

Design Of Knowledge Management System To Improve Employee Capabilities In Organizations

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Abstract: This article discusses the design of cloud-based knowledge management systems, the purpose of this study is to facilitate organizations in delivering ideas to improve the company's business processes by integrating Knowledge Management Systems (KMS) with Cloud Computing and making recommendations about the KMS concept. The method used in this study is to use Scrum, Scrum describes the ineffectiveness of product management and work techniques that are carried out, to continue to improve the performance produced, the team, and the work environment in the company. KMS design starts from data analysis which is a determining factor for the success of KMS in organizations using critical success factors and Balanced Scorecards that focus on learning and growth, referring to core knowledge management processes based on cloud computing.

Index Terms: Core Process; Cloud Computing; Knowledge Management System; Scrum; System Recommendation.

1 INTRODUCTION

In the knowledge management system there are two factors for developing this KMS system, namely tacit knowledge, and explicit knowledge, these two factors are used to make KMS a place of experience and can be useful for others. The following are some explanations/ definitions regarding the knowledge management system: "knowledge management is the process of identifying, acquiring, organizing and disseminating intellectual assets that are important for long-term performance in an organization." [1] "Tacit knowledge is identified and utilized through a form that can produce the highest returns for the business." [2] "Explicit knowledge is organized, categorized, indexed and accessed. Explicit knowledge through the codification of knowledge often includes decision trees, decision tables, production rules, concept maps." [2] "Knowledge Management (KM) is a relatively new concept that moves over existing information technology (Internet & Intranet) infrastructure. KM is focused on being someone/ an institution to win in its competition because it has better knowledge than its competitors." [3] "Knowledge Management Systems (KMS) is defined as a class of information system that is applied to manage the organization of knowledge. It is an IT-based system, developed to support the organization of knowledge management behavior." [4] "The "KM nature" category gathers characteristics that have a direct impact on how the KMS is built, its processes, its actors, etc." [5] "In matters related to knowledge management, users will use their skills to manipulate existing documents. Therefore, the mechanism and results of knowledge manipulation activities, include acquiring, selecting, finding, creating, and retrieving the knowledge that will affect customer satisfaction." [6] Knowledge Management System has three components called triad knowledge management, namely: [7]

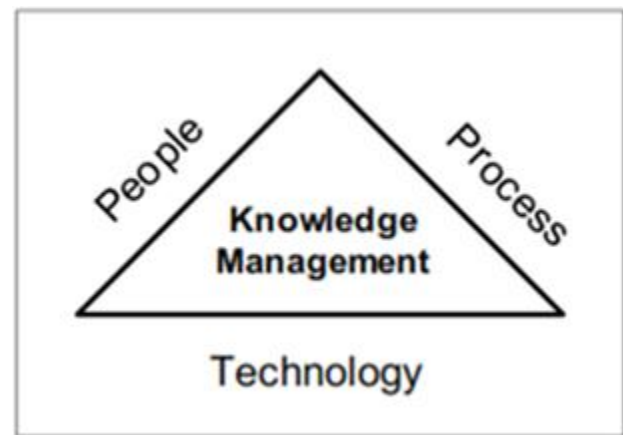


Fig. 1. Triad Knowledge Management. [7]

1. People

People are people who have the knowledge, manage systems and processes, and are committed to the strategic knowledge process for the success of the company. Human resource is an essential component in the Knowledge Management process, where the knowledge and expertise possessed by People will be a value for the organization. [1]

2. Process

The process is the arrangement and alignment of strategies, principles, procedures, practices to ensure that Knowledge Management can run well when implemented. Argue that it is vital that knowledge be shared and distributed within an organization (and community) so that the whole community can use isolated information or experience. [8]

3. Technology

Technology is an essential aspect of supporting KMS development, storing and disseminating information documents or knowledge. Organizing the right information and experience can help users to find information and culture quickly. Then it is necessary to analyze the technology used in the organization to assist in the process of developing KMS. The research methodology used in this study consisted of interviews, observation, and literature studies. While the method used in designing this cloud computing based KMS uses the Scrum method and the analysis tools that are intended are the Critical Success Factors and the Balanced

Scorecard. The results will be obtained in the form of a KMS prototype design proposal. Based on the results to be achieved, it is necessary to discuss the Knowledge Management Cloud Computing Framework, KMS Prototype Design, KM performance initiative model evaluation framework.

2 APPROACH AND MODELING

This research indeed uses several methods and the tools used such as using:

2.1 Scrum

Scrum is a process framework that has been used to manage complex product development since the early 1990s. Scrum is not a process, technique, or methodology. But Scrum is a framework where various methods and methods are used. Scrum exposes the ineffectiveness of product management and work techniques so that it can continuously improve the performance of products, teams, and the work environment in the company. The Scrum framework consists of Scrum Teams and roles, events, artifacts, and related rules. Each component within this framework has specific goals and is very important for the success of using Scrum. Below are some essential processes in the Scrum method:

1. Product backlog

Product backlog aims to determine what priorities must be made during the sprint work, namely meeting the planning of making software that is carried out by the agreed duration. Product backlogs involve all related teams, starting from Product Owner, Scrum Master, to the development team.

2. Sprint Planning

Sprint planning is the most critical process that is carried out every time you start newsprint. In this process, all groups gather to formulate what tasks they want to do and release in the future.

3. Daily Sprint

In this phase, each team member shares what has been done, and what will be done on that day. Team members can also report obstacles encountered during work. Daily scrum carried out every day during the sprint.

4. Sprint Review

It's time for team members to demonstrate what was completed in a race. The sprint review is carried out after one race is completed.

5. Sprint Retrospective

Check how the last Sprint is related to people, the relationship between them, the process, and the tools used. Identify and rank the main things that are going well and the potential for improvement. Make a plan to implement an increase in the Scrum team's work style.

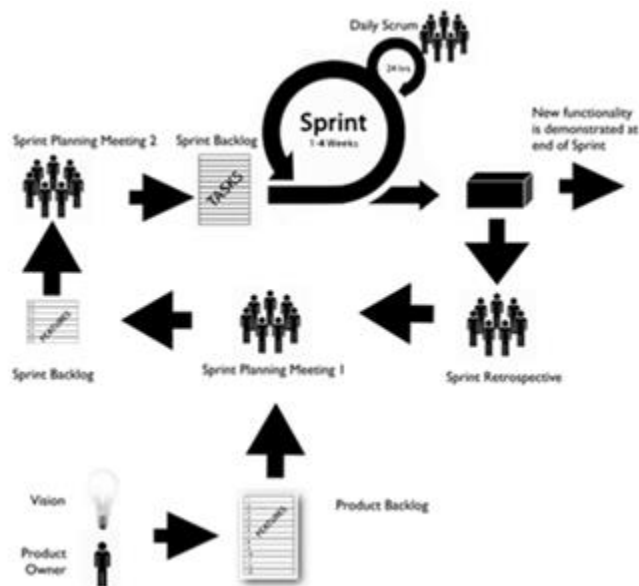


Fig. 2. Scrum [9]

2.2 Critical Success Factor

Critical Success Factor analysis is a provision of the organization and environment that affects success or failure. CSF aims to interpret clearly what activities to do and what information is needed. There are several determinants of success in running a business in an organization:

1. Organizational leadership
2. Corporate culture
3. Structure, Roles, and Responsibilities of the organization.
4. Technology used

From the presentation of the Critical Success Factor analysis, the results of data collection are outlined in Figure 3.



Fig. 3. Critical Success Factor

Tacit initiatives/ideas that can be poured in the explicit form, so that knowledge sharing communication is formed in the organizational environment, as for the existing feature ideas

such as:

- a. There is a chat feature
 - b. There is a document upload system
 - c. The existence of knowledge storage (Knowledgebase)
- Provision of content, as well as adequate infrastructure and a system that is user-friendly designed to make KMS easy and sustainable to use.
- Basic training is given to all who have an interest in KMS users

2.3 Balanced Scorecard

The Balanced Scorecard (BSC) is used as a measure to measure organizational performance in both the public and the private sector to achieve key business strategies and objectives. The BSC was first developed in the early 1990s by Robert Kaplan and David Norton in the Harvard Business School. Because of the main problem, they identified many organizations tend to manage the business based on financial measures. Basically, the balanced scorecard consists of four main element perspectives as in figure 4.

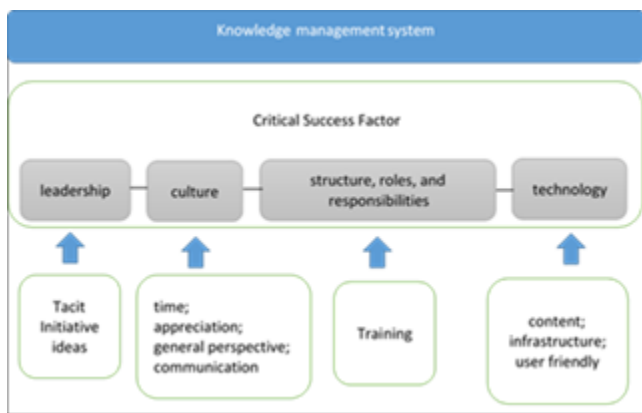


Fig. 4. Four perspectives from the balanced scorecard [10]

1. Financial
To succeed financially, how should we hold and manage our shares?
 2. Internal Business Process
What must business processes be mastered? To contribute to the company
 3. Learning & Growth
How do you maintain and improve your abilities? To achieve the company's vision
 4. Customers
How do you bring in customers? To achieve the company's vision.
- From the presentation of the Balanced Scorecard analysis, the results of data collection are outlined in Figure 5.

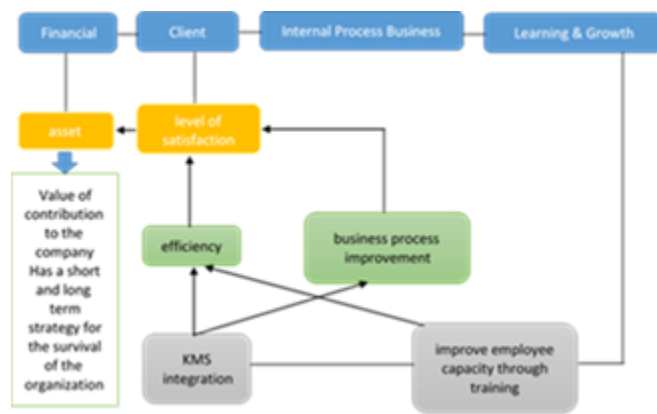


Fig. 5. BSC Perspective

So this study focuses on learning & growth indicators on BSC in terms of integration. From analyzing using the BSC, several things can be raised that become references for KMS design such as:

- a. Improve employee capacity
With the training carried out, it can train and improve the ability of employees to manage ideas that can be poured on KMS
- b. Integration using KMS
Effect on efficiency that can improve business processes in the company
- c. Client satisfaction level
- d. Financial

3 RESEARCH METHODS

The final set of stages of this research methodology is the stage of how to plan a plan to achieve the agreed objectives. It starts from entering all ideas, ideas and related to any KMS feature that will be displayed on the web. Research framework as shown in figure 6 below:



Fig. 6. Research framework

4 KMS DESIGN CONCEPTS

Recommendations obtained in the form of features and design concepts of the tacit and explicit knowledge management system that can be applied to organizations as shown in figure 7:

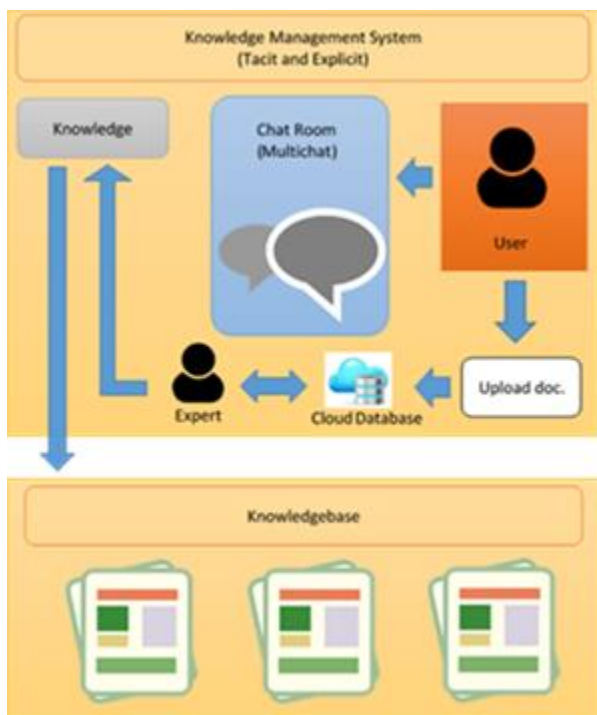


Fig. 7. KMS design concepts

5 CONCLUSION

KMS which is built integrated in cloud computing is expected that running business processes can be more efficient and reliable with features such as: Private access that is presented with the Login feature, Chatting feature and uploading data/documents to share knowledge, Register upload documents from the user's side, Knowledgebase that can be accessed by all users at any time

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