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Modelling Business Activities of Small and Medium Enterprises Using Soft System Methodology

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Abstract:

Indonesia is a country with a high growth population rate. This condition encourages Indonesian government to provide and facilitate enough jobs for all Indonesian people. This problem can be tackled by supporting Indonesia people to build small and medium enterprises known as Small Medium Enterprises (SMEs). From the survey results, the type of business classified SMEs amounted to 53.82 million of the total business in Indonesia.One of alternatives to support SMEs in order to promote and sell product is information technology development including plan, policy and infrastructure. However, to develop information technology (IT) in order to support SMEs activities must be planned based on real business process. This research is aimed to model business activities of SMEs in Indonesia by using soft system methodology (SSM). As the result, factory or manufacture, small medium enterprises and costumers are main actors involved to business activities. The result of this research can be used as basic to make plan, policy and infrastructure of technology to support small medium enterprises (SMEs) in Indonesia.

Keywords **—Soft system methodology, small medium enterprises, conceptual model**

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I. INTRODUCTION

The increase of population encourages economic growth in Indonesia. However, the proportion of employment and population is imbalance. This problem can be tackled by support Indonesia people to build small and medium enterprises known as Small Medium Enterprises (SMEs)[1].

From the survey results, the type of business classified Small Medium Enterprises (SMEs) amounted to 53.82 million of the total business in Indonesia [2].

Referring to the results of the survey indicates that there should be special attention to encourage the development of classified Small Medium Enterprises (SMEs). This is important to supportSMEs in business competition with large-scale enterprises [3], [4].

One of alternatives to support Small Medium Enterprises (SMEs) in order to promote and sell product is information technology development including plan, policy and infrastructure[5][6]. However, to develop information technology (IT) in order to support Small Medium Enterprises (SMEs) activities must be planned based on real business process[7]. In IT concepts, business process model is needed as references to develop information technology in order to make a plan corresponding to business needs [8].

One of general approach to model business structure that used many researchers is soft system methodology (SSM). These approaches have been

used to several cases. For examples, Williams (2005) attempted to make a concept of model business process from multi-stakeholder[9]. Research by Ramadhan, Sensuse, and Arymurthy (2011) is successfully make a model of business process in e-Government domain[10]. Then, Wicaksono and Shihab (2015) completed research about business process of logistic distribution using SSM [11].

In this research, we attempted to model business activities of small medium enterprises (SMEs) in Indonesia by using soft system methodology (SSM).

II. LITERATURE REVIEW

This section presented insight about Small Medium Enterprises (SMEs) in Indonesia, Soft System Methodology (SSM) and related works.

A. Small Medium Enterprises (SMEs) in Indonesia

Indonesia is a country with high population rate. This condition encourages Indonesian government to provide and facilitate enough jobs for all Indonesian people. However, the proportion of employment and population is imbalance.

This problem can be tackled by support Indonesian people to build small and medium enterprises known as Small Medium Enterprises (SMEs). From the survey results, Small Medium Enterprises (SMEs) in Indonesia is amounted to 53.82 million of the total business in Indonesia [2]. However, those SMEs must be improved and supported to reduce imbalance percentage of employment and population.

B. Soft System Methodology

Soft system methodology (SSM) is introduced by Peter Checkland in end of 1960 [9], [12]. Soft system methodology (SSM) is consisted ofsome phases with last goal to model a complex problem[9].

In the beginning, situation definition is defined in order to express problem situation. Problem situation considered problematicispart of situation definition to explain problem as research object [13]. Furthermore, problem situation expressedis image of problem based on previous phasethat is depicted in rich picture [14].

The next phases are root definition until conceptual model which are presented in Figure 1 below. Number phases of SSM are 7 (seven) sequential phases.

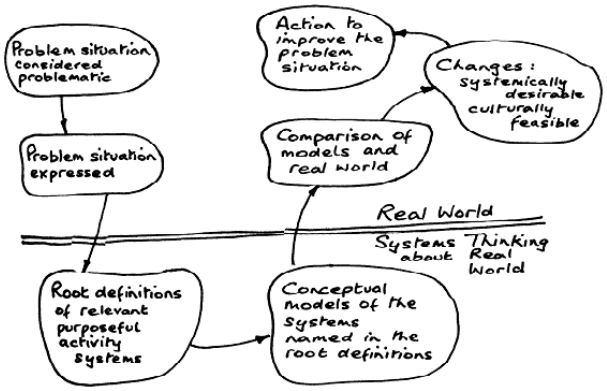

Fig.1 Soft system methodology [9]

C. Related Work

The research works of soft system methodology have been successfully completed by Williams (2005), Ramadhan, Sensuse, and Arymurthy (2011) and Wicaksono and Shihab (2015). Williams (2005) attempted to make a concept of model business process from multi-stakeholder [9]. Research by Ramadhan, Sensuse, and Arymurthy (2011) is successfully made a model of business process in e-Government domain [10]. Then, Wicaksono and Shihab (2015) completed research about business process of logistic distribution using SSM [11].

III. METHODOLOGY

This research is quantitative research to model business activities of small medium enterprises (SMEs) in Indonesia. The phases of this research work are presented in Figure 2. There are 5 (five) main phases of this research, i.e. literature review, data collection (interview), transcribe, modelling and reporting result.

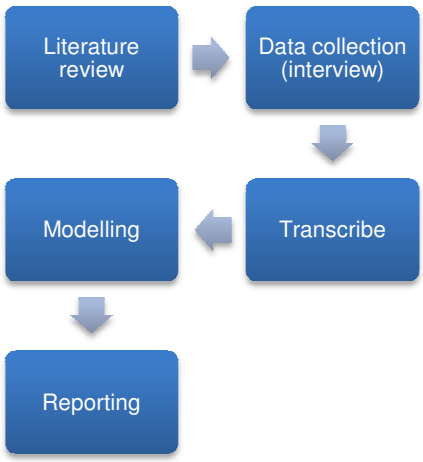

Fig.2 Phases of research work

A. Data Collection

This research used interview as method to collect data. In general, there are two types of interviews, i.e. unstructured and structured interview. In the unstructured interview, the interviewer will suggest the theme to interviewees and communicate each other. However, scope of theme is remembered by interviewer in their mind [15]. In the structured interview, the interviewer has specific questions and scope to get the clear and concise answers[16]. This research used a combination of unstructured and structured interview named semi-structured interviews [17].

We interviewed 10 (ten) SMEs in Indonesia to get perspectives about their daily business activities. In general, we asked for identity, technology literacy and business activities to interviewee.

B. Research Question

The research questions were defined to keep the research focused. The research question is how to model business activities of small medium enterprises (SMEs) in Indonesia by using soft system methodology (SSM)?

IV. RESULT

In this part, we will deliver conceptual model of web content management system for small medium enterprises (SMEs) based on result of soft system methodology (SSM).

C. Phase 1: Problem Situation

Many small and medium enterprises (SMEs) Indonesia are still used traditional or conventional approach to manage their business. This impacted to low capability in promotion and transaction.

D. Phase 2: Problem Situation Expressed

Factory or manufacture, small medium enterprises and costumers are identified as main actors in problem situations. The alternative to tackle problem is the technology development to support business activities in order to gain promotion and transaction.

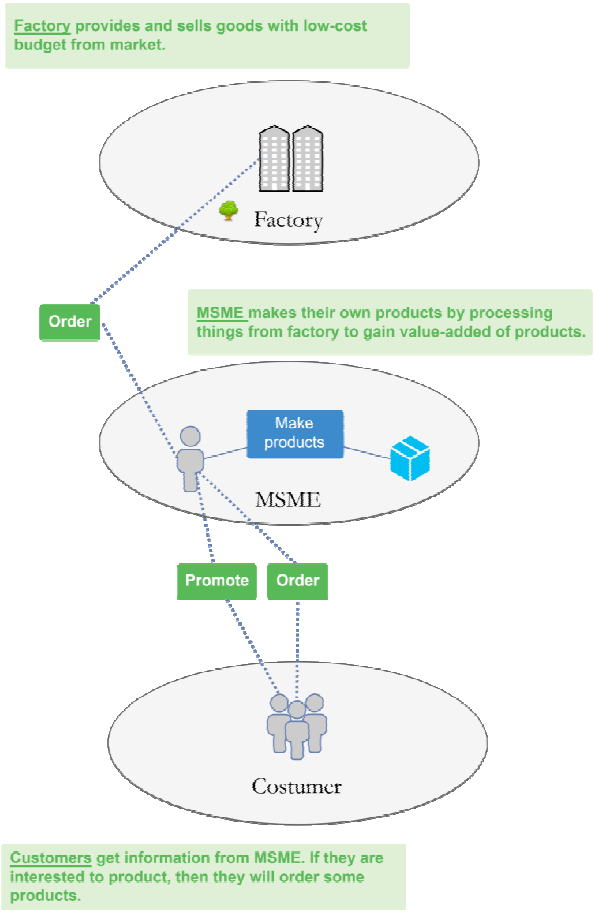

Fig.3Rich pictures

Based on Figure 3, small medium enterprises (SMEs) and costumers conducted two main activities, including promotion and order. SMEs processed goods from manufactures by modifying and adding things to products in order to gain the value-added.

E. Phase 3: Root Definitions

In this phase, we assigned root definition of problem based on rich picture that is depicted in Figure 4. The root definition can be concluded as follows:

> Factory or manufacture, small medium enterprises and costumers are involved to business transaction. Factory provides and sells goods with low-cost budget from market. MSME makes their own products by processing things from factory to gain value-added of products. Customers get information from MSME. If they are interested to product, then they will order some products.

Fig.4Root definition

Then, CATWOE is defined. CATWOE is Customers, Actors, Transformation Process, Weltanschauung, Owners, and EnvironmentalRestraints. The guidance to define CATWOE as follows[18]:

1. Customers: Who willget benefits from this process? Benefit form outcome of transformation process later.
2. Actors: Who are people involving to business process that have roles and responsible? In this case, it can be identified by looking for all things that conduct activities in business process.
3. Transformation Process: What is transformation process that will be achieved? It can be started by listing input, process, and output from all activities.
4. Weltanschauung: What is the system of beliefs or values that are considered involving to business process?
5. Owners: Who are people that can stop the business process or identify as owner of problem?
6. Environmental Restraints: What are factors influencing to situation (e.g. ethical issues, culture and so forth).

Based on root definition and problem situation, we constructed CATWOE analysis as follows:

TABLE I
CATWOE ANALYSIS

Questions	Answers
C	Small medium enterprises
A	Factory or manufacture, small medium enterprises and costumers
T	Low capability in promotion and transaction → applied technology to support business activities in order to gain promotion and transaction
W	Computer literacy of people in small medium enterprises
O	Small medium enterprises
E	Government

F. Phase 4: Conceptual Model

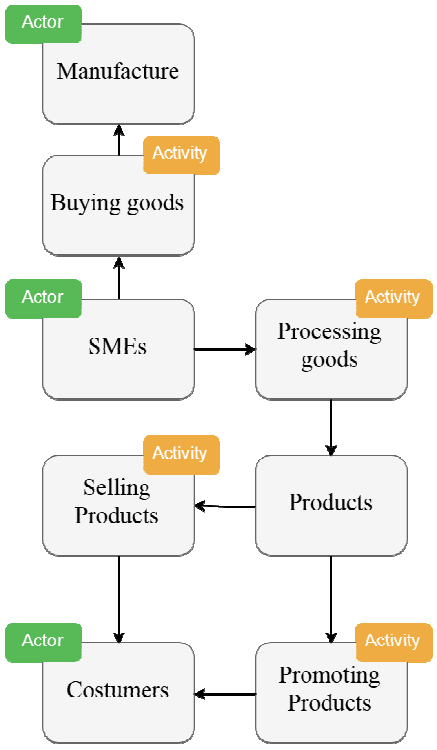

Fig.5Conceptual model

Based on previous phases, we attempted to make a simple model of business process in small medium enterprises in Indonesia, in which is depicted in Figure 5.

In general, SMEs conducted communication and transaction form manufacture to get goods with low-cost. Then, SMEs processed goods to get value-added. SMEs promoted their products to increase purchase intention of costumer.

G. Phase 5 an 6: The Real World and Define the Changes

Small medium enterprises as main actor of business process must interact to factory or manufacture and costumers. The interaction between small medium enterprises (SMEs) and factory or manufacture is related to business transaction to get materials and goods with low budget. This interaction did not need psychological approach to attract them. In this relation, small medium enterprises (SMEs) is acted as costumers and only recorded and monitor their transaction.

The interaction between small medium enterprises (SMEs) and costumers is related to promotion and transaction. SMEs must understand about their target market before promoting and selling products. SMEs should make strategies to attract new customers interested into the offered products.

H. Phase 7: Taking Action

The application of this model is to increase low capability in promotion and transaction in SMEs by applying technology to support business activities. This model is involved factory or manufacture and costumers. However, before this model implemented, developers must consider about computer literacy of people in small medium enterprises.

V. CONCLUSION

The results of research showed that the soft system methodology is a useful approach for modeling business process, particularly if there are complex and unclear processes. The proposed model from this research is generated to the later research in order to develop a system.

As the main business activities, factory or manufacture, small medium enterprises and costumers are involved to business transaction. Factory provides and sells goods with low-cost budget from market. MSME makes their own products by processing things from factory to gain value-added of products. Customers get information from MSME. If they are interested to product, then they will order some products.The application of this model is to increase low capability in promotion and transaction in SMEs by applying technology to support business activities.

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