Journal of Civil Engineering Researchers

J-Researchers

JOURNAL OF CIVIL ENGINEERING RESEARCHERS

Advantages and disadvantages of KM models in construction management

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Abstract

Knowledge management (KM) is an important issue in the construction sector and complements the activities of corporate business strategy every business has become. The lessons learned from the construction industry has proven to reuse and share knowledge Can with reduce the cost and time of completion of the project and to increase the competitiveness of the entire organization to increase organizational success of the project. The aim of this paper is to introduce and discuss the advantages and disadvantages of knowledge management models are used to manage the construction industry. Executive challenges of knowledge management in organizations, lack of a systematic approach to the development and use of knowledge management systems (KMSs). A corporate competitiveness, to depend on the organization's ability to learn faster than their competitors. Organizational learning process the ability to collect and use the knowledge, skills and behaviors that have the potential to educate people and enforcement activities are the organization's future depends.
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Keywords: knowledge management, organization of construction, e- COGNOS Model, Grayson's and O'Dell model, Activity-based models and base map.

1. Introduction

Now as an important part of any organization's knowledge management and complementary business activities will be assessed organization. With the development of the new economy into an economy that is based on science, Knowledge economy, the most important contribution to organizational success, among other factors such as capital, materials, automation and facilities has become.

Many organizations have stated that many property using knowledge management in their firms have accumulated. Due to the success of knowledge, change, division and creation of industrial companies can improve the training process organized to improve the quality of implementation and create more opportunities for profits for companies to be competitive. Company to maintain its superiority over other companies has been encouraged to use methods of knowledge management. Organizational training process to the ability to collect and use the knowledge, skills and behaviors that have the potential to educate people and enforcement activities are the organization's future depends. Here are the

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advantages and disadvantages of knowledge management as the foundation for the development of a new and efficient model provides construction management, will be discussed.

2. Overview and Definitions

Definitions of knowledge according to scholars is different But generally can be defined as the facts of knowledge, skills and learning obtained by individuals, particularly during training or experience that enhances one's ability to assess the situation, make decisions and act.

KM terminology used in this article as set specific, well-defined procedures and techniques that included a regular procedure based on the technology and skills that motivate effectively, acquire, organize, develop, use and sharing useful knowledge, both implicit and explicit to enable the organization to be effective and productive in their work and create value for the project and is formed, is defined.

The word system usually with different trends For reference, the relevant members together, together, by guided procedures that are sometimes convertible or as part of a simulated communication line between them is that they work, are used. The knowledge management system written in books is used with different meanings. The impact of knowledge management systems, knowledge management and knowledge systems as synonyms to refer to technology or parts of knowledge management software is used.

3. Model e- COGNOS

Examples of knowledge management made by Wetherill and his colleagues was based on projects e-COGNOS and on the basis of methodologies, tools and architectures required for full electronic management of the various sectors are construction, Which aims to identify and develop a knowledge management model is open and based infrastructure and a set of tools that knowledge management within a collaborative environment to promote the construction [1].

E- COGNOS a detailed examination of existing technologies is the executive processes and facilities based KMS, are useful and needed to be adjusted. as a result of this review, a set of technologies and technical architecture is used which aims to shape the foundation for knowledge management in the future is to develop and implement e- COGNOS infrastructure [2], In other words, e-COGNOS methods without technical components, important and efficient. Although this model shows the development of a knowledge management solution, but the important factors that affect these activities and how the relationship with them, But the important factors on their activities and how they affect relationships with, Such as culture workers and management strategy, it does not display. Although this method involves understanding and explaining management of knowledge management for corporate employees, Although this approach include understanding the Construction Management and knowledge management for the company's employees are described, A need to identify a strategy management and culture of the staff there if these are supplied, this model will help to identify appropriate methods and techniques [3] .

Another shortcoming of this approach is that the importance and role of knowledge management systems knowledge does not display that this role is essential to the success of knowledge management efforts. The way some of the important activities of Knowledge Management, Such as classification knowledge acquisition, storage, reuse and update your knowledge also ignores. These activities will exploit the knowledge gained and create new knowledge from old specimens that are very important [4].

Another flaw in this method, sequence of activities that makes the two activities at the same time unable to work [5] For example, an organization can use to upgrade existing components of a knowledge management system will work and at the same time on the design of the new knowledge management activities. However, one advantage of this method is classified into 3 groups Dash [1].

This category includes: 1- The extent of knowledge; which is available to all companies and users, 2- organizational knowledge; that is company-specific, 3- Knowledge project, which is project

specific and is created by the interaction between companies. This classification is important but not enough. A need to recognize there are two types of explicit and tacit knowledge. This is an important issue because it would require any knowledge of methods, tools and processes specifically for the acquisition, management and use [6].

4. Model Grayson's and O'Dell

Skanska Knowledge Network Assessment the transfer process developed and presented by Grayson's and O'Dell depend. This four types of wealth that the company's environmental impact and steps in the process of knowledge transfer it shows, introduces [7].

The purpose of the study by Axelsson, Assessment of existing knowledge management and access to facilitate and support the creation and transfer of knowledge within the group is Skanska. This research used to display maps in a particular environment encourages knowledge. This way, travelled steps in the process of knowledge transfer show but the steps taken in the design, implementation and promotion of knowledge management and the relationships of these steps to collect, share and create new knowledge is not. In order to implement the characteristics of knowledge in the first place you have to follow a number of steps such as identifying tools and methods are needed to start collecting steps. It also does not display the classification of knowledge important the explicit and implicit knowledge various methods for successful management knowledge and also no difference between the so-called knowledge and information which appears to have been used interchangeably in the study does not give [8].

The shortcomings of this method are that it does not display the importance of the knowledge groups, especially in large companies, that they, to put the knowledge management system and their end-users in business and sharing knowledge is essential. As well as activities that are applied to the same form does not display and the only activity that can be used to sequentially display [9].

This leading role in supporting the efforts of management to manage knowledge does not display. Management strategy in organizations is a major factor that affects the enforcement and application of knowledge. In this way, the chief engineer and shareholders to convince the organization to implement a knowledge management solution is required [10].

One of the major shortcomings of this approach is the importance of architecture and operating system does not display the [11].

One system, by examples of knowledge management, which only includes sectors such as information base, yellow and contract information sheet is to be assessed, but cannot guarantee that knowledge to share, use and creation. Without adequate components, systems able to meet the required business activities, share and create knowledge will not. In this way, the appropriate components of the system with the ability to store, process and successful transition Skanska Group provides knowledge, does not exist [12].

Researchers to conclude that this system is not a successful knowledge management system and it is more correct to explain the system as an information system and not a knowledge network, have set up.

5. Model based and activity-based map

Research carried out by Tserng and Lin and Lin and his colleagues are complementary. This study proposes a knowledge management system based construction activities with the help of tools such as maps and knowledge of web technologies [11].

The first study is preferred method of IDEF, in order to create a prototype for use in the construction of knowledge management systems [13].

The second study, a map of knowledge-based activities to promote the construction of knowledge management, the first study suggested the show. One advantage of this study is that, The importance of knowledge to explicit knowledge and tacit classification and emphasizes that any of this knowledge must be managed in different ways to show [6].

The study knowledge and resources where can be found explicit and tacit knowledge, determine Two important methods for classification and storage of knowledge, as of activity

by reconciling each activity to similar projects in the past. It streamlines the process of gathering and processing knowledge from past projects related to an activity or a specific subject for reuse in solving similar problems [4].

The IDEF0, in order to introduce a high level of knowledge management activities, inputs and outputs, is used. There are five general activities and each of the five sub-activities analyzed. For this high level of detail is required for knowledge management activities to understand and use is simple in construction organizations [11].

Researches, the importance of detail components and systems architecture for successful implementation and the use of knowledge management systems and how much of the detail in reliability, security and validation systems are important to show [11].

Research also about the importance of knowledge workers, senior engineers, engineers, experts and novices in the successful implementation of knowledge management activities, have argued [9].

Although the two investigations is a useful example to introduce knowledge management, including shortcomings are similar to those previously discussed. An example of IDEF0, show that some activities Such as share knowledge and experiences and solutions to problems almost complete other activities such as data acquisition and transmission depend on them. Although these two studies, the categories of knowledge to knowledge management in construction organizations have used, some terms, such as information and explicit knowledge are not separate and the terminology they use is variable in many situations [8].

The data also highlight the importance of environmental factors that affect the application of knowledge management activities such as culture and management strategies affect employees do not show up. This factor is important and should be implemented with how knowledge management activities comply [9].

In addition, the two research knowledge required to manage many activities that are not displayed. They are only acquisition activity, extraction, storage, sharing and updating knowledge of the show. Their activities related to the design, implementation and maintenance do not represent knowledge management as well as the relationship between the proposed activities and process improvement, knowledge management is also not showing [1] .

6. Model IMPaKT

Methods IMPaKT, a three-step method, based on the knowledge management strategy, with the aim of formulating a business plan is promoted as well as the model to develop the relationship between Europe and Asia has been assigned. External forces, according to research, can be technical and structural. Internal forces, including customers, employees and shareholders are [11].

In this way, the importance of using standards for knowledge management systems different aspects, by using various techniques such as cause and effect assessment plan, assessment of the road map, list of benefits and costs, and initial matrix displays. Although there are shortcomings in this method, This model, details of the implementation and application of knowledge management activities, inputs, outputs and factors that influence their implementation Such as employee culture does not display. This method, as well as the importance of knowledge and knowledge workers will not display groups and recognize the importance of different types of knowledge resources and different methods and system components needed not emphasize [11] . For example, this method of classification of implicit and explicit knowledge and how they need to learn and apply different methods are not displayed. In addition, this sample, the technical architecture for security and does not offer coverage issues in knowledge management system [10].

Other examples reviewed or obtained in the written works are almost universal, In other words enough detail to ensure efficient and effective use of knowledge management construction does not provide. Many of these models are just a way for the implementation and application of knowledge management, provide but do not show the connection between them [11].

Many models of knowledge management, importance and environmental factors play an

important role in the implementation and application of good management to ignore knowledge [9].

Some of the models, the importance of having a continuous method of knowledge management systems and ensure that the text of the most recent and updated resources do not emphasize knowledge management [11].

Recent research has shown that the construction still lacks procedures for the implementation and application of knowledge management, so further research activities needed to create integrated methods for the implementation and application of knowledge management in construction projects.

7. Conclusion

In this study, methods of development to implementation and use of knowledge management were investigated, but still with a lot of features that may lead to the use of knowledge management systems and effective enough in building organizations that away. These models, features and special accomplishments in construction and project-based organizations are not taken into consideration. Environment construction projects, using successful knowledge management is difficult. Identify, discuss and summarize the failure of these models to create the proper context that the proposed process and development of a new prototype helps and a method for the removal of existing defects in these models provides construction projects, it's too important.

Many examples generally lack sufficient detail to meet the needs of the construction industry and help to increase awareness of knowledge management in this industry. Many of these samples lack alignment with the special features of the project are organizations For example, the lack of detail about the nature of the sources, lack of classification methods that can be useful for projects, not detail the activities and the activities that can be used to manage and process knowledge to be applied in construction projects, The absence of fundamental factors for the project environment and ... Most of the construction of knowledge management knowledge management will come only after the two main process In other words, the construction of knowledge management and its implementation. The relationship between these two processes and how knowledge management implementation will affect the use of knowledge management systems and also how to use it to develop and enhance the knowledge management models do not include this affect. More examples of knowledge management without reference to environmental factors about knowledge management activities could argue that staff activities such as culture, strategy and management support levels.

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