Abstract

Changes in Information Technology strive to fill the gaps in access and control of information and knowledge. Even when these gaps are bridged, several fundamental challenges remain such as how do we apply knowledge for value added and competitive advantage; how do we convert information into knowledge; and how to use knowledge to convert challenges into opportunities in the business sector. Knowledge Management provides solutions for facing up to these challenges of accessing technology and developing the abilities to manage knowledge. The building of a knowledge management can be viewed as a lifecycle that begins with a master plan and ends with a system structured to meet Knowledge Management requirements for the entire company. The most critical phase of the Knowledge Management System life cycle is identifying the immediate, intermediate and long term needs for the prospective system. This paper examines the usefulness and value in building a Knowledge Management System as a Life cycle in enterprise resource planning (ERP).

Keywords: Information, Information Technology, Knowledge, Knowledge Management, Knowledge Management System, Life cycle

1. Introduction

Our concern here is with regard to the usefulness and value in building a Knowledge Management System as a Life cycle. Life cycle here refers to the steps in which a knowledge management system project goes through before it becomes operational. Development of life cycle in this context of management system can be approached in terms of a comparison between a conventional information system life cycle and a knowledge management life cycle. There are arguments that efforts put to developing conventional information system life cycle in the past have now shifted their focus and attention towards building and developing knowledge management systems life cycles. The relationship between these two can be perceived by analyzing the role of the systems analyst and that of a knowledge developer. We can identify the usefulness of a Knowledge Management System Life cycle by rationalizing the differing ways of developing the life cycles under the conventional information management system with that of the knowledge management system.

2. Systems Analysts and Knowledge Developer

In the first instance, the premise by which the system analyst under the conventional system life cycle and the knowledge developer under the knowledge management system, on the other hand, go about dealing with source for their information and data go beyond visible assets as capital and equity in financial balance sheet clearly indicates the differing purpose and workflow. The system analyst
deals with data and information from the user who in turn relies heavily on the system analyst for the solution under the conventional information system. Contrary to this, the knowledge developer deals with knowledge captured from the people with known knowledge in the firm’s specific know how of the company to produce future cash flows. Here, the developer is highly dependent on people in the firm for the solution and knowledge auditing of the organizations.

3. Interfacing Problem and Solution

Secondly, in the conventional information system life cycle, the main interface for the systems analyst is with the novice user, who knows the problem but not the solution. In contrast, the main interface for the knowledge system life cycle is the knowledgeable person who knows the problem and the solution. Therefore, one of the helpful aspects of a knowledge management system as a life cycle is that the knowledge about the problem and the solution to it can be developed within the firm, unlike the conventional information system life cycle where there is no in-house comparable expert.

4. Sequential and Incremental Processes

Thirdly, the development and the mode of operations in the conventional information system primarily go by a sequential process, that is, particular steps are carried out in a particular order. For example the logical and physical designs cannot be initiated without analysis, testing cannot be done without a design, and so on. On the other hand the knowledge management system life cycle is incremental and interactive. In this respect Knowledge Management System life cycle is helpful in that it is not built in a few large steps, rather, it evolves toward a final form. We can realize the usefulness in Knowledge Management System as a life cycle arising from rapid prototyping as a knowledge capture for playing a major role in knowledge management system evolution. Knowledge capture is the process by which knowledge is obtained and stored.

While each knowledge management author employs different terminology, the process of the life cycle of the knowledge management can be outlined in four basic steps, namely knowledge capture, knowledge development, knowledge sharing and knowledge utilization. There are arguments that until now, no single information system could provide clear-cut support for all four processes of knowledge management and typically, several individual information systems support each step in the knowledge management process. In this regard, we can see the usefulness of knowledge management as a life cycle from the point of view of the application of Information Technology in every step of the Knowledge Management life cycle. The applications of information technology can support the creation, storage and dissemination of knowledge in the organization. For example, expert systems and decision support systems can be used for knowledge creation, data warehouses for knowledge storage, and intranet technology for knowledge diffusion.

5. Testing Phase in Life Cycle

We are familiar that testing is an exceptional and important component of evolving and developing a system and project encompassing characteristics of validation and verification. In this context, the application of testing phase under the development of conventional information systems, takes place towards the end of the cycle after the system has been built. Whereas, in the knowledge management system life cycle it is very apparent that the knowledge developer tests the evolving system from the beginning of the cycle. In this way, the need for corrections and modifications in the system and in the processes can be carried out so that the evolving system is in line with the
requirements of the users for finalizing solutions to problems. Carrying out testing at each level of the knowledge management system life cycle such as knowledge capture, design knowledge management blueprint, and evaluating existing infrastructure tend to be helpful for the knowledge developer to keep close tab of each aspect of the knowledge management life cycle evolving with regard to availability and optional usage of material and human resources rather than face an accumulation of matters that need reviewing at the end of the cycle after the system has been put in place.

In the knowledge management system life cycle, knowledge developers use an interactive approach in knowledge capture, which means a series of repeated actions. The developers start with a small scale system, a prototype, and gradually build a fully fledged knowledge base that is ready for use through several sessions with the experts. Its usefulness is recognized as being essential for large systems, because the cost of a poorly structured system can be prohibitive. Among other benefits and advantages from rapid prototyping of knowledge management system life cycle include documentation for the expert and others that progress is being made on the project, mistakes can be quickly corrected, the system is tested each time new knowledge or modifications are incorporated and yields a tangible product at an early stage. In addition, the system grows in steps with increasing understanding of what the user will learn and how the expert will provide and also promote accelerated knowledge capture.

6. Systems Maintenance

When it comes to system maintenance, the usefulness of the Knowledge Management System as a life cycle can be realized as the system delegates this responsibility specifically to knowledge editors whose job is to ensure a reliable system and to upgrade the system to standards. Knowledge editors are assigned roles as quality assurance keepers and ensure compliance to standards of maintenance. Quality assurance is the development of controls to ensure a quality knowledge management system and strives to ensure that every step in the knowledge system development and system maintenance is error free. There are pointers that this is a neater and systematic way of system maintenance than one that is much more extensive under a conventional information system.

7. Knowledge Capture

The benefit from this life cycle is that it works well and systematically in the process for knowledge capture, knowledge design and knowledge implementation. For example, knowledge capture, both explicit and tacit, takes several directions under the Knowledge Management System life cycle. The system captures explicit knowledge from repositories, and tacit from company experts and knowledge stored in databases for all authorized personnel. In the knowledge management system, life cycle focuses on results and outcomes and the emphasis is on a ‘start slow and grow’ incremental process. This is quite different from the conventional system life-cycle which is process-driven and documentation oriented and which emphasizes on the flow of the data and the resulting system. The conventional system can be likened to one that fosters and develops the ‘specify then build’ kind of approach. The element of result oriented outcomes and incremental processes are lacking in their organization. In this regard to view the knowledge management system as a life cycle has positive uses in making itself an open-ended system accommodating incremental information and data from reviewing with experts and users as the process moves along towards implementation. It takes constant stock of the experts’ tacit knowledge that can keep changing and strives to conform to
users’ solution seeking needs as an interactive process.

8. Summary and Conclusion

The Knowledge Management System from the point of view as a life cycle augurs well as one that does not follow some kind of rigid set sequence of steps on the conventional systems development. The help from the stand to view the knowledge management system as a life cycle may, among others, be attributed to the knowledge management system supporting tools like rapid prototyping, incorporating changes on the spot, and augmenting and refining the knowledge management system until it is ready for use. This goes to show that this rapid prototyping as a knowledge capture tool evolves into the final knowledge management system. The rapid prototyping process which can be expressed in terms of a life cycle consisting of knowledge capture where tasks are structured, end knowledge sought is reformulated until the knowledge worker or the resident expert judges that it is right serves as an exhaustive process to ensure reliability for adoption. In addition this process promotes verification of the knowledge management systems. Verification answers the question whether the system built is right and the programs do what they are designed to do. The internal make up of the system is checked to see that the right knowledge is available when needed in the format required and that any rules will take place when they are supposed to. In this way the technical performance of the system is evaluated.

The Knowledge Management System as a life cycle employs validation as a second procedure in its testing phase. This task ensures that the system is the right system that meets the user’s expectations, that it is user friendly, and that it will be usable and scalable on demand. Validation provides assurance that the solution or advice derived from the knowledge management system comes close enough to that of the human expert. In other words, the validation process checks reliability of the knowledge management system.

In concluding, we observe that organizational knowledge is distinct from individual knowledge. A knowledge development cycle in an organization consists of knowledge creation, knowledge adaptation, knowledge distribution, and knowledge review and revision phases. The discussion henceforth tends to show that KM system encompasses all the above phases and elements in its life cycle as a ‘start slow and grow’ incremental process. Nevertheless, it is noteworthy that each phase in the life cycle needs to be evaluated in the context of its characteristics on repetition, standardization, reliability and specifications. This paper is supportive of the view that there are various helpful uses and advantages in the development of knowledge management system as a life cycle.

References