A Study on Document Management Tools

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Abstract— Document Management systems are computer based programming that are used to store, track and manage documents, these systems helps in reducing the manual effort involved in managing documents and usage of papers. There are variety of DMS software that are available in the market. These software offers many features to the clients. This paper makes a comparison of cost, platform supported by the product and few common features offered by DMS for ten such products.

Key words: Document, Management

I. INTRODUCTION

There are a few sorts of business reports, running from brief bookkeeping records to complex lawful assertions. Organizations broadly utilize such records to convey, execute business and dissect their profitability. This outcomes in the era of an extensive number of records day by day, and little and medium-sized organizations are effortlessly overpowered by this circumstance. Given this foundation, organizations require programming arrangements which give the majority of the elements required by clients for ideal record administration, and in addition advancing administration forms and robotizing the extraction of applicable data from the reports[1]. Document Management Systems (DMS) are utilized by associations to effortlessly store, seek, track, share, and recover reports. Diverse sorts of documents might be put away in a DMS including content reports, spreadsheets, presentations, and pictures – they might be put away in their local configurations or in a convenient portable design. DMS normally fuse workflow capacity too so that business process might be mechanized. DMS is broadly utilized by organizations for dealing with their records.

A DMS might be utilized on a local machine in an independent design, might be on a server in a LAN, or may be on the cloud. The DMS might be a client-server sort framework or might be a web-based framework. The web-based choice is platform independent and might be gotten to from laptops, smart phones, tablets, and desktops [2].

Different departments that use DMS are Records Management, Manufacturing, Human Resource Management, Systems and Procedures, Customer Services, Administrative Services, Training and Education [3].

II. BASICS OF DOCUMENT MANAGEMENT SYSTEM

A DMS can fall onto either client-server architecture or a web based tool[3]. Fig 1 shows the software architecture of DMS. User interface, DMS Manager and Repository are the components of DMS. User interface provides a way to interact with the system. In a client-server architecture client is the user interface, in the case of web based system, web browser is the user interface. User interface directly talks to the main component of the DMS system- DMS Manager. Depending on the range of functionalities offered, DMS Manager contains several sub components. Finally repository is the place where all the data is stored. DMS system can have a database or a file system, or combination of these two as repository [2]

Fig. 1: Software Architecture of DMS

A. Functionalities of Document management system

Figure 2 represents the capabilities provided by Document management systems [4][5]. Metadata is regularly included for each document. Metadata may, for instance, incorporate the date the record will be stored and the user's identity who is storing the document. The DMS may likewise extricate metadata from the document consequently or incite the user to include metadata. A few frameworks likewise utilize optical character acknowledgment on filtered pictures, or perform content extraction on electronic documents. The subsequent separated content can be utilized to help users in finding reports by recognizing plausible keywords or accommodating full content inquiry capacity, or can be utilized all alone. Extricated content can likewise be stored as a part of metadata, included with the picture, or independently as a source for seeking collection of documents.

Many DMS endeavor to integrate document management specifically into different applications, so users may recover existing documents straightforwardly from the repository of DMS, update document, and save the changed document back to the repository with a new version, all without having to leave the application. E-mails and office suits are provided with these integration.[6]Capture basically includes processing and accepting pictures of paper records from multifunction printers or scanners. Electronic documents are tracked with indexing, Retrieval is mainly supported with indexing, indexing topology has great role in rapid data retrieval. Storage deals with the management of documents stored, location of storage, and duration of storage, document migration to a different media of storage and document destruction. Retrieval of document from the storage can be simple where the unique ID of the document is specified, or flexible for the users where the partial search term is provided [7][8].Distribution of the document is carried out in such a way, that the document is not easily altered, an original master copy is maintained and duplicate copy is used for distribution

Security plays a very important role in document management applications. Different access levels are assigned to user groups, based on the type of document [9].Few DMS are incorporated with built in workflow module, and these workflow modules can be manual or rule-based. Simple collaboration involves, blocking the access to the document by multiple user at the same time, advanced systems allow multiple users to modify the document in real

time and changes from all the users are visible in the comprehensive document. Versioning involves the document being checked in and checked out from the central DMS, and all the previous updated copies are available for the users, allowing the user retrieve previous copies. Using the document content or attribute, specific document can be searched form repository.

Proofreading, authorizing, reviewing, printing and approving of document are the steps involved in Document publishing.

In addition to the basic features, DMS can also provide enhanced features like data encryption during transfer, data compression[10]

B. Types of documents stored

Transcripts from meetings, Computer Printouts, Script and visuals from presentations, Video Clips, Email and Voicemail Messages, Drawings, Blueprints, Photographs, Contracts and Agreements, Reports, Manuals and Handbooks, Business Forms, Correspondence, News Items and Articles.[11]

C. DMS Use Modes

DMS has three use modes. In the first mode, all the transactions are electronics, i.e. data inserted and retrieved from the DMS system are in electronic form. This electronic mode of DMS can make use of all the available functionalities. In the second mode, stored physical data is converted into electronic data. Scanners are used for this physical- electronic conversion of data. Once the documents are converted into electronic format, subsequent search for the document is supported. Third mode of DMS usage is the hybrid of first and second modes of usage. This mode is used by the industries, where business processes include physical documents [2].
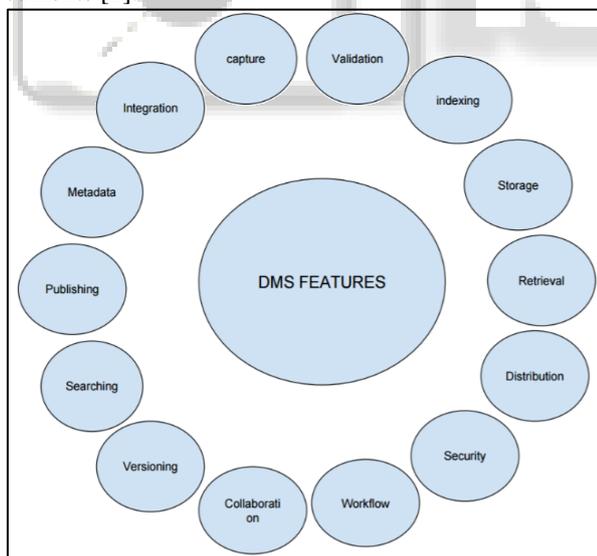

Fig. 2: DMS Features

D. Types of DMS

Self-Hosted Document Management System: DMS software is installed in company's own servers. Storage limit is defined by the company's server capacity. Advantage of self-hosted DMS is that, business can run independently without relying on others. Internet connection is not required to access the documents. Disadvantage of this type of DMS is paying the cost of updating systems every year.

Cloud Hosted Document Management System: Provider of DMS takes care of hosting the system. The system can be accessed remotely by desktops or mobiles that are connected to internet. Depending on the usage and provider, user has to pay monthly fee. Advantages of Cloud hosted DMS is that, maintenance and upgrades are taken care by the provider, user need not worry about installation of software in his system. Disadvantage of Cloud hosted DMS is dependency on the provider for keeping the system up and running. [12][13]

E. Advantages of DMS

- Cloud based: Users can access data from anywhere anytime and anyplace.
- Intelligent Organization: Documents needs to be organized intelligently as the business grows and there is increase in number of documents.
- User friendly UI: Provides attractive features so that it's easy for the user to interact with the system.
- Reduced physical storage: Physical documents can be scanned and stored digitally, and thus reduces the space required to store the documents in papers.
- Saves Time: When compared to documents stored in paper files in cabinets, DMS provides instant access to the required documents regardless of the place from where user is trying to access the document.
- Security: Physical documents can be easily stolen and destroyed, whereas crucial documents can be stored safely and can be backed up in multiple locations.[14]
- Go Green Business Practice: Step towards lowering impact on the environment from the business process.[15]

III. DMS TOOLS

Variety of DMS software product rea available on market. Based on the requirements, users must choose that best suits their needs. Here comparison of 10 software product is done. CaudraSTAR SKCA which supports preservation of multimedia content & document collections are easily visible, searchable and accessible[16], eXo Platform which is an open source document collaboration product and known for the sophisticated design[17], ProcessStreet supports standard operating procedures, teams workflows, recurring processes[18]. ZohoDocs is an online DMS software that supports storage of files, documents, videos and images, enforces data encryption and security[19], ContentCenter has rich and secure features[20], EisenVault that uses innovative solution to make document management easy[21], NeatSmallBusinessSolutions is an expensive cloud based software which is a value for money product[22], PriorityMatrix has Managers as target customers and is available on variety of platforms[23], CaseFox which has CPAs and attorneys as target customer[24], RMail which is an email management tool[25]. These Products are compared for a set of parameters like Target Customers, Customer Size, Pricing and other Product Features.

Table 1 the compares the products on the parameters Customer Size, Price & supported platform. Table 2 compares the products for the various features of DMS.

Product Name	Customer Size	Starting Pricing	Platform
CuadraSTAR SKCA	1-1000+	Not Available	Cloud, Windows
eXo Platform	10-1000+	$5.0/month	Cloud, Windows, MAC, IOS, Android
ProcessStreet	2-1000+	$15.00/month	Cloud
Zoho Docs	1-1000+	$5.00/month	Cloud, IOS, Android
ContentCenter	2-1000+	Not Available	Cloud, Windows
EisenVault	1-1000+	$2,000.00/year	Cloud, Windows, MAC, IOS, Android
NeatSmall Business Solution	1-49	$7.99/month	Cloud, IOS, Android
PriorityMatrix	1-999	$12.00/month/user	Cloud, Windows, MAC, IOS, Android
CaseFox	1-49	$10.00/month	Cloud
RMail	1-1000+	$6.99/month/user	Cloud

Table 1: Comparison of Customer Size, Price & supported platform

Product Name	Access controls	Collaboration	OCR	Version Control	Document Indexing
CuadraSTAR SKCA	No	No	No	No	Yes
eXo Platform	Yes	Yes	No	Yes	Yes
Process Street	Yes	Yes	No	Yes	Yes
Zoho Docs	Yes	Yes	Yes	Yes	Yes
ContentCenter	Yes	Yes	Yes	No	Yes
EisenVault	Yes	Yes	Yes	Yes	Yes
NeatSmallBusinessSolution	No	Yes	Yes	No	No
PriorityMatrix	Yes	Yes	No	Yes	No
CaseFox	Yes	Yes	No	No	No
RMail	No	Yes	No	No	No

Table 2: Comparison of DMS Features

IV. CONCLUSION

Document management systems are widely used by various organizations to create, approve, store, share and retrieve documents. Incorporating DMS software in the business process is a smarter way of carrying out the process. While choosing a DMS, user has to keep in mind various factors, and choose the product that best suits their requirement, functionalities expected from DMS changes with respect to Business domain, size of the organization, type of document stored and access to the document from remote locations and user's budget. Previous section shows comparison among ten DMS products, and it is observed that there is a tradeoff between cost and the available features of products.

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