

CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

Informatics

Department of Information Technologies



Diploma Thesis

Web Content Management Systems

Alekcandra Diachkova

Summary

The diploma thesis provides the detailed analysis and comparison of the most popular nowadays web content management systems (CMSs) such as WordPress, Joomla! and Drupal based on three dimensions of quality according to ISO/IEC 25010 standard. On the basis of the results was chosen the most suitable CMS WordPress for which was designed and implemented the template for existing microsite according to the latest trends in web design development. Methods of analysis include installation of used CMSs on special clean program shell for creating and debugging websites “Denwer”, conducting of series of comparative tests and web template development including all steps of template creation from wireframing and drawing in Photoshop software to coding, testing and location of finished web site on a web hosting. Web site wireframes and graphical representations can be found in the appendices.

The diploma thesis results say that all three CMSs are powerful tools for managing of the web sites but they have significant differences thus it is important to choose the most suitable system for each specific project. It is understood, that for more conclusive results is required a more detailed study involving more criterions to compare.

Keywords

CMS Joomla; CMS Drupal; CMS WordPress; creating new template; comparing CMS Joomla, Drupal, WordPress; recent trends in web design.

Introduction

Nowadays amount of web sites is approaching 1 billion websites. To have your own web site in XXI century is not a luxury but a necessity to live with the times, to establish your online presence, to stay in touch with your customers, to earn money through the Internet and so on. So the question of creation of modern and competitive sites is particularly acute now.

The most convenient way to maintain and manage website nowadays is the use of special computer application – web content management system (WCMS) which allows creation, editing and full control on the web content. Functioning of CMSs, their classification, advantages and disadvantages are also examined in the literature review.

The practical part of current work is divided into two parts. In first part is done comparison between CMSs Joomla!, WordPress and Drupal based on three dimensions of quality according to ISO/IEC 25010 standard: functional suitability, usability and performance efficiency. On the basis of this comparison their strengths and weaknesses are formulated. The second chapter of practical part presents the steps of template elaboration (from wireframing to

finished web site) for existing micro site working under WordPress CMS chosen as the most suitable for this purposes. In the template development were revealed and implemented the most recent web design trends. A particularity of current work is study and implementation only the latest technologies and practices according to modern research of specialists in the field of web development.

Objectives

Main objective of the diploma thesis is comparison of three the most popular web content management systems (CMS) - Joomla, WordPress, Drupal and use of one of the systems on real project.

Partial goals of the thesis are:

- analysis of the prospects for their further development,
- illustration of working on CMS

Methodology

Methodology of the thesis is based on study and analysis of specialized information resources. The practical part is focused on analysing of three the most use CMS, using special design programs draw web template and using final template on real project. Based on a synthesis of theoretical knowledge and the results of own solution, the conclusions of the thesis will be formulated.

Conclusion

The diploma thesis is focused on study and comparison of three the most popular nowadays web content management systems WordPress 4.2.2, Joomla! 3.4.1 and Drupal 7.37 on based on three dimensions of quality according to ISO/IEC 25010 standard: functional suitability, usability and performance efficiency. Minimal hosting requirements are also were included into comparative analysis.

The main objective of the diploma thesis – comparison of CMSs WordPress, Joomla! and Drupal was achieved. For this purpose was used clean virtual machine and conducted special tests for different measurements using special tools such as Apache benchmark.

The tests indicated that the most functional, fastest (from the viewpoint of database efficiency and page loading) was Drupal CMS. The evident disadvantages were lack of consistent interface and workflow what leads to steep learning curve, and high hosting requirements due its complexity and functionality.

With regard to Joomla! CMS in all tests it showed the worst or middle results such as high hosting requirements, low functional suitability and usability and middle results in performance efficiency.

Summing up Drupal CMSs is most suitable for advanced developers who are working with complex projects where flexibility and scalability are required. Joomla! CMS is suitable for e-shops web sites and web-portals with quite big page loading. WordPress CMS could be used for small and middle size web sites (blogs, magazines, some portals) by people without or with limited programming skills.

The partial goals of the diploma thesis - analysis of the prospects for the further development of CMSs and creation from scratch new template were also achieved.

On the basis of the comparison was chosen the most appropriate CMS WordPress for microsite intended for selling e-books online and was designed and implemented template according to the most recent web design trends. WordPress CMS was chosen for template development for microsite due to its high usability, functionality (functions which are included in the core of WordPress were enough for proper work of given web site), quite high performance efficiency of database. The only disadvantages of this CMS were the biggest time of page loading on server and resource utilization.

Regarding the forecast for the future development and popularity Google Insight predicts significant growth for WordPress CMS at the same time as demand for usage of Joomla! and Drupal CMSs will gradually decrease. This could be explained by low usability leading to steep learning curve, complexity of these CMSs and the growing popularity of one page web sites and blogs.

Bibliography

1. **Netcraft**. January 2015 Web Server Survey. [Online] January 15, 2015. [Cited: 11 4, 2014.] <http://news.netcraft.com/archives/category/web-server-survey/>.
2. **SMITH, et al.** *Creating web pages for dummies: an introduction for web professionals*. 9th ed. New York : Hoboken, NJ: Distributed to the book trade worldwide by Springer-Verlag, 2009. p. 318 p. ISBN 04-703-8535-9.
3. **CROWDER, David and CROWDER, Philip**. *Creating web sites bible*. 3rd ed. Indianapolis : IN: Wiley Pub., 2008. ISBN 978-047-0223-635.
4. **NIEDERST ROBBINS, Jennifer**. *Learning Web design: a beginner's guide to HTML, CSS, JavaScript, and web graphics*. Fourth edition. Boston : Cengage, 2010. p. 603. ISBN 978-144-9319-274.
5. **GIL, Paul**. What Is a 'Domain Name'? [Online] [Cited: January 21, 2015.] http://netforbeginners.about.com/od/d/f/domain_name.htm.
6. **SKILLCRUSH**. Client-side vs. Server-side. [Online] July 30, 2012. [Cited: January 18, 2015.] <http://skillcrush.com/2012/07/30/client-side-vs-server-side/>.
6. **KERR, Mark and KOWATSCH, Ed and Tobias**. *Tips and tricks for web site managers: trends, applications and evaluations*. London : Aslib-IMI Information Management, 2001. p. 204. ISBN 08-514-2439-2.
7. **KOWATSCH, Tobias and ADDEY, Dave**. *Content management systems: trends, applications and evaluations*. 3rd ed. Birmingham : Glasshaus, 2002. p. 204. ISBN 19-041-5106-X.
8. **KERR, Mark and KOWATSCH, Ed and Tobias**. *Tips and tricks for web site managers: trends, applications and evaluations*. London : Aslib-IMI Information Management, 2001. p. 204. ISBN 08-514-2439-2.
9. **KOWATSCH, Tobias and ADDEY, Dave**. *Content management systems: trends, applications and evaluations*. 3rd ed. Birmingham : Glasshaus, 2002. p. 204. ISBN 19-041-5106-X.
10. Tutorial: Build a Content Management System. [Online] December 21, 2009. [Cited: June 10, 2014.] http://www.interaktonline.info/documentation/KTML4/082000_Build_A_CMS.htm.
11. **HIGHTOWER, Lauren C**. *Professional sitecore development*. 1st ed. Indianapolis : Wiley Publishing, Inc., 2011. ISBN 978-0-470-93901-7.
12. **TOMLINSON, Todd**. *Beginning Drupal 7*. New ed. New York : Distributed to the book trade worldwide by Springer-Verlag New York, 2010. p. 316. ISBN 14-302-2859-8.