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Cross-cultural Training as part of Policy and Business Strategies to Prepare Indonesian IT Engineers in Global Job Market Competition Agung Prabowo Information Systems Department STMIK Palangka Raya Palangkaraya, Central Kalimantan, Indonesia agungdosen@gmail.com Rosmiati Information Systems Department STMIK Palangka Raya Palangkaraya, Central Kalimantan, Indonesia fayadhah@gmail.com Ika S.

Windiarti Electrical Engineering Department Tridharma University Balikpapan Balikpapan, East Kalimantan, Indonesia ika.windiarti@mymail.unisa.edu.au Abstract - Indonesian IT engineers need to have both hard and soft skills to be ready in global market competition in term of work force. Hard skills are the technical expertise related to their field of work.

On the other hand, soft skills are also the important one including communication, creativity, adaptability, collaboration and leadership. The purpose of this paper is to develop theoretical review of how to educate Indonesian IT engineers to be ready to face global job market competition by the use of cross-cultural training program in the university in Indonesia.

This study reports the results of a web-based survey of Indonesian expatriate engineers addressing their knowledge, experience and perceptions of working in multicultural working environment in some engineering projects. The output of this paper is a framework of cross-cultural training as the supplementary material in the university curriculum in engineering education in Indonesia.

Keywords: cross-cultural training, IT soft skills, global job market, policy and business strategies I. INTRODUCTION International cooperation and collaboration in engineering

industry become an emerging trend in global development. Engineering industries employed engineers from diverse cultural background with regard of their expertise in the engineering field itself.

To be ready in global market competition in term of work force, Indonesian IT engineers need to have both hard and soft skills. **Hard skills are the technical** expertise related to their field of work, including experience with some of language program and operating systems, experience building software applications, etc.

Contrary, soft skills are also the important part of engineers' capability including communication, creativity, adaptability, collaboration and leadership [1]. These soft skills are also valuable for getting recognized by colleagues and super ordinate and being more effective in doing IT engineering jobs [2]. **Hard skills are divided into 11 (eleven) elements** which are communications, people, marketing, work, time, career, job-interview, boss, motivating, and delegating smart, also being visionary [2].

The problem identified in this research is that Indonesian IT engineers have lack of soft skills is to ensure the project goal achieved by the engineering team. Engineering projects including the IT projects succeed when there is a balance of all factors to deliver the whole solution for the project goals[3]. **This research aims to** provide solution on problems related to the lacked in engineering soft skills faced such as communication, adaptability, leadership, and collaboration on culturally diverse teams. II.

RESEARCH METHOD AND DESIGN The first phase of the research project 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. This paper reports results from the second phase of the research project. 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. This study was conducted by developing a web based survey. The participant filled up the agreement and the survey answer on-line. III. **RESULTS** A. Research Participants Profile The total participants of this

study were 291 engineers working all over the world.

Figure 1 show their industry sectors and figure 2 shows the country of employment of the interviewees. In figure 1 shown that there are 47 Indonesian engineers who work in IT industry involved in this research. They are our focused subjects in this paper. Those IT engineers are working in various type of industry in some countries included in the list of countries in figure 1. Fig. 1. Participants by industry sector.

In figure 2 shown that the complete 291 research participants were working in 43 countries around the world in at least 9 kinds of industries. Fig. 2. Participants by country of employment. B. Elements Investigated This research investigated knowledge and experience of Indonesian IT engineers working in some countries in multicultural situation.

The engineers were asked about their work environment in related to the practice of IT engineering soft skills including communication, creativity, adaptability, collaboration and leadership. By working in overseas, Indonesian IT engineers found that they faced cross-cultural situation where they need to contact with people from different cultural background.

The Indonesian national culture is a type of Asian culture that is a group oriented or collectivist culture [4]. In collectivist cultures people act with the main intention to think the welfare of their family or group and then the nation and their work or project [4-6]. On the contrary, Western cultures are typically an individualist culture. They are not driven by a group perspective [4-6].

People work in a cross-cultural situation need to build up cross-cultural abilities. Those who are adjustable will effortlessly merge with their working environment and quickly develop confidence in behaving suitably. However, there is the possibility of unintentional inappropriate actions by people working in another cultural context [7].

Wenvesgat engis'tl in order to prepare them to be ready in global workforce market with consideration of cultural differences between Eastern (Asian) and Western culture. Those soft skills are also important including communication, creativity, adaptability, collaboration and leadership. IV. DISCUSSION In the discussion, we analyzed the 5 soft skills of IT engineer that are communication, creativity, adaptability, collaboration and leadership. A.

Communications In terms of communications, we have questions to investigate how the engineers perceived their communication styles depending on the objectives of the

communications. From figure 3, in daily conversation 35 out of 47 engineers feel comfort to communicate by direct face-to-face communication. Fig. 3. Communication styles of engineers in IT industry Contrary with their communication habit in discussion about complex topic, both in initial and later discussion, the engineers prefer to sending email to propose the ideas and discussing the later.

This is happened because the nature of IT engineering work is working on the computer. Moreover, they feel more confidence when talking about complex topic related to their work by email to minimizing misunderstanding between work team. In other part of the survey, the engineers also mentioned about their lack of confidence in speaking English in their daily and work related conversation also become one of the challenges in their readiness to face **global job market competition**. B.

Creativity Creativity is one soft skill that Indonesian engineers mastered out of 4 other skills. This is related to the work performance that they do in their job. Some engineers explained the observation that western people perform more effectively and productively than non-western. Effective and productive work is also known as smart work [8, 9] which must be organized and disciplined.

Pollock [9] suggests some tips for smart work: 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. Several engineers reveal that educational background from the family could influence their perceptions of how work effectiveness should be achieved [10].

At an early age, a person is taught to work responsibly and efficiently, in terms of time consumed. This idea was disclosed in the following statement: Yes, the cultural education provided by parents and the environment has an enormous influence in shaping the human character, and the effectiveness of the work is a result of the formation of character.

A person who is accustomed to work and given responsibility at an early age will have a tendency to be more responsible and tend to better appreciate time, which will affect the effectiveness of the person's work. (This is the result of observation and personal opinion; I can give no quantitative data to prove this point). (ES12) Other engineers said that the culture, in terms of national and religion-related culture, also influenced how they do their work [11]. C.

Adaptability 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 [12]. Part of cultural intelligence is knowing another culture and having basic skill for cross-cultural interaction [12].

The challenge for this IT engineer who works in Australia was the concern that the Australian accent is very different to what she had learnt, increasing her difficulty in understanding others and making herself understood by others. In addition, Australian words and idioms were also a new experience for her: The challenge in cross-cultural adaptation for me is in understanding the language, because I was newly arrived in Australia. I was not familiar with the Australian accent since the English that I learned over the years was American English.

(E7) In terms of adaptability that is the willingness to face the unexpected, they faced that different cultural background is the main factor in adaptation process [13]. D. Collaboration In term of collaboration, Indonesian engineers typically are good at work as a team. This fact is supported by Indonesian type of culture: collectivist.

Engineer E7 from the IT industry illustrates how she perceived the effect of the individualism-collectivism cultural dimension: Australian people tend to be individualist. While Indonesian people, like me, are group-oriented collectivists. In my work, as a new person I tend to lack confidence when standing as a 'me', I am more comfortable when I am part of a 'we', meaning I am more comfortable in a team. (E7) This IT engineer identifies that Australia is an individualist society.

Australians have a strong sense of personality and independence even when working in groups [14]. Australia has the second highest Individualism Index (IDV = 90) after the United States (91), and see figure 4 [15]. She added that in contrast to Australia, Indonesia has a group oriented collectivist culture.

Mostly Indonesians are more comfortable representing themselves as a group oriented person. As she mentioned in her quote, she is more comfortable if standing as', refls gr-oriented personality. She realized that in her workplace, there is clearly recognised different personality between individualist and collectivist team member. Fi .Casonfor emens te edcltra dimensions for Indonesia and Australia based on data from Hofstede [16] Eventhough Indonesians are good at team work, the engineers need to build strong teamwork to maintain the quality of work performance. E.

Leadership In individualist society, managers conduct weekly meeting to gather progress and/or difficulties in on-going project. In collectivist society, especially in Indonesia, managers need to be actively asked to their subordinates about their

progress and/or difficulty. Managers will wander around their subordinates to make sure the project running well.

The statements below show the effect of how Indonesian culture tends to see a supervisor as having full authority: Honestly, I still have my Indonesian cultural [perception] that a boss is someone who has full authority in the department. However, I try to be more democratic as a department head; I listen to my subordinates whenever they have ideas or suggestions.

(E1) Culture impacts on the way the authority is perceived. As an Indonesian, I feel I have to honour and respect my boss because his position is higher than me professionally.

(E4) Indonesian people tend to view that the leader as having absolute authority. But for me personally, I try to put myself and my leadership in the right position.

(E5) Moreover, 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[17]. V. CONCLUSION This research reveals that from the engineers experience in their work setting, some problem related to the lacked in engineering soft skills faced such as communication, adaptability, leadership, and collaboration.

In communication, they found that English language skill is the main problem in daily and work related conversation. In terms of adaptability that is the willingness to face the unexpected, they faced that different cultural background is the main factor in adaptation process. In leadership matters, the engineers needed to be able to manage various types of work colleague.

And for collaboration, the engineers need to build strong teamwork to maintain the quality of work performance. From our out of five needed soft skill that needed to be addressed in this paper, we identify the problems, and develop it into a framework for supplementary curriculum in engineering education in Indonesia for the preparation in workforce market especially to be ready in global competition.

This cross- cultural training is become an important thing as part of policy and business strategies for industry and academic institutions in Indonesia. This cross-cultural training will cover issues around strategies to interact with people from different cultural background. 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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