Open Source-based Set of Tools and System for SMEs Management

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Abstract: - The paper presents an open source-based set of tools and a system for managing and disseminating documents in heterogeneous software (source code files, database objects, graphical objects, text files etc). The paper motivates the utilization of open source models for the maintenance and adaptation of the (application or generic) software. It describes the representation of the software in Internet computing, the architecture of the open source-based XML repository manager and the most important issues for its implementation.

Key-Words: Open source, software tools, secured socket connections, client-server application, real-time system

1. Introduction
The Open Source movement has developed new concepts of making business based on transparent and co-operative ownership of software. The system develops methods and tools to better match the results from the F/OSS software designers community and potential users at SMEs in various businesses in an unprecedented way.
The system presented brings together relevant software and technology demonstration in this field and tackles the following issues:
1. Motivations and sustainable business models for open source software provision
2. Co-operative design models for authentication to various enterprise services
3. Developing and integration of mission critical applications for enterprises
4. Reference implementations for open groupware and multimedia archiving solutions
5. Simplification and visualization of F/OSS legal aspects and licensing

2. System Aims
The system aims at a series of activities to apply this scheme to different types of business areas, especially for SMEs and NGOs. The overall goal is to foster the usage of F/OSS backend platforms and services and to generate new business opportunities for the Open Source developer community. The open source-based set of tools is supposed to have a high socio-economic effect for both, the providers and users of F/OSS, with a special focus on SMEs. On the development side, the system is arranged around a few models, bringing experience and moderating integration to various end users.
Scientific and technological objectives and state of the art of the system supports the migration of the business processes in enterprises and public organizations to use F/OSS. A number of F/OSS solutions are available for different purposes, however some elements are missing so that F/OSS can be used for supporting all day-to-day business tasks.

The Open Source movement has to tackle some obstacles, in order to be competitive with commercial closed license solutions. First, a few critical applications in the area of accounting, customer relation management or shared calendaring are not available or need major improvements. Secondly, many mature F/OSS applications, which are already used in offices, such as file sharing, forum, web mail, or web logs, usually have different user management schemes, which enforce the user to remember different user names and passwords.

3. General Presentation

By splitting the application across three tiers, we are able to separate out the three logical components of the system: user interface, computational logic and data storage. Each logical unit can then be developed separately from the others, introducing an important degree of flexibility into the design of the application.

The open source-based set of tools provides a mechanism for tight integration of authentication schemes of various enterprise related applications to a commonly managed user base. The experience in ISP hosting shows, that it is not wise, to give any user his/her own account to access different kind of services due to security risks. Instead, the product manages user accounts in a database and makes it available through various interfaces (including LDAP) and programming languages. This provides high flexibility for user (and group) management and minimizes the risk for exploits.

The system provides enterprises with reliable business applications, which seamlessly work together, and makes any office independent from closed source software.

The long-term impact of Open Source business applications is that it radically simplifies and standardizes servers in any companies big, medium or small data center. Because Linux runs as well on low-cost Intel as it does on high-reliability mainframes, Linux brings consistency and manageability to the data center. This makes Linux a key technology that will transform today's garbled, underutilized data center into a highly automated resource built on cheap hardware components, an architecture named "Organic IT." Unlike today's data center, in which it can take months to deploy an application, an Organic IT data center running Linux can deploy the same application in days.

The system outlines a work programme and vision that leads to the development of:
- a framework platform for service deployment;
- an office server platform;
- tools to help developers build services and applications to be deployed on this integrated platform.

This is highly relevant to the strategic objective by producing open source components, by producing an integrated platform built using these components (to enable further innovation in the applications and services market), and by producing tools for designers to use to develop applications and services targeting this platform. A key feature of the platform is that is not simply an abstract middleware platform but an instantiation of such a platform in a real-world domain where there is a great demand for new
innovative services (essentially hybrid Internet and office services potentially sharing resources from these two domains). At the heart of the system vision in this area is the use of IETF and W3C standards. The system sees this as being of relevance to all future business related services, especially those targeted at networking capabilities.

PHP web applications commonly make use of some objects to perform tasks such as connecting to databases or sending email. When moving websites between web servers, it is critical to know which objects are used on the site, as it may be necessary to install these objects on the new web server or to rewrite the code. The system looks for the instantiation of such an objects through the use of the CreateObject and Server.CreateObject functions. The report produced by the system contains a list of the objects used.

4. Conclusions

Implementation of this system in Romanian firms has the following advantages: obtaining a high efficiency and time saving, limited efforts for developing a new application in a short period of time and high performance of the system in solving the demands of SMEs applications.

The system uses secure socket connections (SSL) to transmit all sensitive information during confidential process.

The application has been tested in an integrated system, with several servers running Windows 2000, connected in a network. The system was configured easily, and it has worked very fast because the communication protocol transmits just the information needed. The system targets cover three areas.

- Content engineering: is a cooperative task of experts in the domain of SMEs management and information specialists from the IT and multimedia domain. Their outputs are digital modules, consisting of the combination of the management methods, realized by advanced IT solutions.
- Platform engineering: generate the technical framework, supporting the management process and e-business. The platform engineering is based on available standards and methods and executed by integration of IT specialists and IT solutions.
- Business engineering: is a collaborative work, which integrate all the activities of the management and IT professional partners. The target of the business engineering is to offer new management solutions, via the modern methodology and technology.

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