn Chalassathien. His passion in developing skilled technicians for the industry and his strategic vision in engaging private stakeholders to lead the public sector in skill development have contributed to the successful establishment. His leadership has not only been well recognized by the private sector but also by government partners. He has been nominated as a board member in multiple government agencies related to skill development, including the Department of Skill Development, the Office of Vocational Education Commission, and the National Professional Qualification Institute. As a consequence, he has been able to bridge the collaboration gap across these agencies through the AHRDA.

Therefore, the AHRDA has been set up with strong legitimacy in terms of its recognized establishment by authority, which is the Ministry of Labour

and by the business and auto-parts community, which is under the Federation of Thai Industries. In addition, Mr. Thavorn has involved representatives from leading companies such as Denso, Somboon Advance Technology and the Summit Auto Body Industry to sit on the board members of the AHRDA. In this way, the AHRDA is well respected by government officials, and is under close supervision of these board members in driving the organization as well as enhancing its capability to acquire resources from the private sector. However, since the AHRDA is a newly-set-up institution, it takes time to build up credibility to undertake impactful actions leading to recognized organizational capabilities.

After the AHRDA was formed, Mr. Thavorn has taken multiple steps to enhance the AHRDA's legitimacy by creating value for the partners. Since its unofficial establishment in August 2014, skill building at participating auto-parts manufacturing companies were organized for three cohorts of trainers from the OVEC and DSD. All partners from the OVEC and DSD involved with companies have worked together on curriculum adjustment, and expertise sharing and training, by contributing their resources equally. In this way, the legitimacy of the partnerships has been built through working collegially and realizing the value created from such partnerships.

4) Trust

The AHRDA has been initiated through the continued efforts in working through the bureaucratic system involved in long procedures and formality, escalating to higher power. Without trusting relationships, it would not have been easy for a group of private partners to work harmoniously with government officials for a period of over 3 years before the AHRDA could be set up.

Mr. Thavorn has been perceived as the leader with a strong belief in human resource development. This belief is reflected by his successful attempts in pulling resources from Denso Japan in setting up the Denso Training Academy (Thailand) with an investment of 120 million baht (Thachawan Kanitpong, 2008) and the setup of Denso International Asia in Thailand with an investment of 700 million baht and the expansion of its production in Thailand with an investment of 4 billion baht in 2013 (Kanittha Panthong, 2013).

The high recognition of Mr. Thavorn by multiple stakeholders is supported by his advising positions in multiple public and private organizations, including Chairman of the Human Capacity Building Institute, the Federation of Thai Industries, board members of Thai-Nichi Institute of Technology, The Thai Automotive Industry Association, Rajamangala University of Technology Bangkok, the Office of Vocational Education Commission, and Thailand Professional Qualification Institute.

With the trust he has earned from multiple partners from various sectors, he has been able to mobilize resources when initiating partnerships with the DSD. Moreover, because of the trust, the DSD's top executives have been willing to appoint him as the vice president of the AHRDA with the addition of board members from the private sector. Furthermore, with his wide network with multiple government units, he has bridged the relationship gap across government agencies between the DSD and OVEC by fostering closer collaboration between these two agencies in developing national skill standards.

5.4.2.2 Initial Conditions and Motives - Work-integrated Learning

Initial Conditions

The STI is a policy office under the Ministry of Science and Technology (MOST). MOST has been resourceful in terms of funding and access to university resources. The close relationships between MOST and King Mongkut University of Technology Thonburi have been expanded to connections between the STI and KMUTT. This connection has also expanded to KMUTT alumni, which has now spread over to the RMUTL and many technical educational institutes.

The STI has played an important role in advocating cooperative education and use of public and private partnerships as a mechanism in strengthening technical education for several years. The implementation of the Talent Mobility program and Science-based Technology school initiative have both demonstrated STI's attempt to address the science-based skills gap in the nation.

Another initial condition contributing to the initiation and sustainment of WiL is the leadership of the Minister of Science and Technology, Dr. Pichet Durongkaveroj. He was the Director of Policy Innovation Center at King Mongkut's University of Technology Thonburi and was the Secretary General of the STI. With

his recent appointment as the Minister of Science and Technology, his endorsement of STI's initiative like WiL has carried a lot of weight with relevant stakeholders.

1) Shared Vision

Under the strong vision of the Minister of Science and Technology, Dr. Pichet Durongkaveroj has championed the piloting of the Work-integrated Learning program, aimed at reducing the skill gaps in the industry through a demand-driven and public and private partnerships approach. In terms of public leadership, it is led by the STI, the sponsoring agency that initiated the program. In terms of private stakeholders, the program was initiated by Michelin, which faced a technician shortage and high turnover. However, the initiative was begun by only one company with the implementation support by Rajamangala Technology of University Lanna, whose shared mission was to provide hands-on technical education for students. A champion that mobilized resources at the time was the university project manager, Dr. Banpot Horbunluekit. He was very passionate in helping to develop the technical skills of young adults so that they could advance from operators to a higher career path. He developed a business case to justify a return on investment by Michelin to support student allowances and accommodations in exchange for personnel with qualified skills. Dr. Banpot assisted in negotiating with companies to participate in the WiL program later on.

It can be noted that all three parties, the STI, Michelin, and Rajamangala Technology of University Lanna, share a common vision in addressing the skill gap in the workforce.

2) Political Advocacy

The WiL program was initiated by Michelin aiming to convince the government to contribute funding to the workforce development program. While the STI wanted to pilot a Work-integrated Learning program as a showcase model, it was necessary that the STI aimed for successful implementation of the program. RMUTL was selected because of its organizational capacity to deliver the expected results. It has faculty members that can design the curriculum, deliver instruction, and are authorized to assess students and issue a certification upon graduation. Similarly, RMUTL would like to be part of this program in order to build

visibility as the leader in strengthening vocational education through the work-integrated learning approach as well as in developing young faculty members with technical skills and hands-on experience in factories. With the matched resources desired and contributed by all parties, the partners entered into an agreement for implementing the program. This dependence on resources resulted in exerting influence on all parties to share resources, which will benefit to the program.

3) Legitimacy

In terms of legitimacy, WiL has been set up based on a common vision shared by all parties to address the skill gap in the workforce that has been widely accepted as a top priority for the country. At the company level, it is justified by the business plan with a return on investment which was approved by the company in the first place before investment was expected. However, the legitimacy of the program is enhanced by the endorsement the Minister of Science and Technology—that WiL is one of the programs to be supported by the ministry.

4) Trust

RMUTL has been working with STI for over five years on another program called the Science-based Technology College (SBTC) Program. Dr. Banpot taught at KMUTT and was a former student of Dr. Somchai Chatrattana, Deputy Secretary General of the STI. Furthermore, Dr. Banpot has a close relationship with Dr. Niwat of RMUTL, and these prior relationships among all players within STI, Michelin, and RMUTL have contributed to the initiation of the partnerships and the sustainment of partnerships over time.

Through successful program implementation for the past two years, trust has been strengthened. Currently, Michelin has agreed to support a new cohort of students under the WiL program with RMUTL as the implementing agency. Moreover, new companies have been invited by RMUTL to join the Wil program.

5.4.2.3 Initial Conditions and Motives - German-Thai Dual Excellence Education (GTDEE)

1) Initial Conditions

GTDEE has been initiated under multiple initial conditions contributing to the initiation and expansion of the program. These conditions include the emergence of the automotive industry in Thailand with large investment by

German automotive companies and large manufacturers such as BMW, Mercedes Benz, Robert Bosch, BGRIMM, etc. Another important condition is the high visibility of German dual education worldwide and in Thailand. This has resulted in two key conditions: a strong norm of dual education support by German companies and high program visibility. Dual education has been regarded as the foundation for Germany's industrial strength and continued growth. It has been well-accepted as a norm that companies take part in this dual-education. Regarding the other consequence, acceptance by government leaders and educators has led to program advocacy. Another key government support that has been another key advocating organization is the Thai Embassy in Berlin, Germany. The German dual education has been heavily promoted during the 150th Thai-German Diplomatic relations anniversary beginning in October 2012. The credibility of German dual education has been referred to for well-structured process and the quality control of program implementation, including its partner selection.

There is one factor which has contributed to the increased visibility of the German dual education—a visit of HRH Princess Sirindhorn to the BMWs' dual education program in Germany in January 2015 followed by a partnership initiated between GTDEE and Chitralada Vocational College with support from the BMW group and BGRIMM group in Thailand.

2) Shared Vision

For GTDEE, the initiation was driven by the German-Thai Chamber of Commerce with close linkage with GIZ. Public stakeholders play a partner role in providing financial support, not to lead. Unlike the other two programs, GTDEE has been initiated under a private entity with support from the Germany government. The engagement by the private community has been instilled in the corporate norm worldwide. The chamber of commerce has been expanding its collaboration with more German companies in Thailand since the launch of GTDEE in 2013. It is interesting to observe that these Germany companies have abundant resources with capacities to contribute and comply with the high standards and to fulfill strict requirements set by GTDEE.

3) Political Advocacy

Regarding funding, the operation of GTDEE is partly funded by the Germany government through the German-Thai Chamber of Commerce. The

rest of the operational funding is covered by companies for student allowance and accommodation. In addition, companies pay for the operation fee for GTDEE's coordination efforts. This well- structured funding scheme reflects the good practices adopted from the established model implemented worldwide and the norm within the Germany industrial culture. It is interesting to observe that prior to the launch of GTDEE, some companies such as Robert Bosch and BMW have implemented similar programs by themselves. However, after GTDEE, these companies have entered into this partnership program. The collective partnership under German-Thai Chamber of Commerce has benefited them in accessing government power from both the German and Thai side.

Regarding the participating colleges, they look for complementary resources and status. The expertise contributed by the program has been regarded as a big contribution for teaching personnel development and for student achievement, which is difficult to access. Moreover, the increased reputation by taking part in the program is treated as another substantial value of the partnerships.

4) Legitimacy

However, German dual education has been highly regarded by private and public stakeholders worldwide for its high quality standards in technical education delivery. GTDEE's legitimacy is enabled by German current practice where the Chamber of Industry and Commerce plays the role of representing industrial companies in implementing dual education. Moreover, the program legitimacy is tied to the quality of German dual education standards claimed with good practices and procedures. The advanced technologies in modernized and well-equipped companies, with the provision of experience trainers and mentors, combined with the strict requirements expected to be fulfilled by German employers, reflect well-structured high-standard practices. The willingness of these companies to participate stems from the shared mission to develop a quality workforce contributes to the manufacturing quality that the companies have an obligation to deliver. All of the above qualities of the program have led to the high legitimacy of GTDEE.

5) Trust

The trusting relationships stems from the belief in the standards of the system which have been in place worldwide. The structure of the program, the

standards, and quality assurance have been implemented and assure expected results. Therefore, all of the parties expect that GTDEE will implement the program with the same process and standards implemented elsewhere in the world.

5.4.3 Institutional Settings

An analysis on the institutional settings of each partnership will be explained according to organizational structure, governance, and legislation and norms of reciprocity.

5.4.3.1 Institutional Settings - AHRDA

In Figure 5.16, it can be seen that the AHRDA has been set up through government regulations, the National Committee on Labour Development and Vocational Training Coordination, which ensures formal engagement by the private sector and relevant skill development agencies, clear goal matching with the industrial and skill-development master plan, organizational stability, and constant funding through the Department of Skill Development, Ministry of Labour. Such a structure provides mandates for different agencies of the Office of Vocational Education Commission and the Thailand Professional Qualification Institute to collaborate. However, without strong leadership by Mr. Thavorn, the collaboration towards a consensus on unified industrial/professional skills standards could not have been finalized. The solid structure of board members from private stakeholders ensures their contributions, which include strategic advice, technical assistance, equipment sharing for training, training support for teachers, and internships and placement for students.

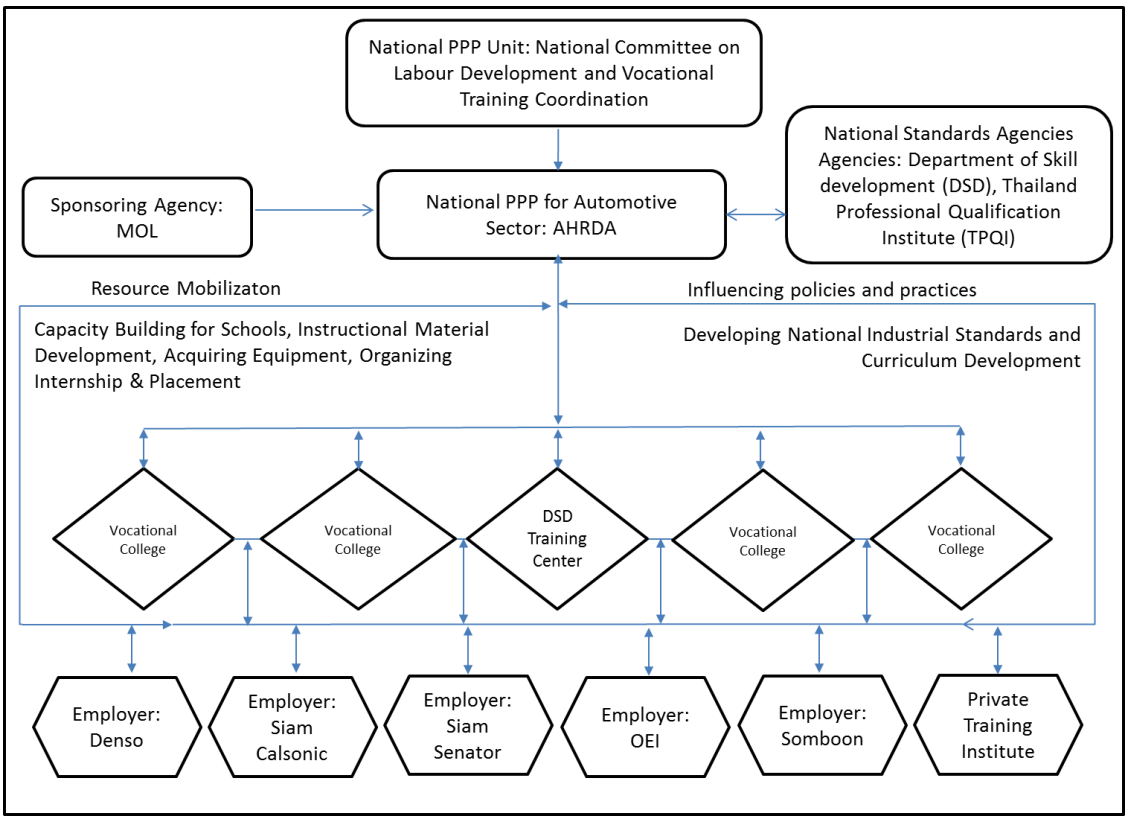

Figure 5.16 AHRDA's Partnerships Organization with Major Roles and Responsibilities

5.4.3.2 Institutional Settings - Work-Integrated Learning

For WiL, the partnership structure is very loose in terms of the nature of project organization. As presented in figure 5.17, the project has been initiated by sponsorship from National Science Technology and Innovation Policy Office. The project has developed relationships with participating companies through one-on-one project collaboration. Companies and the STI contribute funding to support the program while RMUTL is responsible for executing the project. However, companies are also responsible for assigning staff to facilitate on-the-job training for students, pay for student allowances, support accommodations and monitor the students' progress together with RMUTL. Michelin was the first company to participate in the program while more companies such as Star Microelectronics, Sammitr Motor, Dutch Mil, etc. have been invited to support the program.

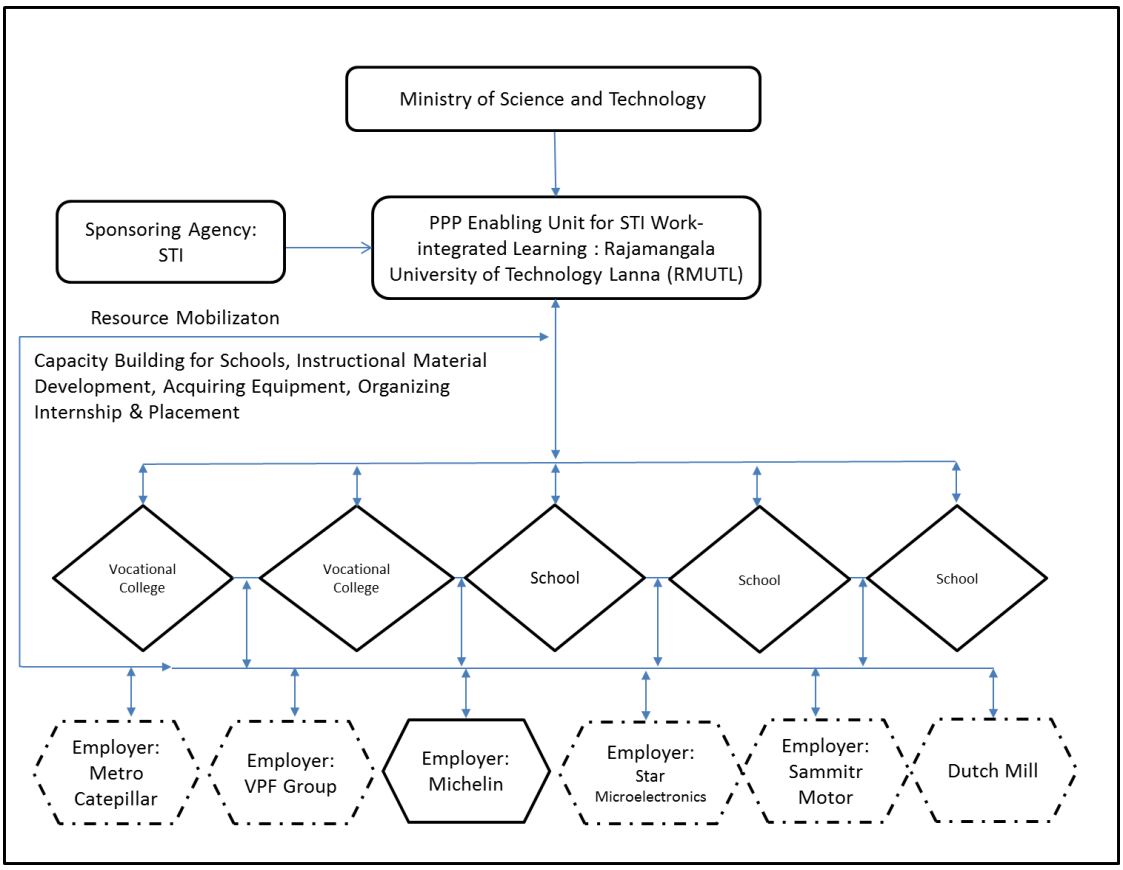

Figure 5.17 WiL's Partnerships Organization with Major Roles and Responsibilities

5.4.3.3 Institutional Settings - German-Thai Dual Excellence Education

GTDEE has been a private-led program with support from the German-Thai Chamber of Commerce. It has been legitimized by its attachment to GIZ with the adoption of the German dual education system. With this association, it has developed relationships through a normative approach. The participating companies are familiarized with standards and practices of offering dual vocational training for vocational students and are willing to comply with the set standards.

Therefore, the role of mobilizing resources from companies to contribute to dual internship program has been well supported by German companies, as presented in Figure 5.18. The coordination with the Office of Vocational Education Commission to seek support is through its relationship with the Thai Embassy in Germany and with GIZ, which has developed a government relationship in other technical transfer areas.

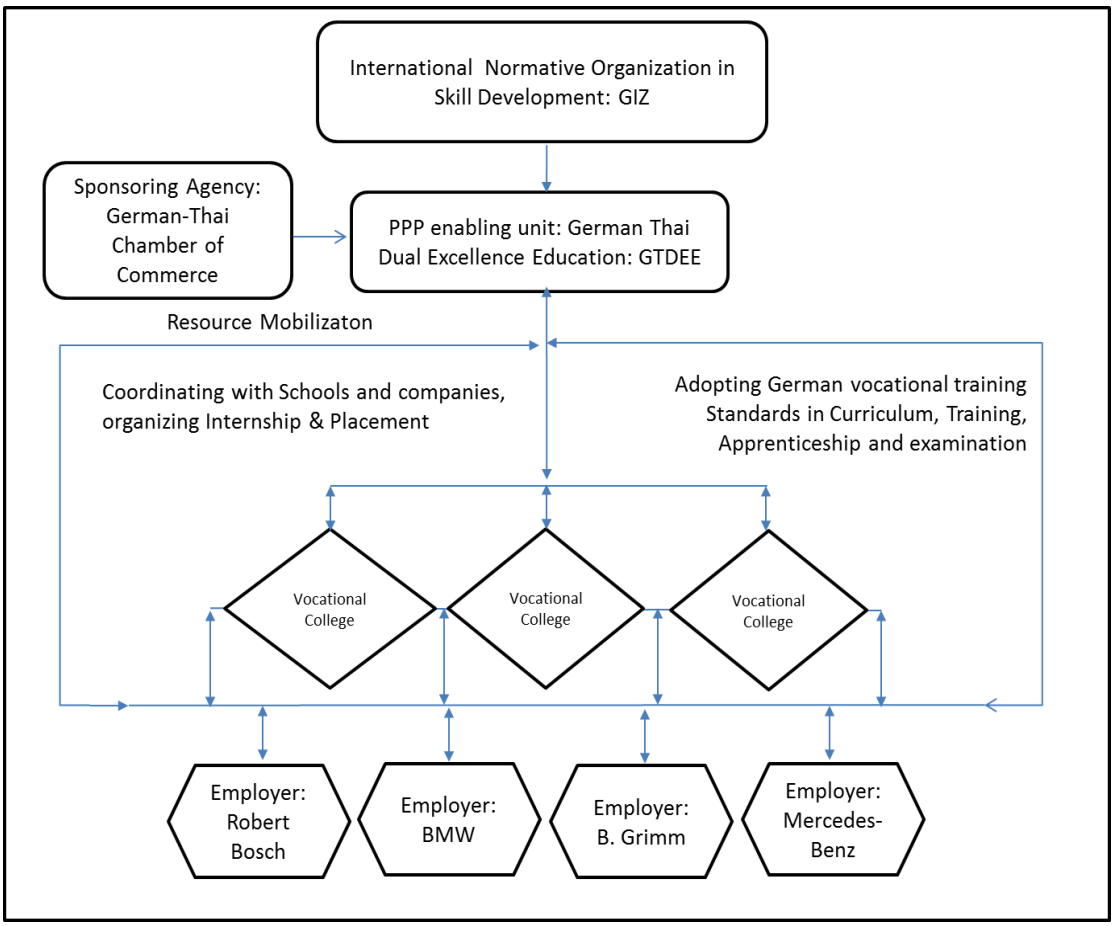

Figure 5.18 GTDEE's Partnerships Organization with Major Roles and Responsibilities

5.4.4 Partnership Capabilities

Partnership capabilities can be explained by the ability of the alliance in undertaking the partnership process of strategic planning, resource sharing and mobilizing, personnel development, and standards and program development, together with student development.

5.4.4.1 Partnership capabilities - AHRDA

The Federation of Thai Industries has played a significant role in both resource mobilization and in influencing policies and practices to set up the AHRDA. Under Mr. Thavorn's leadership, he has realized that setting up the AHRDA will be a sustainable way of addressing the human resource development gap. With his relationships with multi-stakeholders, his credibility and his strategic decision in

working with the DSD, he has decided to push forward with the establishment of the AHRDA. His ability to understand how the government system works is very important. Moreover, his leadership in assembling collective acts from the private sector in demanding a human resource development institute has been very outstanding. He and the FTI members assisted in the strategic planning during the workforce strategy framework for the automotive and auto-parts industry. In terms of mobilizing resources, Mr. Thavorn, on behalf of the AHRDA, coordinates with both public and private sectors to utilize funds, land, machinery, equipment, personnel and expertise to deliver training for trainers, vocational teachers, and students. In terms of influencing policies and practices, the AHRDA works with the DSD, TPQI and OVEC in advising on industrial standards and curriculum development. These capabilities have been enabled through the strong leadership presence of AHRDA's leader, Mr. Thavorn, who sits on the board of OVEC and TPQI, two other organizations with direct roles and responsibilities in professional standards and vocational education. Regarding the other corporate partners, their corporate philosophy of social contribution in upgrading vocational education has been extant. These companies have prior experience in partnering with vocational colleges in providing technical skill building for students, which helps them to understand the partnership role as an AHRDA alliance.

It has been stated by a corporate partner representative that the AHRDA has been more flexible in working on partnering activities compared to the DSD. This is value created from the partnerships in improving organizational processes.

5.4.4.2 Partnership capabilities – WiL

RMUTL plays a significant role in organizing the technical training for students, and in coordinating with companies in designing and implementing an internship program which matches the companies' needs. Twelfth graders and vocational students are recruited and are provided with both academic and practical training on the company's premise. Student mentors are recruited from 4th year engineering students to provide a mentorship for these students. Ongoing monitoring by RMUTL's faculty members and company mentors assures the smooth transition of students from school to work, quality instruction, and learning and mentorship by all

parties. Therefore, the capacity building for students and faculty members is carried out through an ongoing collaboration process.

In the WiL project evaluation report developed by the STI, it has been reported that the STI went through an adjustment process in curriculum development, human resource management, and in the administration process in order to serve Michelin's needs and to facilitate project implementation. It has been stated that the faculty members in the current system have not be trained to be adaptive to the dynamics of the corporate sector. This is why the university had to develop a new generation of faculty member to handle this project.

Similarly, the STI must have the capability to manage partners. In spite of being the sponsor, the STI has to effectively play an active role in identifying potential partners, engaging them in partnerships and monitoring the work. For Michelin, the willingness of the companies to take part in helping students is the first key to success. The contributions of the staff that are willing to transfer the knowledge and skills for students are the center of the project success.

5.4.4.3 Partnership Capabilities - GTDEE

The GTCC coordination office works closely with participating companies in designing courses to comply with vocational education standards. It is positioned as a competent body to advise, supervise, verify stakeholders, and administer examination. Its capabilities are not limited to only liaising with companies and government partners; it needs to guide all partners through all of the well-structured implementation practices of the program.

The GTCC's ability to select the right partners, varying from companies to schools, is fundamental to the program. Their coordination skills in mobilizing resources from different private partners are essential. The know-how on how to manage the program, to prepare partnership contracts, to screen right partner candidates, to monitor implementing activities, and to administer the tests is very crucial.

Regarding the companies, they have to be able to work with vocational colleges in agreeing on the curriculum to be used, and to assign appropriate staff as trainers and mentors to deliver training and to provide mentorship for students that join the internship program.

5.5 Summary

In all three cases, there is a relationship between initial conditions, motives, institutional settings, and partnership capabilities. The partnerships in the cases vary a great deal in the legitimation process, which is supported by who the sponsors are. The following logic model depicts how key factors contribute to the initiation of each partnership and its legitimation process. The model helps to elaborate the cause and effect relationship which will lead to a conceptualization of the contributing factors and results. Each case presents varied motives with different partnership processes.

As presented in Figure 5.19, the AHRDA was initiated to address the strategic needs of the industry and this strategic need has not been efficiently fulfilled by existing policies. It has been evident that the AHRDA's champion, Mr. Thavorn of the FTI, is well connected. His leadership and his strong social assets with partnership capabilities have greatly contributed to the initiation of the AHRDA. Moreover, the cohesiveness of the industrial community has contributed to the collective efforts in voicing the issue as well as in assisting in the strategic planning process. Because the AHRDA has been initiated as a new entity, the legitimation process of the partnership has gone through multiple endorsements from different stakeholders. Moreover, as a matter of fact, the sponsoring agency is not a large unit with big funding allocated, and Mr. Thavorn, in collaboration with DSD's executives, has to undergo a long process of stabilizing the AHRDA. Altogether, it has taken the FTI, under the leadership of Mr. Thavorn, over three years (July 2011 to Aug 2014) to legitimize the setup of the AHRDA and 14 more months to officially launch the AHRDA.

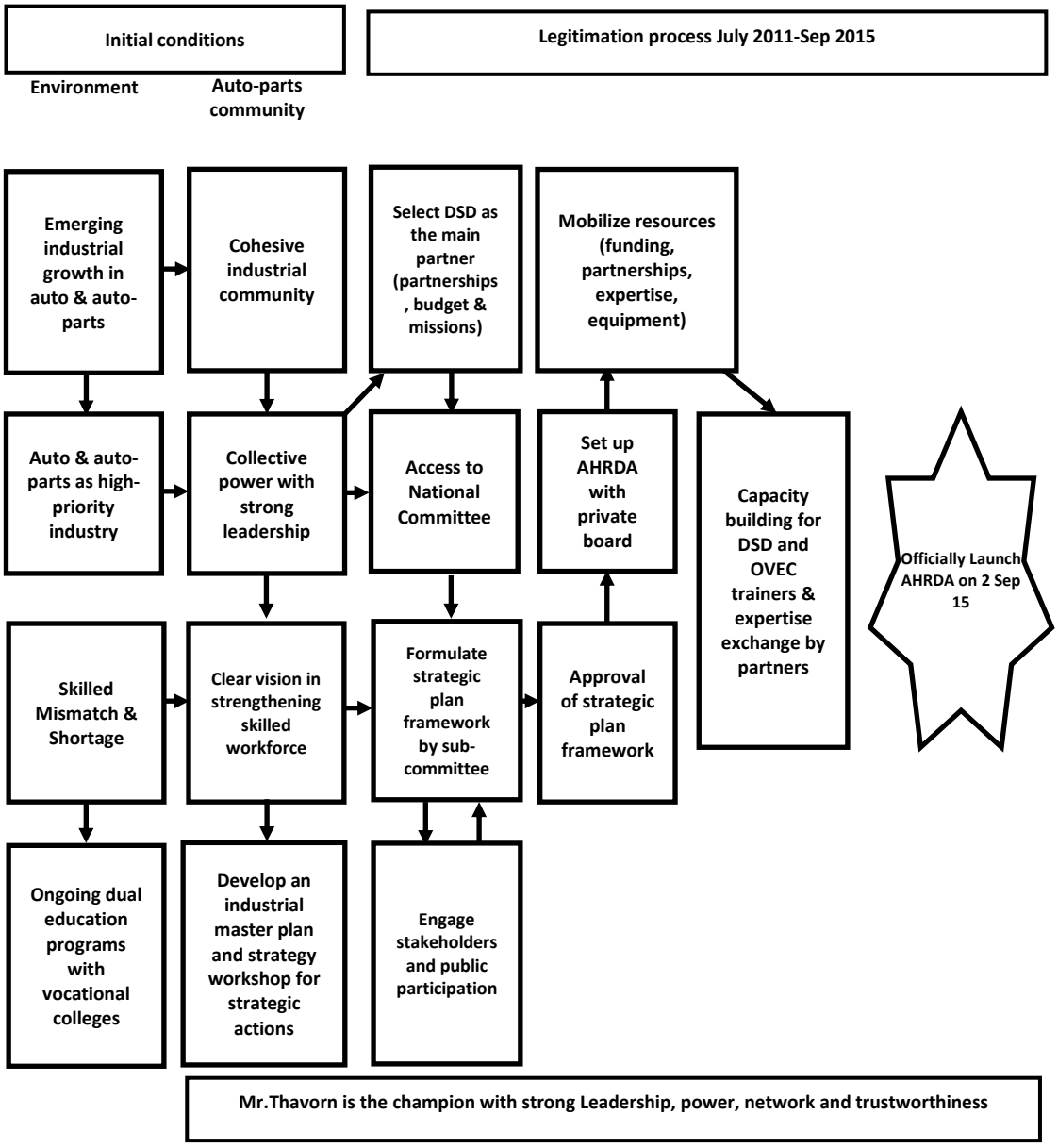

Figure 5.19 An Overview of AHRDA's Initial Conditions, Motives, Legitimation, and Partnership Process

For Work-integrated Learning, the partnerships were initiated by the government. It is interesting to observe that the sponsoring unit, the STI, is the think-tank of the Ministry of Science and Technology. The STI's mission to pilot science and technology innovation policy with an emphasis on promoting public and private partnerships has always been the priority when addressing the science and technology

skills gap and enhancing national competiveness. With this clear mission and with its sufficient resources in terms of budget and access to capable human resources, the STI has been able to initiate partnerships without undergoing a long process like that which the AHRDA has encountered. Moreover, the current Minister of Science and Technology, Dr. Pichet, was the STI's former Secretary General. Therefore, his championship in the Work-integrated Learning imitative has carried a lot of weight with the government leaders and stakeholders.

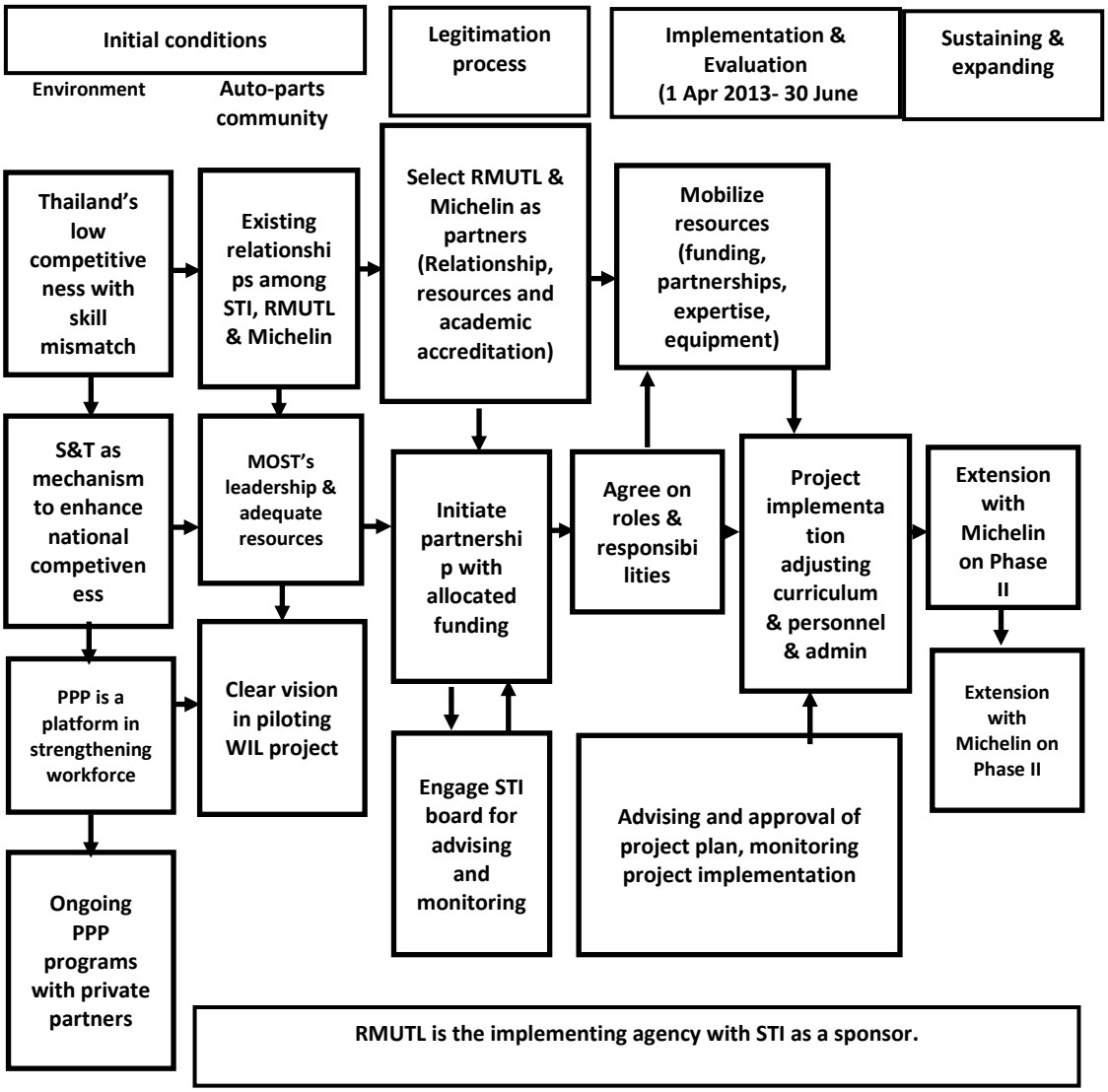

Figure 5.20 Overview of WiL's Initial Conditions, Motives, Legitimation, and Partnership Process

Besides the strong leadership and political position of Dr. Pichet, the STI's experience in implementing public private partnership initiatives have contributed to its capabilities to administer the partnership process.

For GTDEE, as presented in figure 5.21, the partnership initiated has been built on a strong foundation of know-how, expertise, and program credibility in addition to strong corporate norms of contributions in vocational skill development, called dual education.

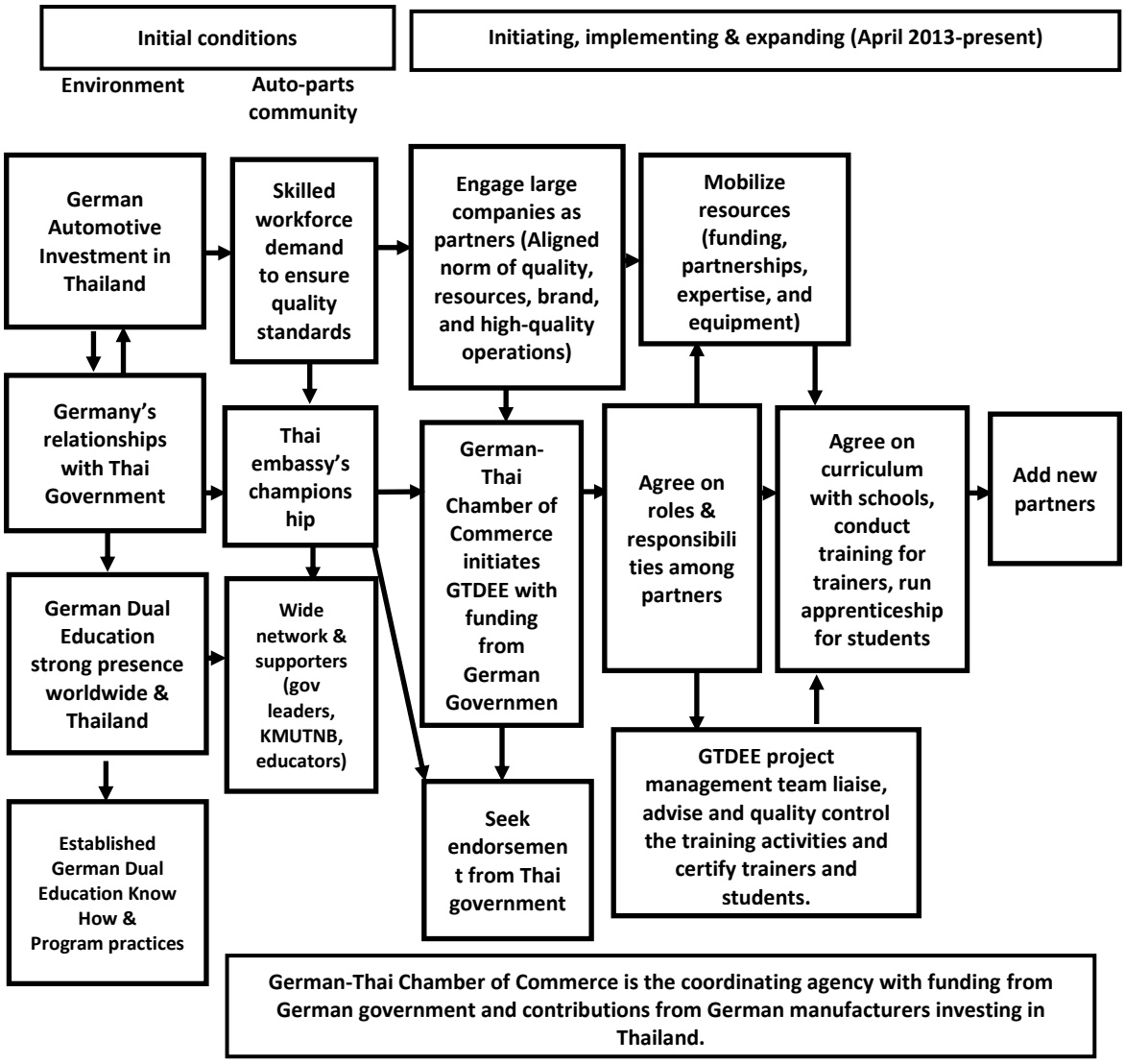

Figure 5.21 Overview of GTDEE's Initial Conditions, Motives, Legitimation, and Partnership Process

The global German dual education influence, combined with the established diplomatic relationship between Germany and Thailand, has added more weight to the legitimacy of the initiative. However, apart from the leading educators that have been influenced by the high quality of German dual education, it can be noted that German cars are perceived to excel in terms of engineering. As Mr. Thavorn's remarked, Germany has been regarded as the best in the manufacturing process. Therefore, the initiation of GTDEE has been well received by many stakeholders. As a result, the leaders of many vocational colleges consider that it is a privilege to participate because they view that the partnership has created an opportunity for upgrading the quality of their delivery of vocational education as well as elevating their institutional positioning due to its association with the high quality and standards of the German system. Unsurprisingly, GTDEE has been able to expand its partnerships with numerous companies and vocational colleges.

To summarize, a comparison of all varied dimensions in all three cases is presented in table 5.5.

Table 5.5 Summary of Partnership Dimensions by Case

	AHRDA	**WiL**	**GTDEE**
Initial conditions	Industrial growth, skill mismatch & shortage in auto-parts	Industrial growth, skill mismatch and shortage in science and technology	Industrial growth, skill mismatch and shortage in manufacturing
Funding from government	Limited by MOL	Modest by MOST	Established funding mechanism by German government
Role of funding agency	Practitioners that receive capacity building	Policy unit that wants to showcase and support a successful model	Industry support and promotion unit
Sponsor	FTI's executive: Mr. Thavorn	STI championed by Dr. Pichet	Executive director of German-Thai Chamber of Commerce

Table 5.5 (Continued)

	AHRDA	**WiL**	**GTDEE**
Leading actor	The Federation of Thai Industries (FTI) and DSD's director general	Rajamangala University of Technology Lanna	German-Thai Chamber of Commerce
Champion	FTI's executive: Mr. Thavorn	RMUTL: Dr. Niwat Moonpa	Executive director of German-Thai Chamber of Commerce
Partnership initiation	- Long process - Regulations enforcement	- Project approval	- Established with normative approach
Motive	- Addressing skills shortage - Response to rapid industrial growth	- Pilot the model for policy proposal	- Quality assurance through competent manpower
Shared Vision	- Formalized through strategy framework	- Aligned through communication of organizational missions	- Aligned through institutionalization of business practices and norms
Political Advocacy	- Influence on workforce development policy and access to resources by private sector - Reluctant to relinquish control by government	- Power gained through recognition of leadership through program success by partners and the public	- Respect of roles and authority exerted by Chamber of Commerce embedded in business practices - Expect to access higher authority through Chamber of Commerce
Legitimacy	- Pressure by industry - Address national agenda	- Address national agenda - Productivity-driven - Organizational visibility	- Industrial competiveness - Business norms

Table 5.5 (Continued)

	AHRDA	**WiL**	**GTDEE**
Trust	- Individual level through relationships - Organizational level through former business and working relationships	- Individual level through relationships - Through track records of success	- Organizational level - Embedded procedures and quality control
Structure and Governance	Rigid with board members and working committee, top-down approach	Loose with assigned project team	Structured and systematic with assigned project team
Legislation	- Issued to justify the entity set up - Skill Development Act to promote training provided by employers with tax incentives	No	German Vocational Training Act 1969
Norm of reciprocity	FTI advises and share expertise, government support funding	Equitable contribution by members (STI & Michelin)	Equitable contributions by members

It can be noted that among all three cases, GTDEE has demonstrated an established norm among corporate members, which has facilitated replication of the program model worldwide with the adoption of standards procedures, curriculum, and testing. In terms of the initiation of partnership governance, the more formalized structured it is, the longer process it takes, especially when it is a new entity with a new function set up, as featured in the case of the AHRDA.

In the next chapter, a conceptualization of the factors contributing to the partnerships will be derived based on the three cases.

CHAPTER 6

ANALYSIS AND DISCUSSION

In this chapter, an analysis of the findings will be conducted considering the derivation of the factors in different scenarios for theoretical conceptualization in order to respond to the research questions set in the first chapter as follows:

1) What are the initial conditions and motives of participating actors in formulating public and private partnerships for vocational education and training?

2) What are the institutional settings of the PPPs in terms of governance and structure?

3) What are the important factors in sustaining partnerships?

The findings from the analysis of all three cases are formulated according to eight propositions under three dimensions, including initiation conditions and motives, governance and structure, and partnership capabilities. The analysis is conducted with linkages to the literature and practical suggestions, as defined below.

6.1 Initial Conditions and Motives

6.1.1 PPP Formation is Influenced by Vulnerable Strategic Conditions.

The findings from all three cases shared the following results—that partnerships are formed under vulnerable strategic conditions, when skilled resources are scarce, and when existing government policies fail to address the critical issue of skilled shortages and mismatches; partnerships are then formed as an alternative solution to address the unsolved issues. This situation is true for all three cases, leading to the initiation of partnerships.

This finding proposes that partnerships are usually formed in vulnerable strategic positions, stemming from either highly-competitive or emerging industrial environments. This is consistent with past research, which emphasizes the influence of vulnerable strategic position on the formation of strategic alliances. An alliance is

formed with the expectation that it will provide critical resources, such as financial, expertise, legitimacy or market power. (Galaskiewicz, 1985; Oliver 1990; Baum & Oliver, 1991; Hagedoorn, 1993) In this way, the alliance aims to enhance the strategic position of the firms in order to manage environmental uncertainty. In addition, an alliance could enable cost sharing, leading to increased margins as well as obtaining differentiated technologies for new product improvement. (Eisenhardt & Schoonhven, 1996; Bryson, Crosby & Stone, 2006) In all three cases, two out of three were related to the automotive and auto-parts manufacturing industry, which are emerging and highly competitive. For WiL, the program aims to address the problem of skill shortages and mismatches in the manufacturing industry, where a science- and technology-based workforce has been scarce. Therefore, private partners decide to enter relationships with the expectation that they will access qualified human resources, which are not widely extant in the current market environment where recruitment demand is high and competitive.

Aligned with the literature studied by Bryson, Crosby and Stone (2006), the policy makers studied in this paper regard partnership formation as an alternative to addressing the skill development issue, which has been considered as a crisis. As a result, PPPs are formed as a solution to addressing the critical issues, which were not able to be addressed by them alone. These issues are considered in the study as vulnerabilities faced by private and public partners.

The contribution of the findings from the paper is to recognize that the vulnerable strategic condition of PPPs includes public vulnerabilities when current policies do not deliver the expected results, leading to pressure for alternative solutions of PPPs. This aspect has been confirmed by numerous scholars, who have suggested that PPPs are used as vehicles to mobilize resources from multi-sector partners in addressing social and economic problems. Resource mobilization and expertise sharing has resulted in an increased economy of scope and scale, and higher efficiency with regard to cost effectiveness and public service quality (Bovaird, 2004; McQuaid, 2010; Verger, 2012; Stadtler, 2015). It is interesting to observe that in all three cases, the private partners initiated the partnership idea while the government responded to their request by pursuing the partnerships. The pressure in responding to the partnership request was high in AHRDA’s case due to skill gap problems which are under the direct responsibility of the Department of Skill Development.

The implications stemming from this perspective are that public actors should consider PPPs as an alternative to addressing economic and social problems. By selecting partners that have high stake in those problems, the partnerships will be formed with full commitment and efforts contributing to the achievement of the common goal of addressing the issues. Moreover, it is essential that all partners view the same common goals as their priority so that the partnerships can be sustained.

6.1.2 The Greater is the Extent of the Experience, Status, Credibility, and Access to Resources Held by Conveners (Individuals or Organizations), the Greater is the Rate of PPP Formation and Sustainment.

Individuals or firms with wide connections, status, and that are regarded as experienced together with access to resources (funds, know-how, expertise, equipment, facilities, human resources, etc.), will attract other partners to join the PPPs. Organizations enter into partnerships because of power dependence in terms of acquiring the desired resources in order to reduce uncertainty (Ulrich 1984; Oliver, 1990). From the three cases, the ability of individuals (Mr. Thavorn and Dr. Picht) and organizations (The Federation of Thai Industries, National Science Technology and Innovation Policy Office, and German-Thai Chamber of Commerce) in attracting partners is evident in all three cases. Individuals and organizational capabilities in accessing resources and power attract partners into the relationships. The results emphasize the importance of the strong social position of either individuals or organizations while past research focuses on the senior executives' social position in facilitating partnership formation (Eisenhardt & Schoonhven, 1996). The contribution of the paper is to extend the influence of social advantages from individuals to organizations. In all three cases, the social position held by the FTI, STI and the German-Thai Chamber of Commerce was seen to be an advantage in attracting partners to join the partnerships. In addition, for those partners that are conveners, in either the AHRDA or GTDEE case, they are all large-sized companies with adequate resources in terms of machinery and training personnel with allocated time and funding to provide for students and teachers.

This finding aligns with several studies where business partners were seen to be attracted to partnerships that provide them with access to resources, networks with

government officials, and opportunities to strengthen their creditability. In addition, partnerships are used as legitimation by involving stakeholders (Dewar et al., 2008; McQuaid, 2010). Therefore, it is essential that conveners be individuals or organizations have a strong social position for accessing vast resources and possess high creditability in earning confidence from partners that they will open a door for them to access those resources, networks, and the goodwill they desire.

The implications stemming from this finding are that upon the initiation of the partnerships, a champion with high credibility and a vast network is required. It is important for the champion to approach potential partners and build confidence on their part that the partnership will be an enabler for accessing resources and networks. This suggestion aligns with Herzberg and Wright's (2004) study introducing that idea that championship or sponsorship with credibility, expertise, and the ability to attract media is one of the key four capabilities contributing to competitive partnerships.

6.1.3 The Partners' Existing Positive Relationships Lead to the Great Extent of Trust Which Determines Decision on Joining the PPP.

The findings yielded similar results to those of existing research; that is, partnerships tend to be formulated when the partnering alliance possesses prior relationships (Ring & Van de Ven, 1994; Gulati, 1995). They present findings indicate that formerly-allied firms that tend to extend further alliances and interdependent firms are more likely to enter alliances. In the first case, the AHRDA, Mr. Thavorn has had prior relationships with individual executives of partnering companies, Somboon Advance Technology and the Summit Auto Body Industry, However, with Mr. Thavorn's taking the position of chairman of The Human Capacity Building Institute, The Federation of Thai Industries, and senior vice-president of Denso (Thailand) Co., Ltd., the existing relationships are not limited to only individual level but include the organizational level as well. Regarding Work-integrated Learning, the relationships among the STI, the Rajamangala University of Technology Lanna (RMUTL), and Michelin, had existed at both individual (Dr. Kittipong, STI's Deputy Secretary General, Dr. Niwat, RMUTL's director and Dr. Banpot, Michelin's University Project Manager) and organizational levels before the Work-integrated Learning program was initiated. The last case of GTDEE has a

unique characteristic of the partnerships with established relationships and common norms shared by participating organizations. Prior experience at the organizational level in Germany and in many countries for partnering in dual education programs has influenced the formation of similar programs in Thailand.

The three cases all demonstrate that prior relationships among partners strengthen trust, which is considered a critical factor for partnership formation and sustainment. (Barney & Hansen, 1994; Cullen Johnson & Sakano, 2000; Vangen & Huxham, 2003; Bryson, Crosby and Stone, 2006) Cullen Johnson and Sakano (2000) refer to Coleman's (1990) relational capital, which stems from the facilitation of relationships on a day-to-day basis. The accumulation of trust through relationship building leads to confidence that the partnerships will benefit them, which will influence the decision to join the PPP.

The above finding leads to the suggestion that when formulating partnerships, the initiator should consider selecting partners with prior positive relationships. Selection might be based on specific industrial clusters with a high level of cohesiveness, in which players demonstrate close relationships through evidence of collective actions. In the case of the AHRDA and GTDEE, corporate partners are all from the automotive industry, which is regarded as a strong network, especially among Thai tier-1 parts manufacturers.

6.1.4 The Greater is the Extent of Alignment of Strategic Missions and Values Among Partners, the Higher is the Extent of the Trust and Benefits Perceived by Partners, Leading to a Higher Rate of PPP Formation.

Alignment of the strategic missions with the shared values and shared norms among partners was observed for all three cases. Especially for the government agencies, the DSD and STI, they placed high priority on undertaking activities that were aligned with the organizational mission. The mission directs the mandate to be carried out by a government officer. For corporate partners, the shared values of social contributions lead to the formation of partnerships aimed at addressing the skills gap for the country. Oliver (1990) stated that organizations enter into IORs in order to pursue common goals, and mutual benefits and interests, namely reciprocity.

Shared goals or goal congruence are referred to as a key success factor of partnerships. (Ring & Van de Ven, 1994; Das & Teng, 1998; Vangen and Huxham, 2003; Bovaird, 2004; Dhillion, 2015; Cuevas, Julkunen & Gabrielsson, 2015) Das and Teng (1998) discussed the idea that the goal setting process is vital for formal and social control mechanisms in alliances. They suggested that participatory decision making during goal setting is used as a kind of control to curb deviation from agreed objectives. Goal alignment is considered a part of the trust-building process during partnership initiation (Vangen and Huxham, 2003). For the AHRDA, the process of strategic framework development among partners, especially between the Department of Skill Development and auto-parts manufacturers was used to curb the direction of setting up the AHRDA and to gear the target group of sectors to focus more on the auto-parts industry with higher rates of skill shortage. Moreover, the development process has built confidence that all parties share the common goal of reducing the national skill gap. This goal-setting process for the AHRDA has significantly added weight to the notion of goal alignment as a trust-building process and assurance of shared interests.

The perceived benefits by these partners are the development of employee candidates to be recruited as future manpower, as well as increasing technical skills for these staff individuals in order to increase productively and to ensure quality. Expertise exchanges among partners is an indirect benefit perceived by some partners in the AHRDA case. Powell (1990) regards reciprocity as the embedded norm for the network form of organizations. From the long-term perspective of resource exchanges, members are able to achieve mutual interests and complementary strengths leading to engendered trust.

The values added for all three cases regarded by vocational institutions are capacity building for vocational education institutes. Quality trainer development or student internships at private partners' well-equipped facilities are the valued added perceived by vocational educational institutes upon deciding to join the partnerships. For the university, an added value for joining the partnership is developing new faculty members in technical education that have direct training experience in factories and with the Work-integrated Learning model. At the policy level, the STI and DSD both benefit from the partnerships through expertise sharing by private partners in order to address the skill gap, which is treated as a top-priority national

agenda. Moreover, staff development through knowledge transfer is considered another perceived benefit by government partners.

The contribution of this study adds to the existing research taking into consideration the supplementary aspect of shared value and shared norms of partners. Especially in the public and private partnership context, the value of social responsibilities has to be instilled as organizational culture in order that the staff is willing to contribute its expertise and know-how. In these three cases, the social contribution value observed by staff behavior showing the willingness to provide professional and moral support to help young adults learn is tied to the organizational culture of placing high priority on human development. In the case of GTDEE, partnering organizations, all German-based manufacturers have embraced participation in dual education as an obligation to promote high-quality technical education, which is considered crucial for enhancing manufacturing competitiveness. Furthermore, the key role of the German chamber of commerce in leading the dual education initiative has become common practice for promoting apprenticeships inside and outside Germany, with significant investment by large German manufacturers worldwide. This practice has become a widely-expected norm among corporate partners upon participating in the partnerships.

The internalization of norms is a process of accepting them as legitimate. Nation states use public education, nationalistic events, and patriotic propaganda to encourage individuals to identify with the nation. Similarly, companies use different strategies to socialize new actors into their network (Coleman, 1990: 293), and organizations are motivated to interconnect based on the legitimation of partnerships. (Oliver 1991) They are pressured by the institutional environment to justify their activities. The findings from the GTDEE case suggests that for a country to succeed in promoting PPPs in vocational education and training (VET), the socialization of PPP norms is needed. The Thai government should advocate the norm of engaging corporate actors to contribute in providing VET for the increased quality of skilled workforce development for the enhanced competitiveness of the nation. In spite of the current dual education policy, with tax incentives being promoted and implemented, the degree of quality assurance has varied depending upon the employers' standards of practices. Therefore, it is critical that the incentives offered for corporate

contributors should not be exploited without a well-designed process of quality assurance that the implemented program will meet the expected outcome. In parallel, corporate leaders such as the Federation of Thai Industries should place priority on socializing the norm of fostering partnerships in raising quality dual education as a mechanism for upgrading workforce skills.

6.2 Governance and Structure

6.2.1 PPP Structure and Governance are Influenced by the Partner with Superior Political Power.

The three different structures of partnerships demonstrated in the three cases are influenced by the varied political settings in each case. The AHRDA has been set up by political pressure from the Federation of Thai Industries (FTI) to address the skilled shortage in the auto-parts manufacturing industry. The negotiation between the Department of Skill Development and the FTI to set up an entity inside the DSD reflects FTI's bargaining power over the DSD. Given the situation when existing policy could not fulfill the goal of developing skilled manpower in response to the emerging demand of the private sector, the FTI has therefore legitimated its active participation in forming and leading the AHRDA in order to assist the DSD in implementing alternative solutions for addressing the skill gap. The structure of the AHRDA has consequently been designed to include board members from the FTI as key actors in shaping the AHRDA's policies. Similarly, GTDEE was established with a higher influence exerted by the private sector on skill development. The norm where the private sector takes the leading role in dual education has been established and well accepted by both government and private players. As a result, the German-Thai Chamber of Commerce, the strong representative of the private sector, has taken a leading role in implementing the dual education program in Germany and other countries, with funding support from the German government. For Work-integrated Learning (WiL), the STI is the sponsoring unit with supporting funds for program implementation. It has considered WiL as a piloting program with initial funding before the program can sustain on its own. Therefore, the program was set up with a

project-based structure and governance. The STI acts as an oversight unit to oversee and monitor the program outcomes and impacts.

According to Benson (1975: 233), organizations interact with others in order to ensure that the network undertakes activities to increases the stability of the resource flow. Cook (1977) has indicated that the higher powerful organization will influence the form of the interaction and the ratio of exchange in inter-organizational relations. Another perspective was introduced on power dependence and political advocacy—that organizations enter into collective action to control, to seek resources, to exert power, to influence, or control organizations in order to acquire the desired resources possessed by those organizations (Oliver, 1990; Galaskiewicz, 1995). In this context, the private partners in the AHRDA and GTDEE cases have exerted power in controlling the resources through relationships governance. They enter into the relationship in order to reduce the environmental uncertainty of skill shortages and to use their power to secure resources and authority. In the AHRDA case, the FTI is the partner with superior power. It assists the Department of Skills Development in accessing to resources, which are money, expertise, and networks. The DSD has agreed to enter into the relationship with the FTI in setting up the AHRDA in order to defend and secure two critical resources, money and authority, of the political economy of inter-organizational networks (Benson, 1975: 232). It can be noted that in spite of the power asymmetry among partners, trust can be strengthened through the partners' goal congruence (Cuevas et al., 2015). For the GTDEE case, corporate leaders in trade associations have advocated the norm of dual education as a mechanism to shape organizational practices. Acceptance of the norm that companies should contribute to dual education led by the German-Thai Chamber of Commerce reflects the socialization within the German industrial communities.

Therefore, it is important that when initiating a PPP, a party with superior power is needed to lead the partnerships. Not only does the party possess superior political power, it also requires better access to resources with regard to funds, expertise, and networks. Moreover, communication is necessary in order to ensure that all partners share common goals. Even with asymmetric power among the lead agency and partners, trust can be engendered through recognition by all parties, that is, that they all will commit resources to the shared goals.

6.2.2 The Extent of the Legitimation Process Depends on the Range of Stakeholders Addressed and the Level of Formalization of the Partnerships to be Set Up.

The three dimensions of network legitimacy include the network as a form, the network as an entity, and the network as interaction (Human and Provan, 2000). Human and Provan suggest that a sustainable network is based on the success of building legitimacy that addresses both internal and external stakeholders. The external strategy or outside-in orientation is based on the assumption that interactions will follow as a consequence of money-raising success. In the case of the AHRDA, the extensive legitimation process is a result of the outside-in approach of legitimating a network as an entity to be endorsed by the authority in order to secure funding and personnel resources for its operation. The endorsement process goes through buy-in from multiple ranges of external stakeholders in the relevant ministries responsible for education and workforce development. For Work-Integrated Learning, the legitimation addresses only the parties involved in the implementation of the program, including Michelin and Rajamangala University of Technology Lanna. Therefore, the legitimation process is less complicated than in the AHRDA case. For GTDEE, the stakeholders are focused around German manufacturing companies invested in Thailand as internal stakeholders. As it is a norm for these companies to take part in the program, the legitimation of the program has been normalized as an obligation to participate. The endorsement by government stakeholders, such as the Ministry of Education, has been later sought after an agreement by those manufacturing companies was secured to enter the partnership.

Three types of network governance are explored by Provan and Kenis (2005 : 1) self-governing with informal interactions among members; 2) structure with organization leading, coordinating activities, and decision making; and 3) structure with an administrative organization set up to oversee network administration. In these three cases, the forms of the networks or partnerships in the three cases are different, which results in a varied extent of the legitimacy process. Work-integrated Learning is the less formalized unit formulated in project form with a self-governing team. This kind of form requires less of a legitimacy process compared to AHRDA’s led by the FTI. On the other hand, the FTI and DSD have attempted to create a new entity with

a different structure and governance from the existing unit within the DSD. Their efforts have undergone different stages in seeking endorsement from political and administrative leaders for justifying the setup. The long establishment process of the AHRDA, over 4 years, has demonstrated that when a new entity of a PPP unit is formalized within the current system with structural change of governance, it takes an extensive process of establishment compared to setting up a program-like partnership. For the GTDEE case, in spite of a formalized PPP unit within the German-Thai Chamber of Commerce with partial funding from the government, the PPP unit has already been established and institutionalized in Germany and in many countries. Therefore, the setup of the PPP unit in Thailand has a less-extensive legitimation process. It is merely a replication of the existing form of partnerships earlier adopted in Germany and in many countries. It has become a norm for German companies to participate in a dual education program as part of the social contribution of enhancing national competiveness, and strengthening German product quality and capacity building for the local workforce in the country in which German manufacturers have invested.

The finding from the study contributes to the understanding of the legitimacy process across partnerships, which is dependent on the extent of stakeholder and governance formalization. The study extends the legitimacy process related to the three types of network studied by Provan and Kenis (2005) mentioned above.

It is suggested that when a PPP unit is established, the leader has to take into consideration the legitimacy process, both externally and internally, before the unit can be operationalized. Careful planning of relevant stakeholders that are the endorsers and influencers is required in order to create a proper buy-in. In addition, the formalization of the PPPs is required if the unit involves additional resources to undertake activities that are added to existing mandates and missions.

6.2.3 A Coordinating Unit is an Essential Component of PPPs in Terms of the Mobilization of Resources for Partnerships.

Newman (2001) indicates that administration practices have shifted from hierarchical government to networked governance. Bovaird (2004) introduces the concept of public governance through the partnership concept from the perspective of

shifting from stakeholder control to joint decisions for goal setting and implementations by partners in order to ensure reciprocity.

In the three cases, a coordinating unit exists as a key actor for facilitating successful public private partnerships. For the AHRDA case, AHRDA has been set up to coordinate resource sharing for trainer development activities across private partners and vocational education institutes. The AHRDA is very special in terms of its structure. It is led by corporate executives with operational staff nominated by the Department of Skill Development. It is a unit within the structure of the DSD, in the Ministry of Labour. For Work-integrated Learning, Rajamangala University of Technology Lanna plays a coordinating role in facilitating the implementation of the student development and student internships at Michelin manufacturing sites. Regarding GTDEE, the GTDEE coordination office has been appointed to liaise with the partners. This office also ensures that the training and internship activities are run with set standards and quality. The office also administers an examination to assess students' qualifications for receiving a professional license.

Provan and Milward (1995) share similar findings in their study of healthcare networks. They suggest that a network with a lead organization coordinating the efforts among members is more effective than a decentralized one. Besides a coordinating role, this core agency takes leading responsibilities in monitoring and controlling the activities undertaken.

From the study, it is suggested for practitioners that when PPPs are formulated, an organization to coordinate with other partners in terms of administration and resource sharing should be set up. This organization could be embedded within the government agency in order to mobilize resources from the government and to ensure sustainability. Moreover, this kind of arrangement will ensure that the expertise is shared with the existing personnel to promote learning and improve their practices. This suggestion aligns with one of the four strategies Benson (1975) proposed in rearranging network relations. It is an authoritative strategy with the introduction of new programs for establishing agencies that require connections with existing activities. The suggestion was confirmed by Human and Provan (2000)—that the administrative unit is a key component of multi-lateral networks in undertaking planning and coordination in facilitating partner interaction. As Powell

(2000) states, trust results from the exchange of information and expertise that promotes learning. Similarly, Herzberg and Wright (2004) introduce the idea that effectiveness increases when partnerships are integrated into the existing government structure. Such a setting will help reduce the resistance to any proposed initiatives by the current authorities.

6.3 Partnership Capabilities

6.3.1 The Greater is the Extent of the Relationship Management Skills Possessed by the Coordinating Unit, the Higher will be the Trustworthiness and Added Values Perceived by the Partners, Leading to a Higher Rate of Sustained Partnerships.

Public and private partnerships require close collaboration across sectors in order to achieve the common goals set. Multiple scholars have defined partnerships differently according to their scope, stage or dynamic process. The collaboration process can be identified as of three major types: identification of problems and goal setting; mobilizing of resources to be shared among partners with a sense of efficiency and equity; and sharing of resources and expertise (Bolland & Wilson, 1994; Agranoff & McGuire, 1998). Ring and Van de Ven (1994) present cooperative relationship cycle development with repeated sequence of negotiation, commitment of resources and execution. For each stage, trust plays an important role in assuring that equitable resources and commitment will be contributed by all parties under agreed procedures to achieve the commonly-shared goals before securing informal or formal contracting.

Therefore, it is essential that the coordinating unit possess appropriate competencies to successfully foster collaboration among different partners across sectors. Hansen et al. (2008) state that cooperative capabilities include the ability to identify combinations of complementary assets with economic values, the ability to assess partners' cooperative capabilities and trustworthiness, and the ability to manage alliances with relations to both contract and relationship management. Similarly, Sarkar, Aulakh and Madhok (2009) introduce the notion of alliance management competencies, called the alliance portfolio management capability,

which are considered as essential factors for sustaining partnerships. They include three dimensions of portfolio formation, relational management, and coordination.

In the cases studied, the coordinating units, the AHRDA, RMUTL and the GTDEE coordination office, have taken efforts in approaching different partners to join the partnerships. The representatives of this unit all demonstrated capability in identifying partners, high relationship management, and coordination skills, which are proven by the initiation of partnerships with new partners in joining the program, the coordination of program activities, and sustainment of old partners. These relationship management skills are capabilities to build trust, where the alliance will deliver the expected results as promised by the partnerships in order to mobilize the resources needed for program delivery, and to monitor and assure the program's results and impacts.

This study posits that the relationship management considered as key cooperative capabilities are critical for the partnership coordination unit linked with higher trust and perceived values by partners. The finding aligns with the study of Whetten and Aldrich (1979), where the design of social service programs should place an emphasis on external relations through qualified personnel. It extends the influence of the partnership cooperative capabilities as being critical for partners (Hansen et al., 2008) to the coordinating unit, who plays an important role in sustaining the partnerships.

As a result, it is suggested that personnel development programs for public and private agencies entering partnerships should include relationship management skills development. Moreover, the key personnel in charge of coordinating with partners should possess relationship management skills in order to ensure that the partnerships will be sustained.

6.4 Summary

The study has led to a summary of the critical contingencies, including both motives and initial conditions, which lead to the formation of three types of public-private partnerships (PPPs), as well as the conditions facilitating different structures and types of governance of PPPs.

6.4.1 Critical Contingencies for PPP Formulation

The author has applied the concept of critical contingencies of relationship formation offered by Oliver (1990: 249) to formation of PPPs based on the findings from the study. Table 6.1 describes the different contingencies for each sample type of PPP, including public-led joint-programs, public-sponsoring linkages, and trade-association-led programs. In the following section, an elaboration for each critical contingency is provided for each type of PPP.

Public-led joint programs. As per Oliver (1990: 255), joint programs are related to the joint planning and implementation of specific tasks and activities. It has been suggested that joint programs are used to increase organizational network centrality and influence by other agencies in the network without creating a separate organization. In the present study, the AHRDA with relationships between the Department of Skill Development and private partners from the Federation of Thai Industries exemplifies this kind of relationship. The finding indicates that the creation of the program was influenced by private partners with superior negotiating power in accessing and managing resources. The driving force for public agencies is the urgency to address critical social issues that have failed to meet the clients' and public's expectations. The creation of the program contributes to the increased reputation of the public agency as well as the enhanced good will of the private partners' community, which are regarded as legitimacy for creating such a program. The negotiation by the private partners involved in managing resources represents their superior power or asymmetry, while the public agencies maintain control of funding and authority in exchange for access to funds and expertise. The creation of the program aims to increase stability in terms of the flow of funds regarded by the public partners or the flow of quality supply viewed by the private partners. With the objective to increase the effectiveness of the program, and to improve the quality of output and outcomes treated as the supply for private partners, joint programs are established with reciprocity through facilitating access to funding, and exchange of expertise and knowledge among the public and private partners' network.

Table 6.1 Critical Contingencies: Examples of Three Types of PPPs

PPP type	Perspective	Critical contingencies				
		Asymmetry	Reciprocity	Stability	Effectiveness	Legitimacy
Public-led joint-programs	Public agency	Control over funding or authority	Facilitate access to funding, expertise and network	Reduce uncertainty in flow of funds	Increase quality of output and outcome	Increase agency's acceptance
	Private partners	Collective power to exert control over access and management of resources	Exchange of knowledge and personnel	Reduce uncertainty in supply of resources	Increase quality of supply	Enhance organizational/community good will
Public sponsoring linkages	Public agency	Control over funding or authority	Facilitate knowledge and expertise sharing	Rationalize acquisition of funding	Increase quality of output and outcome	Low awareness of agency or its program
	Voluntary agencies/ private partners	Augment power relative to other agencies	Exchange of knowledge and personnel	Reduce uncertainty in supply of resources	Increase quality of supply	Enhance organizational profile
Trade association-led programs	Public agency	Control over funding or authority	Facilitate knowledge and expertise sharing	Rationalize acquisition of funding	Increase quality of output and outcome	Increase agency's acceptance and prestige

Table 6.1 (Continued)

PPP type	Perspective	Critical contingencies				
		Asymmetry	Reciprocity	Stability	Effectiveness	Legitimacy
	Private Partners	Collective power to exert control over access and management of resources	Promote collective good	Reduce uncertainty in supply of resources	Increase quality of supply	Demonstrate norm of cooperation

Public-sponsoring linkages. As stated by Oliver (1990: 258), the sponsor-agency linkage relationship is formed when the flow of essential resources is regularized to a voluntary organization. In this study, the relationships among the STI, RMUTL and Michelin in setting up the Work Integrated Learning program represent this type of relationship. The agency that seeks ties with a sponsor to access critical resources, which is funding and power, is RMUTL. The driving force for public agencies is the need to enhance its public visibility to maintain its creditability against other agencies by addressing the critical social issues that are regarded as top priority. The finding indicates that the creation of the program is influenced by the public agency's demand to pilot skill development programs implemented by voluntary or private partners with implementation capabilities. The development of the program contributes to the increased visibility of the public agency as well as the enhanced profile of the voluntary/private partners' community, which are regarded as legitimacy for formulating such programs. Unlike the public-led joint program, the public agencies possess higher power in terms of status, autonomy, and access to funding without dependence on the power from their partners. The willingness by voluntary/private partners for the sponsor to control decisions is motivated by the funds provided by the sponsor and by the power through the public perception of their association with the sponsor. Similar to the public-led joint program, the development of the program aims to increase stability in terms of justification of the acquisition of funds regarded by public partners or the flow of the quality supply viewed by private partners. With the objective to increase the effectiveness of the program and to improve the quality of output and outcomes treated as supply for the private partners, public-sponsoring linkages are created with reciprocity through facilitating the exchange of expertise and knowledge among public and private partner networks for the grants awarded to the agencies in carrying out the agreed tasks identified in the contract agreement.

Trade association-led programs. In this study, GTDEE represents this type of relationship. From the findings, trade association with strong power of negotiation is able to influence government stakeholders to secure funding for a program to be managed and implemented by the association. Unlike the sponsor-agency linkages, the decision to initiate and formulate a program relies on the association's judgment.

This asymmetry is a result of the superior power of the association over the government to provide supporting funds for program implementation. Unlike public sponsoring linkages, the private partners, through collective voice and capacities, possess higher power in terms of status, autonomy, and access to funding and expertise without dependence on power from public agencies. This relationship is different from the public-led joint program in that the ownership and management of the resources are borne by the association. The driving force for both public and private agencies is the need to enhance its public visibility by addressing critical social issues which are regarded as top priority. In parallel, the association intends to address the uncertainty of the quality supply for the benefits of its members. The development of the program contributes to the increased visibility of the public agency as well as a demonstration of cooperative norms to the public regarded by private partners as legitimacy for formulating such programs. Like public-led joint programs and public-sponsoring linkages, the development of the program aims to increase stability in terms of justification in the acquisition of funds regarded by public partners or the flow of the quality supply viewed by private partners. Similarly, with an objective to increase the effectiveness of the program and to improve the quality of output and outcomes treated as supply for private partners, trade association-led programs are created with reciprocity through facilitating an exchange of expertise and knowledge among public and private partner networks for the funds set aside to carry out the program.

6.4.2 Conditions Facilitating Different Structures and Types of Governance of PPPs

Varied conditions facilitate different structures and types of governance for each type of PPP. The following section will explain the combination of conditions which lead to how partnerships are governed and with different structures, as summarized in table 6.2.

Public-led joint program. This program is formulated based on the conditions that the creation of the joint program will justify budget allocation to implement program activities. With the superior collective power of the private partners to reach higher government power in order to allocate funds for the program, combined with

access to expertise, the government agency permits involvement of the private sector in directing how the funds are utilized and how programs are operationalized in exchange for retaining control of funds and authority. The structure of the program is highly formalized in order to seek buy-in from a wide range of external and internal stakeholders for the legitimacy of the new entity being set up. Meanwhile, it is centralized by focal organization.

Table 6.2 Conditions Facilitating Different Structures and Types of Governance of PPPs

PPP Type	Source of funding	Source of power	Decision making	Scale of partners	Structure of relationship	Power distribution
Public-led joint program	National government	Private: Access to funding, network and expertise	Directed by private agencies regarded as client of public org	More than 10	Formalization within focal organization, informal relations across private partners	Centralization by focal organization
Public sponsoring linkages	National government	Public org: funding and network	Public organization	Less than 5	Intermediate formalization; partners are obligated to undertake agreed tasks as contracted	Budget Centralization by focal organization but operational undertaking by partners
Trade association-led program	National government/ Private	Trade Association: Private: network and expertise	Trade association	More than 10	Formalization with government partners and within focal organization, intermediate formalization across private partners to undertake agree tasks as contracted	Allocated funding from central government for operationalization

Public-sponsoring linkages. Here the programs are sponsored by a public agency with full authority and access to funds. The voluntary agencies receive funds from sponsoring public organizations in order to carry out activities that will address critical social issues. The power held by the sponsor is based on the funds and visibility, which the agencies regard as legitimacy for entering the partnerships. The program is formalized to an intermediate extent, where the agreement among several numbers of parties is confirmed in terms of roles and responsibilities. Budgets are centralized by the sponsoring agency while the operation of the program is managed by the awarded organization.

Trade association-led programs. These programs are funded by both public agencies and private partners that are members of the association. With negotiation power in terms of access to expertise and networks, the trade association is authorized to undertake the program with allocated funding from the government. Partners that are members of trade associations regard participation in the program as the obligation of a good citizen, who contributes to the common good. The program is formalized with a range of government partners in order to clearly identified funding obligations and within the focal organization in order to allocate appropriate personnel and resources in undertaking the program activities. Among the private partners, the program is formalized to an intermediate level in order to define the contributions, roles and responsibilities held by the partners, which has been a common practice among affiliated companies located in other countries.

The findings from all three cases in the present study have led to the factors affecting the formation of partnerships under the domains of initial conditions and motives, structure and governance, and partnership capabilities. These key factors are placed into a conceptualization of public and private partnership phenomena in the next chapter.

CHAPTER 7

CONCLUSION

This last chapter consists of three sections. The first section presents a summary of the study in response to the research questions. The next section provides policy recommendations and practical suggestions. The last section presents suggestions for future research.

7.1 Summary of the Study

This study aims to answer to the research questions in relation to the motives of the collaborating actors in initiating public and private partnerships for vocational education and training; the institutional settings of the PPPs in terms of governance and structure; and the factors critical for sustaining successful PPPs.

The findings derived from the three cases studied provide a conceptual framework to better understand the phenomena of public and private partnerships with respect to the following domains: initial conditions and motives, governance and structure and partnership capabilities. The conceptualization of the public and private partnerships concept is presented in figure 7.1.

Prior to PPP formation, vulnerable strategic conditions existed. These conditions can be referred to as the critical contingencies in reducing uncertainty due to economic situations, the market environment, or problematic public issues that require urgent action in order to enhance the organizational image. The convener of the PPP that is highly regarded as a respectable figure with access to resources assembles potential partners, agreeing that urgent action is needed to address the issue. The sense of urgency leads to partners' interest in solving the problems. They all share common values in treating the shared goals of public interests as a high priority. The contingencies of reciprocity and effectiveness are prompted by these shared benefits. These partners usually have formed relationships or trust before a

new form of partnership will be created to address the issues of interest. In case the missions of the parties are not aligned, goal setting to align the partners' missions is needed to ensure that all partners will commit their resources to the same goal that all partners have agreed to achieve. This goal setting is treated as a trust-building process and an assurance that the partnerships formation will result in the expected interests that all parties will equally share in exchange for the resources to be contributed fairly.

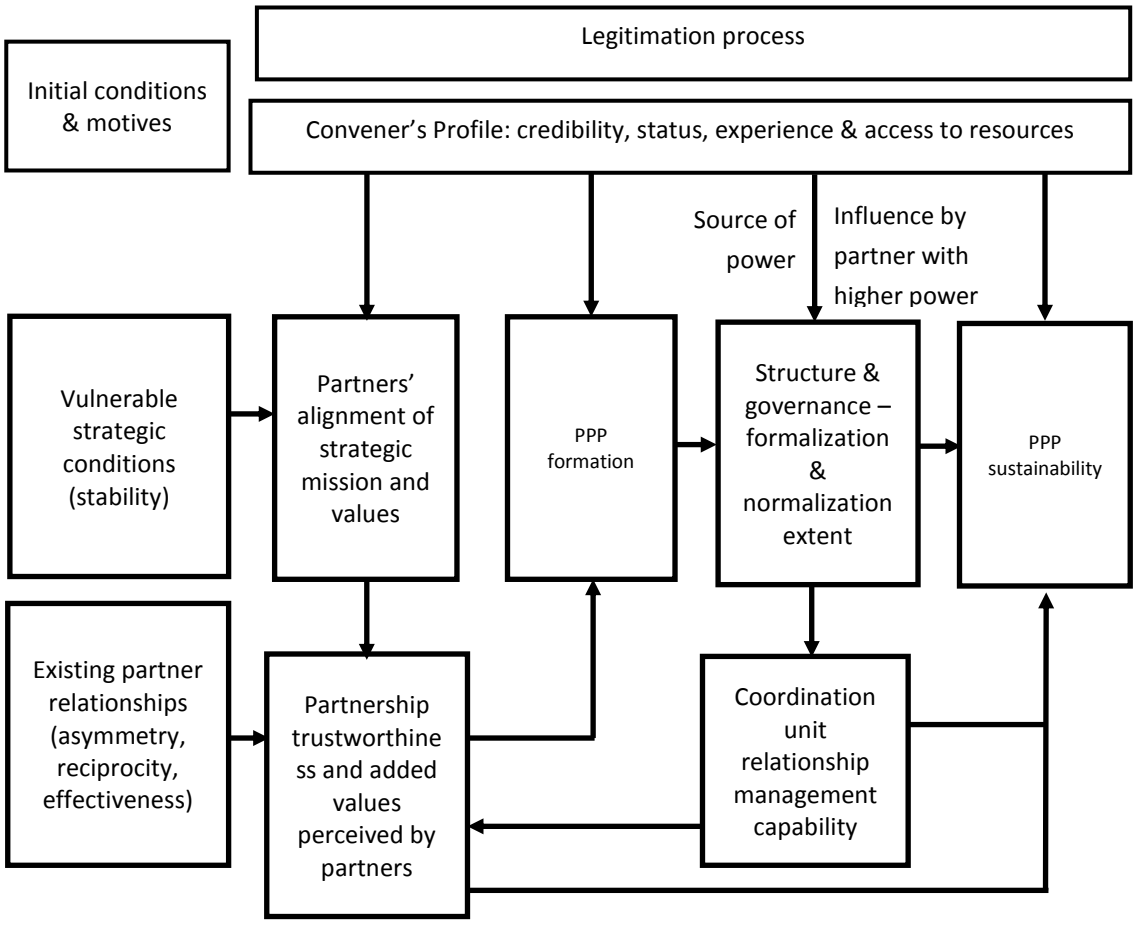

Figure 7.1 The Public and Private Partnerships Concept Derived from the Research

During PPP formation, the convener or the party with higher political power will influence how the partnership is structured and governed. The contingency of asymmetry leads to the formation of partnerships, which is usually influenced by the

partner with superior negotiating power. The dominating party intends to exert its power in accessing funds, expertise and networks in exchange for access to the desired resources. Meanwhile, the other party attempts to maintain its balance of power through access to funds or authority. The extent of the formalization of the structure depends on the range of stakeholders to be addressed and the level of funding and commitment required to be secured for the operation of the program. However, once the formalization has become normalized, the legitimation process for new partnerships is shorter. The coordination unit, which is separately set up, takes the facilitation role of mobilizing resources from partners. It is essential that this coordination unit possess cooperative capabilities, especially regarding relationship management skills, in order to effectively liaise with the partners to undertake the planned activities successfully. The coordination unit has to strengthen trust among the partners, indicating that the partnerships will deliver the expected results as promised with the agreed scope and quality. In this way, the collaboration provides value added to the partners and leads to sustainment of the partnerships.

7.2 Policy Recommendations and Practical Suggestions

It is evident that public and private partnerships have been trialed and implemented in many countries with a belief that synergy of resources and collaboration will better address the public issues. Many countries have succeeded and realized the benefits of such partnerships. The following policy recommendations with practical suggestions are provided based on this study, which has incorporated the findings and lesson learned from the three cases studied, combined with the two cases in Singapore and in the U.S. presented in Chapter 2.

7.2.1 Strategy I: Build Awareness of Public and Private Partnerships and a Collaborative Mindset

Public and private partnerships are not novel but are not commonly adopted either. The collaboration mindset needs to be instilled at all levels: the government, the private sector, and the media and the public. The awareness has to stem from the principles of treating public interests more importantly than personal benefits and

more than one's own organizational visibility. Especially in the government sector, high fragmentation is mainly found due to the weak leadership resulting from continued political unrest for over many decades.

In order to implement awareness and mindset building, all Ministers have to hold the principle that public and private partnerships are an alternative solution to upgrading Thai government efficiency. The following suggestions are provided:

Suggestion 1.1: Hold seminars on public and private partnerships for government leaders and practitioners. These seminars could invite speakers to showcase successful implementations of PPPs in different policy areas. Lessons learned and discussions on how these programs are implemented will increase an awareness of PPPs among government leaders and practitioners.

Suggestion 1.2: Define PPPs as a mandatory course for public servants both for in-service and pre-service training. Embedding PPPs as a pre-requisite training for government officials will build understanding for PPPs and provide opportunities for them to learn how to implement PPPs successfully.

7.2.2 Strategy II: Engage the Private Sector as Part of the Governance of Public Service Delivery.

As demonstrated in the case of the AHRDA, its establishment took over four years. All parties have spent countless time in holding meetings, workshops, and focus groups in order to justify the PPPs set up to upgrade the workforce. Imagine that new public governance is actually implemented through a new structure for selected entities, which are in critical need of technical assistance from the private sector. It would save a lot of time for all partners to initiate the partnerships without going through a long legitimation process to seek endorsement from political leaders.

Suggestion 2.1 Adjust the governance structure of some government units to be co-led by the private sector. This adjustment can be implemented with the following approach: appointing a renowned figure from the manufacturing industry to chair the board of vocational education or the training unit, with half of the board members invited from the private sector. The board of ITE in Singapore has modeled this approach by inviting the Chairman of Jurong Engineering Ltd. to chair the board while half of the board includes leading executives from the private sector.

Suggestion 2.2 Invite experts from the private sector to lead the public service unit while transferring know-how to government officials. Over four decades ago, the Singapore government leaders invited experts from France and Germany to transfer know-how about technical education during the setup of technical and vocational institutes.

7.2.3 Strategy III: Promote PPPs Through a Funding and Incentive Mechanism with Government Oversight on Quality Control of the Awarded Programs.

Currently, the incentive for the private sector to be involved in the provision of skill development for the workforce is extant. However, the system lacks the quality control necessary to ensure that the incentivized program meets the standards. Moreover, a funding mechanism in empowering local actors to implement the PPP initiative is rare. Therefore, the following suggestions are made.

Suggestion 3.1 When incentives for the tax benefits of PPPs for vocational education and training are provided for companies, it is important that those programs or training applying for tax benefits meet the training standards. Moreover, bi-lateral vocational education has to be closely monitored, making sure that the participating companies accepting students for internships provide technical skill training for students, which is considered beneficial for the students' future career development.

Suggestion 3.2 Funding mechanisms can be implemented to promote local actors to engage in PPPs for strengthening vocational education and training. Grant proposals can be accepted with the condition that the leading agency has to partner with the private sector and prove itself capable of sustaining its operation in the future. The U.S.'s Career Academies in California and other states have received state funding to cover program development costs. Another example is the U.S.'s Perkins Funds which provide competitive grants to local actors that partner with post-secondary schools and employers in improving career technical education. In Thailand, the STI has been a good model in implementing this approach by helping RMUTL implement WiL with initial funding support to match Michelin's funding. Besides grant proposals, funding a proven implementation model by the private actor can be done as demonstrated in the case of GTDEE. The German-Thai Chamber of Commerce has been granted to be an operational agency for a dual education

program, which is partly funded by the German government and private companies. GTDEE has been a great example of showing that when public and private partnerships are institutionalized as a community culture, combined with an efficient implementation process, the program will be very highly credible in terms of unity demonstrated by a high level of goal congruence and commitment across government and private partners.

7.2.4 Strategy IV: Build Government Capacity in Cooperative Capabilities

The findings from the study indicate that one of the critical success factors for successful PPPs is cooperative capability. Relationship management is one of the main skills contributing to the successful coordination among partners. Besides the relationship management and quality control expertise that public servants need to acquire, the government agencies need to be flexible in supporting the new roles of coordinator or quality assurance officer. Suggestions are provided below.

Suggestion 4.1 Public officers in the coordination unit have to be trained as a coordinator with the capability of mobilizing resources and earning trust. This can be done through an internship for similar programs in large corporate training institutes where high collaboration with multi-sector partners through high standards and processes exists. In this way, they will learn how to liaise with different partners while learning about high-quality training processes and testing procedures.

Suggestion 4.2 Public entities such as training agencies and universities should be reformed in terms of rules and regulations to facilitate the collaboration activities. It has been suggested in the case studies that the main obstacles to entering partnerships were rigid administration rules and regulations, which made the program implementation more difficult than it should have been. Moreover, the key performance indicators of these institutes should not be limited to only research papers in published journal but extended to out-reach program impacts on the improved livelihoods of the underserved.

Suggestion 4.3 Public entities should be reformed in terms of programming and performance indicators. In the development arena, it takes time for a program to yield tangible results or a substantial impact. Therefore, it is vital that the performance of the program be assessed according to the level of accumulated results yielded by

continuous change or improvement. In Thailand, few government initiatives are multi-year programs, which contradict the nature of development work as earlier noted. Therefore, it is suggested that the programs be set for a longer term with anticipated results and impacts rather than focusing on outputs as key performance indicators.

7.3 Suggestions for Future Research

This research represents an initial step in linking the relevant conditions and determinants of partnership formation and its sustainment. Further questions on the performance of partnerships are needed in order to deeply explore what would be indicators for effective partnerships. Unfortunately, two programs have only been in existence for two years at the time of this writing, with the first batch of students just graduating from the program. This aspect of performance should translate the perceived values into different tangible indicators that should be available when the program has been implemented for a longer time.

Public and private partnerships in different fields might be explored in order to expand the types of partnerships, such as granting for local actors. A funding program using health promotion funds with an attempt to empower local actors with implementation might be additional cases for exploration. Then a comparison across cases in terms of the efficiency of the partnerships according to the type of partnership could be done in order to assess the impact of governance on partnership effectiveness.

Further research to strengthen the developed framework is suggested. The propositions drawn from the cases studied can be sharpened with in-depth study with quantitative research on the same topic.

7.4 Final Words

Government might generate its own agenda through its own processes, and its interaction with the public might involve mobilizing support, rather than reacting to public opinion, interest groups or social movements (Kingdon, 2003: 230).

It is hoped that government leaders will pursue public and private partnerships as an alternative approach to public governance with a mindset and approach that public issues should not be totally burdened by public agencies. Instead, with the synergy of efforts and goodwill by stakeholders, they could contribute resources for a better society with more equitable and fair distribution of resources.

The study of public and private partnerships in strengthening vocational education and training provides insight into the PPP phenomenon. The conceptualization of PPPs related to the initial conditions, motives, structure, and governance with partnership capabilities has led to recommended public policies and actions. They include building awareness of PPPs among public managers and officers, reforming the governance and structure of relevant government units to support PPPs, providing funding mechanisms and incentives to promote PPPs, as well as building the government's capacity to successfully implement PPPs. It is hoped that the paper will contribute to useful policy implementation or future research contributing to public governance strengthening.

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APPENDIX

(Questionnaire – Thai Version)

คำถามที่ใช้ในการสัมภาษณ์

ผู้สัมภาษณ์สรุปวัตถุประสงค์ของวิจัย หัวข้อของการศึกษาวิจัย รวมถึงระยะเวลาที่ใช้ในการสัมภาษณ์

ข้อมูลเกี่ยวกับองค์กร ผู้ให้สัมภาษณ์ และโครงการ

1) พันธกิจขององค์กร และตำแหน่งหน้าที่ที่ดูแลรับผิดชอบ

2) โครงการความร่วมมือรัฐและเอกชน มีวัตถุประสงค์อะไรบ้าง และขอบข่ายในการดำเนินงานเพื่อสร้างความร่วมมือคืออะไรบ้าง

ข้อมูลเกี่ยวกับการริเริ่มโครงการความร่วมมือ

1) โครงการริเริ่มได้อย่างไร ใครเป็นผู้ริเริ่ม ใช้เวลานานเท่าไหร่ในการริเริ่ม ปัจจุบันมีพันธมิตรเข้าร่วมโครงการมากน้อยแค่ไหน

2) เงินสนับสนุนในการริเริ่มมาจากไหนบ้าง มีใครเกี่ยวข้องบ้าง

3) ใครเป็นผู้เชิญให้พันธมิตรต่างๆเข้ามาร่วมมือ มีเกณฑ์ในการพิจารณาอย่างไร เป็นการร่วมมือแบบสมัครใจหรือไม่

4) อะไรเป็นแรงจูงใจให้พันธมิตรถึงอยากเข้ามาร่วมมือ อะไรคือจุดประสงค์หลักที่พันธมิตรต่างๆอยากเข้ามาร่วมมือด้วย (กรณีเป็นผู้ริเริ่ม)

5) อะไรเป็นแรงจูงใจให้ท่านอยากเข้าไปร่วมมือในโครงการ องค์กรของท่านจะได้ประโยชน์อะไรบ้างจากความร่วมมือดังกล่าว (กรณีเป็นพันธมิตรที่เข้าร่วมโครงการ)

6) ท่านหรือองค์กรของท่านมีความสัมพันธ์อย่างไรกับองค์กรหรือผู้ ริเริ่มโครงการ ท่านมีความคิดเห็นอย่างไรบ้างต่อผู้ริเริ่มหรือองค์กรนั้นๆ (กรณีเป็นพันธมิตรที่เข้าร่วมโครงการ)

7) ท่านมีความสัมพันธ์อย่างไรบ้างกับองค์กรอื่นๆ ที่เข้าร่วมโครงการ (กรณีเป็นพันธมิตรที่เข้าร่วมโครงการ)

8) ทำไมท่านถึงมั่นใจว่า หากท่านร่วมมือในโครงการนี้ ท่านจะบรรลุตามเป้าหมายที่ตั้งไว้

ข้อมูลเกี่ยวกับรูปแบบ โครงสร้างองค์กร และบทบาทหน้าที่ของพันธมิตรต่าง ๆ

1) รูปแบบของโครงการความร่วมมือนี้เป็นอย่างไร มีโครงสร้างการบริหารงานอย่างไรบ้าง และมีการแบ่งหน้าที่กันอย่างไรระหว่างพันธมิตรต่างๆ การแบ่งบทบาทดังกล่าวชัดเจนหรือไม่ อย่างไร

2) ใครเป็นผู้วางรูปแบบความร่วมมือนี้

3) กระบวนการดำเนินงานตามความร่วมมือระหว่างพันธมิตรเป็นอย่างไรบ้าง

4) มีสัญญา หรือบันทึกข้อตกลงกันอย่างเป็นทางการในความร่วมมือดังกล่าวหรือไม่อย่างไร

5) เงื่อนไขหรือภาระผูกพันในข้อตกลงดังกล่าวคืออะไรบ้าง เป็นไปอย่างเคร่งครัดหรือไม่อย่างไร

6) ในปัจจุบันหลังจากที่โครงการดำเนินมาได้สักระยะหนึ่งแล้ว รูปแบบความร่วมมือเปลี่ยนไปหรือไม่อย่างไร มีการขยายขอบเขตหรือจำนวนพันธมิตรที่เข้าร่วมหรือไม่อย่างไรบ้าง

7) ความสัมพันธ์ระหว่างองค์กรภาคีต่างๆเปลี่ยนไปหรือไม่ อย่างไร

ปัจจัยแห่งความสำเร็จของโครงการความร่วมมือ

1) ในความคิดเห็นของท่าน โครงการนี้จะสำเร็จลุล่วงได้ ต้องอาศัยองค์ประกอบอะไรบ้าง

2) คุณลักษณะที่สำคัญขององค์กรที่ร่วมมือด้วยนั้นต้องเป็นอย่างไรบ้าง

ปัญหาและอุปสรรคที่พบในโครงการนี้คืออะไรบ้าง

BIOGRAPHY

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