

# CHAPTER 1 INTRODUCTION

## 1.1 Problem Definition

The concept of region in regional development defined as the administrative division of a country. The concept of regional development is seen as a result of intricate connection among territorialized relational network and global production networks within the scope of changing regional governance structure (Coe, et. Al., 2004). According to Organisation for Economic Co-operation and Development, it is an act of reducing regional disparities by supporting activities related to economics in regions. Regional development is one of Saxion University's research center for urban & environmental development's areas of expertise. Other than regional development, research center for urban & environmental development also covers the renewable supply of energy, sustainable development, area development & law, governance, safety and risk management, and innovative technology in construction. Jacques Bazen as a client of this research is a part of Saxion's regional development team. In 2016, Hariadi Purnomo and Mutia Cintya Rahmi did a regional development research with Jacques Bazen entitled, *Internationalization of Innovative Business – Indonesia and Netherlands*. The study was focused on finding out the potential business activities for both regions by considering economic and innovation factors. Based on the market analysis they did, the partnership between two countries is likely possible in a way of technology transferring in two sectors which are water sector and smart city sector, mainly focused in Twente (the Netherlands) region and Bandung (Indonesia) region.

Saxion has a long-term goal to 2020 which addressed to the international outlook and focus on the applied research and teaching, also reducing the gap between technology and practical application so that students can make a huge contribution to development on their subjects (Saxion University, 2016). To achieve the goal, Saxion has made a lot of cooperation programs with universities from another country such as exchange students program, double degree program, joint degree program, and joint research program. Education as a means of revamping experience could contribute more meaning into the experience itself, and in a way, will raise the capacity or skill to direct the course of subsequent experiences (John Dewey, 1916).

Aside from formal education within the university, non-formal education is also a vital element in the learning period of study as stated by OBESSU, Organizing Bureau of European School Students Union. Non-formal education is best at creating knowledge, skills, and attitude— rather than swallowing readymade facts and opinions without evaluation (European Commission public consultation, 2011). The client, which is one of Saxion lecturer, asks researchers to design the non-formal education in the form of educational program to foster knowledge and give an added value to its beneficiary. This program is expected to provide practical experience for students in two sectors based on the previous research and provide an open opportunity for companies that are interested in doing businesses with Indonesia to have an in-depth analysis about business fields in a specific region. Before making an educational program, the researchers are going to find out how many Dutch and Indonesian companies that are interested in making a working-

relation partnership between one another, focusing on technological transferring from the Netherlands to Indonesia. Then, further analysis of whether the educational program will be feasible or not can be made according to the number of Dutch companies that are potentially interested in exporting their technologies to Indonesia

The figure 1.1 below illustrates the main idea of the educational program. The primary purpose of this educational program is to build a working–relation partnership between Indonesian companies and Dutch companies regarding technology transfer in any form such as blueprint of the technology, licensing, data, or the product itself, which focused in two sectors, water sector and smart city sector. Saxion and Telkom will promote their educational program to companies in their respective countries. Companies in the Netherlands who would like to make a partnership with Indonesian companies could contact Saxion to operate its educational program as well as Indonesian companies that are interested in doing the partnership could contact Telkom University. The companies will give the information needed to universities for students to perform the analysis and research. Then, students from both universities will exchange the information of each company and work together to deliver the expected result for the companies. The role of government lies in the partnership between two companies in their own countries, especially for the regulation of exporting and importing technologies. There are requirements and regulation that should be fulfilled by involved companies to do technology export.

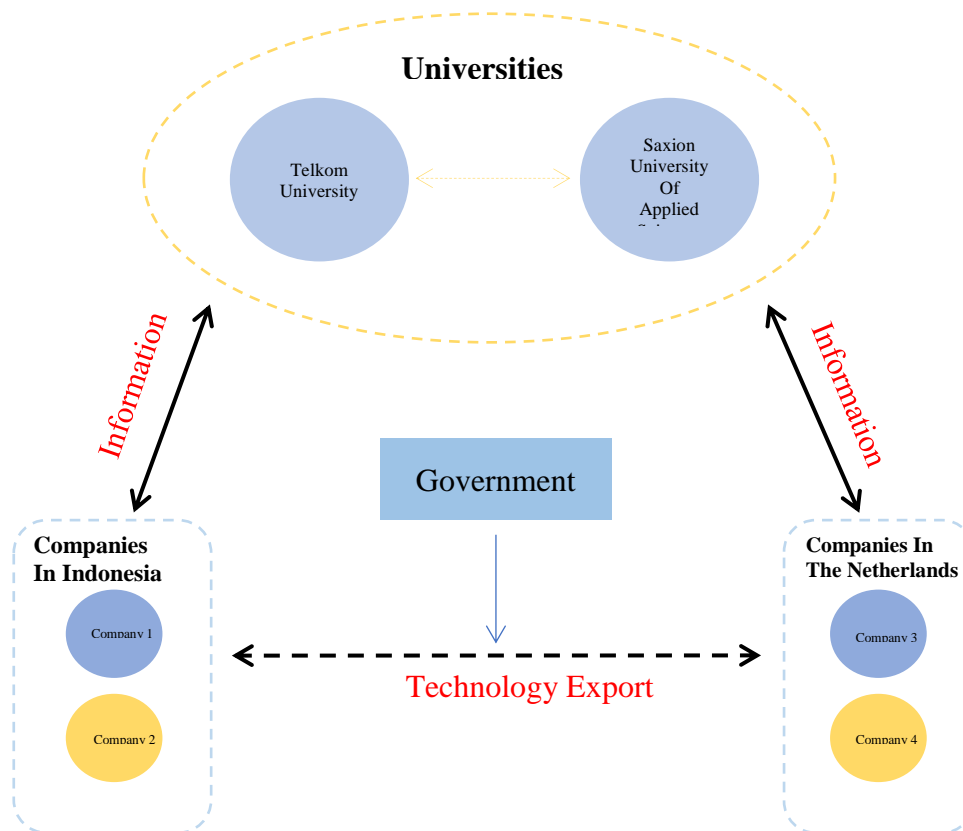


Figure 0.1.1 Educational Program Workflow

This kind of program has been made before by Saxion University of Applied School with the collaboration of Lomonosov Moscow State University Business School, Russia. The

program is known as Autumn Business School and still functioning annually. The client expects this research could generate such program with some adjustments taking into account the environment of Indonesia which is obtained from the previous study by Hariadi Purnomo and Mutia Cintya Rahmi and making Autumn Business School as exemplar program.

Indonesia and the Netherlands are known to have a good relationship, especially in an educational field. The proposed program is built to improve the professional relationship of two universities which are Telkom University and Saxion University of Applied Sciences as the client sees there are many potential in research and business cooperation referring to Hariadi Purnomo and Mutia Cintya Rahmi dissertation report.

## 1.2 Objectives

The objective of this research is to make an educational program by considering the number of Dutch companies in both water and smart city sector that are interested in exporting technologies within their companies to Indonesian companies, and assess the feasibility of making an educational program to support the process of incorporating companies in the two selected sectors to cooperate as partners that will be implemented in Saxion University and Telkom University. The result of this research will be delivered to the client, Mr. Jacques Bazen in July.

## 1.3 Research Question

### 1.3.1 Research Main Question

What are the most suitable practises to implement an educational program for Saxion University of Applied Sciences and Telkom University which could support the process of technology transferring for Dutch companies that are interested in doing a working-related partnership with Indonesian company in the water sector and smart city sector?

### 1.3.2 Research Sub-Questions

1. Who are the stakeholders of the two sectors (smart city and water sector) in the Netherlands and Indonesia?
2. How many Dutch companies that work in smart city and water sector that are potentially interested in doing a partnership with Indonesia?
  - a. Why are the Dutch companies that perform in smart city and water sector interested in doing a partnership with Indonesian companies?
3. How many Dutch companies that work in smart city and water sector that are potentially interested in doing technology exporting with Indonesian companies?
  - a. Why are the Dutch companies that perform in smart city and water sector interested in exporting their technology or services to Indonesian companies?
4. What kind of technology transfer method which will be selected and exported to companies in Indonesia?
5. What are the successful examples of the educational program between Saxion University and other University in cross-cultural market learning?

6. What should the program look like to be practical and effective?
7. How much are the out-of-pocket costs needed to construct the educational program?
8. What are the benefits of running the educational program for Saxion University, Telkom University, and its students?
9. How to implement the educational program at Saxion University of Applied Sciences and Telkom University?

## 1.4 Substantive Orientation

In the process of making an educational program, substantive orientation plays a crucial part as it helps the researchers to build and formulate the educational program. The substantive orientation of this paper is divided into three sections namely, previous research, literature study, and definition of terms. In the previous research, Hariadi Purnomo and Mutia Cintya Rahmi thesis with the title of Internationalization of Innovative Business – Indonesia and Netherlands is the only paper which is used as a basis for this research. The literature review consists of several methods which are Stakeholder Analysis, Mendelow's Power-Interest Matrix, Project Cost Management, and Brainstorming. Definitions of terms explain about several terms which are educational program, technology transfer, internationalization of business, and design research.

### 1.4.1 Previous Research

This report is a follow-up research from the previous thesis written by Hariadi Purnomo and Mutia Cinthya Rahmi with the title of Internationalization of Innovative Business – Indonesia and Netherlands is their graduation provision to be able to graduate from Telkom University and Saxion University of Applied Sciences. Their research objective is to find out about the potential of two representative countries of Telkom University and Saxion Hogeschool, which are Indonesia and Netherlands, to do a business activity focusing on innovative technology companies. According to their report, several business opportunities that are possible to be done in Twente and Bandung region is technology transfer in the textile sector, water sector, and smart city sector. Technology transfer can be done in many forms such as blueprint transfer, licensing, product, and others. This research also observes the possibility of two universities (Telkom University and Saxion University of Applied Sciences) to make an educational program, following the previous successful program, Autumn Business School between Saxion and Russian University, Lomonosov Moscow State University Business School as they found out there is a similarity between Russia and Indonesia in cultural dimension. The client and researchers will use the outcome of this research as a basis to make an educational program in Saxion University of Applied Sciences and Telkom University to improve the professional relationship between two universities and participate in region development of two regions. (Rahmi & Purnomo, 2016)

## 1.4.2 Literature Study

- *Stakeholder Analysis*

The concept of stakeholder was implemented as a new way of understanding business organizations as opposed to the mainstream shareholder view of the company and was first introduced through organizational studies (Foo et al., 2011). It was stated by Thompson (et al., 1991) that stakeholders are groups or participants that have, in some ways, a relationship with the organization, on the other hand, Clarkson (1994) explained that the said relationship is possibly exposed to risk either voluntary or involuntary.

Stakeholder analysis is defined as a process that outlines the aspects of a social and natural occurrence affected by a decision or action from the organization. It also identifies the actors that are affected by or can give effect to those parts of the occurrence. Moreover, the stakeholder analysis involves the individuals and groups in the decision-making process.

Stakeholder analysis aims to distinguish and study stakeholders looking at their attributes and the criteria of the analyst appropriate to the specific situation. These attributes includes Influence-interest grid (Imperial College London), Power-impact grid (Office of Government Commerce UK 2003), Mendelow's Power-interest grid (Aubrey L. Mendelow, Kent State University, Ohio 1991), Three-dimensional grouping of power, interest and attitude (Murray-Webster and Simon 2005), as well as the Stakeholder Circle (Bourne 2007). It also aims to evaluate and understand stakeholders from the perspective of an organization, or to determine their relevance to a project or policy. In carrying out the analysis, questions are asked about the position, interest, influence, interrelations, networks and other characteristics of stakeholders (Brugha & Varvasovszky, 2000)

The client asks the researchers to do a deeper analysis in micro-environmental level as the previous research conducted by Purnomo and Rahmi research only analyzed the business at a macro-environmental level. The proposed educational program deals with many stakeholders. Stakeholder analysis is an essential thing as it might help to decide which stakeholders have the most influence in the business activity and how to associate with stakeholder considering its influence, power, or interest.

- *Mendelow's Power-Interest Matrix*

The impact of specific stakeholders is not always obvious (Coff, 1999). When resources such as time are limited for companies, it would be near impossible to meet the demands of all the stakeholders involved. Thus, it is critical to determine each priority for each stakeholder at a certain moment especially for educational program that will involve many stakeholders. However, the effects between each stakeholder and the company may not have the same intensity, each having different importance to the company or universities. If a company is able to prioritize and differentiate the importance of each stakeholder, meeting their needs would be much easier as they would be able to focus resources on each of the needs, which would then provide them with long-term survival. Hence, it is highly necessary to first identify the stakeholders, determine their needs as well as their significance, and then finally involving the stakeholders accordingly in the

company's business strategy. In Power-Interest Matrix, level of power shows the degree of strength or influence of the stakeholder in a company while level of interest shows the degree of stakeholders' desire to be involved or informed with the decisions made by a company.

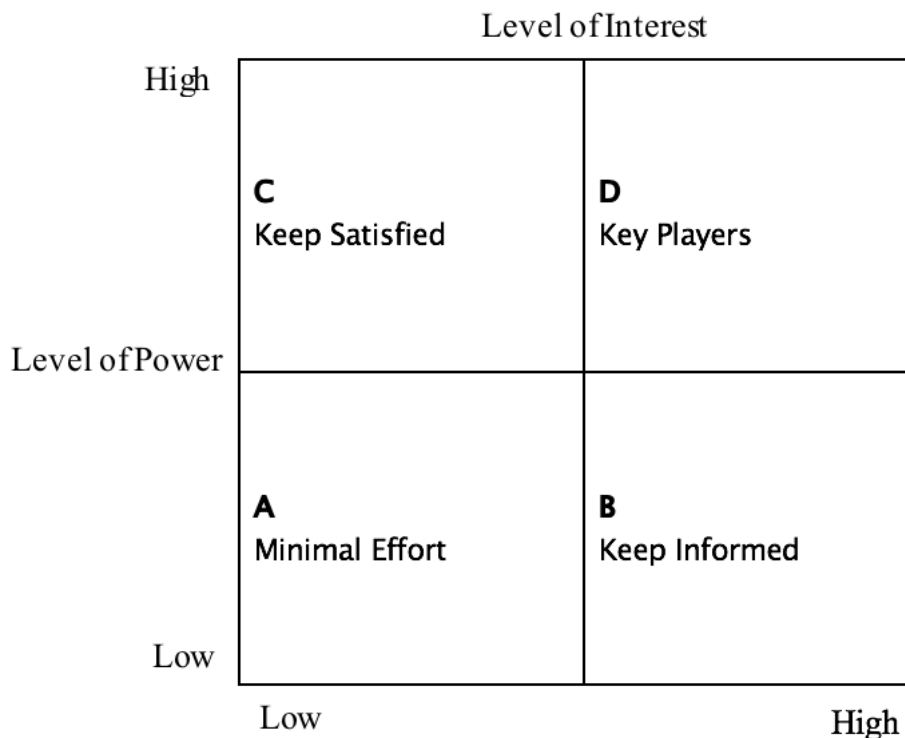


Figure 1.0.2 Level of Power/Interest Matrix

The Figure 1.2 shows the connection of the power that stakeholder's hold and the degree to which they are probably going to indicate enthusiasm for supporting or contradicting a business strategy. Within the matrix, it illustrates the different stakeholders' position and likely to differ depending on the issue and the extent of interest they have.

- *Project Cost Management*

Project Cost Management is a method which is commonly used to control financial condition in order to guarantee that project expenditure will be within the budget given. It is mainly focuses on the resources' cost used to finish activities in the project. Nevertheless, analyzing the impact of decisions made in utilizing the project's budget has to be considered as it might essential to the project continuation. Project Cost Management consists of four processes which are:

- Plan cost management is a process of procedural, policy, and documentation standardization before planning and estimate the project cost.
- Cost estimating is a process of estimating how much cost would it takes to complete the project activities.
- Cost budgeting is used to assign overall cost of individual work items to form cost baseline.

- Cost control which is a process to control and monitor changes regarding the project budget.

This method is chosen to find out the program expenses as project cost management determine the expenses cost in detailed from preliminary stages to end stages by breakdown the work structure (human resources, material resources, equipment) and overview the similar work to verify its validity. Proper use of project cost management will help to ensure the given budget is properly allocated and deliver the desired work with the demanded time frame.

- *Brainstorming*

Brain storming is a brisk and simple approach to produce original thoughts for critical thinking, innovation, and development. The method of brainstorming intended to fortify or stimulate the brain into pondering issues in a new light which resulted in urging people to capture traditional, logical thinking and grasp spontaneity, originality, and imagination. Reacting to a solitary, particular issue or problem, the brainstorming's participants express their recommendations or thoughts rapidly and in a spontaneous manner, without handled idea or reflection. In a brainstorming session, building and expanding on the thoughts of others are encouraged while criticizing others considered as taboo. It focuses on the amount of ideas created rather than the quality of every idea, which objective is to produce whatever number of thoughts in a brief timeframe. The presumption is that the more prominent the quantity of thoughts created, the more prominent the possibility of delivering a novel and successful answer regarding the topic discussed. At the point when brainstorming is effectively applied, it could briefly stops the critical processes that would usually snuff out conceivably valuable thoughts which previously could have been surfaced.

There are several common goals of using brainstorming methods which are to solve problems by looking from different perspectives, innovating when starting a project, and finding out various solutions when facing a problem.

- *Analytic Network Process*

Analytical Network Process (ANP) is a multi-criteria decision making that is a generalization of Analytical Hierarchy Process (AHP). AHP make a decision according to its hierarchies structure. However, some problems cannot be structured hierarchically because it involves interdependence of one higher-level element to a lower-level component which needs to use ANP as its decision-making method. There are three elements in ANP which are goal, criteria and sub-criteria for the model, and (3) alternatives. Figure 1.3 illustrates the structural hierarchy of ANP. There are four steps to do ANP; first, we need to define the problem comprehensively to determine the goals. The second step is generating pairwise comparisons on node level and cluster level by using Saaty's scale of the absolute number. According to Saaty (1993), the hierarchy is intended as a representation of a complex involved in

a multi-level structure where the first level is the goal, ie, the level of factor, criterion, and down to the last level of the alternative. The next step is to prioritize elements by constructing supermatrix. Last, make the final decision according to supermatrix model.

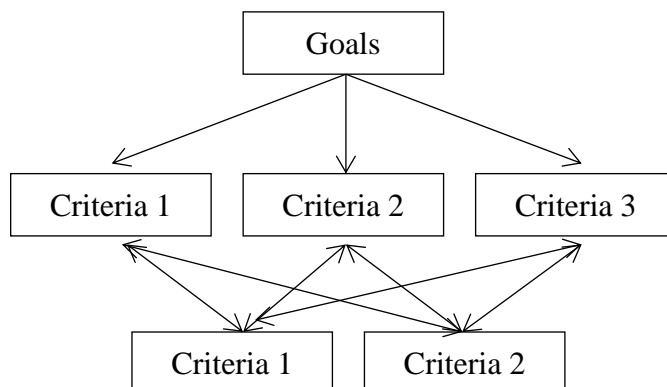


Figure 1.0.3 Analytical Network Process Model

### 1.4.3 Definition of Terms

Table 1.1 Definition of Terms

| Terms                            | Definition   |
|----------------------------------|--|
| Educational Program              | Program that involves a teaching process to improves the beneficiaries' literacy input as well as giving practical experience to give an in-depth understand about business internalization. |
| Non-Formal Education             | A program that is not included in the University's curriculum and it is an optional program for the students.  |
| Technology Transfer              | Process of transfer or export the technology of a product either in form of blueprint or licensing from one place to other places.   |
| Internationalization of Business | Covers commercial and trade related activities in a worldwide extent involving international markets.  |
| Design Research                  | Research that carrying out formative research to assess and clarify educational designs based on principles from earlier research  |

### 1.5 Research Design

The goal of this research is to make an educational program which will be implemented in Saxion University and Telkom University to support companies in water and smart city sector. A particular research design is applied in this research to ease the process of the research itself, it is known as design research, which is a valuable means of



carrying out formative research to assess and clarify educational designs based on principles from earlier research Allan Collins, Diana Joseph & Katerine Bielaczyc (2004).

Two data collection methods are used in this research, namely, qualitative research and quantitative research. Essential information or also known as primary data is gathered with a method of a questionnaire (Cohen, 2013). Primary data, in this case, is data which observed and collected through first-hand experience, thus considered original (Kothari, 1985). The desk research is separated into three sections which first is looking for the literature study. The second section of the desk research focuses on what are the contents of the educational program so that it could be useful and meet the needs of the client. The last part of the desk research is to find out how to implement the educational program at Saxion University of Applied Sciences and Telkom University. On the second and third desk research, interview with concerned parties will follow. An open and closed questionnaire will be made and spread to several Dutch and Indonesian companies that are active in smart city sector and water sector. Interviewing experts in the field of building an educational program from both regions concerning the two sectors through a face-to-face interview or Skype application will also be done. The detailed information regarding the data collection method is attached to the appendices, Table 1.2 Data Collection Method.

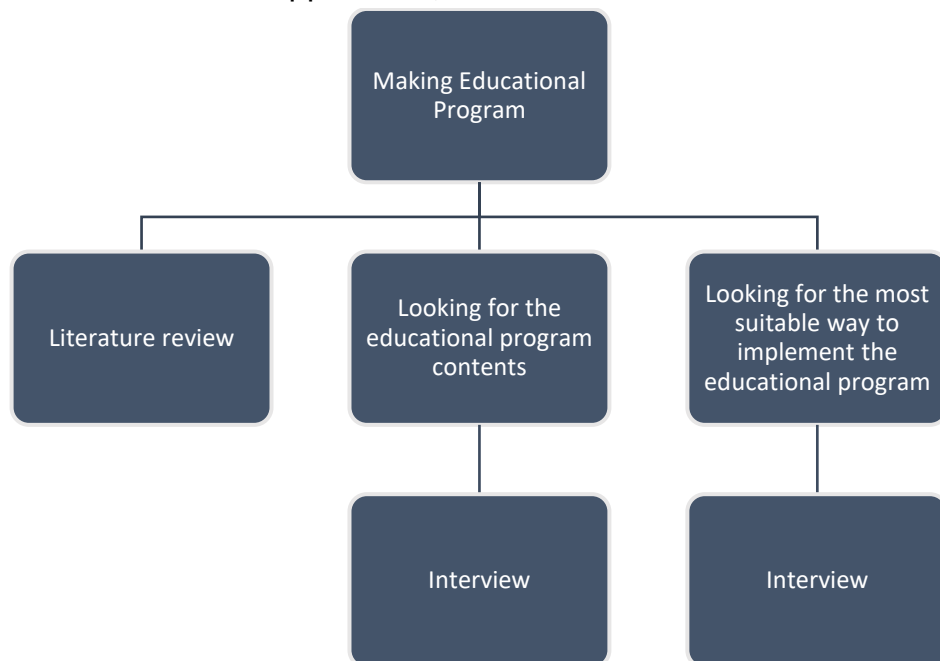


Figure 1.4 Data Collection Method

Design research often requires a lot of qualitative data which the researchers try to fulfil the needed data through a method of interview. The method of an interview will present accurate qualitative data to understand interviewee's experiences, how they depict those experiences, and the significance they make of those experiences. Most of the data used for this research will be based on the result of the interview with experts in different fields such as the water industry, smart city industry, and educational program expert. The framework and structure of the educational program are also made based on the interview's outcome.

All of the interviews are done to look for information that cannot be obtained through the questionnaire. To maintain the reliability of the research, most of the interviews will be executed with a method of a face-to-face interview in a closed room where only the researchers and interviewees are in present. It will minimize the miscommunication that often occurs in a telephone interview and also prevents subjective thinking of the interviewees if someone other than the interviewers is joining the interview. Some of the interviews will be carried out via telephone and video call because of the limitation of time and geographical position of the researchers and interviewees. Apart from the interview method, interview report and logbook will immediately be made after the interview is conducted.

The interviews are divided into two topics which are first, will be done to find out information about Indonesian and Dutch companies in the smart city sector and water sector which will answer research sub-question number 2 and 3. The interviewees for the first topic are Indonesian companies, several Dutch companies, and the Netherlands Water Partnership. The second topic of the interview is about the educational program itself where the researchers will try to find out how is the framework of the educational program, what are the contents of the educational program, what are the barriers and limitation of similar program, how much it cost to run the program, and how to implement the program in Telkom University and Saxion University of Applied Sciences to answer research sub-question number 6, 7, and 8. Six interviewees included in the second topic, namely the official of International Class Academic Office of Telkom University, Staff of International Affair of International Office in Telkom University, Organizer of Autumn Business School and Fast Forward Program, Saxion's lecturer, and Mrs. Gaby Somers as the representative of BBT Industrial Engineering.

The two sectors will be researched by both researchers as it will be the basis of this research, Fatimah Marwahutami Marjan will be in charge on making the educational program and estimating the project cost while Narotama Nur Narendra is in charge of stakeholder analysis and Mendelow's Power-Interest Matrix. The questionnaire is made by both researchers, according to the needs of the client. Both researchers will discuss their findings to get an understanding of each other works and align the goal. The detailed schedule of this research is attached in the appendices, table B6.2 research timeline (see appendix 6).

In chapter 2, stakeholders for Dutch and Indonesian companies will be discussed. This chapter finds out the involved parties and analyze the power/interest of stakeholder to answer research sub-question number 1. Chapter 3 discussed Indonesian and Dutch companies outlook and the benefit of the educational program which will answer the sub-question number 2, 3, 4, and 8. The answer to the research sub-question number 5, 6, and 7 will be elaborated in chapter 4. Last, the implementation plan will be detailed in chapter 5 to answer the question number 9.