

Using Alfresco CMS for Storage and Searching of Documents in Small and Medium Enterprises

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Abstract - Document management and storage for each company is a serious and demanding job. Managing of electronic documents solves this problem. Electronic documents and software systems for document management provide affordable, sorted and classified documentation for company, fast search of documents and increased security. Companies that have business units in several cities, using a system of record management can achieve considerable optimization of resources in the form of centralization and optimization of process documentation and flow of documents. There are many different document management systems on the market, and it is important to note that there are some very effective systems based on open source standards. This paper presents the Alfresco CMS that can find its application in small and medium enterprises.

I. CONTENT MANAGEMENT SYSTEMS

Content Management System is a application that is used to store electronic documents and scanned paper documents, to track documents through their life cycle and to the integration of different databases. According to [4] content management system is the category of software that helps manage all the unstructured information and content in the enterprise. This information exist in many digital forms such as text documents, images, XML, audio and video files.

Content management includes following technologies [2]:

- Document management - creating, organizing and sharing digital documents.
- Web Content Management - manage files and data that are intended for posting on the Internet. It makes it easier for people without extensive technical knowledge to set the appropriate content to the web sites.
- Records management - provides an environment for creating, declaring, classifying, storing and deleting records.
- Image-processing applications - to transform and manage images of paper documents. This
- technology allows you to scan documents using hardware and software for character recognition (OCR).

- Social content - for document sharing, collaboration and knowledge management support and project teams. In this component were added to blogs, wikis and support for online interaction. Social content, including video, is the fastest growing category of new content in companies. The name of this component is changed from "Colaboration document" in the "social content" to more accurately reflect customer requirements [3].
- Workflow - to support business processes and routing content, assigning work tasks [3].

CMS also controls the publishing of content through multiple channels. For example, a single piece of content may be published simultaneously to a Web site, broadcasted as a fax, printed as a text document, and sent to a handheld wireless device[4].

These systems allow managing informations that passing through the company or the information that are stored on different servers in the database - and deliver them in a way that enriches the business processes and makes employees more productive. The main advantages are [5]:

- Increased competitive advantage through faster decision-making
- Saving time and costs through more efficient organization of work
- Easily adapt to market demands.

All these features have have one common goal, and that is that collected data from the vast knowledge of the company to use as a competitive advantage in the market.

II. ALFRESCO CMS

Alfresco is a content management system for Windows, Linux and UNIX operating systems, based on the Java programming language. It was made as a web application that runs on the server. In this way, any updates or adjustments can execute in one place, and all users at all times have the same access to data.

Alfresco is based on open source standards. Users can add specific functionality through add-ons modules, or to take some of the finished modules developed by the user community of Alfresco. Some of the major open source components that are built into the Alfresco are [1]:

Open source component	Used in Alfresco
Apache Lucene	Search for text and meta data
Apache MyFaces	JSF components in web client
Mozilla Rhino JavaScript Engine	Web script controlers, JavaScript on server
OpenSymphony Quartz	Planning induction process
Apache Axis	Web services
OpenOffice.org	Conversion <i>office</i> documents into PDF
Spring ACEGI	Security (autorization), roles
Apache FOP	Transformation XSL:FO into PDF
Apache POI	Extraction meta data from Microsoft Office files
ImageMagick	Image processing

Figure 1. Open source components

Alfresco Record Management provides a safe environment for the creation, classification, and storage of documents. Managing of paper documents is not easy job, distribution of documentation is a manual and slow process. Electronic document management solves this problem. Digitalization of paper documents, create a number of benefits:

- No need for large storage rooms,
- Documents are stored in digital form, eliminating the possibility of damage over time and independent of temperature and moisture
- The system enables fast search of documents
- Increased security of the records by assigning the appropriate rights to different users
- Provided the simultaneous access to documents for multiple users

- Centralized database for documents that belong to different departments
- Provided the integrity of documents using a file for read-only

Alfresco provide creation reports on numerous criteria, such as: data on cases that are commonly used, documents whose validity period has expired, the documents created by the user.

By integrating the scanning and OCR (Optical Character Recognition) technology Alresco provides solution for storing paper documents, transforming it into digital form, whose contents can be searched. Document scanning procedure is quite simple: paper documents are scanned using a device that is associated with Alfresco and converted into TIFF digital format. Then in the warehouse Alfresco determines whether this will be a scanned document saved as a PDF, Word document, or will remain in its original form [1].

There are two versions of the software:

- Alfresco Community Edition – *open source* i free software
- Alfresco Enterprise Edition – *open source*, with commertial support.

Characteristics of Alfresco Community Edition:

- It is designed for highly trained programmers and enthusiasts who are themselves able to perform adjustments and solve problems related to this system.
- It is designed to work on open source systems
- Support is not provided.

Characteristics of Alfresco Enterprise Edition:

- It is designed for companies, government institutions and other organizations that need high quality open source CMS for a price that is 1 / 10 cost of commercial software of its kind on the market.
- It is designed to work on open source systems, as well as with MS SQL Server and Oracle databases and BEA WebLogic and WebSphere
- Includes advanced tools that facilitate the JMX connection with databases, monitoring memory and reconfiguration of server.
- Afresco provides commercial support with Service Level Agreements (SLA) for troubleshooting, fault resolution and installation improvements

- The implementation of rigorous tests to detect errors, checking the stability and security.

III. USING OF ALFRESCO CMS

The following example will show how Alfresco Record Management could be applied for storage (archiving) and searching of documents in the Green Trade Company.

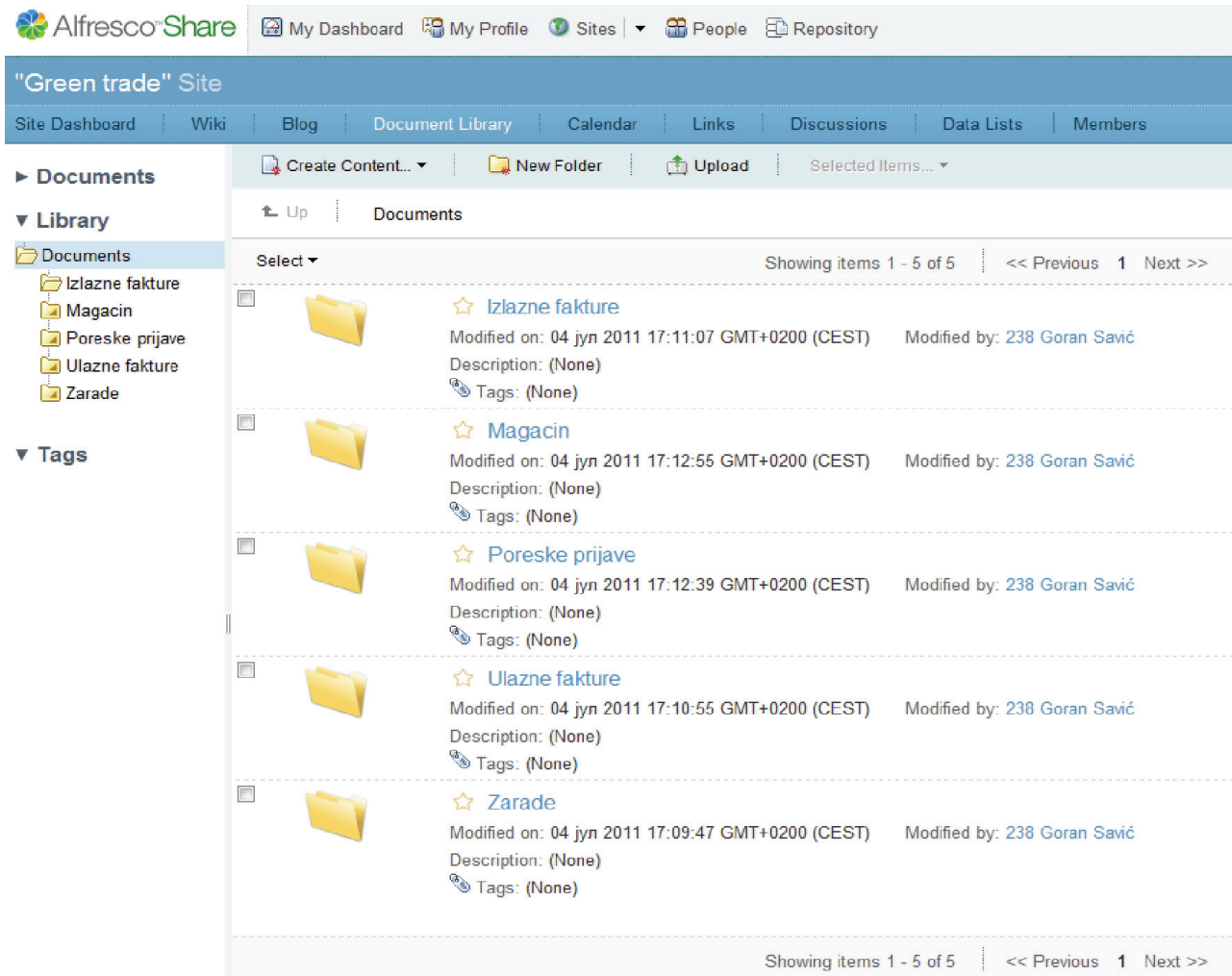


Figure 1. An example of the organization of documents

The structure of this program is in the form of folders on the local computer. The organization of this archive is very simple. Paper documents are scanned and accommodated in the appropriate spaces, and are electronically entered directly into the system. In this way, the documentation is effectively systematized and search results are obtained in a very short period of time, in just few seconds. This way of working with documents in particular has an advantage if the company consists of several business units that are physically deployed in several cities or countries.

Alfresco Record Management incorporates a number of options that facilitate its use, as well as search documentation by numerous criteria, review of selected documents directly in the program (Alfresco has built-in Flash), etc.

Documentation can be viewed by all employees to whom the administrator gave authority to access the system, with defined rules of access to documents and users are assigned to appropriate roles. I can also create groups of users that have the same rights over the documents. Access to the system may have and external users.

IV. CONCLUSION

Using of document management systems that are necessary to any company, working with documents becomes faster and more efficient, reduce paper use, eliminating the need for archive space, employees in different business units, companies can easily have access to the necessary documentation.

Alresco CMS that provides all of this is free to download, install and use.

If in a company does not exist the person who has knowledge of working with Alfresco, the engagement of external collaborators brings additional costs. Training employees to work on this system can take some extra time and a money. Also, system administrator must always be available in order to work with all users, their rights, eliminated mistakes and problems at work.

REFERENCES

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- [2] www.alfresco.com
- [3] Magic quadrand for enterprise content management, Gartner, <http://www.gartner.com/technology/media-products/reprints/microsoft/vol14/article8/article8.htm>
- [4] A 15 minute guide to enterprise content management, <http://www.emc.com/collateral/software/15-min-guide/h3150-ecm-15min-guide-gd.pdf>
- [5] When content matters: Building the business case for enterprise content management, http://emc.com/collateral/software/15-min-guide/h3007_15_min_guide_when_content_matters_gd.pdf

