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Pan Arab Cyber Security Observatory Website

Final project

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Chapter 1 – Introduction

The Pan Arab Regional Legal and regulatory Observatory for Cyber Security is a non-profit, volunteer-based project that pools the resources of the private, public and academic sectors to develop a monitoring body aiming at improving awareness and identifying, assessing, updating, upgrading, and introducing Cyber Security Laws, regulations and guidelines by communicating and sharing regional and international best practices. The Pan Arab Regional Legal and regulatory Observatory for Cyber Security aims to contribute to socio-economic growth in the Arab World through increased levels of Cyber Security awareness in the Arab World – the public sector’s e-government projects, the private sector’s e-business transactions, the academic sector’s e-learning programs and individual digital identity.

In this report, we will present the observatory’s website (Pharos) which we developed using drupal. Pharos includes many features such as automated archiving, membership registration and a statistical reporting portal for the Arab world. The portal’s backbone is designed based on a combination of SQL and NoSQL technologies in order to guarantee a flexible and rapid exchange of information.

The rest of the report is organized as follows: In Chapter 2, we present an overview the adopted technologies. In Chapter 3 we describe our website’s structure and the database design scheme. . In Chapter 4 present the statistical portal which is based on HBase (a NoSQL database). Finally, we conclude in Chapter 5.

Chapter 2 – CMSes and NoSQL: An Overview

CMSes

In this chapter, we will present in the first section, several Content Management Systems (CMSes) and compare them according to a set of predefined criteria's. In section 2, we will provide a brief description on the NoSQL technology which is a Non-relational database system. We will browse into its advantages and its different databases.

Content Management Systems – An Overview

When it comes to CMSes, choosing the elite list would be long and difficult process, especially since there are a large number of content management systems available. Therefore, we divided our work into three steps. The first step is the evaluation process that consists on building up comparison clusters with CMS categories, then we will concentrate on the comparison chart between the CMS features to finally explain in-depth the top CMSes chosen.

ENTERPRISE	CONTENT-EDITING	AGENCY-TOOLS
<ul style="list-style-type: none"> + really complex software with many different and powerful functions and interfaces for communication with other software. - high amount of investment for licence and customization. 	<ul style="list-style-type: none"> + concentrates on fast and easy content-editing. - does not take care of functions for special business-functions and workflows. 	<ul style="list-style-type: none"> + individual solution for an individual problem made by a development-company. - solution is not scaleable und changeable.
<p>OPEN SOURCE</p>	<ul style="list-style-type: none"> + free of charge + due to many different developers, new functions for the software are growing fast - professional service and support standards are only given by a third party 	

Figure 1: Choosing Open Source or Enterprise Editions

Analyzing this chart, we can explain that with commercial systems, the cost of license fees can add up quickly as we add content editors, software extensions, servers and databases. With the open source licensing model, there is no need to worry about licensing and buying new mandatory extensions. On the other hand, we can mention the difference between a hard-to-learn commercial CMS and a better reliable and ease of open source CMS as shown in Figure 2. Hence, we decided to go with the open-source CMSes.

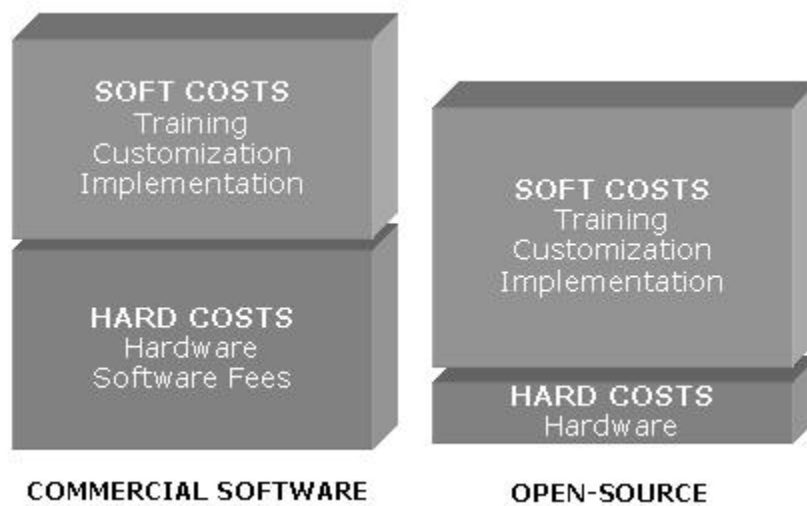


Figure 2: Commercial Software vs. Open-Source CMSes

CMS Features

The selected CMSes are the top 4 most reliable, known, used CMSes for corporate and business solutions. TYPO3, Joomla, Wordpress and Drupal will be compared by the following features:

1. Content Editing: The ability to copy/past from text editors directly into the web editor, Image Auto Thumbnails, Spelling checker and all other word-editing commands are held in this part.
2. Content Management: Includes the back-end functions such as custom content types.
3. Core Applications: Holds all the main components that a website can have, such as chat, event management and XML Sitemap for Search Engines.
4. Flexibility: Describes the different interactive and important components that a website can have, such as an Internationalization component to translate content to different languages.
5. Interoperability: API, RSS and Database Query Editor are the major criteria's in this part.
6. Layouts, Design and Templates: Includes all the wizards related to theming, drag and drop layouts and URL path theming.
7. Mobile Web: Criteria's such as Device Capabilities Detection and SMS Support are held here to show the strong points of the CMS interacting with the front-end part.
8. Performance: This part compares the CMSes with different core-based functions such as Bandwidth and Database Optimization.
9. Security: Points to different security-related components that a CMS could have, such as Password Encryption, SSL Support and Error Reporting.
10. Side Administration: Distinguishes the back-end functions that an administrator can take advantage of, such as Workflow engine, Mass Upload and File and Document Management.
11. Support: This part describes the different techniques of support each CMS presents, such as community forums, Issue tracking and Online Help.
12. Users: Lists the different qualifications that a user can have.

We explained further, each and every one of these features individually in the tables shown in the Annex. (3)

From these tables, we can resume the result of the scores and reliability of each CMS in the following comparison chart having the Computes Scores relevant with the 12 features describes from Table 1 to 12.

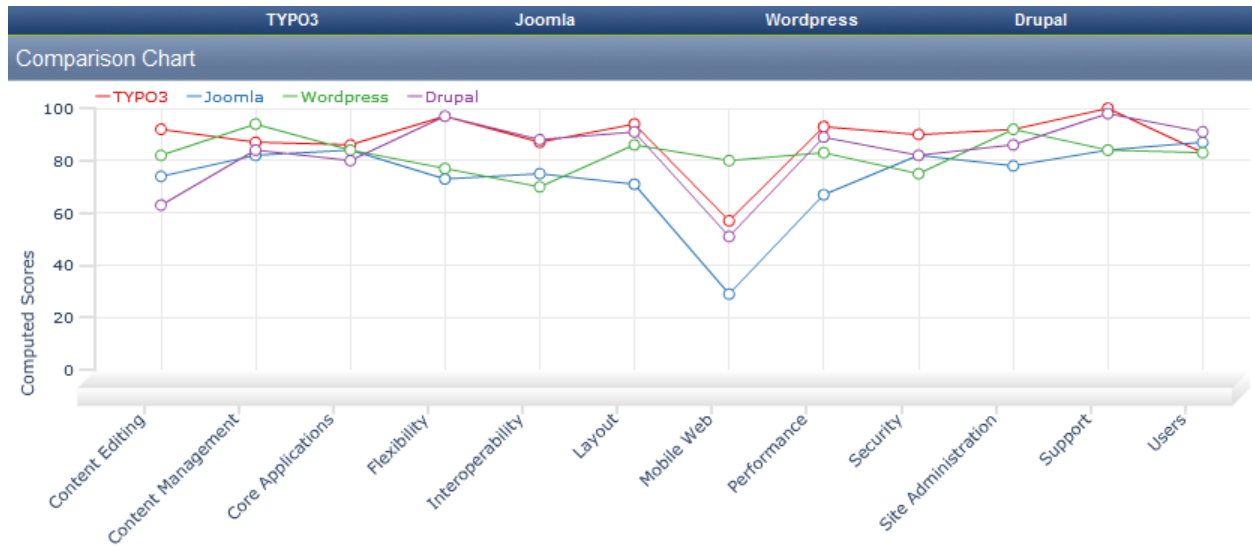


Figure 3: Comparison Chart - TYPO3 vs. Joomla vs. Wordpress vs. Drupal

Evaluation Process

There are many approaches for the purpose of using a specific type of a CMS, these approaches could range from enterprise to open source system, therefore we elaborated the advantages and inconvenient of each and every approach.

Highlights on TYPO3, Drupal, WordPress and Joomla

TYPO3

TYPO3 is an enterprise-level solution as it delivers its own framework as a content management system. Whether it was about managing content for a large corporation, university, non-profit organization or a small business, TYPO3 offers a lot of essential features such as templating, ease-of-use, open architecture, simultaneous installation and many more(1)

Advantages

- For administrators: TYPO3 offers a wizard for creating a site based on an HTML template or series of templates. We define where we want the dynamic content or menus to appear. We

can further extend the templates through a well-documented scripting language called Typoscript.

- For content editors, they have few limits on what editors can use to edit the site, enterprises can easily integrate TYPO3 into their multi-platform environment.

Disadvantages(4)

- High learning curve: TYPO3 is hard to learn. This is both true and false. TYPO3 can be used by three types of people: editors, administrators and programmers as describes earlier. Learning becomes harder with each next group. It is easy for editors to learn TYPO3. Not as easy as WordPress (because WordPress is a very simple blogging-only tool) but still easy.
- Size: TYPO3 is large, it needs a good hosting; TYPO3 can run on a shared hosting too, though it is not the best hosting case for it.

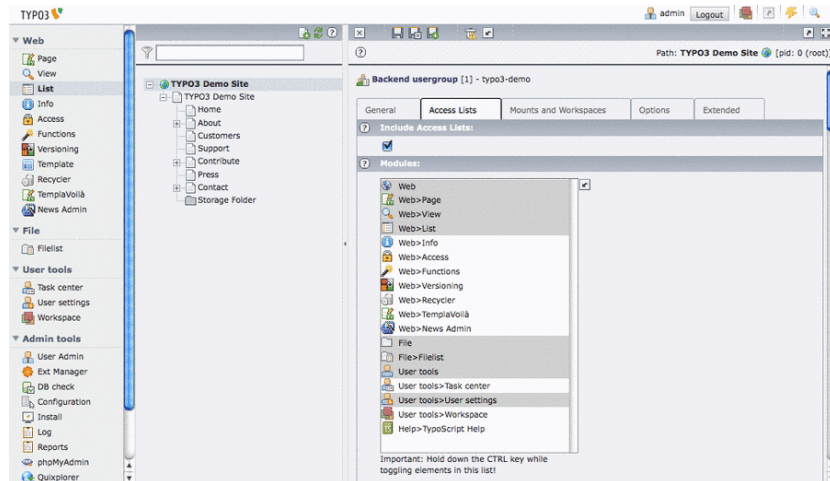


Figure 4: Screenshot on TYPO3 backend.

Drupal

Advantages

- Administer, create and design: Drupal permits to create fine-grained permissions allowing users view and create what the administrator permits. It also allows to create and design our content with an easy-to-use web interface without needing to know HTML or CSS.
- Connect, organize and extend: Drupal makes it easy to connect your website to other sites and services across the web via the extension of RSS (feeds), RDF (semantic web) and XML (search engines). It also helps us organize, structure and re-use our content no matter how much content we have.
- **Disadvantages**



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