A GROUP DECISION SUPPORT SYSTEM MODEL WITH KNOWLEDGE SHARING CAPABILITY

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To my beloved Family and Friends

To my respected supervisor

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IN THE NAME OF ALLAH, MOST GRACIOUS, MOST COMPASSIONATE

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ABSTRACT

Since their introduction a quarter of a century ago, group decision support systems (GDSS) have evolved from applications designed primarily to support decision making for groups. Indeed, it is generally accepted that improvements of group support systems is a longstanding interest to organizational researchers, containing solid practical as well as scientific significance. Within this practice, there is increasing interest to implement new technologies to increase information accessibility of organizational groups, in order to advance its productivity. As group decision support systems (GDSS) become more widely adopted, issues relating to enhancement of how groups exchange and share information are becoming increasingly relevant. This research addresses how GDSS can be improved in order to increase knowledge sharing. Therefore, the research investigates the implementation of GDSS with the capability of knowledge sharing and analyzing the contribution of KS to enhance GDSS. The requirements of Knowledge sharing to enhance GDSS are also included. A finding result from UTM respondents is also presented. An enhancement model is being developed according to finding results and from the literature review. It is hoped that this findings plus enhancement model will aid to provide GDSS with the solid capability of knowledge sharing.

ABSTRAK

Sejak diperkenalkan seperempat abad yang lalu, sistem bantuan keputusan berkumpulan atau *group decision support sistem* (GDSS) telah berubah menjadi aplikasi yang dibangunkan untuk menyokong membuat keputusan dalam kumpulan. Penambahbaikan kepada GDSS telah menarik minat para penyelidik, terutamanya dalam melaksanakan teknologi baru yang boleh meningkatkan capaian maklumat oleh pembuat keputusan berkumpulan. Peningkatan penggunaan GDSS telah mencetuskan isu yang berkaitan dengan bagaimana pertukaran dan perkongsian pengetahuan di antara pembuat keputusan berkumpulan boleh ditingkatkan. Oleh itu, penyelidikan ini dijalankan untuk membahaskan bagaimana GDSS dapat meningkatkan perkongsian pengetahuan. Penyelidikan ini telah mengkaji keperluan perkongsian maklumat untuk meningkatkan GDSS. Berdasarkan kepada keperluan perkongsian maklumat yang telah dikenalpasti dan kajian literatur, model GDSS yang telah ditambahbaik dengan keperluan perkongsian maklumat telah dibangunkan. Diharapkan hasil penyelidikan ini, dapat meningkatkan kemampuan GDSS dalam perkongsian pengetahuan.

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RESEARCH OVERVIEW

1.1   Introduction

Recent advances in information and communications technologies (ICT) have made it easy to connect many people at different places in order to share knowledge. Individuals require sharing ideas and thoughts, coordinating strategies, and observing on the effort of others. Employees need exchanging documents, transmitting drafts, sending pictures, and communicating with multiple persons. Similarly, Group members need to solve problems together and make collective decisions. Organizational businesses use information systems to encourage knowledge sharing among groups. When done well, these activities can enhance the effectiveness and productivity of the group beyond what individuals can do separately.

According to Huber (1984) our society is acknowledging the appearance of a post-industrial environment surrounded by superior knowledge, complication, and confusion. One effect of this movement is that decision-related meetings are turning more regular and more significant.

At the same time, the decision gathering groups are occurring more difficult and must be reach further quickly, and with better contribution than in the past (Huber 1986).

Moreover, it appears that decisions are strange, complex and dependent in information now than in the past. Hence organizations recently encountering more complications and high confused environments than earlier and thus require unambiguous decisions for quickly to responding to recently complex situations. Therefore, with knowledge is important step in decision making, decision makers need to differentiate between defective and ideal information (Banker, Kauffman 2004). Decisions might not be made by individual person only, but also by group of members in the related areas.

The importance of storing knowledge in groups has been enlarged by the use of current industrial organizations, which could not carry on without it or without ordered information. Therefore, the enhancement of groups is dependent on how they exchange and share knowledge. Hence, shared repository is needed to implement in order to increase the effectiveness and efficiency of groups.

Over the past ten years academic and industry researchers have been working to develop computer systems which increase group effectiveness and productivity. Therefore, the concept of Group Decision Support Systems has emerged to enhance groups and several definitions of (GDSS) exist, i.e., "is an interactive computer-based system that assist finding to solve formless problems by a group of decision makers operating as a group together'' (DeSanctis, G. &. Gallupe 1987) or "as computer-based systems, that facilitates two or more clients slotted in a general mission (or goal) and that present an interface to a shared atmosphere'' (Ellis S. etl. 1987) GDSS require real-time access to shared data, computer applications which provide structure to group work, and advanced user interface concepts. The key to making groups more productive is to allow a high degree of parallel activity and access to shared data at same time.

1.2   Problem Background

It is generally accepted that improvements of group support systems is a longstanding interest to organizational researchers, containing solid practical as well as scientific significance. Within this practice, there is increasing interest to implement new technologies to increase knowledge accessibility of organizational groups, in order to advance its productivity.

Over the past two decades till now, several studies have examined the impact of group technologies, management, group size, tasks and various additional aspects on enhancement of group productivity and satisfaction (Nunamaker, et al., 1991). Only a countable cases and field studies have been carried out to describe significance of making correct decision science.

In modern group support systems, a group decision occurs as the result of interpersonal communication which means the swap of knowledge among members. The communication activities in a decision-related meeting include, opinion exploration, analyzing, socializing, knowledge seeking, information giving, proposal development and proposal negotiation (Bedau 1984; Poole 1983a). On every meeting, fresh collection of data and knowledge could be generated. The combination of the decision-making group, however, may change: group members may leave, give resignation, or be removed. Newly recruited members of the group require learning how previous decisions were completed and how knowledge is being accessed. All these circumstances may reduce group collaborations or make it compound.

Similarly, the challenge of groups is that group members often are not in the same place at the same time. If everyone in a workgroup can get together in one room at one time for a meeting, then much can be achieved and knowledge can be exchanged by hand. But often meetings are not easy to arrange, especially when

individuals work at distant locations. In addition, information can be ambiguous and time-consuming when people are distances to get together. As well as organizations can not afford to make information drafted and maintained.

To overcome these problems, researchers intended to develop a method to house the knowledge of groups. This preserves to be important significance on the association in general and groups in individual. Then, the improvement of a shared repository that stores the information and knowledge of group individuals, maintain the policy and rules, and obtains relevant data and knowledge from the outside surroundings will obviously help these groups.

According to Paul, et al., (2004) the GDSS together with repository is likely to offer a large knowledge processing support. With GDSS motivate research academics with an extraordinary occasion to tell broad details of group member interactions. Satzinger, et al., (1999) stated that increasing group storage supply expansion, in the form of ideas, to the users of groups using the software. Hence, GDSS can assist the electronic acquisition of knowledge and purify individual experts' knowledge in a parallel fashion (Liou & Nunamaker, 1990). And it is found that GDSS might facilitate participants in group meeting to provide their own knowledge stores and hold them to memorize its knowledge system (Holsapple and Whinston, 1996).

The process of meeting is increased, if we promote the sharing among group members, and enlarge communication of groups. The recorded knowledge in GDSS is improved and connected in this case. The idea of organizational knowledge management process invented by Alavi and Leidner (2001) is employed. This research combines some helpful knowledge management concepts to enlarge the facilities of GDSS, including knowledge context, enhancing group repository and knowledge sharing.

1.3   Problem Statement

In this research, the main idea will be about finding method to detain the expertise knowledge of groups in order to solve group collaboration problems. Therefore, this research will focus on "how GDSS can be improved in order to increase knowledge sharing?

This will include the following:

1. What are the requirements of knowledge sharing in GDSS?
2. What type of GDSS model that can support knowledge sharing?

1.4   Project Objectives

In order to understand the research, author has identified four objectives. Those four objectives are:

1. To identify the current problems of Group Decision Support Systems (GDSS)
2. To analyze the requirements of knowledge sharing in Group Decision Support Systems
3. To propose an enhancement model of GDSS in order to simplify the exchange of knowledge sharing.
4. To test and evaluate the proposed model.

1.5   Project Scope

The most important points of this research scope are summarized below:

i.   The research will try to cover challenges in group collaborations

ii.   The research will be limited to find the integration of knowledge sharing in GDSS.

iii.   A new model will be developed to enhance the capability of sharing knowledge in GDSS.

1.6   The project Importance

This study will present the way that knowledge sharing can enhance group capability of sharing knowledge. The research will contribute to accelerate groups by simplifying exchange of knowledge as well as reducing decision making time. The implemented model will help groups to access knowledge in order to become experience. Therefore, the knowledge can be exchanged and shared when it's stored and offered to all group participants.

1.7   Chapter Summary

This chapter provided a brief description about the introduction of the research including the background of the problem, problem statement, research objectives and scope of the project. The main purpose of this chapter is to implement Group Decision Support System to enhance knowledge sharing in groups. Hence, this research will be done with literature review from some resources such as books, conferences and journals to collect from variety of initial data.

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