TEST Engineering & Management

January - February 2020
ISSN: 0193 - 4120 Page No. 4961 - 4967

A Framework for Content Management System for Effectiveness of Web Applications

Apriana Toding
Department of Electrical Engineering, Universitas Kristen Indonesia Paulus, South Sulawesi, Indonesia. E-mail: apriana.toding@ukipaulus.ac.id

K. Shankar
Department of Computer Applications, Alagappa University, India.
E-mail: shankarcrypto@gmail.com

E. Laxmi Lydia
Professor, Vignan's Institute of Information Technology(A), Department of Computer Science and Engineering, Visakhapatnam, Andhra Pradesh, India.
E-mail: elaxmi2002@yahoo.com

Miftachul Huda
Universiti Pendidikan Sultan Idris, Malaysia.
E-mail: halimelhuda@gmail.com

Satria Abadi
Department of Information Systems, STMIK Pringsewu, Lampung, Indonesia.

Article Info
Volume 82
Page Number: 4961 - 4967
Publication Issue:
January-February 2020

Article History
Article Received*: 18 May 2019*
Revised*: 14 July 2019*
Accepted*: 22 December 2019*
Publication*:25 January 2020*

Abstract:
For managing and creating the digital content it can consider a set of related programs or a software application as a content management system (CMS). All types of digital content provide and organize in a system by a content management system. By the use of IT and tools a CMS can accomplished. For web content management (WCM) and enterprise content management (ECM) generally CMS are used. For better academic management in educational planning and quantifying activities this paper study the concept of Content Management Systems. Education delivery management and Computer-based planning becomes knowledge for management and planning and an electronic database in future.

Keywords: *content management system, web content management, enterprise content management, digital content.*

1. Introduction

In any type of unit of digital information the content is essential. It can be sound, graphics, records, images, video, documents, text etc. Anything that is like to manage in an electronic format can also refer as Content Management. By combining process,

January - February 2020
ISSN: 0193 - 4120 Page No. 4961 - 4967

rules and workflow so its electronic storage is effectively management of contents are described as content management.

A CMS is considering as a database that can provides and organizes access of all type of digital content. Generally it has 4 categories:

a. Authoring: Into the database styling and placing the digital content used mechanism

b. Workflow: The content is subject to the approval path

c. Storage: The ability to reference the data and the way in which data held in the system

d. Publishing: From the database options and mechanism of displaying the digital content.

Figure 1: Content management system

Content Management System Architecture

A system of content management made with two major parts on a more technical level:

1. CMA (content management application) – Manage and add the content on a site it actually allowed by this part.

2. CDA (content delivery application) – It is known as behind-the-scenes or backend process, for input in the CMA it get the content, properly store it and make visible to viewers.

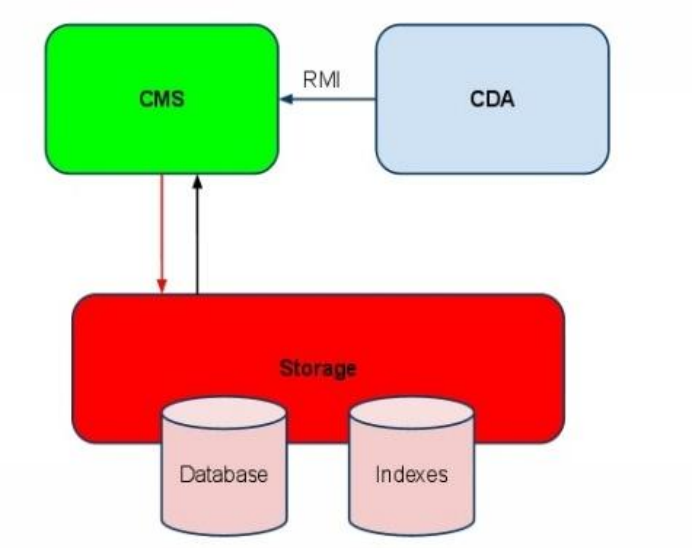

Figure 2: Architecture: single node

2. Features of CMS

Different CMS has it different features, but format management, indexing, publishing, retrieval and search and revision control are some common functions of all the CMS. The features are described below:

1. Legacy the electronic documents into PDF or HTML documents scanned paper documents are facilitates through format management.

2. To create or modify the contents use a templates or a combination of template that is approved by the organization come in to publishing functionality.

3. After initial publication with the use of revision features it can edit or update the contents. Any change that is done by individuals to make the changes can also control by revision control.

4. For access easily by allow users to search by attributes and search functions the retrieval and search features and intuitive indexing index all the data. It can search the data by attributes like author, keywords or dates.

For one to one marketing it also provides tools.

A CMS may also provide tools for one-to-one marketing. Balanced showcasing is The capacity of a website to tailor its advertising and content to a

January - February 2020
ISSN: 0193 - 4120 Page No. 4961 - 4967

particular qualities of user utilizing data given by the gathered by the site or user known as One-to-one marketing - for example, a specific page succession design of user.

Some other features that are included in CMS are as follows:

1. File managers integration
2. With unlimited size and depth use the content hierarchy
3. Permission systems based on group
4. with multiple language support of multiple language admin panels
5. Including discussion boards online and integrated help
6. Customizable templates and full template support
7. URLs that are SEO friendly
8. Audit logs integration
9. Versioning procedures and installation based on easy wizard
10. Less server requirements

Figure 3: CMS useful features

3. CMS compare to traditional online information updating

When it compare to traditional methods then to manage the information online it present a revolutionary way. The necessary personnel and business processes are streamlined considerably because it is not required everyday update for most of the ream members.

	With a CMS	Without a CMS
New Page Creation	A new page is created based on a pre-defined default. All navigation links are automatically updated and a full audit trail is available.	A new page is created as a copy of an existing one. The site map and context navigation links must be updated by hand and standards enforced in an ad-hoc manner.
Content Consistency	Templates are separated from page content, strictly maintaining consistency throughout the site. Display consistency is enforced by the CMS.	Content and template are inextricably tied together, making it difficult to update changes site-wide. Display consistency is determined by the developers.
Workflow Processes	Workflows are built to mirror designated business processes. The CMS workflow engine records an audit with comments on each step. Upon final approval, content is automatically published online.	Workflow is typically done via email in an ad-hoc fashion. Emails are sent to different persons in the organization and upon subsequent approvals, manually published online.
Publishing Times	Content is published immediately once necessary approvals have been made.	Content is published when the webmaster has available time, which could take several days and incur reconfiguration errors.
Legal Compliance	Compliance is enforced by the system maintaining records of content changes and content publication.	Compliance is left up to the team members. Changes to the content must be manually backed up and a log kept of when content was published.

Table 1: With a CMS vs. Without a CMS

January - February 2020
ISSN: 0193 - 4120 Page No. 4961 - 4967

4. Web Content Management System

Without the need for the technical skills requisite to amend or create a web page enabling of user done by a web content management system (WCMS). In a web content management system the content management is a significant factor. In the web content management system Editing, managing and publishing are consider as the three pillars. The content is the combination of data that is either acquired or created from the given source. In this way for publishing an attractive website there is need to do some functional work on set of content.

5. Features of WCMS

Any WCMS has three main features are:

1. It has a process of automated publishing
2. For a website ability to maintain, design and create the personalized content
3. To approve and review content prior to publication the ability for editors
4. Some additional features are as follows:
5. Various languages ability to display content
6. Access to the page control
7. Software updates regularly
8. To retrieve previous versions of content it allow the editors
9. Management of workflow
10. Management of document
11. To extend existing functionality easily installed plug ins
12. To allow for growth scalable expansion
13. Standard, automated templates
14. To modify content for multiple users allow the collaboration tools
15. For easy editing use the tools that allow

6. WCMS Capabilities

A web content management system controls controls a powerful gathering of web material, including HTML reports, pictures, and different types of media. A WCMS encourages record control, reviewing, altering, and course of events the executives. A WCMS ordinarily has the accompanying highlights:

1. Collaboration: WCMS programming may go about as a cooperation stage where numerous clients recover and chip away at substance.
2. Workflow management: work process is the way toward making cycles of successive and parallel errands that must be practiced in the WCMS.
3. Automated templates: Create standard templates (usually HTML and XML) that users can apply to new and existing content, changing the appearance of all content from one central place.
4. Scalable feature sets: Most WCMS programming incorporates modules or modules that can be effectively introduced to expand a current site's usefulness.
5. Document management: WCMS programming may give methods for cooperatively dealing with the existence cycle of a report from starting creation time, through updates, distribution, chronicle, and archive pulverization.
6. Easily editable content: Once substance is isolated from the visual introduction of a site, it normally turns out to be a lot simpler and faster to alter and control.
7. Access control: Some WCMS Some WCMS frameworks bolster client gatherings, which control how enlisted clients communicate with the site.
8. Content virtualization: WCMS programming may give methods for enabling every client to work inside a virtual duplicate of the whole site, report set, or potentially code base.

January - February 2020
ISSN: 0193 - 4120 Page No. 4961 - 4967

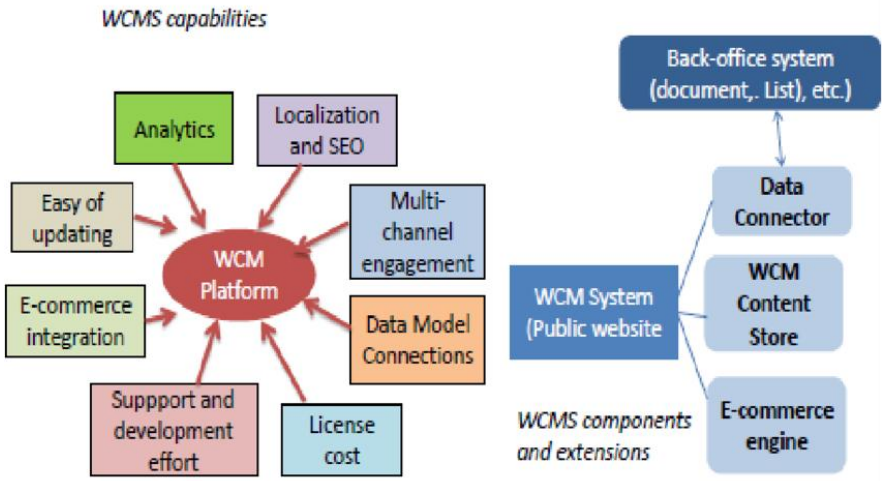

Figure 4: Capabilities of WCMS

7. Conclusion

For managing and creating the digital content it can consider a set of related programs or a software application as a content management system (CMS). All types of digital content provide and organize in a system by a content management system. By combining process, rules and workflow so its electronic storage is effectively management of contents are described as content management. Without the need for the technical skills requisite to amend or create a web page enabling of user done by a web content management system (WCMS). In a web content management system the content management is a significant factor.

References

[1] Umesha Naik & D Shivalingaiah(2009), "Open Source Software for Content Management System". 7th International CALIBER 2009.

[2] Kale Suhas Babasaheb & Santosh S. Lomte(2015), "Study of Content Management Systems". International Journal of Advanced Research in Computer Science and Software Engineering,Vol. 5, Issue. 3, March 2015.

[3] Mike Johnston (2009). "What is a CMS?". CMS Critic. Retrieved 2009-02-13.

[4] Multiple (wiki). 'Content management system". Docforge. Retrieved 2010-01-19.

[5] Jose-Manuel Martinez-Caro, Antonio-Jose Aledo-Hernandez, Antonio Guillen-Perez, Ramon Sanchez-Iborra & Maria-Dolores Cano (2018), A Comparative Study of Web Content Management Systems.

[6] Cao, Y., Huang, L., Li. Y., Jermsittiparsert, K., Ahmadi-Nezamabad, H., & Nojavan, S. 2020. "Optimal Scheduling of Electric Vehicles Aggregator under Market Price Uncertainty Using Robust Optimization Technique." International Journal of Electrical Power & Energy Systems 117: 105628.

[7] Yu, D., Wang, Y., Liu, H., Jermsittiparsert, K., & Razmjooy, N. 2019. "System Identification of PEM Fuel Cells Using an Improved Elman Neural Network and a New Hybrid Optimization Algorithm." Energy Reports 5: 1365-1374.

[8] Tian, M., Ebadi, A., Jermsittiparsert, K., Kadyrov, M., Ponomarev, A., Javanshir, N., & Nojavan, S. 2019. "Risk-Based Stochastic Scheduling of Energy Hub System in the Presence of Heating Network and Thermal Energy Management." Applied Thermal Engineering 159: 113825.

[9] Yu, D., Wnag, J., Li, D., Jermsittiparsert, K., & Nojavan, S. 2019. "Risk-Averse Stochastic Operation of a Power System Integrated with Hydrogen Storage System and Wind Generation in the Presence of Demand Response Program." International Journal of Hydrogen Energy (In press), DOI: 10.1016/j.ijhydene.2019.09.222.

[10] Jabarullah, N., Jermsittiparsert, K., Melnikov, P., Maseleno, A., Hosseinian, A., & Vessally, E. 2019. "Methods for the Direct Synthesis of Thioesters from Aldehydes: A Focus Review."

January - February 2020
ISSN: 0193 - 4120 Page No. 4961 - 4967

Journal of Sulfur Chemistry (In press), DOI: 10.1080/17415993.2019.1658764.

[11] Jiao, Y., Jermsittiparsert, K., Krasnopevtsev, A., Yousif, Q., & Salmani, M. 2019. "Interaction of Thermal Cycling and Electric Current on Reliability of Solder Joints in Different Solder Balls." Materials Research Express 6 (10): 106302.

[12] Yu, D., Ebadi, A., Jermsittiparsert, K., Jabarullah, N., Vasiljeva, M., & Nojavan, S. 2019. "Risk-constrained Stochastic Optimization of a Concentrating Solar Power Plant." IEEE Transactions on Sustainable Energy (In press), DOI: 10.1109/TSTE.2019.2927735.

[13] Jermsittiparsert, K., Sriyakul, T., Sutduean, J., & Singsa, A. 2019. "Determinants of Supply Chain Employees Safety Behaviours." Journal of Computational and Theoretical Nanoscience 16 (7): 2959-2966.

[14] Sriyakul, T., Singsa, A., Sutduean, J., & Jermsittiparsert, K. 2019. "Effect of Cultural Traits, Leadership Styles and Commitment to Change on Supply Chain Operational Excellence." Journal of Computational and Theoretical Nanoscience 16 (7): 2967-2974.

[15] Sutduean, J., Singsa, A., Sriyakul, T., & Jermsittiparsert, K. 2019. "Supply Chain Integration, Enterprise Resource Planning, and Organizational Performance: The Enterprise Resource Planning Implementation Approach." Journal of Computational and Theoretical Nanoscience 16 (7): 2975-2981.

[16] Singsa, A., Sriyakul, T., Sutduean, J., & Jermsittiparsert, K. 2019. "Willingness of Supply Chain Employees to Support Disability Management at Workplace: A Case of Indonesian Supply Chain Companies." Journal of Computational and Theoretical Nanoscience 16 (7): 2982-2989.

[17] Jermsittiparsert, K. & Chankoson, T. 2019. "Behavior of Tourism Industry under the Situation of Environmental Threats and Carbon Emission: Time Series Analysis from Thailand." International Journal of Energy Economics and Policy 9 (6): 366-372.

[18] Romprasert, S. & Jermsittiparsert, K. 2019. "Energy Risk Management and Cost of Economic Production Biodiesel Project." International Journal of Energy Economics and Policy 9 (6): 349-357.

[19] Kasayanond, A., Umam, R., & Jermsittiparsert, K. 2019. "Environmental Sustainability and its Growth in Malaysia by Elaborating the Green Economy and Environmental Efficiency." International Journal of Energy Economics and Policy 9 (5): 465-473.

[20] Jermsittiparsert, K, Sriyakul, T., & Rodoonsong, S. 2013. "Power(lessness) of the State in the Globalization Era: Empirical Proposals on Determination of Domestic Paddy Price in Thailand." Asian Social Science 9 (17): 218-225.

[21] Jermsittiparsert, K, Sriyakul, T., & Pamornmast, C. 2014. "Minimum Wage and Country's Economic Competitiveness: An Empirical Discourse Analysis." The Social Sciences 9 (4): 244-250.

[22] Jermsittiparsert, K., Pamornmast, C., & Sriyakul, T. 2014. "An Empirical Discourse Analysis on Correlations between Exchange Rate and Industrial Product Export." International Business Management 8 (5): 295-300.

[23] Jermsittiparsert, K., Sriyakul, T., Pamornmast, C., Rodboonsong, S., Boonprong, W., Sangperm, N., Pakvichai, V., Vipaporn, T., & Maneechote, K. 2016. "A Comparative Study of the Administration of Primary Education between the Provincial Administration Organisation and the Office of the Basic Education Commission in Thailand." The Social Sciences 11 (21): 5104-5110.

[24] Jermsittiparsert, K., Trimek, J., & Vivatthanaporn, A. 2015. "Fear of Crime among People in Muang-Ake, Lak-Hok, Muang, Pathumthani." The Social Sciences 10 (1): 24-30.

[25] Jermsittiparsert, K. & Akahat, N. 2016. "Fear of Crime among Students of Kalasin Rajabhat University." Research Journal of Applied Sciences 11 (2): 54-61.

[26] VDebanshuKarmakar, Suman S., " E- Learning Trends of CMS and the Role of Digital Libraries", 2002.

[27] Amit Ashok Kamble, Jimmi Rosa, Kevin Reynolds, Pablo Matamoros, "Customization of CMS Software for E-Learning Platform Implementation for Dentists", 2012.

January - February 2020
ISSN: 0193 - 4120 Page No. 4961 - 4967

[28] J.A. Itmazi ,M.G.Megias , "Survey: Comparison and Evaluation Studies of learning Content Management Systems", 2004.

[29] F. Khodakarami, Y.E. Chan Exploring the role of customer relationship management (CRM) systems in customer knowledge creation INFORM MANAGE-AMSTER., 51 (1) (2014), pp. 27-42

[30] S. Duffield, S.J. Whitty Developing a systemic lessons learned knowledge model for organisational learning through projects International Journal of Project Management., 33 (2) (2015), pp. 311-324.

[31] Yen C, Yen C, Hsu J. A Web-based CMS/PDM Integration for Product Design and Manufacturing. IEEE International Conference on e-Business Engineering (ICEBE2008). Xi'An, China. 2008. p. 549-53.

[32] Mirdha A, Jain A, Shah K. Comparative Analysis of Open Source Content Management Systems. IEEE International Conference On Computational Intelligence And Computing Research (ICCIC 2014); Coimbatore, India. Pub Place: IEEE Podhigai; 2014. p. 1-4.

[33] Proposal Submission System - A Content Management System Approach for Proposal Submission,Saeed Shadlou, Chai Kinn Pong, Sanath Sukumaran Taylor's University , International Journal of Web & Semantic Technology (IJWesT) Vol.2, No.2, April 2011.

[34] Web Development Using Content Management System Rushabhkumar H. Baldaniya, Prof. H.J.Baldaniya, International Journal of Emerging Research in Management &Technology ISSN: 2278-9359 (Volume-3, Issue-4).