

PERCEIVED BENEFITS FROM INTEGRATING COMPUTER-BASED DECISION SUPPORT SYSTEMS AND KNOWLEDGE MANAGEMENT IN ORGANIZATIONS

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ABSTRACT

Decision making is a daily action and it's a significant for any person, and its significant part of all organization professions, where the professional decision makers apply their knowledge ingiven issues to make knowledgeable and true decisions. Decision Support Systems "DSS" is accomplishment of obtainable and appropriate computer-based knowledgesystem, and knowledge based System "KBS" is a kind of any computerized database with more powerful, comprehensive and capable knowledge instead of traditional data. It is a computer system that uses knowledge of the issues to reach your purpose at an explanation to a problem from that issue. This explanation is basically the same way and result that concluded by a knowledgeable person about the domain. The proposed paper will try to elaborate and explain the perceived advantages of integrating computerized DSS with knowledge management as it one of essential and most important factors that may affect in the organization performance. The interviews will be used as a tool for qualitative data from some Sudanese organizations in order to get their feedback through a series of open ended questions; Qualitative data will be analyzed using thematic analysis method. The results show the uses of computerized DSS differ from one user to another and from one organization to other. However, generally, a computer-based DSS is mostly used in the selected organizations to share information and to examine and select the optimum solutions from various generated reports. Even though the DSS is used for different activities in the selected companies, generally, all of them use the system to support the organization's decision-making activities and it automatically improves the performance.

Keywords: Computer-Based System, Decision Support System, Knowledge Management, knowledge based system, Sudanese Organization

INTRODUCTION

Decision support system is one of the most important tools for creation of good decisions in the organizations to support structured/ unstructured decisions providing very rich reporting, monitoring and analyzing data for efficient decision making. Integration Computer based Decision support system integrated with knowledge management will help the organization in that issue (Bohanec, 2001)

Background

The following section discusses information and definition of paper's main key words and related phrases.

Computer Based System

According to (McGraw-Hill, 2002), is any system which uses a computer for managing, scheming or implementing the job it is intended to perform. It is a complementary system of

hardware and software used to gather, filter and process data or other applicable information. These systems build it available for users to make, analyze and use essential information from computers as persons or within organizations scopes.

Decision support System

The Decision Support System (DSS) intends for helping people who countenance problems with decisions and it engage to use computerized software tools including, business intelligence expert systems, databases and knowledge bases, to get to exact decisions and explain problems solutions (Bohanec, 2001).

Knowledge Management

Knowledge Management (KM) is the collection of specialized practices that facilitate the thinker platform for a business to mix the ‘intelligence,’ ‘design’ and ‘choice’ process in a methodical decision-making procedure and direct the organization’s knowledge (Simon, 1987).

Knowledge based system

A computer application system that uses knowledge related to different areas, to help users by providing solutions to a problem from that area. This solution is basically conducted with same as that finished by knowledgeable person in the area of the problem. (Bahlmann, 2008).

Sudanese Organization

Refer to Sudanese medium sized organization working in deferent activities and has a collective goal to be achieved.

Relationship between DSS & KB

The Knowledge Based Decision Support System is a computer system that mixes computerized applications or technology tools with a decision support technology system to combine both systems for more advance outputs in the area of problem solving, problem picture and plan of solution strategies, and corroboration. The suitable mixing of DSS and KM applications like knowledge based system will offer physically powerful support for getting better quality and improving the well-established system (Pal, & Palmer, 2000).

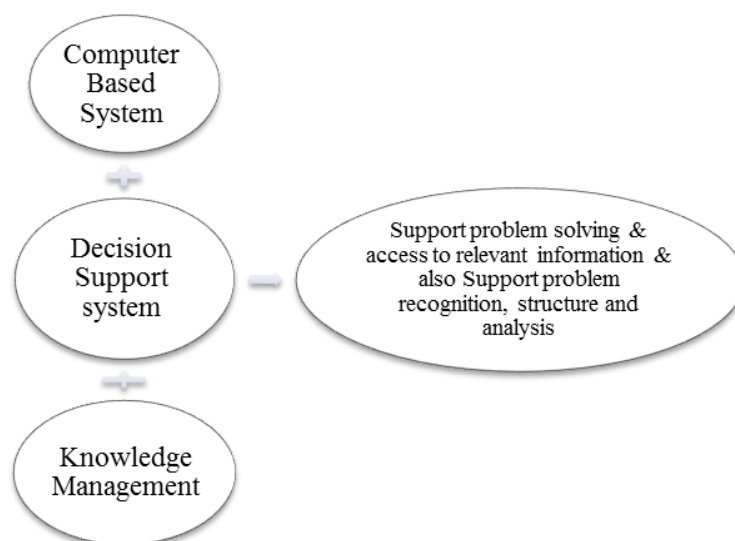


Figure 1: Computer-Based DSS and KM

COMPUTER-BASED DSS AND KM

According to (Bahlmann, 2008), it is computer based information system integrated with knowledge management in order to improve and enhance quality of support to decision makers, Support problem solving task and access to relevant information and also Support problem recognition, structure and analysis, the above figure 1 show the relation between the computer based, decision support system and knowledge management.

BENEFITS OF INTEGRATING COMPUTER-BASED DSS & KM

The organization performance measurement is associated to the input areas of the company when they used computerized decision support system with management, such as growth, innovation and productivity (Carneiro, 2001). Computerized Decision support with knowledge management system tools will enhance capabilities and the quality of organization performance against important knowledge management companies (Ergazakis, 2008). Decision support system with Knowledge Management helps through business and managing modify. It is also an essential purpose in the manage and organization of actions. To face up to and be winning in today's organization's surroundings, organizations have implemented DSS with KM as a new organization method that can boost competitive advantage, it was establish that organization recital powerfully affects the activities of the organization's managers and staff, and that an organization's performance in KM can be considered into four parts: activities, products, human resource, and general recital. status(Lee,&Gandolfi, 2007).

According to(David, 2002), DSS with Knowledge Management gains/benefits are the outcomes of additional capable dispensation of in order and knowledge, for example, by decreasingrepetition; more benefits involves waysduring which knowledge can be transformed into benefits that can produce circumstances of capability. An organizational benefit involves also the number of activities that are affected by capability and client services. DSS with KM will alsoimprove better knowledge sharing, knowing who's doingwhat, acquiring new ideas, quicker problem, and civilizing customer service.

PROBLEM STATEMENT

In spite of growing of DSS and KB in the world wide, the increase of KBS application is still very low among the Sudanese medium-sized organization. This could be a reflection of less knowledge and awareness of importance and benefits of Integrating Computer-Based Decision Support Systems and Knowledge Management in Sudanese

This paper will investigate the perceived benefits of integratingComputer-Based Decision Support Systems and Knowledge Management; based on the problems raised in the above statement the following research question is posed:

What are the benefits of implementing a computer-based DSS integrated with Knowledge Management in Sudanese Medium sized organizations (as the case study)?

THE PAPER MODEL

The following research paper model (Figure 2) was developed based on Benefits from Integrating Computer-Based Decision Support Systems and Knowledge Management all organizations identified in the literature in order to help this paper in answering the above question.

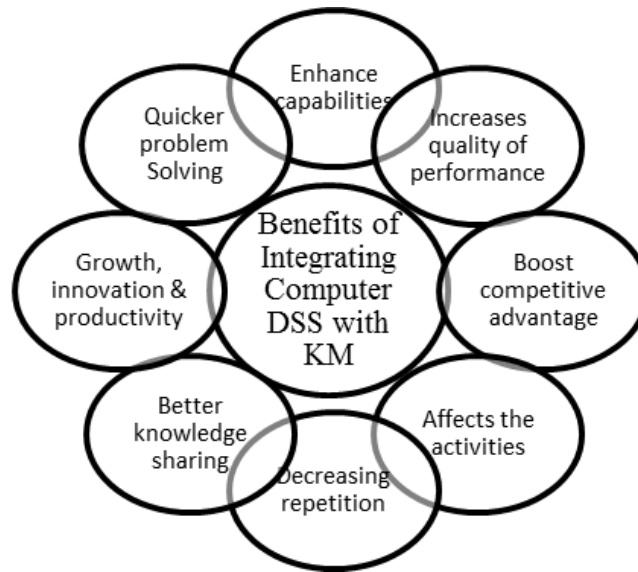


Figure 2: Model of Benefits from Integrating CB-DSS and KM

METHODOLOGY

During the paper qualitative methods approach was used for data collection and then the collected data has been analyzed using thematic analysis to answer the research question and achieve the research objectives. A multiple case study approach was conducted in selected medium sized organization. The method adopted for this paper involved extended on-site visits to the three medium sized organizations in Sudan (purposely selected), and interviews with some staff of these companies, in addition, articles, reports, internet and expert contacts. Purposive sampling method was used to select the Sudanese organization studied. There are approximately about 389 Medium sized organizations in Sudan (Report, 2008) with total population of approximately 56,600 staff. The interviews consisted of open-ended questions derived from preceding related studies. For this paper, 34 in-depth interviews were distributed out with 25 male and 9 female employees in the selected organizations. By using purposive selection, a 'homogenized' group of interview participants were selected from among the staff. The selected participants were those who were more closely associated with the DSS and computerized systems within those organizations.

DATA ANALYSIS AND RESULT

Quantitative method was used to answer the research paper question about the benefits of integrating Computer-Based Decision Support Systems with Knowledge Management in Sudanese medium sized organizations. This will include data has been collected from multiple organization's staff point of view.

This research paper is to answer the perceived benefits of implementing integrated computerized based decision support system with knowledge management. The analysis used is thematic analysis. This kind of analysis is a move towards for dealing with data that includes the formation and use of 'codes' to data. In this research paper, 34 in-depth interviews were carried out with 25 male and 9 female staff from the selected Sudanese organizations.

Most of the participants agree that the computer-based DSS with KM facilitates the progress of the problem-solving flow; it improves the decision-making expertise of decision makers by allowing them to enhanced decisions inside the organizations. Also, they mentioned that the

DSS with KM will help them to generate a variety of reports in the decision making processes, the computer-based DSS with KM provides decision makers with easy access to information by connecting all the organization sections. The competitive advantages of implementing an integrating computer-based DSS with KM an organization improve that organization's performance, and might influence community needs and integrate them, table 1 show the summary of the interviews questions.

Table 1. Summary of Interviewees Feedback

<i>Interview Question</i>	<i>General Feedback From Interviewees</i>	<i>Most Frequent Feedback (of 34)</i>	<i>Comments and Suggestions</i>
How is computer-based DSS used in your organization?	Used mainly for sharing information and to examine and select the optimum solutions from reports.	Used to produce generated reports, represent 34.3%	Computer-based DSS is used to improve decision-making skill of managers.
What are the competitive advantages of implementing a computer-based DSS with KM	The competitive advantages are: reduced cost and time, increased productivity.	Increased productivity, represent 54.3%	The competitive advantages include enhanced productivity, support decision-making process
What are the benefits of implementing a computer-based DSS with KM in your organization's	Users and customer satisfaction, Innovation of product and service, Improves and facilitate problem solving.	User and customer satisfaction, represent 44.1%	It will open new markets for them and the organization going to unleash a knowledge-based revolution
how the perceived performance will be affected by integrating a computer-based DSS & KM	Positively affects competency and competition, efficiency of organizational performance, and innovation.	Efficiency of personal and organizational performance, represent 32.3%	The perceived performance is affected by the satisfaction process and its improvements
To what extent does the computer-based DSS contribute to KM	it supports decision making processes, improves performance, innovation and improves organizational teamwork	Improve innovation processes performance, represent 38.2%	Enhances quality of support provided to decision makers and the KM functions
Any other comments or suggestions?	The integration of DSS and KM could lead to: improvements in organizational performance, activities of decision makers, planning and support KM functions. All agree about the importance of KM in DSS	The integration of DSS and KM could lead to some benefits and improvements in organizational performance, represent 100%	A DSS with KM should be implemented in organizationwide. Also, the awareness of top management about the various DSS with KM is very important

RESULTS DISCUSSION & CONCLUSION

This section describes the perceived benefits of implementing computerized DSS with KM in Sudanese organizations. The analysis is based on a thematic analysis. Descriptions of the results were organized into themes that attempted to show what the 34 participants in the three case study organizations said concerning how perceived activities affected by the use of computerized DSS with KM in their organization.

The most participants have decided the importance of the integration of computerized DSS with KM as it will be used to produce generated reports, which will help in the decision making processes, they agreed that it will increase the productivity, therefore it will lead to user and customer satisfaction, also there will be an efficiency of personal and organizational performance and improvement of innovation processes. Overall, most of the participants they said the integration of DSS and KM could lead to some benefits and improvements in organizational performance, and reputation in the competitive market

A DSS with KM should be implemented in organization widely. Also, the awareness of top management about the various DSS with KM is very important.

The findings of this research paper showed that the uses of computerized DSS differ from one user to another and from one organization to another. However, generally, a computer-based DSS is mostly used in the selected organizations to share information and to examine and select the optimum solutions from various generated reports. Even though the DSS is used for different activities in the selected companies, generally, all of them use the system to support the organization's decision-making activities.

Regarding to this matter, (Lee, & Gandolfi, 2007) found that organizational activities powerfully affect positively the behavior of managers and employees, and stated that the methods used to measure organizational performance in knowledge management can be divided into four categories: activities, output, human resource, and general performance.

Finally, the results also showed that the perceived performance was positively affected by Computerized DSS with KM in relation to competency and competition, efficiency of organizational performance, and innovation in products, services, and operations on condition of good plan and good infrastructure.

To conclude, participants' comments and suggestions can be summarized as follows: the integration of DSS and KM could lead to some benefits and improvements in organizational performance in areas including decision making, and support for knowledge management functions. All participants agreed that KM is of central importance in organizations but all results are realistic if in a conditions of proper planning and provision of infrastructure.

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