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# A Planning and Assessment Model for Developing Effective CMS Support

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*Note: This paper is modified from a presentation at the 2003 WebCT conference in San Diego, CA.*

## **Introduction**

At the University of Florida, in Spring 2003, more than 32,000 individuals enrolled in courses using the centrally-supported Course Management System (CMS). Because less than 1 full time equivalent (FTE) was allocated to support the CMS, this created problems for both users and support providers. In the face of rapid growth, support resources for the CMS had not kept pace, remaining constant over the preceding five years. UF administration is now addressing that problem, and CMS support is undergoing reorganization and expansion. The critical task at this point is to ensure that UF develops a CMS support program that can effectively allocate responsibilities across tasks and hire staff who will bring to UF the knowledge and skills necessary to complement and extend existing resources. The model presented here was developed to help assess current support needs and staff, allocate support responsibilities, identify and hire for needed skills and abilities, facilitate planning, and align CMS support with institutional priorities. Most institutions of higher education face an identical task. Furthermore, the general principles established in this model are applicable to other support areas, not simply to course management system support.

## **Definition**

A course management system, as discussed in this essay, is a tool that, “provides an instructor with a set of tools and a framework that allows the relatively easy creation of online course content and the subsequently [sic] teaching and management of that course including various interactions with students taking the course” (Meerts, 2003). A CMS can support a range of uses from simply serving as online “space” to post static documents all the way to serving as the context and functions of highly interactive, content rich online courses. Related systems are often referred to as Learning Content Management Systems (LCMS) and Learning Management Systems (LMS) (Ellis, 2001). To further enhance confusion, the acronym CMS can also refer to “code management system” for software developers (FOLDOC, 1994) and “content management system” for librarians and those who work with document repositories (Robertson, 2004); but these are not under consideration here.

## **Basic Processes**

As suggested by Table 1, five basic processes form the foundation of this support model: define support staff roles, identify critical role responsibilities, estimate the necessary FTE commitment, assign the responsibilities, and prioritize importance of responsibilities.

“Defining roles” breaks down the overall practice of support into related tasks. Assigning a label

to each role is not necessary, but simplifies talking about roles and component responsibilities. Identifying critical responsibilities for each role serves the purpose of locating support tasks for clarity and accountability. Estimating the necessary FTE commitment provides an indicator of how much staff time should be committed to each task and role. Assigning responsibilities associates the fulfillment of roles and tasks with specific individuals or, in some cases, groups of individuals. This is important not only for accountability but also for clarifying lines of communication when dealing with a problem. Finally, establishing priorities for various roles and tasks clarifies for staff where they should commit their time and effort. Prioritization also facilitates problem solving by identifying the order in which problems ought to be addressed.

Each of these processes needs to be understood as dynamic rather than static. These processes must be flexible to accommodate “live” support issues as they arise. For example, assisting a faculty member in repairing a broken link to course content is a problem of entirely different significance when a class has 15 students as opposed to when a class has 2200 students.

### **CMS Support Roles:**

Supporting a course management system involves a wide variety of responsibilities. Defining those is the cornerstone of developing an effective support program. The CMS Support Model presented here defines five major roles, each with numerous responsibilities [see Table 1]. While support roles are defined for discussion purposes, it is undoubtedly the norm at most institutions that these roles are distributed across personnel rather than uniquely identified with a given individual.

### **Strategic Administration**

Strategic Administration is typically the responsibility of a top-level administrator for CMS support. Elements of strategic administration include visioning, strategic advocacy and marketing, evaluation and adoption, alignment with institutional strategic priorities, integration planning to connect with other campus systems and initiatives, and development of policies and procedures.

“Visioning” means imagining future directions for CMS growth, development, and use. This process includes a responsibility to remain knowledgeable of emerging trends in IT as well as an ability to consider the implications of those trends for online teaching and learning. Strategic advocacy and marketing, on the other hand, involve selling the “here and now;” how the CMS can reinforce current institutional objectives and extend the institutional mission and what the CMS can do to enhance teaching and learning in the present.

Rational decisions need to be made about the selection of a course management system. As a result, Strategic Administration also involves the evaluation of competing CMS products and the selection of a “best fit” system for the institution. Such evaluation should be an ongoing task because of the rapidly changing CMS market. This will ensure that an institution does not find itself wedded to a system that no longer meets evolving needs.

Strategic Administration also includes making sure that CMS use supports institutional strategic plans and priorities. In some institutions, such alignment is required to receive funding. But even when not required, a clearly articulated alignment with institutional goals always supports the business case for funding the CMS. Closely related to strategic alignment is integration of the CMS with other campus systems such as SIS and the campus portal.

Finally, Strategic Administration involves developing appropriate policies and procedures for use of the CMS. Policy considerations may include acceptable use of the CMS, rules for interaction

in an online environment, legal issues, and so on. As but one example, because grade data is often generated, stored, and published in a CMS, there are privacy implications. The Family Educational Rights and Privacy Act and other legislation define requirements to keep certain personal information from being made public. Thus, CSM users need to be aware of what information must be controlled and how to use security features to ensure privacy requirements. Defined procedures, on the other hand, should include items like maintenance windows, support schedules, backup and archiving processes, etc. These prosaic tasks can have significant impacts on the user experience and need to be carefully considered and implemented.

## **User Support**

The importance of effective support for both faculty and student users of a CMS goes without saying. What is often inadequately considered is the possible breadth and depth of user support. Careful analysis of user needs and thoughtful targeting of support processes allows maximum impact of limited resources.

At UF, faculty and student support are largely separated in order to provide streamlined support for faculty. Student support is incorporated into the UF Computing Help Desk, which provides assistance with technology issues including UF's single sign-on IDs. Faculty contact CMS support directly, for phone and email help and walk-in consultation.

Help Desk support should be understood in two dimensions: short answer and consultative support. Some contacts are simple; the problem easily identified and resolved. Other contacts may require research and consultation with other support resources to achieve resolution. Because of this differentiation, many help desk centers employ a multi-tiered a system with entry-level employees or students serving as the first point of contact and specialists serving as a second tier. The complexity of a CMS, or multiple CMSs, can also affect how many support personnel and what levels of support are needed.

The boundary between help desk and training is tenuous. As a result, it is not uncommon for help desk personnel to be trainers and vice versa. However, as use of a CMS grows, it becomes important to clearly articulate these roles in order to ensure that one or the other is not inadequately supported. Furthermore, as CMS use grows, a point may be reached at which efficiencies may be gained by separating these roles.

The help desk role is also often complicated by "tactical advocacy." This occurs in a situation where a user wants assistance completing a particular task, but the support person realizes that there may be an easier way to achieve the goal than that identified by the user. As a result, the support person seeks to guide the user toward new tools or processes to accomplish the task. Assistance starts out as help desk but metamorphoses to training.

A related task is the developing resources such as manuals, step-by-step tutorials, multimedia presentations, etc. These can be time and resource intensive to produce and require regular updating in response to system changes. However, their easy accessibility may offset some of those front-end costs.

Support for student CMS users is typically neglected. Most institutions appear to focus on faculty support. As a result, there are usually more extensive support and training resources available to instructors than to students. In fact, it is often assumed that students will figure out CMS skills on their own. However, feedback from faculty suggests that instructors often decide to implement tools based on whether they believe students can easily use them. Therefore, providing training resources for students can also be a valuable element for driving CMS use.

Many institutions are considering 24/7/365 support. 24-hour support is expensive and within the means of few institutions. However, the any-time availability of the CMS means that support needs are not restricted to traditional class hours. Furthermore, the more an institution moves into online education, supporting clientele in other time zones and countries, the more it may need to expand its support hours or risk undermining the success of distance programs. In this context, some institutions are exploring consortium solutions to provide any-time, cross-institutional support or even outsourcing help desk support.

Finally, user support may also take on the task of community building for the CMS user group. Such activities may include relatively simple processes such as participating in new faculty orientation, publishing a newsletter, or supporting a user listserv. However, community building may include more challenging tasks such as producing a faculty showcase event, coordinating a peer-support program, or implementing a local CMS users conference.

### **Technical Administration**

Another CMS support role is technical administration: maintaining and supporting the hardware and software infrastructure. This includes installing CMS software, patches, upgrades and, perhaps, taking responsibility for system-wide backup and archiving. Closely related is hardware and network administration where again installation, upgrades, and various kinds of routine maintenance are required.

Depending on the size of the institution, the level of use, and the complexity of the CMS these responsibilities may be assigned to one or more clearly identifiable individuals or assigned across units. For example, at the University of Florida the North East Regional Data Center is tasked with primary responsibility for University hardware and networking, however software is usually left to other units to support. Hence, NERDC supports the centrally-supported CMS hardware but the Office of Academic Technology supports the CMS software and users.

Depending on the CMS, an additional element of CMS support may be database administration and management. For this role, someone trained in setting up and installing database hardware and software and creating the desired data structures is required for maximal use of the system. This role may also be assigned to statistical monitoring as well as institutional and other research.

### **CMS Administration**

CMS administration fulfills the critical tasks of creating the course accounts, creating and maintaining the organizational structure of the CMS (colleges, departments, terms, etc). CMS administration is also typically responsible for ID management and may be in charge of backing up and archiving courses at the end of a term or while a term is in progress.

### **Programming Support**

A dedicated programmer can increase the efficiency of CMS administration by developing tools to streamline loading of students into the CMS, or to facilitate course account creation and other administrative functions. Programmers are likely to be critical to integrate with campus SIS systems or for institutions implementing enterprise data systems or campus portals. A programmer may also develop new tools for CMS users.

### **Project Development / Instructional Design**

Many institutions also provide project development and instructional design support for CMS

users. These services may involve creating specific learning objects such as graphics, Flash animations, or web pages; they may provide support for building single online course units; or they may be involved in every aspect of building an entire course or program. Ideally, instructional design also involves tactfully encouraging faculty to consider how teaching at a distance is different from face-to-face instruction. Thus, there is a training component as instructional designers seek to guide content experts toward developing lessons and activities following “best practices” models for online instruction.

Project development and instructional design support can quickly become very expensive; and it is the rare institution that has made a commitment to provide such services free of charge. At the same time, it can be argued that implementing a CMS carries with it a certain responsibility to provide assistance such that users can use the system well.

### **Ancillary Support**

Finally, CMS support can involve a wide variety of support issues beyond the CMS itself such as third-party software that may be used with the CMS. At UF we have site licensed the Respondus test creation software and have made Impatica for PowerPoint available at faculty support centers around campus. Both of these software packages can be used independently of a CMS, but at UF their primary use is integrated with the CMS. Likewise, CMS support at UF is in charge of the Turnitin anti-plagiarism service.

Other initiatives can also affect the CMS. For example, UF is in the process of developing a center for online testing to provide a place for high security examinations offered through the campus CMS. Obviously, the extent to which an institution views CMS support as a kind of “one stop shopping” for online and related technologies, a model currently favored at UF, can also play a role in developing appropriate CMS support agencies and staff.

### **Modeling Support**

This overview of support roles and tasks now lends itself to modeling (Figures 1 through 4).

A first model [Figure 1] is for identifying persons responsible for each task. This will clarify the responsibilities of each member of the support team and makes sure that critical tasks are not overlooked because it was assumed that someone else was doing them. In this figure, the allocation of tasks begins with assessing current staff and needs and includes discussion in order to clarify the list of tasks as well as to identify staff desires and interests to achieve maximum buy-in to the final task allocation. Evaluation of the ongoing program is a critical final element in each “cycle.”

A second model [Figure 2] is for general planning. By identifying the importance of various tasks, as well as staff interests and preferences, CMS support staff are able to more effectively set priorities. Likewise, it becomes easier to avoid wasting time on tasks that are of lesser importance while neglecting those that are deemed critical.

**Figure 1. “Static” Situations: Staffing**



**Figure 2. General Planning Situations**





**Figure 3. Growth Situations: Hiring**

A third model is for hiring situations [Figure 3]. This model starts with assessing the strengths and weaknesses of current staff to help ensure that new employees are hired with skills and knowledge that will complement and extend existing capabilities. Here again, discussing staffing needs with current employees can set the stage for upgrading existing employee skills along with hiring new staff. This is an important step to achieve the greatest efficiency in hiring.



**Figure 4. Organizational Change Situations**

A final model suggests responding to, as well as to helping form and set, institutional priorities [Figure 4]. This recognizes that successful technologies can drive the institution toward new goals as well as support current objectives. For example, expanding use of a CMS can stimulate interest in distance education. Likewise, if an institution wants to emphasize training, it becomes possible to allocate the various CMS support tasks and then to identify which existing staff will focus on training, for how much of their time, and whether additional staff may be needed to support desired training initiatives. Notice that in this model discussion of institutional objectives in order to ensure a common understanding of those objectives precedes further implementation of the remaining stages.



Table 1 identifies the various tasks of supporting a CMS and suggests some of the possible ways support can be modeled. This can be a useful tool in helping supervisors understand the demands faced by CMS support staff and can be an effective tool for helping administration recognize the need for additional staff when necessary. Table 1 can also be a useful supervisory tool for helping employees understand the scope of their responsibilities.

**Table 1. A Planning and Assessment Model for Developing Effective CMS Support**

<b>CMS Support Roles [What needs to be done]:</b>	<b>Who</b>	<b>Importance (rank)</b>	<b>Allocation (FTE / %)</b>
<b>1. Strategic Administration</b>			
Visioning			
Evaluation and selection of a CMS			
Marketing / Strategic advocacy			
Alignment with strategic plans and priorities			
Policies and procedures			
Integration planning			
Coordinate CMS support tasks			
Ensure redundancy in tasks / cross-training			
General administrative tasks			
<b>2. User Support</b>			
Development and delivery of training classes			
Faculty help desk / walk-in / one-on-one training			
“How-to” resource development			
Troubleshooting			
Tactical advocacy			
Student help desk			
Organize / implement “community-building” activities			
<b>3. Technical Administration</b>			
Hardware administration			
Selection and purchasing decisions			
Installation and troubleshooting			
Ongoing monitoring and maintenance			
System administration			
Installation			
Patches/hotfixes			
Upgrades (hardware and software)			
Backup and archiving			
Ongoing monitoring and maintenance			
Database Administration			
Setup and structuring			
Development of data paradigms			
Database Management			
Statistical monitoring			
Institutional research			
Other research			
CMS Administration			
Course account creation			
Organizational structure (categories, terms)			
ID Management			
Backup and Archiving			
Ongoing monitoring and maintenance			
Programming Support			
Integration planning and implementation			
Utilities programming			
<b>4. Project Development / Instructional Design</b>			
Consultation			
Learning object creation			
Course module development			
Course / Program building			

5. Ancillary Support	_____	_____	_____
3d-party software integrated with the CMS	_____	_____	_____
Other programs not integrated with the CMS	_____	_____	_____
Other initiatives affecting the CMS	_____	_____	_____
ADA / Sec. 508 Compliance	_____	_____	_____

**Conclusion**

In most situations, many of these processes modeled above will operate simultaneously, and the constantly changing needs of CMS support will demand constant “cycling” within operational models. As a result, there is no “magic” FTE figure and no “one size fits all” formula for calculating a necessary FTE allocation for CMS support. Instead each institution must assess its needs, determine its institutional priorities, and identify the resources it can allocate to CMS support. Likewise, different structures of CMS support may require greater or lesser FTE allocations.

Furthermore, the general processes that underlie this model – define support staff roles, identify critical role responsibilities, estimate the necessary FTE commitment, assign the responsibilities, and prioritize importance of responsibilities – are applicable to a wide variety of support situations. Because these processes are generalizable, this model can easily be extended to a wide variety of support areas and types of institutions. Therefore, regardless of the type of institution and support situation, this model can serve as a useful guide for assessing current support needs and staff, allocating support responsibilities, identifying and hiring for needed skills and abilities, facilitating planning, and aligning support with institutional priorities.

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*Online Journal of Distance Learning Administration, Volume VII, Number I, Spring 2004*  
*State University of West Georgia, Distance Education Center*  
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