ENTERPRISE CONTENT MANAGEMENT (ECM) IN PRACTICE FOR INDIAN R & D ORGANIZATION

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ABSTRACT

Today's R & D organizations create an increasing volume of unstructured content which contains document files, e-mail message, video and images, instant messages, web pages, and other digital assets. The steeply decreasing costs for storage and the accessibility of enormous scale storage systems, enable enterprises to store all the applicable business data. Thus enterprises are facing increasing challenges concerning management of content. Management of this is a considerable challenge in the case to share content within specific groups and persons internally and externally. The generalization from this study shall be insights on the ECM use in INDIAN R & D organizations, which may be valuable for related work/practices in other organizations and contexts, at present or in the future. This study also contributes to the scarce academic research that so far has been conducted concerning the new and emerging ECM concept, suggesting further research within the ECM field that presumably will continue to grow the following years.

Keyword: *- ECM, R & D Organization*

1. INTRODUCTION

Enterprises today are facing a rapidly increasing amount of digital information and content to be handled. Today's digital information is steadily decreasing storage space prices and the general availability of large scale storage systems, enabling enterprises to store all their important business data. Concept of ECM is a new and emerging field in both the Information System academia and practice. In the digital economy, organizations are faced with an increasing amount of data which could be in the form of an email, faxes, text messages or presentations. The amount of content in organizations is growing at an astonishing rate and this needs to be managed and the increasing amount of data is managed from the view point of the enterprise. Study shows that the rate of increase in the unstructured content is 800 megabytes per person per year. Whilst others have estimated about approximately 79 percent of an organization's data which can be unstructured and is not in standard format which can easily be retrieved when needed [2]. To solve the problem of unstructured content which presents itself in information overload and data that is unstructured, organizations have adopted Enterprise Content Management (ECM) systems and it is seen as a suitable system to use as structuring of content is concerned [6].

Today, ECM is being used in organizations and industries, often where there is strong competition, rapid product innovation and changing consumer behavior. To maintain a competitive advantage in such an environment there is a great need for IT and organizations to adapt and innovate. Effective capturing, managing, storing, preserving and delivering of information, content and documents can help facilitate this [4]. The ECM concept has received much attention from the practitioners and vendor's perspective but ECM research is still an upcoming field in Information Systems and research ECM research is approximately more than one decade but it only received little consideration from scholars and a lot of attention from industries. There are various related and well-researched concepts to ECM like Electronic Document Management (EDM), Record management (RM), Knowledge Management [1].
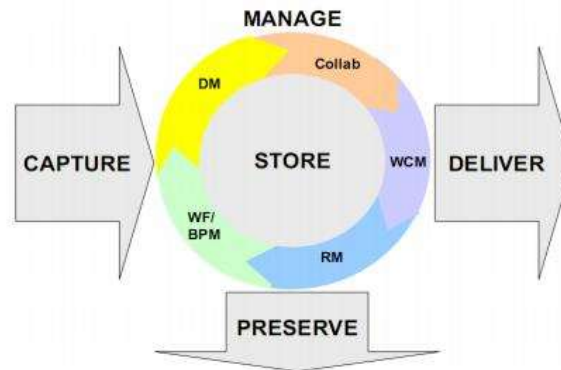
Fig -1: Components of ECM [8]

1.1 Capture
This part refers to the process where new content is collected, generated, or created within the enterprise. This content has to be identified and classified with metadata in some way into the ECM system which will manage it. Content items can be unstructured as addressed earlier [8].

1.2 Manage
The Managed components are for management, processing, and use of information. This incorporates database for administration and retrieval, and access authorization systems for securing information. The goal of an ECM system is to provide these two components only one time as services for all Manage solutions like Document Management, Collaboration, Web Content Management, Records Management and Work flow or Business Process Management. To link the various, manage components, an ECM system should have standard interface and protected transaction process [8].

1.3 Store
Store components cast-off for the temporary storage of information which it is not required archiving [8].

1.4 Preserve
The Preserve components of ECM handle long-term, safe storage and backup information. In most of the cases, contents like business records are needed to be preserved for long duration in a trustworthy and accurate way [8].

1.5 Deliver
This involves providing access and presentation of content from the location it is stored or preserved in a timely and secure manner, to the systems and people who have access to it. This is supported by the meta-data associated with the content [8].

2. Adoption of ECM in Organization
ECM has followed Business Process Automation that is the main advantage. Any other system they don't follow the BPA. ECM has provided the service Right Information, Right People, Right Time [7].

   A.   ECM Functionality
   - Ability to organize reserve and publish document with metadata.
   - Ability to rearrange document properties of metadata and to identify documents uniquely using an ID regardless of location [5].

   B.   Framework for ECM research

This frame work for ECM research aimed at stimulating the academic interest for the field, where they suggest that one should look at ECM as a rich research phenomenon, from four different relevant research perspective: content, technology, enterprise and process.
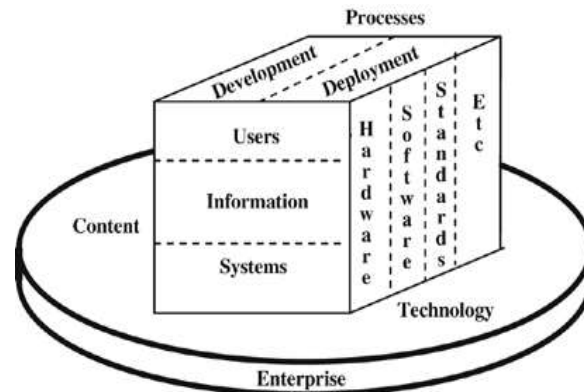
Fig -2: Framework for ECM Research

The content perspective can be further broken down into the following views: the information view, the user view and the system view. The information view looks at content semantics, representation and accessibility to users. This deals with content organization, metadata, and search. The user view deals with the relationship between users and content. This view includes issues with content creation, maintenance and content use. The system view deals with the system on witch content resides, and how content is made accessible to users. Such system includes among others document management system, web sites and portals.

The technology perspective addresses research into the basic technologies: hardware, software development and standards used in ECM in an organizational context, while the system view in the later mentioned content perspective focuses on ECM application accessible to the users [3].

The enterprise perspective describes the environment (context) in which content must be managed. This includes ECM issues relating to the organization, legal, social, and business aspect. This may include analysis of existing and proposed solution from user's perspective, including personalization of content. It is essential to know how the organization works before starting on a successful project.

Finally, the process perspective involves both the development and deployment of process in enterprise. The development involves the process of developing(methodological), implementing and maintaining ECM system correlated with change management, While the deployment process includes implementation of content life-cycle activities such as: "content creation and capture, content editing, review, approval, content indexing, classifying and linking, content distribution, publication and use, update, preservation, format transformation for long-term archival, and retention"

3. Problem Definition

This example addresses the long term documents and records in IPR. These are documents and records regarding trading, research documents, supporting activities, and IPRs inter-company contracts. Every year approximately 1500 long term documents and records are being created and handled in the different department in IPR. Some of these documents take several months to compose, and appurtenant to every documents there are several actions where multiple documents are being created. These could be Word documents, PDF documents, e-mails, there are different versions of the documents, faxes, meeting reports, and the list continues. Most of the department created have at least 30 documents tied to it. And 1500 contracts times 30 documents result in 45,000 documents annually.

Hence in IPR documents, there exists no formal system to handle these long term documents, and there is no automatic in how these documents are being handled and archived. There is no system that manages internal and external documents in a way that we need it, with the quantity of documents. It is the quantity that creates the problem.

If organization make limited around 10000 documents every year, organization could make good documents workspace where the organization manage the documents and everybody would be happy. This situation is illustrated in Figure 3.

Fig -3: Problem Identification of case study

4. Proposed Solution

- Provide global access to information,
- Better collaboration,
- Supported and improved work processes among work groups and teams supported by new IT-tools.
- Batter information sharing between the company and their customers, employees and business partners,
- Proper handling of e-mail,
- Improve tracking of documents and in this way make it easier to retrieve information and ensure sharing and reuse of information,
- Established traceability as well as easy, correct and secure access of information through the information life cycle and with regard to legal requirements,
- Limited duplication of data by classifying information with metadata, enabling the new search engine to find all relevant information regarding a project, process, discipline, organization, etc

From the analysis of the different tools of ECM here for this case study chose Alfresco. After that question is that Why is Alfresco ECM the right choice for enterprise. It is an open source software.

It Keep track of all your information: Storing document securely, eliminates paper work and helps organizations keep critical documents well organized while allowing for complete document lifecycle management and Dealing with different document versioning: version control with offline synchronization capabilities plus it ensures that everyone access the most up to date version of the document.

It also Increase employee productivity, Regulatory compliance Speed up your business process, Low cost, Easy to deploy and maintain, Higher Security, Compatibility [7].
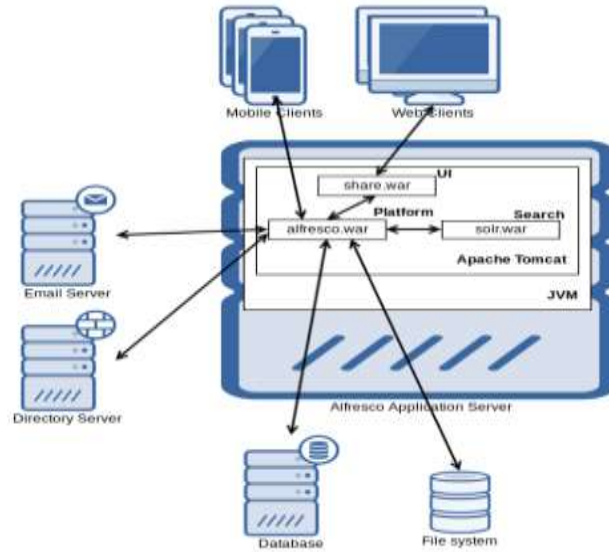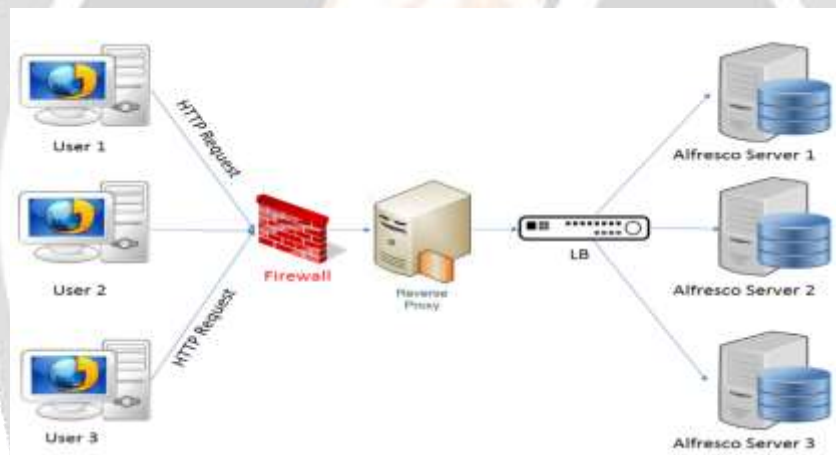
Fig -4: Alfresco System Architecture

Fig -5: Proposed Solution with Alfresco System

Here We apply Round Robin Algorithm for this Alfresco System and Implementation of System, we use Operating System is Windows, database is PostgreSQL 9.4.4 and Application Server is Tomcat 7.0.59.

5. Result and Analysis

Focus group discussion ended with jointly defining 3E criteria of the model which has been adjust, namely:

a) *Efficacy:* a smooth handover: the ECM system does not crash, assistance/accompaniment by the change agents is provides.
b) *Efficiency:* cost reduction by optimizing the use of open source systems.
c) *Effectiveness:* changing procedure and working instructions due to ECM adoption in the nosiness processes.

The customization of ECM system is to define the changes as a result of the comparison between the Indian R & D organization and other organization. Customization that are defined must meet these two requirements, namely

1. *Feasible:* The proposed changes must be able to be implemented in the real world.
2. *Desirable:* Changes must be in accordance with the needs of organization.

6. CONCLUSIONS

This study aims to achieve this research goal: "ECM in practice for Indian R & D organization". This case shows that to be successful with ECM, new communication resources id needed, facilitated by competent and committed persons. Firstly, the case of IPR highlights the need for scrutinizing the customization issues carefully before a selection of a complex ECM product and the need for preparing oneself for customization efforts for functionality Simplification and user interface customization in this area. ECM advantage has increase the efficiency, agility, speed of word search, handle any new situation to very easily. Although it has not put in to practice because of change in culture, which is not easy to achieve appropriately. ECM systems are important to businesses and will most likely be even more important in the coming years. This study presents an overview of issues concerning ECM. Future research may include a more comprehensive study of the entire enterprise to see if these issues are widespread.

7. REFERENCES

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