PDM (Product Data Management) Document Management System (DMS) Architecture for Energy Devices

Ilayaraja Muthalagu
Minot State University
Business Information Technology
United States
ilayaraja.muthalagu@gmail.com

ABSTRACT: *Document Management System is essential to manage and process the energy devices related documents. This research proposal includes following Energy specific DMS System setup processes such as procedures, policies, system configuration, search, document storage, data conversion. PDM System administrator must ensure all routine processes complete on schedule including the DMS system usage, maintain energy systems details, routing of documents for storage, manage and system architecture. Responsible for modifications and enhancements to software as required to meet business needs. Process and documentation provides information to customers or team so they need to bother PDM System Administrator less often and so saves them time. It helps PDMS As repeat processes without any issues and simplify processes which easily be delegated to someone or team.*

Keywords: PLM, Product Lifecycle Management, Product Data Management, PDM, Document Management System, DMS, Energy Systems, System Admin, Computer, Information Systems, Engineering, ECM, PLM Integration, CAD, Computer Aided-Design, MCO, PLM Implementation, ECR, ECO

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1. Introduction

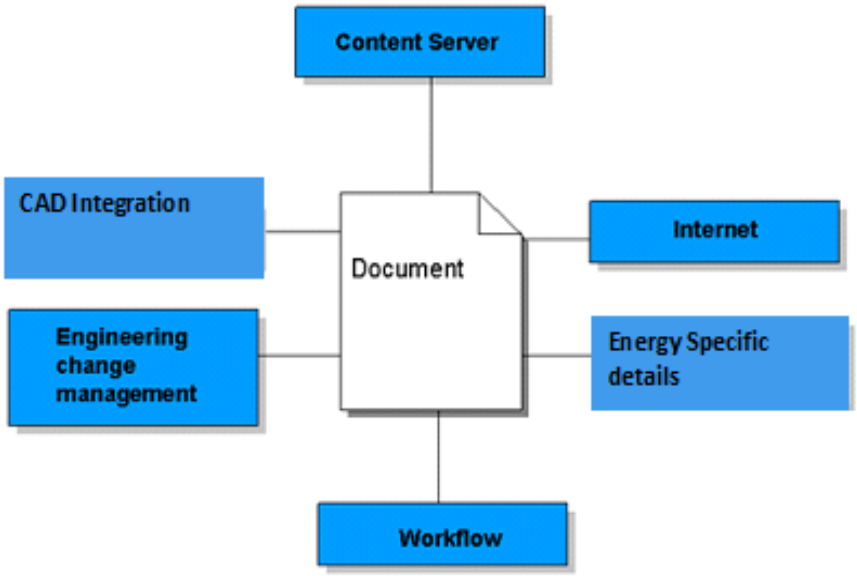
Document Management System (DMS) Architecture

System administrator is responsible to setup document storage area for DMS system and document the storage area setup process for further reference. Creating a storage area or content server for DMS, is an important activity in the documentation process. A centralized document storage location provides a starting point for organizing, updating and managing the documents. Typically, each PLM SA has own source copies of documents and notes; having a central repository makes it easier for people to find the latest version of a document. Creating a DMS application is also a better way to manage documentation. If there is a central repository, people will store their all documents into the DMS application.

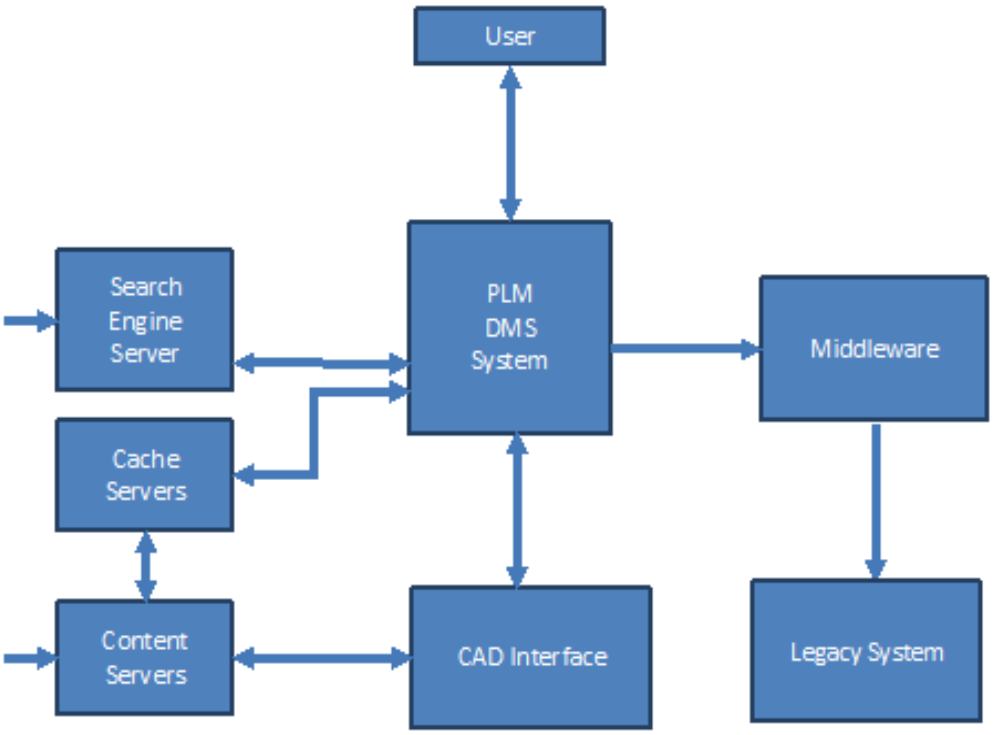
SA develops and documents the DMS Architecture. Users are integrated through front ends in following ways such as Graphical Interface, Integration in desktop application, Internet Applications using web documents, Integration with portal, CAD Integration.

Actual Processing logic is there in Document Management System. CAD (Computer Aided Documents) Desktop enables transfer of documents from external system. Any Documents in DMS saved with a key created as Document Info record and the files get attached to it. This in turn addresses the server components such as Content Servers: Storing the original Files; Index server: Create and manage indexes for full text search; Cache Server: Increase access speed; Workflow: Control the approval and state of the documents.

PLM PDM DMS Data Architecture



PLM PDM DMS Landscape Architecture



DMS Conversion

SA develops a data conversion strategy to implement DMS application. Accurate and reliable Master data is key to a successful DMS Implementation, hence, it is imperative to define a data conversion strategy that will provide the business with data that is accurate, valid, non-redundant and timely converted for both testing purposes and final cut-over.

The purpose of a comprehensive data conversion plan is to leverage a cost effective way to such as Cleanse data, Transform data, Convert the data into DMS maintaining data integrity.

Moreover, the purpose of the Data Conversion Strategy is to specify the systems, procedures, and guidelines on how to migrate data from multiple legacy or strategic systems to DMS. The Data Conversion Strategy will be created initially as part of the Ramp Up phase and it will be revised during each stage of the project to ensure it remains relevant and accurate.

Following data conversion approach is used to implement DMS application such as the following outlines the process that is used implemented for the design and construction of the conversions for the DMS implementation; Conversion approach will leverage data conversion mappings, transformations and processes during the interface design and development phases; All conversions will use intermediate files for cleansing, mapping, and preparation for loading. No direct conversion into DMS will be performed; Reconciliation reports have to be developed for each master/transactional data object being converted; Cleansing of Data (where, when, how, and by who) will be decided on a master/transactional data object basis during the Business Blueprint phase; For each conversion, all the steps (conversion procedures) involved to complete the conversion will be recorded and kept in central location for project team's reference; Conversions will utilize the common data structures, codes, standards, and hierarchies developed during the Blueprint phase.

DMS Enhancements

The purpose of the technical enhancement strategy document is to provide procedures for requesting, documenting, authorizing and prioritizing development requests for enhancements to the DMS system. System enhancements are required when standard DMS business process functionality does not support a specific DMS process team requirement. These are determined to be "Gaps" in the delivered functionality of the software.

Enhancement requests should be researched to determine the overall impact to the system. These findings will be documented as a "Gap" in the Issues Tracking Log. This will provide a high level description of the enhancement requirements to "close the gap.

Searching for Documents

Search facility is a must for a living documentation system. People are going to put stuff where it cannot be easily found by others. When choosing a search engine, consider the level of search granularity and search options available, as well as what types of documents can be accessed for full-contents indexing. It is preferable to be able to limit the search to specific areas or objects. One might specify to search only the titles of documents or the text on the pages where they are linked. Other searches might include the content of the documents themselves or the keywords or tags associated with the pages.

The process, searching for documents, is performed by a large number of people. The storage of documents on a global system with non-significant part numbering will be a significant change. The aids to searching will include such as Document Type, Document file extension, Content search, Document description.

Conclusion

Develop a process and document that process then store it so that it's easily used, and make it available to everyone who might need it. Documentation provides information to respective team or customers so they need to bother PDMS As less often and so save them time. It helps PDM SAs repeat processes without any issues and simplify processes which can be delegated easily. Documenting a process is difficult. However, once PDM SA has done the hard work of creating the process, the documentation can be used by anyone. Documents should be kept in a centralized storage location so they can be shared and maintained. Documentation saves us and everyone time and leverages everyone's knowledge to make a better environment. *Reference: Thomas A. Limoncelli, Christina J. Hogan, Strata R. Chalup. (Second Edition). The Practice of System and Network Administration.*

PDMDMS application for energy devices is eliminating customer paper usage. A well-designed document management system eliminates the need for paper for documents used within the organization and can reduce the need to send hardcopy outside the organization. *Reference: LAWRENCE WEBBER AND MICHAEL WALLACE. Green Tech How to Plan and Implement Sustainable IT Solutions. Amacom books.*

The quality and availability of documentation is becoming increasingly important. The PDM Document Management System (DMS) offers the following advantages such as If customers link document management to computerized development and production systems, avoid data redundancy, maintain consistency of data, and minimize the workload involved in entering and updating data; DMS application allows exchanging data quickly and securely. Customers can access data directly using electronic search tools, or find documents using known parameters and also search for and display documents (original application files) via the Internet/intranet. By reducing access time and the workload involved in routine tasks, lower the costs considerably; Customers can use document distribution to distribute documents that are managed in the document management system (DMS) either manually or automatically according to company-specific processes. This ensures that the employees responsible or external partners can view or process up-to-the-minute information.

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