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By Dr. Timothy R. Obermier

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Accreditation Self-Study Management Using a Website Content Management System

By Dr. Timothy R. Obermier

Dr. Tim Obermier is an Associate Professor of Telecommunications Management in the Industrial Technology Department at the University of Nebraska at Kearney. The Department utilized a website content management system to complete an online accreditation self-study to achieve re-accreditation with the National Association of Industrial Technology. UNK was the first university to receive NAIT Accreditation using an online self-study. Dr. Obermier teaches courses in telecommunications law and has applied the preceptorial concept to technical courses in telecommunications management. Dr. Obermier received the Ph.D. from Colorado State University in Vocational Education with an emphasis in management.

Introduction

Implementation of a website content management system is essential to the successful development of an Internet-based accreditation self-study. Data to be reported in a self-study must be retained in an accessible form for years before it is shared with an accreditation visiting team. Data must also be readily available to advisory committees, program leaders, faculty, students, and often multiple accreditation agencies for ongoing review and analysis. Rather than placing the responsibility of data storage and access upon one individual, typically the department secretary, a well defined content management system that provides controlled access to multiple individuals via the Internet must be implemented.

These systems are referred to in the literature as content management systems or as electronic record management systems. They promise much more in benefits than simply coordinated and protected access to stored data. They can make the process of achieving and maintaining accreditation much less daunting of a task. They also may serve to dramatically restructure the importance of the accreditation self-study, making it an on-going working process rather than a cyclical effort undertaken only when a program's accreditation comes due for review. This article will provide a review of relevant literature to better understand content management systems and how they work, advantages and disadvantages of using these systems for program accreditation, and recommendations for the National Association of Industrial Technology Board of Accreditation and programs considering a web-based accreditation self-study using a content management system.

Review of Literature: Content Management Systems

A review of relevant literature reveals several types of content management systems. Internet users checking current news, their favorite Blogs, stock market reports, and discussion forums are accessing information managed by content management systems. They are also used by college and university faculty in the form of online course management systems like Blackboard and WebCT.

The management of electronic records is as important to organizations as financial management and human resource management. Records management systems are used to document policies, meet regulatory requirements, help protect against litigation, and document institutional history (Sprehe, 2005). In order to meet the Joint Commission of Accreditation of Healthcare Organizations requirements regarding updating employees on policies and procedures, Allina Hospitals & Clinics located in 55 facilities in Minnesota and western Wisconsin, implemented a content management system (Powers, 2004). A global standard exists through the International Standards Organization titled *ISO 15489: Information and Documentation-Records Management* specifically for the assessment, design, and implementation of records management systems (White-Dollman, 2004).

Although the literature shows a near synonymous use of the term *electronic records management system* with *content management system*, the two conceptually are quite different. The term content management system refers to a subset of electronic record management systems

that deal primarily with content accessible via the Internet. Taken a step further, increasingly Internet users are conducting business transactions over the web which ultimately creates an electronic record that needs to be maintained (Barry, 2004). This goes beyond the task of web site content maintenance and enters the realm of record management systems to protect legal, regulatory, and even ethical risks to companies. According to Mohamed (2004) software companies have recognized this need and are making available applications in a category called enterprise content management.

Large enterprises such as corporations and universities typically have thousands of pages of content that can be accessed on web sites. They may be pages accessible to the general public or only to company employees through an Intranet. Typical materials include graphics, videos, marketing literature, training materials, human resource information, documentation of technical matters and the list goes on. Mescan (2004) reports these files are typically scattered in numerous places with little sense of formal organization. Therefore the primary task of a content management system is to create a centralized document storage depository where content can be stored and utilized appropriately. A good system will allow documents to be shared, tracked and used in multiple locations from one central archive.

For example, applied to the university setting, professors are regularly required to submit course syllabi for accreditation and/or university accountability. A professor may have multiple course syllabi each with duplicate information such as office hours, office location, and attendance policies. A content management system that archives individual components would allow the professor to update office hours in one file which automatically updates all the other uses of the same information.

Applied to a larger scale, content management systems allow a once centralized function of web site development to be de-centralized. The institutional website coordinator develops page templates in which individual users are allowed

to update content without the need for extensive HTML programming knowledge or even the need for web page development programs like Frontpage. This eliminates the problem of outdated website content.

Regulatory compliance has become a big issue in our society, and has become one of the most significant motivators for the implementation of content management systems. However, there exists a significant set of benefits for their use with accreditation management.

Advantages and Disadvantages of a Content Management System for Program Accreditation

The cost of a traditional paper-based accreditation self-study is not insignificant when considering the expense of photocopies and shipping to the visiting team members. Eaton (2001) reports that institutions want the accreditation process to be less of a financial burden, not take as much time as in the past, and be more of a tool to help foster improvement. An online accreditation self-study can accomplish all three of these goals. The financial burden may be alleviated somewhat by a reduction in time spent on site by the accreditation visiting team through a partial or completely online program review. Peck (2001) indicates the National Committee for Quality Assurance is planning to bolster online accreditation reviews in order to minimize onsite visits to save money. Olsen (2000) indicates an online accreditation self-study is more accessible to the key individuals that can truly foster program improvement. Further stated by Olsen is the fact that links can be placed in the online study leading to key institutional data. Accordingly the program doesn't have to create a separate report for the data saving time and also ensuring the integrity of the data which could contain errors as it is reformatted. Obermier (2005) points out that an online accreditation self-study would allow for increased collaboration among faculty during the self-study preparation. Traditional paper self-studies don't allow for efficient collaboration. For example, if one faculty member completes a portion of a response to a specific accreditation standard on paper, in order for all faculty

members to review that section the paper must be shuffled from individual to individual. A better process would be to create a file to share electronically and an even better system would be to place the document in a content management system that tracks all changes and allows all faculty to review the completed document at once and provide comments.

The Industrial Technology programs at the University of Nebraska at Kearney achieved National Association of Industrial Technology Accreditation in 2002 using an online accreditation self-study, however without a content management system. Associated with the program, this author's experiences revealed the non-content management approach to be time consuming, requiring an extensive knowledge of HTML programming. Although the non-content management system was unwieldy, (considering it was the first attempt at an online accreditation self-study for a NAIT program) it still had the benefit of increased faculty collaboration, greater involvement among stakeholders, reduced printing and shipping costs, and easier reporting of institutional data already posted to the Internet. Banta (2003) corroborates this by indicating costs to prepare an online self-study in 2002 were a third of those from a traditional paper self-study completed in 1992. In addition hundreds of stakeholders were able to be involved in the process without duplicating a single document.

Re-accreditation was sought in 2006 by the Industrial Technology programs at the University of Nebraska at Kearney using an online accreditation self-study, this time using the content management system Ektron. The Ektron system was easily managed and eliminated the need for HTML programming knowledge. All faculty were able to take an active role and post their responses to program standards for immediate review by their colleagues and important stakeholders.

Program accreditation using the Internet for the self-study is already well underway in fields other than Industrial Technology. Olsen (2000) reports the Accrediting Commission for Senior Colleges and Universities of the Western Association of Schools and Colleges

has recently restructured their accreditation procedures asking for an electronic institutional portfolio that can be viewed on the web rather than a traditional paper-based self-study. Recognizing the benefits of the Internet for accreditation, colleges and universities are streamlining the accreditation process by optimizing accreditation self-studies for web access. (Portland State University, 2004) (The Urban Universities Portfolio Project, n.d.).

Securing and maintaining accreditation requires methodical data collection and analysis, and documentation of program changes, in addition to cataloging and reporting extensive sets of program data and institutional information. When the time comes to prepare the institutional self-study for accreditation review, the process of collecting the data from numerous locations can be a difficult time consuming task. This can be eliminated through the use of a content management system to serve as a central archive for all electronic documents related to accreditation. Since access can be controlled, the data is not accessible to the outside public. According to Askins (2003) Northern Illinois University utilized the online course software Blackboard to facilitate a Higher Learning Commission Self-Study for an onsite visit in 2004. They used the system to enhance communications, review draft copies, and create groups by which teams working on the self-study could collaborate before submitting their work to the group as a whole.

One concern regarding a centralized location of accreditation data is the potential of catastrophic loss of the data through a system failure or operator error. Typically larger institutions have systematic data backup systems that protect against the loss of data which provides comfort in the knowledge that all accreditation data is stored in one location.

One significant drawback to the development of a web-based accreditation self-study is the skill necessary to develop web pages. The use of a content management system effectively eliminates the need for any HTML programming

knowledge. The content of web pages is updated through a software interface which automatically accomplishes the publishing of a web page to an Internet server. This also allows for a consistent look and design to the site. All pages are developed as templates allowing the webmaster to be more involved in establishing uniformity for the site. The individuals posting information to a content management system that will appear in an online accreditation self-study only need to concern themselves with content.

A significant bonus of preparing an online accreditation self-study using a content management system is the increase of collaboration to accomplish the project. The information contained in a content management system is readily available to anyone with the access login information. For example, National Association of Industrial Technology Accreditation requires a systematic survey to be conducted of past program graduates, the results of which are very important for program improvement. The survey results posted to the content management system allow advisory committee members access to the information via the Internet. They then can make suggestions for program improvement. The suggestions can be noted in the advisory committee sections of the on-going accreditation self-study along with how the program responded to the suggestions.

Editing the self-study website through a content management system can be assigned to multiple individuals rather than current practice of just one person. Using a library analogy, when one person “checks out” a particular file in order to update the content, no others are allowed by the software to access the same file. When the person is finished with their work the content is “checked in” and staged for approval. The system can be structured so that all content updates follow a defined workflow and approval process. For example, it may be beneficial for all pages to receive final approval from the Department Chair. When the changes are submitted the Department Chair receives an email notice that an

update has been made on the self-study website and approval is necessary before the page can go on to be published to the website. Depending upon how the workflow approval process has been set up, the Chair may be the final person to allow content to be published to the website. The content cannot be published until all parties in the workflow process have done their part. The workflow approval sequence can be made as simple or elaborate as needed.

The use of a content management system provides the necessary project management tools to effectively change the way self-studies have been accomplished in the past. However, the benefits extend well beyond the institution seeking accreditation. Accrediting agencies have much to gain from encouraging the implementation of a content management system for program accreditation. The opportunity exists for accreditation agencies to re-evaluate the process of program reviews. Program review consultants could be assigned very early in the accreditation review process, possibly a year or more in advance. This could lead to less of a regulatory approach to accreditation and more towards a true program improvement model. Another potential benefit could be a reduction in the number of days invested on site by a visiting team and/or the number of program review personnel needed to conduct a program review.

The previous few paragraphs highlighted the advantages of using a content management system for program accreditation however, there are some disadvantages. A quality content management system can be expensive to implement. These systems are based upon either open source software which is free or low fee or proprietary software that requires extensive licensing agreements and fees. For a comprehensive overview of both types visit the *CMS Review* website at cmsreview.com (Doyle, 2005). While it seems appealing to implement a very low cost solution, what you gain in low software costs are offset by the need for software programmers to adapt an open source code to a specific application. In addition open source content

management software typically has little or no software support and may be more susceptible to security issues. Proprietary systems can be expensive to implement but they are usually supported by the software developer. A typical enterprise system may cost as much as \$40,000 or more. Implemented on a smaller scale, an investment of \$15,000 should be adequate to support accreditation efforts by one department with multiple programs needing accreditation.

Another disadvantage of an online accreditation self-study is the inability for a visiting team member to apply traditional methods of marking up and writing notes in the margins of a paper self-study document. Indiana University–Purdue University Indianapolis experienced this problem when it was discovered the visiting team for the Higher Learning Commission of the North Central Association primarily used a print version of the self-study even though the web-based version was well developed. This created a problem since their evidence was primarily highlighted through online links rather than information contained within the paper self-study (Banta, 2003). Faculty less inclined to accept the online world of doing business may let this one barrier prevent them from accepting the entire concept of an online self-study. Unfortunately this slows technological advancement, but on a positive note, helps ensure a measured adoption process. One solution to the inability to mark up an electronic self-study is to include an electronic response form following the institutional response to each accreditation standard. Comments can be typed or copied into the form by the visiting team member and then sent via email to the visiting team member’s email address.

The disadvantages of a content management system can easily be overcome and the advantages clearly show the possibility of productivity gains for both accrediting agencies and institutions. As shown in Table 1 Advantages and Disadvantages of Using a Content Management System, there are more advantages than disadvantages. However, in order

for implementation to occur for accredited programs in Industrial Technology, the National Association of Industrial Technology Board of Accreditation needs to take a leadership role in the process.

Recommendations

In order to learn more about how a content management system could benefit the accreditation process, the National Association of Industrial Technology Board of Accreditation should:

- study the advantages and disadvantages of an online self-study.
- study the use of a content management system for preparing an online self-study.
- determine if it is beneficial to adopt the online self-study for accreditation.
- identify programs to conduct a comparative study of paper versus online self-studies.
- determine how to best implement online self-studies for NAIT accredited programs.
- establish training programs for visiting team members and programs.
- identify if a need exists for uniformity in processes, procedures, and format of the online self-study.
- explore the extent to which content management systems are available to programs seeking accreditation or re-accreditation.

In order to better understand and formalize the benefits of an online self-study using a content management system, institutions willing to serve as early adopters of this new approach need to be solicited. The NAIT Board of Accreditation needs to conduct a preliminary study with these early adopters to determine how to implement the process among all accredited institutions should the online self-study prove advantageous. Training will need to be put in place for visiting team members and for institutions seeking accreditation. Furthermore the need exists to determine how all National Association of Industrial Technology accredited programs can take advantage of a content management system. One concern is can the National Association of Industrial Technology Board of Accreditation make this technology accessible through a website hosting service with a content management system that all institutions can use, or will each institution need to implement their own content management system? If each institution implements a different system, will uniformity exist allowing a fair and equitable program review by visiting team members?

At the very least a common web page format needs to be considered by the Board of Accreditation so that visiting team members will have a common format to review. There is a strong

Table 1. Advantages and Disadvantages of Using a Content Management System

Advantages	Disadvantages
<ul style="list-style-type: none"> • Increased faculty collaboration • Centralized data archive • Eliminates need for HTML programming • Consistent design and format • Immediate ability to review documents • Advisory committee management • Documented workflow process • Reduction of time spent for onsite reviews • Linking to institutional data already online • Culture of continuous improvement • Self-study developed continuously 	<ul style="list-style-type: none"> • Prohibitive costs • Reading online documents • Document markup by visiting team • Initial system setup and development

likelihood that several National Association of Industrial Technology accredited institutions already have implemented a content management system to facilitate the management of their institutional website. A study needs to be completed to determine just how many institutions are situated with the current ability to implement a content management based accreditation self-study.

These recommendations don't only fall upon the responsibility of the National Association of Industrial Technology Board of Accreditation. Accredited programs have an obligation to seek out and utilize new technologies that will help to keep our profession at the forefront with the usage of information technology.

Conclusion

The current perception of the accreditation self-study is that it is just another project that needs to be completed. This is due in part to the cyclical structure of the accreditation process with re-accreditation required after a specific number of years. Accreditation is currently a project that for the most part ends when the visiting team leaves campus. Following the team's departure the numerous volumes of the paper-based self-study document become shelf fodder. Unless programmatic changes are needed, accreditation is not much of a concern until it comes time to renew and conduct the next self-study. This process and perception must change. The accreditation self-study needs to become an on-going project with no start and stop dates. The emphasis upon program assessment requires that accreditation move from project status to a continuous process. To break the emphasis upon the cyclical aspect of re-accreditation a catalyst needs to emerge to help change perceptions. That catalyst is clearly the implementation of a content management system.

Friedman argues in his work *The World Is Flat* that we are in the beginning of a third phase of globalization largely driven by information technology. He contends that old hierarchies are being flattened and information is more readily available causing the power once held

by controlling access to information to be decentralized. He indicates our society is entering a phase where nearly everything will be digitized and routine tasks automated causing staggering productivity gains for those who can effectively absorb the new technologies and more people than ever will have access to these new technologies (2005). The National Association of Industrial Technology Board of Accreditation can potentially enhance the positive outcomes of accreditation by supporting the implementation of the new technology of online accreditation self-studies using a content management system.

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