

SMALL INDUSTRY GROWTH RESOLUTION THROUGH THE READINESS FOR USING ANDROID TECHNOLOGY IN INDUSTRIAL REVOLUTION 4.0 CHALLENGE

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Abstract—Industrial Revolution 4.0 as the stage of technology influences many sectors include financial sector like small medium enterprises. This study aims to discuss some significant SMEs' variables and explore the readiness of small industry sellers to the new way of marketing such as the use of android phone. To establish the accuracy, some SMEs' sellers from across the difference regions in East Java, Indonesia are taken to take apart to this study. Some findings are found like the intention to market their products via android application are big but those are not matching with their effort, some SMEs' sellers found feel satisfied with what they have now, some SME's sellers are waiting for real action of the related party for actively guiding them to face this era, and many more. Some suggestions are also provided in this study to enrich this case study.

Keywords—Resolution, Readiness for using android Technology.

I. INTRODUCTION

Many academicians and practitioners have selected many objects for their studies in several existing objects but still small and medium enterprises (SMEs) sometimes do not get adequate attention in many countries to be much explored. Researchers sometimes tend to focus on big firms which have many crucial variables to be studied and have sophisticated resource to be explored. Previous case studies point that large firms like IBM, P&G and Xerox were trying to do many efforts for their innovation activities (Chesbrough, 2003; Dodgson, Gann, and Salter, 2006). Other previous studies reviewed the specific aspects of big firms like external source knowledge which is being used for the innovation (Lakhani et al., 2006; Laursen and Salter, 2006). Innovation until now still scoop up considerable amount of attention to be explored and studied however several researchers also believe that the open innovation is just limited to some objects like small and medium enterprises (SMEs). From these facts, several researchers are trying to review the innovation in SMEs (Lee et al., 2010; Parida et al., 2012; van de Vrande et al., 2009) and

other scholars agree that SMEs perform a significant role to the innovation (Chesbrough, et al., 2006).

The innovation related technology and information in this study is related with the Industrial Revolution 4.0. The alteration caused by the Industrial Revolution 4.0 makes the human resource of the Small and Medium Enterprises should race and go hand in hand with the change. This study focuses on the probe of the SMEs businessmen readiness for using the android technology as the outcome of the Industrial Revolution 4.0. This study also probes any possibilities and facts why the SMEs businessmen could or could not be ready with the alteration like the utilization of Android application and another goal is the discovery of any facts about the SMEs.

II. LITERATURE REVIEW

A. Small and Medium Enterprises (SMEs)

In Indonesia, Small and Medium Enterprises (SMEs) is one of the cantilevers of the economic sector. SMEs identified redound the economic development up to 60% and this is a substantial achievement that should be maintained and enhanced. Among existed sectors which is up to 16 creative economic sub-sectors, there are three sub sectors which dominated the SMEs field which are culinary (41%), fashion (18%) and creation sub sector (16%). SMEs is one of business type which have greatly contributed in economic development. In several recent researches, it is found that SMEs serve as the significant drivers of the economic development and SMEs also identified could take many important roles in economic aspects (Obi et al., 2018) like SMEs could fundamentally support the job creation, SMEs could significantly impact to the poverty alleviation through providing some job opportunities to the unemployment (Okpara and Wynn, 2007) and SMEs could significantly contribute to the improvement of the living standard.

SMEs in Indonesia is the combination from several types of business like the micro business, small business and medium business. Compared to Malaysia as the closets country, SMEs in Indonesia have more contributed to the Gross Domestic Products (GDP) which is until 60,6% (Suryani, 2018) while Malaysia just 32% to

the GDP (Tahir *et al.*, 2018). SMEs in Indonesia own many varieties in their business types like grocery store, cracker maker and seller, traditional food maker, food and drink seller, catfish breeder and seller, toy seller, small clothing manufacturer, small until medium size service providers and many more. According to the Communication and Information Ministry, around 8% or 3,79 million of businessmen has gone online.

In the Association of South East Asian Nation (ASEAN), SMEs is potential to develop. It is also resulted from many factors such the ease of doing business. From the World Bank's Ease of Doing Business Index of six countries from ASEAN, Singapore ranks second best and followed by Malaysia ranks 24th, Thailand 26th, Vietnam ranks 68th, Indonesia 72nd and Philippines ranks 133rd from 190 countries (UOB, Dun and Bradstreet and EY, 2018).

B. Industrial Revolution 4.0 and UMKM Gate

Industrial revolution has been genuinely become big phenomena all over the world. The change which occurred almost three centuries ago have influenced many sectors in that era until now. The industrial revolution is marked by great transformation in agriculture, manufacture, development, transportation and technology and also gives huge impact on culture, economic and social condition in the world. Now the industrial revolution has achieved its fourth stage and many alterations happens. The industrial revolution 4.0 not only prints the civilization but also optimizes what already exists. This revolution possesses something unique than the previous revolutions. On condition that the previous industrial revolutions just produce many sophisticated products such as electronic devices, information and technology system and automation, now the industrial revolution 4.0 is able to connect one sophisticated product to others with the result that many products could be integrated.

Similarly with the 3rd industrial revolution, the industrial revolution 4.0 marks its stage through the creation of sophisticated products like autonomous vehicle, 3 dimension printing, advanced robotic, big data, artificial intelligence, block chain and cryptocurrency, augmented or virtual reality, gene sequencing, synthetic biology, new neuroscience and many more. So many ultramodern products are produced and influences the human life.

One of the creation of industrial revolution 4.0 that could be adapted by the Small Medium Enterprises as the marketing tool is the android application. The android application used in this case study is namely UMKM Gate. The UMKM Gate is an application in a Linux-based operating system designed for touch screen mobile devices such as smartphones and tablet computers. UMKM Gate as one of the Android-based applications is an application prepared as an online marketing tool for micro, small and medium enterprises

(SMEs). For SMEs, amid the development of information communication technology in the Industrial Revolution era 4.0 Android-based applications at the moment are one of the appropriate and proper tools to be used to market various products.

For SMEs businessmen, the general purpose of making this UMKM Gate application is to market SMEs products so that they can be recognized by more consumers and the results can improve the economic condition. Then the specific purpose of making this application is to improve the skills and knowledge of the community, especially for SMEs in one of the latest marketing tools and to increase the potential of the product. For researchers, it is hoped that this application will be able to provide value for the benefit and added value for SMEs so that it can create a climate of SMEs that are empowered in Indonesia.

III. METHOD

The method of this qualitative study is case study. Case study is selected for this research since the aim of this research is to explore the potential information about the readiness of Small and Medium Enterprises (SMEs) businessmen when facing the industrial revolution 4.0. The case study which is a holistic inquiry that investigates a contemporary phenomenon is also the reason why this method is suitable for this study. A phenomenon pointed here is about the SMEs businessmen that trying to survive facing the alteration of technology nowadays and they have to change themselves to be able to race against change. The change of the SMEs businessmen in facing the information and technology alteration is a big case in Indonesia remembering that the human resources of SMEs businessmen like the seller of food and drink, the seller of traditional toys, small clothing manufacturer, grocery store seller and many others are still low in acquiring the ability to use, access, and utilize the technology.

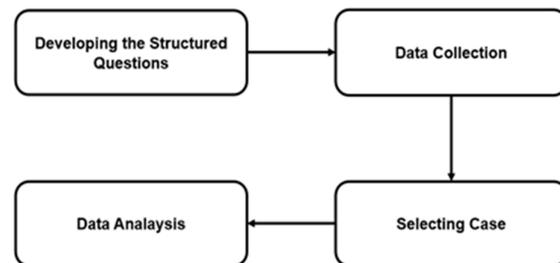


Fig 1. The Case Study Process (Adapted from Perry, 1998)

According to the adoption of case study process provide from Perry (1998), the first step is Developing the structured question. In this study, the structured questions were preferred to be selected than the unstructured questions seeing that the structured questions will assist and guide the researchers' interview activities in the

condition that have been previously planned and determined. Some researches sometimes choose to use unstructured questions for their research at first and make open questions flowing with the interviewee's answers until the data needed are found. Both structured and unstructured questions have starting question which should be able to invite interviewee to tell the story of their experience (Perry 1998).

The second stage of this method is the data collection. The data collection could be obtained through structured or unstructured interview. This study used the mix type of interview both structured and structured interview to make the data collection be rich and any hidden data are revealed. One of the important items should not be forgotten at the interview stage is the preliminary of the probe question (Perry, 1998). Another value of probe questions is that it could provide reliable framework for cross-case analysis data (Yin, 1994). The probe questions in the beginning of the interview process are needed when the interviewees do not raise them in the first (Easton, 1994). The probe questions are usually started with the word "How" (Perry, 1998), the question tag than could not be answered with just yes or no.

The third stage of this method is selecting case. Selecting cases is needed when the phenomenon studied generates multiple cases which are needed to enrich the information. Some researches need multiple cases seeing that they enable cross-case analysis which is used for enriching the theory building (Perry, 1998). The use of multiple cases should be presumed as the multiple experiments and they are multiple respondent (Yin, 1994). This statement signs that the case studies in some conditions should deepen the data collecting through the interview. This study focuses on the phenomenon of the SMEs businessmen readiness to face the technology alteration in the Industrial Revolution 4.0 more specifically their readiness to use the Android technology. The last stage of the case study process is the data analysis. The data analysis will be combined with some theories to strengthen the obtained data analysis. The theory replication is the core of the case selection and also make the data analysis more rigor (Perry, 1998).

For finding the proper subjects or interviewee, the researchers used the linear snowball sampling or chain-referral-sampling which is the sampling method that begins with recruiting a single participant, while the second nominee recruits the third participant. The chain continues to refer linearly up to the end of the sampling (Etikanet al., 2015).

IV. DATA OBTAINED

The data analysis is one of the important part of the case study presentment. Through the obvious explanation, the case study content and point could be caught and understood. Before the stage of data analysis started, this study will explain about the object of the study and the reason why the researcher chose SMEs

which focus on the culinary sector. It has been explained above that culinary is the SMEs sub-sector that has the biggest number which until 41% from the total of SMEs followed by fashion (18%) and creation sub sector (16%).

When researchers got to the to the field off, that was hard to find the subject of the research since the determination of some standard or criteria should be owned by researchers such as the subject who owns the unique products and the subject who is include in SMEs criteria. For a moment by using snowball sampling or chain-referral-sampling, crossing one place to other places and meeting one subject to others, finally the research found the proper subject which was the culinary SMEs businessmen. By doing the deep interview, it was found that the culinary SMEs businessmen were gathered in several communities and the communities that quite active enough for now is the CTH or Cooperative Trading House.

The CTH is the community which mediates the SMEs businessmen and the wider market access. According to the SMEs and Cooperative Agency or Dinas Koperasidan UMKM in Bahasa, there are four aims of CTH establishment.

1. Mediating the SMEs businessmen and the potential buyers, especially non-retail buyers.
2. Facilitating the development of business networks with domestic and export markets.
3. Providing technical consultations and guidance as needed to businessmen and traders from SMEs members of trading houses, as well as conveying information about market dynamics and trends, the quality of products and packaging in order to obtain non-retail markets especially and retail.
4. Facilitating the needs of SMEs members of trading houses in order to access production, distribution and marketing technologies and bridging the relationship with funding sources.

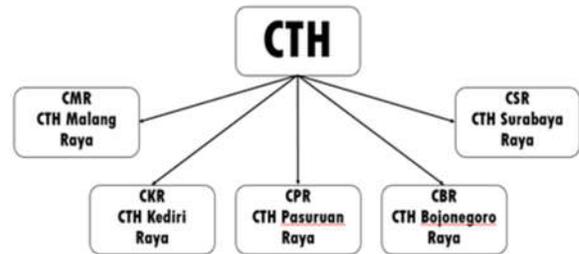


Fig 2. The Cooperative Trading House

In East Java province, Indonesia, it was identified that there are five Cooperative Trading Houses until 2018. The first CTH is CMR or CTH Malang Raya. The CMR consist of several regions like Batu, Malang and Blitar. The second CTH is CKR or CTH Kediri Raya.

The CKR consist of several regions like Kediri, Tulungagung, Nganjuk, Madiun, Trenggalek and Jombang. The third CTH is CPR or CTH Pasuruan Raya which consists of Pasuruan and Probolinggo. The forth CTH is the CBR or CTH Bojonegoro Raya which consists of Bojonegoro Lamongan, Tuban and Mojokerto. And the last is CSR or CTH Surabaya Raya which consist of Gresik, Madura and Sidoarjo (the number of the regions could increase or even decrease depend on the condition).

From the first found SMEs businessmen which is the leader of CMR, the researchers got much information about the next subjects or interviewees and also got quite much information about the readiness of the SMEs businessmen for using the Android Technology. More comprehensive information about the readiness will be discussed at the result phase.

V. RESULT

The data obtained from the interviewees, it was found that 86% subjects are agree to the existence of Android application like UMKM Gate to support their business especially to market their products to the customers. Most of them were agree that in this disruption era, they should change the way they think and the way they act. If they just stick out with what they do now, They can not develop themselves or even just for survive. The UMKM Gate as the tool of marketing products will help them to expand to the wider market.

The 14% of the subjects are not agree with the utilization of Android application. They think that Android application just made them even complicated. For now, they just felt grateful about what they get and the market they have. They can live their life even without the Android application. The offline market with the offline way is enough for them. If they use the Android application, they will just spend their time to learn and focus on the application. If they hire a person to run the application, it will spend their money and their profit will decrease. Most of the 14% subject are the stodgy who are afraid to change and are not ready for using the Android application.

Other results of this research are 57% subjects are ready for using the Android application. They are waiting for the new tool for marketing their products and finally could improve their financial income. The 29% others are not ready to use the Android application. They are not ready since they have no ability both skill and financial to operate the Android application. The rest of the subjects which are 14% are neutral. They just still think over about the benefit they get by using the Android application. They still feel doubt about the benefit.

The main contribution to this application was obtained from visited to the SMEs groups in Pandaan, Pasuruan Regency and SMEs groups in Probolinggo. The report describes the response of SMEs groups in

Pandaan, Pasuruan Regency and SMEs groups in Probolinggo regarding the development of SMEs Gate application as a medium that bridges SMEs to maximize the marketing of their products. The UMKM Gate application is one of the android-based applications that focuses on the marketing and product introduction activities of SMEs to the wider community online with the aim of increasing the potential of products and the economy of SMEs players. From the field visits that have been carried out, the results and inputs are built to develop the UMKM Gate application.

1. Pandaan SMEs Group, Pasuruan Regency. From the results of a visitation to the SMEs group we got input in the form of the need for training or workshops on packaging. The need for this packaging workshop is because there are still many SMEs players who sell their products in a simply way so that in terms of appearance they do not have attracted the attention of consumers to buy their products. The second point is about expeditions. In terms of expedition or shipping, it is expected that there will be cooperated with an expedition company that can provide support for this application. The hope is that with the cooperation with an expedition company, the process of shipping goods becomes easier and shipping costs can be reduced to cheaper. The third point is regarding the calculation of the selling price. The importance of the sale price calculation is intended to find out the right price of a product when marketed through the SMEs Gate application. The fourth point is regarding the existence of a joint account. The joint account is intended to facilitate the payment of consumers for the products they buy and the withdrawal of profits by SMEs on the products they sell.
2. Probolinggo SMEs Group. From the results of a visitation to SMEs in Probolinggo, there are several points that can be used as constructive input. The first point is about funding. Where's currently funding is still a major obstacle for SMEs. The second point is regarding pricing strategies. Price formation is recommended to increase the price of goods sold but by freeing the cost of shipping goods. The third point is promotion. Promotion is intended to attract consumers because the competition at the e-commerce level is so tight. The fourth point is the promotion through the provider. This method is used by sending text message promotions by the provider when someone enters an area that is included in the promotion area of a product.

Thus reports on the results of SMEs visits that can be used as a reference to improve and build the UMKM

Gate Application which is currently still in the development stage.

VI. CONCLUSION

By doing this research, it is found that most of the SMEs businessmen which here is focused on the culinary sector are agree and ready to use the Android technology. They believe that the Android application like UMKM Gate will help them to market their products and will give more benefit in the future. Vice versa, for the subjects who are not agree and not ready to use the Android application, they think that the Android application just make their business more complicated. The researcher suggest that the next research will need to use the quantitative method and more vigorous theory to strengthen the study. The theory like the Technological Acceptance Model (TAM), Innovation Diffusion Theory (IDT), Theory of Planned Behavior (TPB) or Theory of Reasoned Action (TRA) hopefully could improve the more valuable information.

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