

Codice CMS: Towards a Multimedia Weblog Content Management System for Supporting Mobile Scenarios

Pedro C. Santana¹, Victor M. Gonzalez², Marcela D. Rodríguez³

¹Multimedia, Interaction and Smart Environments Group, CREATE-NET, Italy

²Interactive Systems Design Group, University of Manchester, United Kingdom

³School of Engineering, UABC University, México

pedro.santana@create-net.it, vmgonz@manchester.ac.uk, marcerod@uabc.mx

Abstract

This paper describes an architecture extension proposal to the Codice CMS: a Weblog Content Management System in which a weblog is created by a web interface or through the Codice Web Services APIs. Codice is flexible in the content management; it is efficient and scalable through its plug-in engine and the web service API. The paper illustrates the solutions adopted to support the management of multimedia documents on mobile scenarios.

1. Introduction

Our research aims to provide a technological solution focused on supporting the access, posting and edition of multimedia blog entries for mobile scenarios [1]. In many contexts of interaction, people can potentially use a variety of devices to manage multimedia blog-entries including laptop with wireless cards, or camera-enabled mobile phones. Therefore, it is required to develop content management systems (CMS) that go beyond the desktop and facilitate multimedia blogging practices while being mobile.

Inspiration for the proposed technology came from our previous studies and technology implementations aiming to support relationship between elder people living alone in Mexico and their relatives living abroad [1]. Following a user-centered design approach based on ethnographic interviews and prototype evaluations, we envisioned a home-based pervasive communication system: The Electronic Family Newspaper (EFN) [2]. The system facilitates communication between elders and their families living abroad. The EFN is a blogging tool based on Codice, a CMS. The current implementation of EFN supports the blogging of content using Tablet PCs (with a simplified interface for elders) and any other device from where a Web browser can be accessed. Evaluation trials with EFN are providing clear indications of scenarios where

mobile access and posting through mobile phones could be advantageous.

2. Codice CMS

A weblog (or blog) is a term used to refer to a webpage that has frequent postings made to it by the person who created the page and others who are given rights to access the page. The trend of using Content Management Systems (CMS) to manage weblogs is gaining momentum with the introduction of automated publishing tools that facilitate the publishing process and improve the user experience and usability. Codice CMS, is a weblog content management system in which a weblog is created by the web interface or through the Codice Web Services APIs.

Codice was built on AJAX (Asynchronous JavaScript + XML) and PHP. The Ajax engine, allows the user to interact with Codice synchronously by using a web based interface. To implement the API (Application Programming Interface), we used the Service-Oriented Computing (SOC) paradigm [3]; thus, we used services as the fundamental elements for developing applications. This responds to the need of providing a uniform and ubiquitous information distributor for a wide range of computing devices (such a Tablet PCs, PDAs, mobile telephones, or appliances) and software platforms (e.g., LINUX or Windows). We based our architecture on a Web service API layer in order to interact with Codice CMS programmatically (see Figure 1).

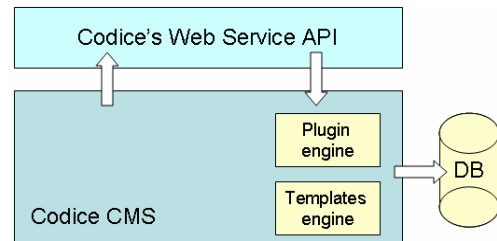


Figure 1. Codice CMS architecture.

3. Codice CMS Mobile

Based on the original Codice architecture we propose to include multimedia content (videos and audio) by implementing particular Web Services, which through the Codice's Web Service API will provide support for this kind of applications.

3.1. Desirable system features

Based on our studies the extended Codice architecture should have the capability of:

- 1) Managing different multimedia documents (video and audio).
- 2) Provide the visualization of the content among heterogeneous devices in particular mobile phones.
- 3) Allow the posting of content from a collection of heterogeneous devices.

3.2. Extended architecture

In order to achieve the system functionalities described above, we are proposing the following architecture as it is described in figure 2.

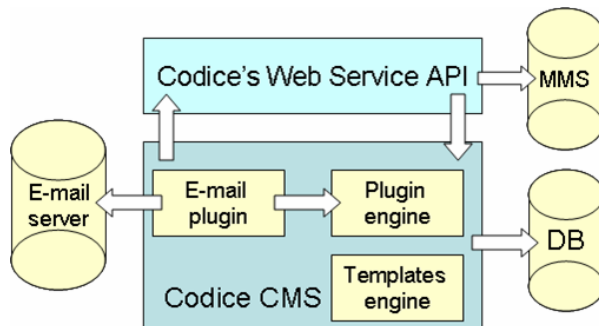


Figure 2. Extended Codice CMS architecture.

Point 1 requires a strategy in order to store the content. Thus, we require a multimedia server component (MMS) to manage the documents used by the application. When the Codice CMS requires retrieving a document, it will send the request to the MMS that will act as a gateway to the actual repository that maintain the files.

In order to address the point 2, we choose the FLV format. FLV (Flash Video) is a file format used to deliver video and audio over the Internet to the flash player software. Because the flash player runs as a browser plug-in, it is possible to embed Flash Video in web pages and view the video within a web browser from many devices. We added a service to Codice with the purpose of encoding the multimedia documents uploaded by the user, using the command line tool FFMpeg that is an audio/video conversion tool.

To provide the functionality on point 3, we added a plugin to Codice CMS in order to verify an e-mail account to allow posting content by email which can be sent from any mobile devices with this capability (e.g. mobile telephones, internet tablets, PDAs, etc.).

4. Conclusions and Future work

We need to explore new approaches to enhance the delivery of multimedia content to mobile devices like smart phones with no support to flash video. Given the current interest on FLV formats to become the standard de facto for video-blogging, we trust that proper support will be developed by manufacturers. Our own efforts will be on the direction of defining alternative forms of visualization through conversion tools.

4. References

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