
Knowledge Capturing and Codifying in Knowledge Management Using Alfresco: A Case Study of Swiss German University

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ABSTRACT

Knowledge management has become the asset of every organization because every knowledge in each group is unique one with another. Two aspects that important in knowledge management is step to capturing the knowledge and codifying the knowledge. Capturing mean to list or create a real documentation of knowledge while codifying is to create a digital version from capturing process so it can be processed or easily manipulated. One of the most growth software to do knowledge management for codifying is alfresco that being established in 2005. Alfresco provide open source so called Alfresco Community Edition that enable developer to create rules in codifying the knowledge. The output of this process is to create functional ECM in a form of a portal where end user can use it to manage a contents or documents.

Keywords: *Knowledge Management, Knowledge Capturing, Knowledge Codifying, Alfresco, Alfresco Community Edition.*

1. Introduction

Nowadays information regarding any knowledge inside an organization becomes more important because this knowledge is often hard or impossible to be found outside the organizational area. This condition is caused by the reason of how that knowledge being develop inside the organization and each organization have a very unique style on running their business, which makes the knowledge becoming unique also. This uniqueness has caused a problem because the knowledge will become an internal knowledge that can only be found inside a certain organization and can only be known by those who work for the organization.

The problem with this knowledge is worsened when the person or a group that understands the knowledge becoming inactive or not connected to the organization anymore. The knowledge will also be gone with their leave. The problem also comes when a groups or departments inside one organization does not have a media to exchange their knowledge to help each other gathering experience and reach certain goals.

In this case an organization need Knowledge Management (KM) as a media to organized collection of employee or people, techniques, procedures, software, databases, and other element that contain information about organization knowledge and then create, store, share and utilize the knowledge and experience of an organization.

2. Related Work

The previous study on content management using alfresco is done by Maria Befas, Efstratios Kontopoulos, Nick Bassiliades, Christos Berberidis, Joannis Vlahavas in Aristotle university of Thessaloniki. The work is concentrated on improving the content management and information search and retrieval (Maria, B.).

The work main goal is to show how the leading enterprise CMS which is Alfresco can automatically importing and exporting RDF/S ontologies.

3. Knowledge Capturing and Codifying

First of all the coverage area of Knowledge is wider than Knowledge Management (Kamara et al., 2002) Knowledge is unique because each individual may create a different result and those knowledge can be defined as an immaterial resource or asset which can bring benefit in upcoming day. The Knowledge Management later be used to collect, manage, preserve and deliver all needed knowledge.

Organizing and storing all the important document of a company can be achieved by creating an Enterprise Content Management (ECM). ECM can manage all documents and secure that asset inside a repository so it can be accessed when needed.

Enterprise Content Management (ECM) is the process to formalize any document that needed to be stored in a repository using certain tools, strategies and method (Retrieved, 2015). The combination of tools, strategy, and method are unique for each company because their needs are also different. ECM can be dynamically configured based on how each company wants to store their documents on repository.

ECM then will be implement in Swiss German University in order to help The Operator from Swiss German University to handle a needed content that require to be stored and maintain in order to fulfill the requirement in doing a research. The first step in Knowledge Capturing is to find every needed document that involve in *Program Hibah*. *Program Hibah* in a University is divided into two categories which is *Penelitian Desentralisasi* and *Penelitian Kompetitif Nasional* (Ditlitabmas et al 2013).

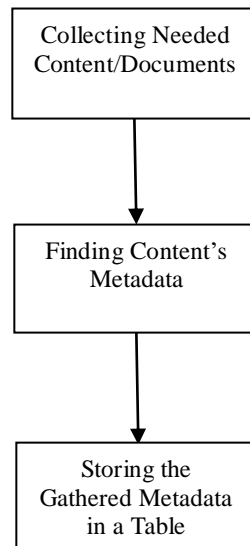


Fig. 1 Knowledge Capturing (Content Metadata)

The next step after collecting the necessary documents is to find the content's metadata. There are a lot of metadata that can be contained within a single document. Some metadata that need to be extract is actually written inside a document, such as Title, researcher data, date, etc. The problem is where to choose the right metadata because not all of those metadata will be used by client to do a search for a document. The gathered metadata has to be relevant and only few are selected to be stored inside repository. The process on selecting the correct metadata is done by questioning the expert or in this case the operator from SGU that working on "*Program Hibah*".

The last step on Knowledge Capturing is to store all the gathered Metadata inside a well-structured table. The tables need to be clear and easy to read so it would be so much easier to read and understand. These tables will be a standard for the next step which is Knowledge Codifying.

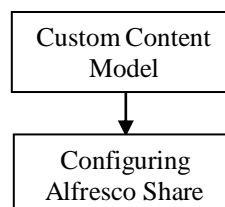


Fig. 2 Knowledge Codifying Process

Creating a custom content Model is the first step on knowledge codifying. In this step, a content model is created to describe how a data will be stored inside a repository. The content modeling is crucial because without it Alfresco would just the same as a file system, nothing more. "Alfresco content models are built using a small set of building

blocks: Types, Properties, Property types, Constraints, Associations, and Aspects.” (ECM Architect, 2015).

After creating the basic model for content now to configure the user side so end user can interact and use the basic model. Same as before when creating a Repository, Share side need Alfresco Maven SDK to build a new project.

4. Result

Based on the methodology, first is to capturing the knowledge after determining the case. As it has mentioned before, there are several scheme inside *Program Hibah*. Each scheme require certain documents to be fulfilled and each of scheme have different form name and metadata.

Collecting the needed documents is the next step in capturing. In the case of *Hibah Penelitian dan Pengabdian kepada Masyarakat*, there are 2 classifications for the documents. One part is a document written by University and documents that created by DITLITABMAS and need to be filled by University.

Documents that need to be created by University are including:

1. Proposal for the research
2. *Monev (Monitoring dan Evaluasi)* for technical and financial.
3. Final report for technical and financial
4. Final presentation
5. Paper

After capturing now is Codifying. Creating a content model for *Hibah Penelitian dan Pengabdian kepada Masyarakat* is the next milestone.

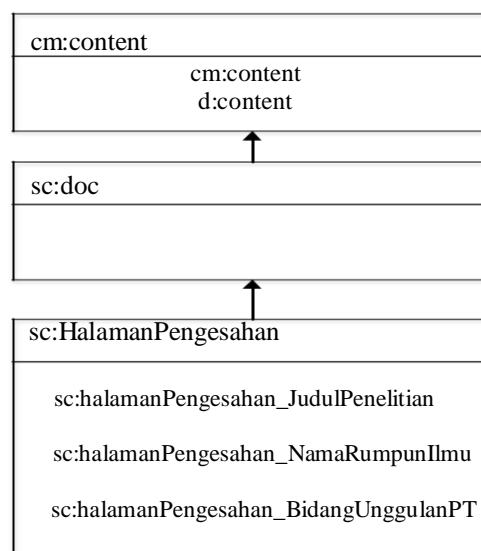


Fig. 3 Content Model Sample with only Halaman Pengesahan

One of the out-of-the-box provided by Alfresco is `cm:content`. `Cm:content` is an association that can connect a folder with a folder or with it documents, it can also associate one document with another documents in different folders. The reason why `cm:content` is the

“grandparent” or the main spot is because this model has a properties so called “Related Documents” which will show and store the connection between the same research title.

When finishing the content Model, a directory for repository need to be done and then start on creating a Maven project in order to build the repositories.

The share tier AMP basically is a process to creating a user interface so they can use the content model that has been built before. Same as repo tier, share tier need a directory first.

5. Conclusion

After creating this project which is content management using Alfresco, a conclusion has been formed. The goal of this thesis which is created a portal using Alfresco as the Enterprise content management is concluded as a success because the portal is fully functional and can help the end user maintain the track of their content, in this case on the behave in completing the documentation for *Program Hibah* from DITLITABMAS.

The portal has been tested and run correctly as it expected. Furthermore, the portal can be extended by adding more metadata to the repository.

The portal has been tested and can be run correctly in a local computer. However, to fully functional and help SGU, the portal need to be implemented inside the SGU server so it can be accessed by anyone that have authorization, from anywhere and anytime. The future work is also include the expansion to other case not only in *Program Hibah*.

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