

**The University of Memphis  
Information Technology Web-Based Ordering Tracking System**

**Sajjad Mahmood  
The University of Memphis  
Information Technology Division**

**Mark Savage  
The University of Memphis  
Information Technology Division**

**Belinda Moore  
The University of Memphis  
Information Technology Division**

**Ann F. Harbor  
The University of Memphis  
Information Technology Division**

## ***Abstract***

*The University of Memphis' Information Technology Division (ITD), Department of Client Support Services, assumed campus-wide responsibility for the procurement, distribution, and tracking of all information technology related purchases paid for by student technology access fees (TAF). With over 2500 equipment purchases annually, the IT Division at The University of Memphis faced a daunting task to assure timely purchases, delivery, and installation of goods. These multi-million dollar annual expenditures for hardware and software are subjected to an annual audit and must be traceable from purchase to declaration of salvage. The Information Technology Division developed a web-based equipment order tracking system which has resulted in improved client service and which compliments the campus' fixed asset and billing systems.*

## **Introduction of the Organization**

The University of Memphis is a comprehensive metropolitan university committed to excellence in undergraduate, graduate, and professional education; scholarly research; service to the metropolitan community, state, and nation; and the preparation of a diverse student population for successful careers in a global society. The University offers 15 bachelor's degrees in more than 50 majors and 70 concentrations, master's degrees in 46 subjects and doctoral degrees in 21 disciplines, in addition to the Juris Doctorate and a specialist degree in education. The campus is located on 1,160 acres with 201 buildings at more than four sites. More than 20,000 students are enrolled each semester and the university employs approximately 2400 faculty and staff.

The Information Technology Division exists to serve the university community by applying information resources to enhance teaching and learning, support research, further outreach and develop partnerships, and optimize administrative processes. The Client Support Services unit provides computer account services, software and hardware distribution, license management and maintenance of software archives, staffs the university's IT HelpDesk, and coordinates technical support for all distributed IT personnel.

## **Statement of the problem/Initiative**

The levying of a student Technology Access Fee (TAF) resulted in the need for central administration of all information technology purchases and expenditures made against that dedicated budget pool (which generates in excess of \$4M annually). The responsibility for ordering hardware and software for the entire campus was given to the Client Support Services (CSS) unit of ITD. The unit hired a Materials Coordinator, whose primary role is to the ordering, tracking, and delivering of hardware and software. We were not able to create reports on demand and we were spending a large amount of time manually entering data into a system that was not meeting business needs. Orders were being lost and we had frustrated clients. It was soon realized that the sheer volume of activity required a tracking tool that would inform clients of the status of their orders, generate reports, and track assets.

## **Design**

In an effort to keep costs at a minimum while implementing the Order Tracking System, we decided to utilize the current database infrastructure already in place within the IT Division. Client Support Services worked closely with several database programmers and created a database that we could use within an already existing Microsoft SQL server. We also utilized an existing web server which resulted in no additional software or hardware purchases.

In order to allow the level of functionality we desired in the application, we decided to utilize the scripting power of PHP, a popular programming language designed for web and database applications. Along with staff programmers, we employed several student and temporary employees who are skilled in this language to help write and debug code.

After the database and initial administration web screens were created, we sought feedback from the division on how the user screens would best fit their needs. Creating a

successful and easy to use end-user interface was critical because our goal was to expand this to the entire University, not just technical users. Once the end user web interfaces were created, we continued to tweak fields and forms to provide the information our clients were looking for.

## **Implementation**

In 2001, Client Support Services began looking at various vendors' order tracking tools. Some of tools were too big for our needs and in other cases they were very costly. Not finding a suitable and affordable product, we decided to use our existing database infrastructure and create an in-house, web-based tool.

We created a project plan for this project and implemented this ordering system in several phases:

In Phase-I we met with our Data Warehouse team and designed the initial database schema. In Phase-II we designed the administration web screens for the ordering system that would allow us to enter orders and update them accordingly. We also began work on several screens for the end user that would allow them to enter and track their own orders. In Phase III we completed the end user screens and piloted the ordering system within the IT Division to resolve as many problems as possible before we opened the system to the entire campus. In this phase we made the necessary tweaks that were requested by our clients. In Phase IV we gradually invited other departments to use the web-based system. Once we were confident with the processes we opened the system to the entire campus.

## **Benefits**

The implementation of the CSS Web-based Order Tracking System has produced great benefits for the university. The order system allows clients to place orders as well as check the status of their orders via the web. The system has been a benefit to ITD in that it allows an efficient way to monitor software annual maintenance and single use licenses along with the tracking of hardware parts purchases. We are able to provide better customer service by allowing the clients access to the status of their requests. This system has allowed us to integrate Accounting's Financial Record System with our database to simplify the billing process. We are now able to FTP the monthly transfer voucher to bill departments for their orders electronically as opposed to the paperwork that was once processed. Clients have saved time and resources on making hardware and software purchases. This ordering system has allowed us to save the university money by making volume license purchases and ordering hardware in bulk quantity to receive discounted pricing. Clients no longer have to call to find out the status of their order. Each time an order is updated the client receives an email notification to reflect the update.

## **Retrospect**

In looking back upon the design and implementation of the web-based system, we could have saved some time and effort by attempting to incorporate components of the legacy system data into the project. The Accounting Department was already tracking fixed assets, and finding a method to pull or update that data as new items were purchased by ITD, would have saved time across both units. The process of refining compatibility between the two systems is ongoing.