Streamlining Forms Management Process in a Distance Learning Unit

M'hammed Abdous, Ph.D
Old Dominion University
mabdous@odu.edu

Wu He, Ph.D
Old Dominion University
whe@odu.edu

Abstract

Managing the required forms for a variety of distance courses is challenging and sometimes overwhelming. Inefficient management can lead to a variety of problems in course delivery, such as delays in obtaining textbooks, problems in obtaining copyright permissions, and even course delays. In an effort to facilitate, streamline and improve forms management, a system was designed to streamline the management of required forms for face-to-face, hybrid, online and televised courses. The environment provides faculty, and the office of distance learning with an easy tool to fill in and manage all forms effectively and efficiently.

Introduction

Preparation and management of distance learning courses often require greater up-front time and cost than traditional courses (Hartman, Dziuban & Moskal, 2000; Smallwood & Zargar, 2000; Smith & Caris, 2001). This additional workload is partially due to the variety of paper-based forms required for the management of distance learning programs. Following the paper-based culture of on-campus units, distance learning units require faculty to complete a myriad of forms such as forms for developing syllabi, ordering textbooks, obtaining copyright clearance, requesting software, requesting course packs, and proctoring exams. Because of the complexity of workflow processes associated with manually processing and routing paper-based forms, the management of such forms has become tedious and time-consuming. This complexity increases when distance learning units use multiple delivery modes (e.g., broadcasting, web-based, CD-ROMs, video streaming) as every mode often has its own forms and procedures. In addition, with more faculty teaching remotely, the submission of paper forms has become cumbersome, inefficient, and difficult for tracking and managing course delivery information.

To effectively manage a large number of forms and to streamline distance course delivery and operation, many distance learning (DL) units have converted conventional paper forms to electronic forms. However, this electronic conversion has not always been effective:

> It is surprising how few organizations have implemented online forms on their intranets. Most have instead created PDF versions of their existing forms, and have placed them on the site. Staff have to print these off, fill them in by hand, and submit them via internal mail. This is only a very small benefit beyond the original paper forms. (Robertson, 2004, p. 1)

In recent years, distance learning staff have also utilized specialized software, such as Adobe Acrobat. Using such software, Portable Document Format (PDF) forms are then completed and e-mailed to appropriate parties. However, unless complete forms management solutions are implemented (Adobe 2003), such specialized software often requires several manual operations such as printing and scanning or faxing before the task is completed.

Despite the problems noted above, our literature review found that the majority of online and distance learning literature has paid little or no attention to workload issues associated with course delivery logistics. Thus, this article will address ways of developing an online form management system aimed to (1) to reduce faculty workload and increase their satisfaction by simplifying forms management processes, and (2) to minimize the DL units administrative burden and costs associated with paper-based forms.

Project Background

The university is a moderate sized, urban, public, doctoral research institution, which is a national leader in

technology mediated distance learning and has been involved in technology delivered distance learning since the mid-1980s. Historically, course delivery has been conducted using interactive television via satellite broadcast from campus to sites around the country. In recent years, delivery modes were expanded to include two-way video, Internet, CD-ROM, and video streaming.

To ensure the success of various course delivery modes, faculty are required to complete a variety of course-related forms such as syllabi, textbook ordering, copyright clearance, software requests, course pack requests, and exam proctor forms. As shown in Figure 1, faculty completed the forms manually and submitted them to the office of Distance Learning for processing and routing to different units. While burdening and overwhelming faculty, this paper-based manual approach created tracking, processing, and retrieving problems to the DL staff. Paper-based forms were traditionally contained in binders and stored in filing cabinets and boxes. As semesters went by, the storage of these forms became cumbersome and problematic. Inefficient management of forms often led to a variety of problems, such as textbook delays, course meeting delays, problems with obtaining copyright permissions, and so forth.

In an effort to facilitate, streamline, and improve the forms management, a system was designed to streamline the management of required forms for face-to-face, hybrid, online, and televised courses. To this end, a pioneering web-based solution was developed and used by faculty since the summer semester of 2006. In this perspective, business process reengineering as a methodological framework to reexamine and improve our internal processes was chosen (Aversano, Canfora, De Lucia, & Gallucci, 2002). The environment provides faculty with an intuitive web interface to manage all forms effectively and efficiently. In addition, online archiving of forms reduces paper consumption and storage costs, according to our distance learning staff.

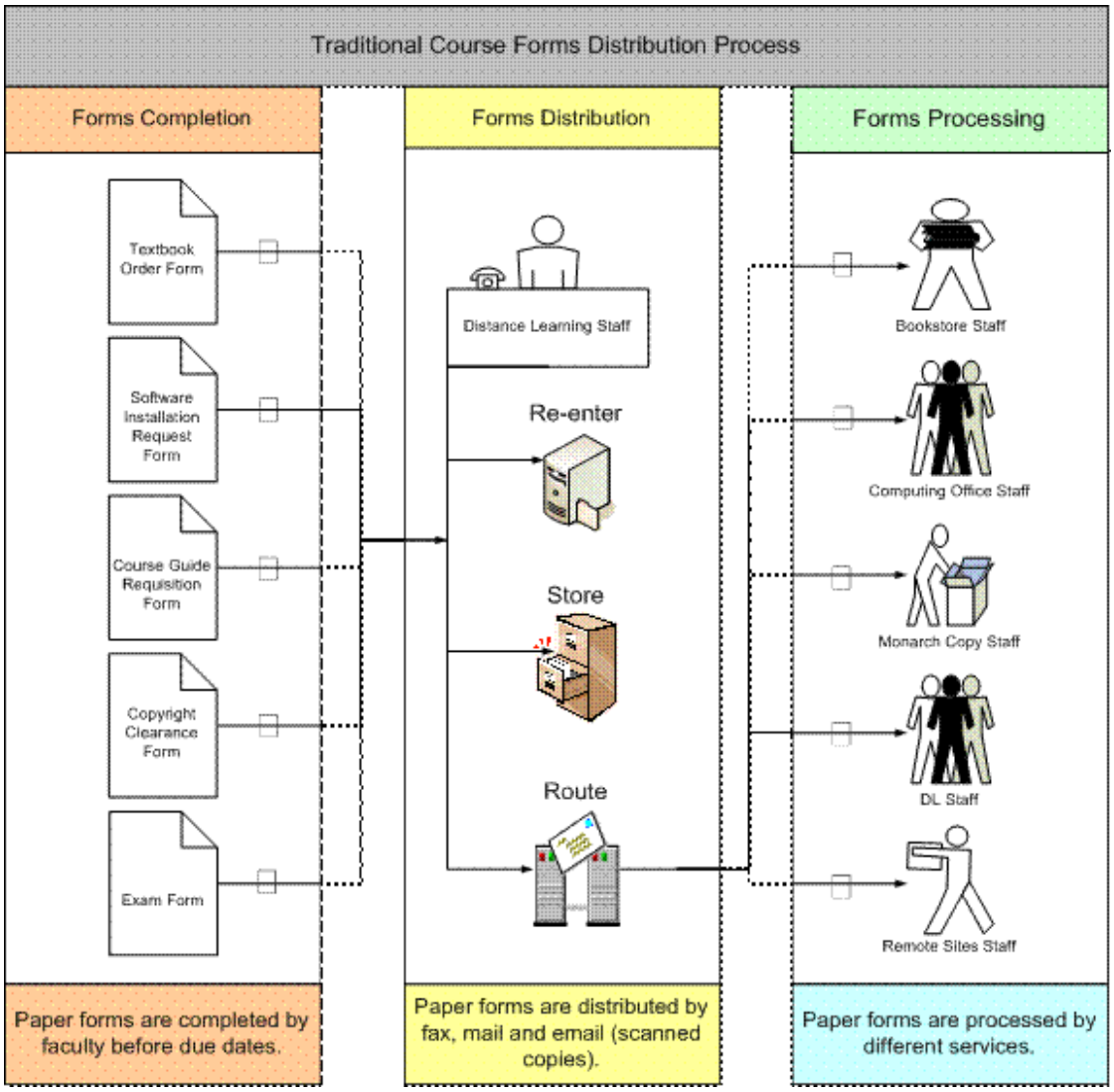

Figure 1. Paper-Based Forms Processing Approach.

Online Forms Service

The project adopted a rapid application development approach (Robinson, 1995) to the design and development of the online form services system. Our design approach embraced several core design principles: layout design, web development, system integration and application programming. As part of the faculty support portal, the system [http://www.clt.odu.edu/onlineform/] has been through two iterations of "molding" and "tweaking," based on feedback collected from usability tests and faculty reviews. So far, over 90 faculty teaching distance learning courses have used this system for their course forms submission and management. The following is a brief overview of the key features currently available in the system:

- *Completing forms online.* Faculty can fill in and submit various course forms online at anytime and anywhere (except for copyright clearance form which requires hard copy signature). Faculty can also check due dates for various course forms (see Figure 2).

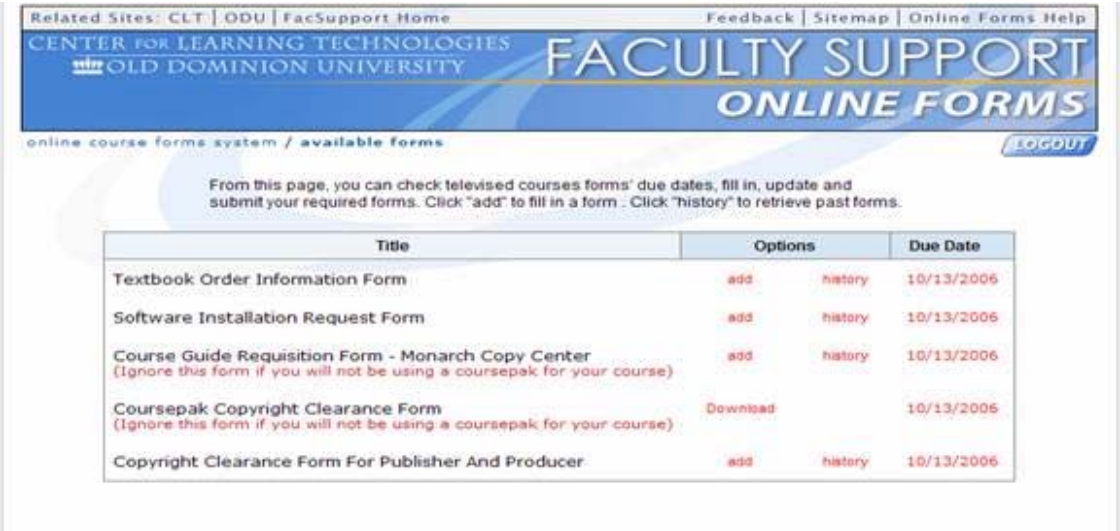

Figure 2. Online Form System Interface.

- *Adapting forms from previous semesters for current use.* Faculty can reuse/update previous semesters' forms to create new ones. User profile information is used to pre-populate generic forms fields. This reduces the data entry time for faculty (see Figure 3).

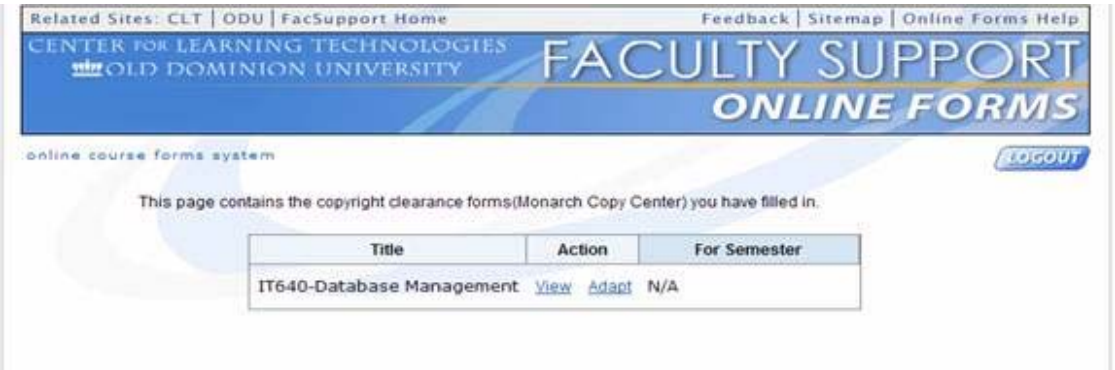

Figure 3. Online Form System Retrieval System.

- *Provide DL staff with immediate knowledge of form usage.* All course-related forms are saved in a centralized database, easily maintained and tracked by DL staff. The interface provides an easy interface to view and generate reports, import and export data, and to send automatic reminders to faculty (see Figure 3).

Figure 4. Online Form System Workflow.

In summary, as shown in the Figure 4, the online forms system plays an essential role in facilitating coordination and communication among the stakeholders involved in the course delivery logistics.

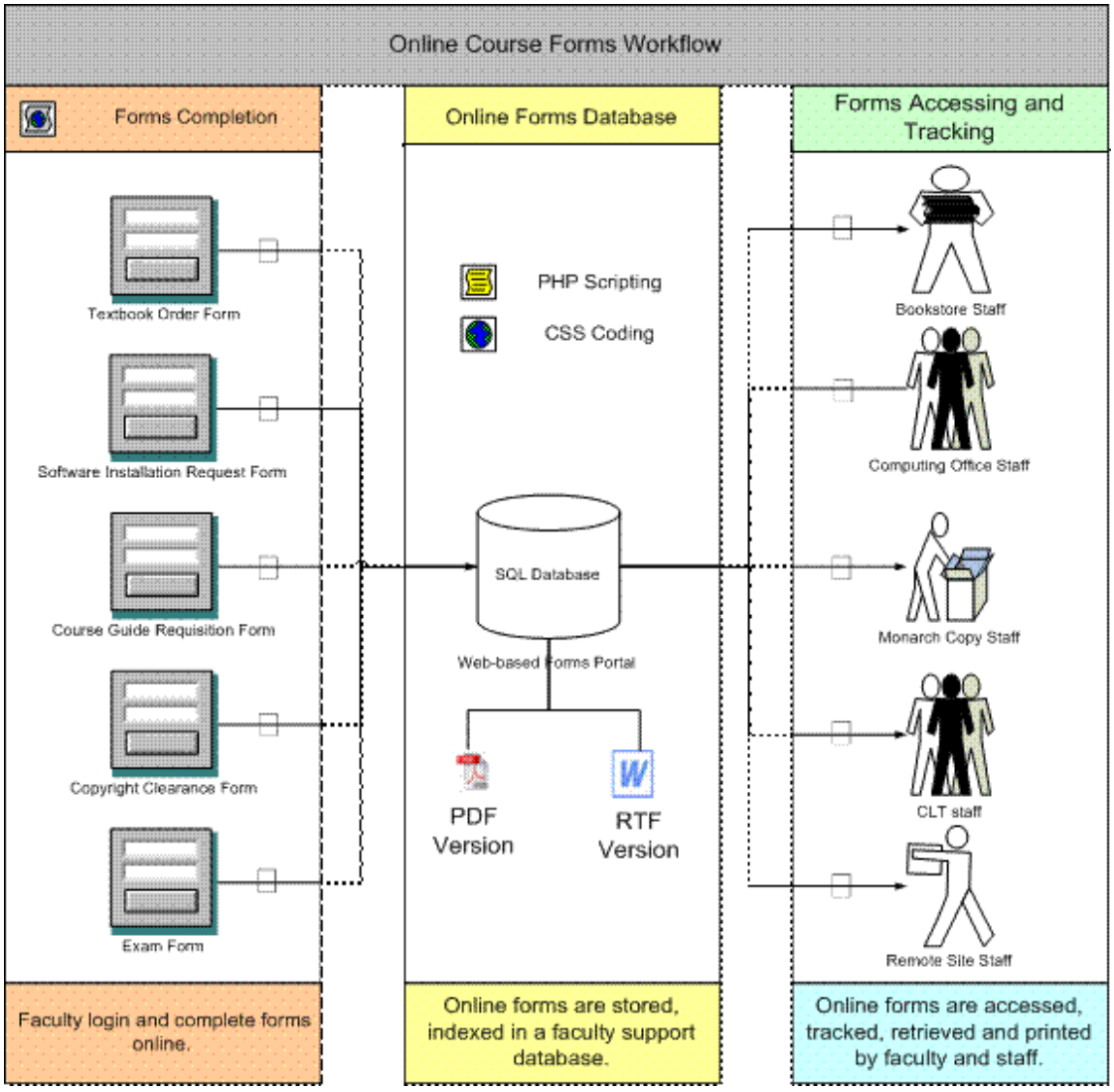

Figure 5. Online forms management system.

Technical Architecture

The system is a database-driven tool that helps streamline forms management process. To deploy the system on the Web, Microsoft MSSQL server was used as the backend database environment, because of its rich capabilities in supporting the required functionalities. PHP was used as a scripting language to create dynamic web content by querying the database. CSS was used to ensure the overall consistency of the system's look and feel. A user account authentication system maintained by the Center for Learning Technologies was used to prevent unauthorized access to the online form services thereby enforcing security of the application. An instructional designer, two instructional technologists and an interface designer were involved in actual system programming and development.

Evaluation

To capture first-hand feedback about faculty experience using the online forms service, faculty were asked to provide feedback and suggestions using an online form. After going through several iterations of modification of the interface, and including suggestions from faculty and CLT staff, the system has received solid ratings and positive comments from faculty who are pleased with the new online form services. Preliminary feedback review indicates that the system is a time-saving and convenient tool for forms management process and improves the performance of the DL operations. The system also enables all parties involved in the process to work together asynchronously and remotely. Through the development and subsequently offering of this online form service a number of lessons were learned, including the following:

1. Online Forms aren't Simply the Electronic Replication of Their Print Paper Format. Although considerable attempts were made to make the online forms appear the same as paper forms, efforts were also made to ensure easy usability of the forms. The online forms were implemented with design consideration to reduce data entry time (data pre-filling), validation, and improve data accuracy. In addition, form fields were labeled with instructions to tell the user what type of information is required for the field, the format the information should follow, and any other necessary information. An online tutorial for using this service is also provided.
2. It is Critical to Keep Online Forms Up-To-Date. To help online forms service run smoothly, our DL staff maintains and updates the forms on a regular basis. From semester to semester changes are made to keep the data updated.
3. Providing Faculty Support is Crucial. Faculty have different needs and proficiency levels with technology. To be responsive and help faculty use the system, technical help is provided to answer faculty questions.
4. Make An Easy Transition to Electronic Forms. *To* avoid a disruption of the normal course delivery operations, both paper and electronic forms have been available to faculty. We adopted a phased approach to facilitate faculty buy-in and involvement. Convincing and encouraging faculty to use the online system will lead to the discontinuation of paper-based forms.
5. Tracking Forms Submission is Essential. Some faculty are tardy in their completion of required forms. This system provides DL staff capability to track and remind faculty of upcoming due dates.

Conclusion and Future Work

There is no question that going paperless to a web-based system is a growing trend in business and industry such as insurance and airlines companies. With schools facing the frustrations related to the effective management of various course-related forms, it has become clear that a web-based system needs to be implemented. Such a system would streamline the forms management process, save time, lower costs, and reduce problems associated with the manual processing of forms (Nimmons, 2003).

In summary, our centralized database approach provides the benefit of drastically reducing the problem of managing and keeping track of numerous course forms. This web-based database system will continue to grow in scope and will be integrated with other university systems such as the university course registration system in the near future. We hope the experiences we shared in this paper can benefit other distance learning programs and encourage their efforts in going paperless.

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