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THE APPROACH OF SOFT SYSTEMS METHODOLOGY FOR SYSTEM ONLINE MANAGEMENT CONSULTANT CONSTRUCTION

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Abstract: Consultant as a service provider konstruksi in order to realize its goal to ensure public safety and create a comfort environment of the construction need to organize a system of internal governance of the company. Governance is translated into the stages of the stages in the implementation of Construction Services. Soft Systems Methodology is the methodology suitable to assist the consultant planner. This methodology can explain their purpose and then designing the system of human activity to achieve these goals. The stages that exist in the methodology of SSM consists of 7 stages that starts from the verification problem situation that is not structured through the design of the system of human activity which are expected to help improve the situation. Think the system is a field transdisiplin that appears as a response to the limitations of a technical approach in the process of reduction to solve a certain problem which in this case is attempted to be applied through the SSM as a method in the application of the online management system (OMS) consultant planner construction. Using the approach of Soft Systems Methodology, manufacturing management system online (CSO) will more fully describe the problems that occurred previously.

Keywords: SSM, OMS, consultants, planners, construction

INTRODUCTION

The construction of the infrastructure that is being developed in Indonesia is an activity that is carried out as the embodiment in a business of construction services. Business of construction services have a very important role to the success of the development. The

implementation of construction services consists of 2 components, namely: 1) provision of construction services business, and 2) the implementation of the provision of buildings (Ministry of Public Works and Housing, 2017). The consultant is a component of the provider of the services included in the business of construction services. Consultant planner in the activities of the implementation of the business services the construction can be done alone or through binding of construction services. The consultant that is a business entity requires the internal governance in the conduct of the activities of the construction services. The industrial revolution 4.0 which is characterized by the rapid development of internet technology to compile the information system construction services are integrated into a necessity to soon be able to apply the system of internal governance as a form of operational management of the consultant planner. Information system that generates data recording the operational management of the office of the consultant planner of the construction will be a collection of data with time series will eventually generate big data. The problems often faced by governance in the consultant planner is a limitation in having the necessary resources in achieving the objectives of the consultant planner. The purpose of this Study is to determine the approach of soft systems methodology (SSM) in the online management system (OMS) as the completion of the operational issues the office of the consultant planner of the construction. With the SSM is expected to help consultants construction planners in applying the OMS as the operational activities of a provider of construction services online. SSM was developed by Peter Checkland in the 60s in the UK. This methodology was originally used as a modeling tool in understanding the problems described.

TINJAUAN LITERATUR

Management is an activity in utilizing resources to achieve the goal. Resources in general in the group top 5 groups, namely: 1) the human (man), 2) materials (materials), 3) machinery/equipment (machine), 3) methods/ways of working (methodes), 5) capital money (money) and one additional group, namely 6) market (market). Available resources are generally limited so that the implementation can make a problem in achieving the goal that is achieved. Problems and obstacles arising can be overcome by doing process management (Muh. Nur Sahid, 2017). Resource planning consultant in the implementation of the construction services provider has an important role. The activities of the construction services that the execution time is limited to be problems when the demands and intensity of their activities change rapidly. The consultant as a provider of total power, the kind of skills and expertise to follow the changing demands of existing activities and competitions that compete.

The operational management of the planning consultant is an activity in managing data and information to the maximum with the use of all group resources consultant planner in the process of transformation to be the product consulting services. Product services consulting planners expected to be the output berkuantitas, quality in accordance with the expectations of the company and the user. Operational management has the objective, namely: 1) Marketing that generates demand, 2) production that generates the output, 3) financial which oversees the cash flow of the company (render, 2009). Operational management is important to learn due to all the components of the resources within the company influence and are influenced by operations. A better understanding can be obtained by berintegrasinya all the components in resource

companies both factors internal and external. Operational management can be a consideration in the decision. The components used in decision-making, namely: 1) the Model, 2) the Approach kuantitatif, 3) Matrices the performance, 4) the analysis of exchange, 5) system Approach.

Approach system used as a tool in analyzing the system consisting of the components of resources that integrates information and technology in it. Approach system expected be able to inform problems of structure, problems of the process and the problem of the relationship between the two. The problem can be analyzed using the approach and improvements can be made to anticipate problems early. The information in the system approach can be developed and can be done continuously update.

The approach system can store the historical data recorded in the documents of each transaction can be used as parts for materials of big data. A systems approach to predict a projection of the top events in the future. Forecasting (forecasting) is a mode to be used by the management to be able to estimate a future value.

SSM is an approach which is used as a tool in modeling evolved into learning and development in deciphering a problem. This methodology is also used to analyze and model a system that integrates the technology (hard) system and a human (soft) system. SSM can be used as a process modeling consultant planner as an organization and an environment that requires modeling in change management. This methodology can help an organization, namely: 1) explain their purpose, 2) identify conditions and problems, 3) answer the question, 4) determine how to perform to reach those goals. Assumptions are often used in the SSM, namely: 1) the problems faced by the organization is less defined, 2) stakeholders interpret problems differently, 3) there is no objective reality, 4) the human factor is important, 5) the approach is creative and intuitive in problem solving.

The stages that exist in the methodology of SSM is composed of 7 stages of the process, namely: 1) clarify the problem situation that is not structured through the design of the system of human activity which are expected to help improve the situation (Checkland), 2) Review the problems with the use of a particular technique, 3) Using Root definisian and CATWOE as destination information from the system the selected activity, 4) Shaping the conceptual model formed from the patterns of thought, 5) Comparing conceptual models with existing, 6) to developing the system in accordance, and 7) improving the situation of the problem by preparing the solutions and performing application

The way of thinking in systems is a field and a new view that can help to analyze the problem as a whole and not separate. In this way arise from the impact arising from the limitations of the approach are in the reduction process to solve a certain problem. The application of this way of thinking system in the consultant planner construction applied through the SSM as a method in the activity Management System Online Consultant Planner Construction. SSM built during the 1980s by the organization/institution is aware that the approach in the mechanics of the top level to the level below in the organize of management. The process that occurs not work quickly to change the surrounding environment.

Soft systems methodology (SSM) is an approach to solving problems that are complex that are not structured based on the analysis of holistic and think system. SSM is also a methodology of participator that can help stakeholders in different to understand the perspective of each stakeholders. The goal to create a system of activity and human relationships within an organization or group in order to achieve goals is one Focus of the SSM.

The basic concept of the SSM starts from the premise that the participation of a person in a process of finding the conditions of the problem and how to fix it. Each person will generally prefer to understand the expected improvements, feel to have these problems, and be committed to change it. SSM is a methodology suitable to help an organization in clarifying their goals and then design a system of human activity to achieve these goals. SSM can be used to facilitate the process of change in many sectors of private and public organizations (Sumadyo, 2016)

RESEARCH METHODS

The research method contains the implementation of the SSM in the system of operational management of the consultants construction planning. The application of SSM is done with the use of the Technique CATWOE and Rich Picture in describing the problem situation in a structured way. Online system Management applied in the resolution of operational problems faced by internal companies. The subject who made the study is a consultant planner.

FINDINGS AND DISCUSSION

The process of SSM does not restrict the problem on a particular variable alone but try to identify as many as possible aspects (variables) that interact in the system. Thus defining the problems will be more complete because consider a lot of aspects and is able to anticipate the possibility of change (dynamics) that will occur.

To use SSM in an effort to solve problems that occur and then give recommendations for improvement then there are seven steps as seen in figure 3 below.

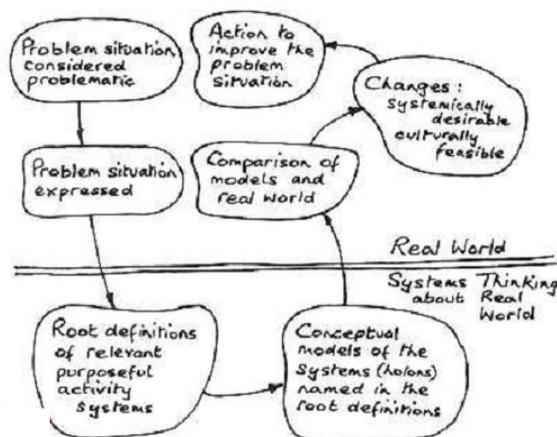


Figure 1 The Seven Stages Process of SSM

Description of the problem, namely beginning to recognize the problems that are happening, namely : 1) the Depiction of the situation of the problem in the diagram, rich picture, which draw a sketch of the situation of real problems in a diagram, rich picture are great (the helicopter view), 2) Defining the key words (the root definitions), which collects key words that must be defined in the form of the way a business process is a textual and concise. From the Root Definition is mapped into the elements of the CATWOE (Client, Actor, Transformation, World

view, Owner, Environment), 3) Manufacturing system model based on the root definitions, 4) Compare the model with the actual situation, 5) make changes/adjustments, and 6) make improvements/solutions to the system are recommended.

The implementation of Soft System Methodology In the System of Operational Management of the Consultants Construction planning in general, then each step contained in the process of SSM is conducted. The steps performed are as follows:

Step 1 : Description Of The Situation Problems

The operational offices would always have problems in the management of limited resources and management in the efficiency of expenditures of the office. Operational office in question is the consultant that construction is a service company that provides a resource of experts and engineers with constraints in resources, time and cost resources in project construction planning.

Step 2: The Problem Situation Expressed (Rich Picture)

Data and information were collected by doing observation, interview, training, and discussions then performed depiction of the situation of the problem into the diagram, rich picture (problem situation expressed). This stage is performed by drawing a sketch of the situation of the real problem into a diagram, rich picture are great (the helicopter view).

Step 3 : Definisi Root dari sistem relevan

LLangkah is used to connect the problem to the system existing with the manufacture of the form of the 'root definition' that explains the process in achieving the goals are: A system to do X, by (means of) Y in order to do Z. With X, Y, Z as follows:

Tabel 1 Variable Root definition

Variable	Activities
X	What system do
Y	How do
Z	Why do

From the form of the then formulated the 'root definition' as follows: the operational office may be assisted by a system of online management that is integrated between several divisions to perform operational processes such as recruitment online, recap admin in realtime, recap project undertaken, every project online, to payroll automatically (X). System management online this is done by the IT division of the office of the Consultant Planner with customized operational process office that has been running (Y). Operating system online was created with the aim that the process of administration, finance, HR and project runs in real time and online and can be used in general by all levels of management in the office of the construction consultant of such (Z).

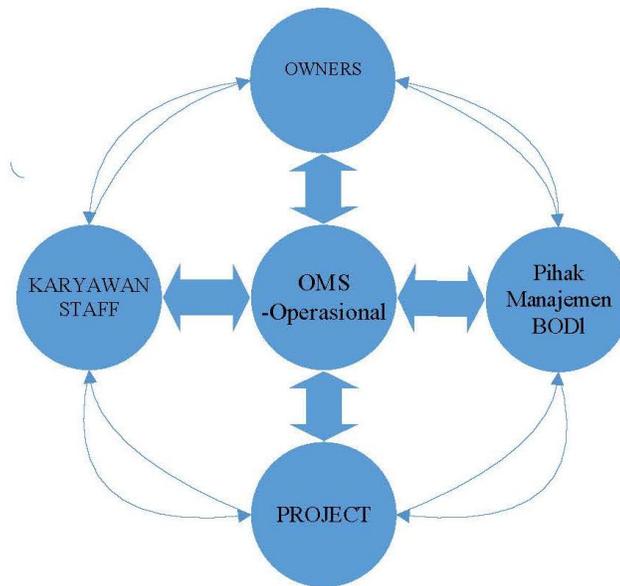
Tabel 2 The elements of CATWOE Management Consultant

Elemen CATWOE	Description
Customers	Employer (the Public and the Department / local Government)
Actors	All The Staff Of The Office
Transformation	The process of transformation of the management / office operations consultants can terindetifikasi in real time and automatically.

<i>World View</i>	Simplify and accelerate the process of office operations and services consulting services online
<i>Owners</i>	Consultant Planner
<i>Enviromental Constraints</i>	Operational procedures and services consultancy services online

Step 4: The conceptual Model of the ‘root definition’

This stage makes the system model a conceptual for each system, the model described by the activity model. Based on the results from stages previous to the problems that arise then made a system of online management that is systematic and can be used by each actor involved in the process of office management.



Definisi Akar Gambar 2, Manajemen Konsultan Perencana.

Followed by determine and measure performance (*performance*) model the efficacy, efficiency and effectiveness.

Table 3 The Size Of The Performance Management Planning Consultant

Performance Measures	Description
<i>E1 (efficacy)</i>	Whether the use of CSOS can reduce the error-errors that often occur during the process operational?
<i>E2 (efficiency)</i>	Whether the use of OMS can save time in the process of administration, recruitment, and consulting services online?
<i>E3 (effectiveness)</i>	Whether the use of CSOS is the most appropriate solution to overcome the problems that occur in the process of administration, recruitment and consultancy services online?
<i>World View</i>	Simplify and accelerate the process of office operations and services consulting services online
<i>Owners</i>	Consultant Planner Construction
<i>Enviromental Constraints</i>	Operational procedures and services consultancy services online

Step 5: The comparison Between the Model and the Real World

Compare the model with existing conditions (comparison of models and real world), which is a comparison between a sketch of the existing situation with the model created. This stage in the implementation can cause new ideas for change. Comparison table model and the real world can be seen in Table 3.

Table 4 The Size Of The Performance Management Planning Consultant

<i>Activity</i>	<i>Is it done in the real situation? How is it done?</i>	<i>Comments, Recommendation</i>
The Staff of the office; the management and owners uses the OMS as a medium operational work that is done	Some elements of management are still confused do OMS	Need to create end user manual and socialization
The integration of system management and services online with OMS	Already running in the internal office with the good but to the owner is not maximized	The need for socialization to the owner
Recapitulation of salary and the cost online could not be online	Still there is a little problem because there is no integration with attendance machine and the simplification of the cost of consulting services online.	Need to the absence of standardization of the price of consulting services online.

Step 6 & 7: Changes may be made and action to repair the situation

Do a repair/solution to the system of recommended (action to improve the problem situation), the final phase is to do recommendations for improvements to the old system. The proposal of Management improvement Planners Consultants can be seen in Table 5.

Table 5 The Proposal Of Management Improvement Planners Consultants

The proposed Changes can be Done	Action to Repair the Situation
Socialization to Staff and Owner for the use of OMS	Do scheduling for the socialization after the process of making CSOS
Training how to charging the OMS in consultation services online do	Carry out some training session or making a video penggunaana OMS
Helpdesk announced the address of the access end user manual system and call centre which can be contacted	Prepare end user manual better.
Need to do monitoring until the process of filing the OMS is running smoothly	Review results monthly process several times the head of division and BOD

CONCLUSION AND SUGGESTIONS

The conclusion that can be drawn from the discussion in this paper is the Soft system methodology is an implementation of systems thinking on Human Activity Systems. Using the approach of Soft Systems Methodology, manufacturing management system online (CSO) will more fully describe the problems that occurred previously.

REFERENCE

- Kementerian Pekerjaan Umum dan Perumahan Rakyat. (2017). *Undang Undang Republik Indonesia Nomor: 2 Tahun 2017 Tentang Jasa Konstruksi*. Jakarta: Kementerian Pekerjaan Umum dan Perumahan Rakyat.
- Muh. Nur Sahid. (2017). *Teknik Pelaksanaan Konstruksi Bangunan*. Surakarta: Muhammadiyah University Press.
- Render, H. &. (2009). *Operation Management*.
- Sumadyo, M. (2016). Penggunaan Teknik Analisis dalam Pengembangan Sistem Informasi Menggunakan Soft System Methodology (SSM). *Jurnal Penelitian Ilmu Komputer, System Embedded & Logic*, 36-48.