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Towards the best method of Cross Cultural Training for IT Engineering Graduates from Eastern Indonesia Region: Ready to be Global Engineers A. Prabowo¹, Sulistyowati², I.S. Windiarti³ ¹Department of Information Systems, STMIK Palangkaraya, Palangkaraya, Indonesia ²Department of Informatics Engineering, STMIK Palangkaraya, Palangkaraya, Indonesia ³Department of Electrical Engineering, Tridharma University, Balikpapan, Indonesia (agungdosen@gmail.com) Abstract - Indonesian IT engineering graduates are nowadays expected to work in multicultural work team.

Generally, Indonesian IT engineering students are only focused on their technical skill. In fact, they need a balance of technical and non-technical cross cultural skill. To conduct cross cultural training in order to prepare them to be ready on international assignments, the best methods need to be selected concerned to some factors.

The purpose of this paper is to analyze the best and applicable cross cultural training methods to be given for Eastern Indonesian IT engineering graduates. This study reports part of the results of a web-based survey of Indonesian expatriate engineers addressing their knowledge, experience and perceptions of working in multicultural working team.

The output of this paper is a recommendation of the best cross cultural training methods for Eastern Indonesian IT engineering graduates as their additional valuable skill to be ready in international employment. Keywords: cross-cultural training methods, IT engineering graduates, Eastern Indonesia, expatriate job I. INTRODUCTION
Indonesian IT engineering graduates are nowadays expected to work in multicultural work team.

Employments are not only in Indonesia but also international job offers. Other than that,

located in Indonesia were not impossible for them to be involved in international cooperation and collaboration in engineering industry. By nature, engineering industries employed engineers from diverse cultural background with regard of their expertise in the engineering field itself.

In general, Indonesian IT engineering students are only focused on their technical skill namely hard skill. The curriculum of engineering education is less contain cross cultural competency and other non-technical skill namely soft skill. In fact, these skills are very important to be involved in the global competition of engineering job market [1-3].

Especially considering for Eastern Indonesian Engineering graduates where they are less exposed to such thing as intercultural interactions compared to those located in western part of Indonesia. Moreover, engineering projects including the IT projects succeed when there is a balance of all factors to deliver the whole solution for the project goals [4].

This paper reports recommendation of the best cross cultural training method for Eastern Indonesian engineering graduates that **need to be selected** concerned to some factors. Those factors are including language skill, mutual interactions, problem solving decision, and cross cultural adaptation. The output of the cross cultural training will be used as their additional valuable skill to be ready in international employment. II.

METHODOLOGY This paper reports part of results from the second phase of a research project. **The first phase was** a deep interview with engineers to get the basic idea of what they face in their interaction with their colleagues in the multicultural working environment. The result was used to construct the questions in the survey. In this research, the sampling methods used are purposive and snowball sampling.

Purposive sampling is a sample method to select participants based on the criteria and research objective. Snowball sampling is a **sampling method to select** participants by asking selected subject to recruit their colleagues for being participants too. The participants were found using professional society membership and we utilize social networking.

Potential research subjects were contacted by email and phone to describe the research and to offer the opportunity to contribute to this study. III. **RESULTS** A. Research Participants Profile The survey took 9 months to be completed. The web- based survey was terminated when the participants reached the expected amount of people, which were 297.

After data cleaning and clearing, 291 participants were included in the survey results. Table 1 shows the participants industry sectors. TABLE I RESEARCH PARTICIPANTS BASED ON TYPE OF INDUSTRY

Industry	Number of Participants
Construction	7
Electronics and Semiconductor	14
Financial and Banking Services	7
Information Technology (IT)	47
Manufacturing, Automotive and Aviation	11
Oil, Gas, and Mining	47
Telecommunication	137
Research and Development	4
Others	17

Figure 1 shows the country of employment of the interviewees. They are working for more than 6 months contract or permanent job in their overseas workplace.

In figure 1 shown that the complete 291 research participants were working in 43 countries around the world in at least 9 kinds of industries. Fig. 1. Participants by country of employment. B. Elements Investigated This research investigated knowledge and experience of Indonesian expatriate engineers working in some countries in multicultural situation.

The engineers were asked about their work environment in related to their cross cultural interactions experience and issues raised from the interactions. Their experience in working in overseas, Indonesian engineers found that they faced cross-cultural situation where they interact with people from different cultural background. Cultural diversity in the project team improves project outcomes [5].

However, people working in cross cultural situation need to develop cross-cultural skills. Those who are adaptable will merge relatively easily with their workplace environment whereas the less adaptable may have greater struggles over certain issues. We investigated the ennees cross cultural challenges as the basis of determination on the best training methods in order to prepare them o be ready in global workforce market with consideration of cultural differences between Eastern (Asian) and Western culture. C.

Indonesia Cross Cultural Challenges In their experiences in working in multicultural environment with people from diverse cultural backgrounds, Indonesian engineers are not without challenges. From the web-based survey that conducted to 297 Indonesian engineers, we gathered some data that categorized into factors that become challenges in cross cultural interaction and determine the type of cross cultural methodology.

They are communication including language skill, mutual interactions, problem solving decision, and cross cultural adaptation. In this paper, some opinions from the engineers about their experience related to their cross cultural issues and challenges and the identity of the engineers which only be used for data labeling.

There is an IT engineer working in Oman said in the survey that in communication matters, most of engineers have reluctance in asking about any issues in workplace especially to people with different first language, which mostly English. It reflected in this quote: "At e st ns,Ireatht cura background a little bit obstruct my working performance, for instance I feel reluctant to speak or ask work related things to my work colleague, especially to people with Eg eagagn6) So from that fact that the engineer felt that he needs to be familiar with English in working related topic and also be brave to speak up. Communication becomes one most important thing in working environment.

One aspect of cross-cultural ability is communication **between people from different cultural backgrounds**. Other engineer who working in Singapore in Telecommunication Company explain that based on her experience, working in a team with different cultures was a very complicated works. Indonesian has a bad habit such as less efficient work in term of time management.

In engineering project, effective and productive work known as smart work is highly demanded [6, 7] which must be organized and disciplined. A smart work should be has characteristics such as: long-term, intermediate and daily goal setting, time management, focus on the job description, maintain the best performance, avoid perfectionism, improve communications, and minimize distraction [7].

This engineer also said that she has not enough ability to express opinion in a discussion, or speaking in public with other project member. However, as time goes by, she learns how to bravely express her opinion, idea and problem sharing to other team member. So she can get the best problem solution. "rkin iverse Ituabckrodteais complicated thing for me, because like most of Indonesian people I feel that I am less efficient in time management.

I also not good in expressing my opinion and speak in public even though only in front of my colleague. But, as time goes b a(E8 Other factors that being a challenge in cross cultural interaction are problem solving and conflict management style. An engineer working in Qatar said that multicultural team need extra effort in managing conflict among the member and more difficult to find the best problem solution that fit to all members. "Inmultul rkin m,sofa e st difficult problem I faced is managing conflict that happened in work team.

People with different cultures need different things to be solved with different approach. So we work hard to find the best solution that can accommodate all memers'coces usll e popject requiremets.(E6) From the above quote from E169, the skill in managing conflict and problem solving is definitely needed by expatriate to manage diverse cultural

background team.

These skills are also included in leadership skills. Leadership skills in a multicultural context are also shown to be important in a project because they are related to the importance of team relationships as a contributing factor to project success [8]. Cross cultural adaptation process also a factor that needs to be considered in establishing the best cross cultural training methodology.

Different cultural background is the main factor in adaptation process [9]. Engineers should have cultural intelligence and so was skilled and flexible in understanding another culture and so was able to learn more about another culture as well as to appropriately interact with people of another culture [10]. Cultural differences in project team itself are a big challenge for each individual.

This is happened in time dimension which means that not forever become a challenge. Once someone become more adjustable with the situation, then the process of cross cultural adaptation is not a difficulty anymore. "Curaagudoroteamemerwie a big challenge for each individual team members.

It will not last forever, because if someone already fit with the teath oecme pbyamo(E0) Other engineers said that the culture, in terms of national and religion-related culture, also influenced how they do their work [11]. IV. DISCUSSION Factors that become challenges in cross cultural interaction and determine the type of cross cultural methodology are communication including language skill, mutual interactions, problem solving decision, and cross cultural adaptation.

The methods of cross cultural training for expatriate have been developed which are the cognitive, the affective, the experiential, and the language-learning approach [12]. A. Cognitive Approach In cognitive approach cross cultural training, the training is given with lecture-type training [13]. In this type of training, the participants will be provided an environmental briefing and culture-orientation programs.

Cognitive approach training designed to give information about history, way of life, demography, values and habits of certain culture. This type of training methodology is considered as more economist in terms of cost, because it need less infrastructure and human resources. The cognitive approach is basically a form of pre-departure training before the expatriate comes into the targeted country. B.

Affective Approach In affective approach cross cultural training, the trng gibdpnsten' ffec espnse such as emotions and attitude. The participants are expected to have

sensitivity and awareness of their own national culture and cultural differences. Moreover, when they already understand their own values and cultural differences then the participants will appropriately behave in interactions with national culture of the targeted country [14]. Affective **approach can be in** form of cultural awareness training and sensitivity training.

In cultural awareness training, the participants learn to appreciate cultural differences and the output is they will appropriately act to improve the effectiveness of cross-cultural interactions [15, 16]. However, the weakness of cultural awareness training is that the participants do not learn specifically about the culture of targeted country [17].

Sensitivity training is more about learning the culture of targeted country. The training will be more specific when the participants already know which country they will be assigned to work. C. Experiential Approach In experiential approach, the participants will be exposed to a realistic simulations or made-up situation so they can feel directly how to **interact with people from different** culture or direct contact with them in a short visit to the targeted country.

The experiential training could be interaction learning, field experience, role playing, intercultural workshops and simulation [13, 14]. D. Language Training Most of the engineer that will be sent to other country has limitation in language skill. To help the successfully adjust with local country is to provide them language training.

If they have insufficient level of language skill, it is not impossible that they may have misunderstanding and misinterpretation in the interaction **with people from different** culture and language of instruction. The question is which type **of cross cultural training** is considered as the best methodology to be applied for Eastern Indonesian IT engineering graduates? Most of the IT engineering graduates have limited knowledge of working overseas or even in other area in Indonesia.

They need to be prepared since in the university to have vision that engineering profession is a global profession. They have opportunity to work across the nation or even across the globe. **The most important thing** is to give them confidence and self esteem that they have a valuable skill in engineering field in the world.

First step that need to be taken is give them language proficiency training. They need to have a good **level of English proficiency** as English is the main instruction language in the world. In engineering, communication style may vary between professionals.

There are three distinct variables in the communication style between engineers: personality, cultural background and situational factors [18]. So the language training should contain those three communication style to accommodate communication needs of the engineers when they interact in cross cultural situation. Among the three other methods which are cognitive, affective, and experiential approach, the most suitable methodology is the cognitive approach.

The reason why the cognitive approach is become the best methodology to deliver the cross cultural training is that the IT engineering graduates need general knowledge about history, way of life, demography, values and habits of certain culture. There will be some common countries that can be the examples for them to learn such as The United States, Australia, The Philippines, Saudi Arabia, United Arab Emirates, and Sweden. Cognitive approach is also considered as a methods that less costly and can accommodate more people in the training.

The objective of the **cross cultural training for IT engineering graduates** is to give overview on how the engineers working in diverse cultural background. So the best way is to give as many as the students to get this kind of training. V. CONCLUSION This research reveals that from the engineers experience in their work setting, there are some factors that become challenges in cross cultural interaction.

They are communication including language skill, mutual interactions, problem solving decision, and cross cultural adaptation. These factors determine the type of cross cultural methodology that the best suit to the Eastern Indonesian IT engineering graduates' diverse view of working in diverse cultural background.

The first most important kind of training is the language training to accommodate the IT engineering graduates with sufficient level of English proficiency. They will be taught about engineering type of communication including personality, cultural background and situational factors. The second methodology that will be used is cognitive approach cross cultural training.

This method is good to accommodate larger number of people and less costly because it only need the course material to be given in lecture type of training. The course material for cross- cultural training will cover issues around strategies to **interact with people from different cultural** background. This choice of the best methodology in cross cultural training is still need to be justified with further research on the IT engineering graduates.

Future research will be a complete cross-cultural training for university graduates to

prepare all the university graduates being ready for global job market competition.

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