INTRANET BUDGETING

THE BUDGETING PROCESS OF A TECHNOLOGY LABORATORY ADVANCES FROM SPREADSHEETS TO WEB-BASED APPLICATION.

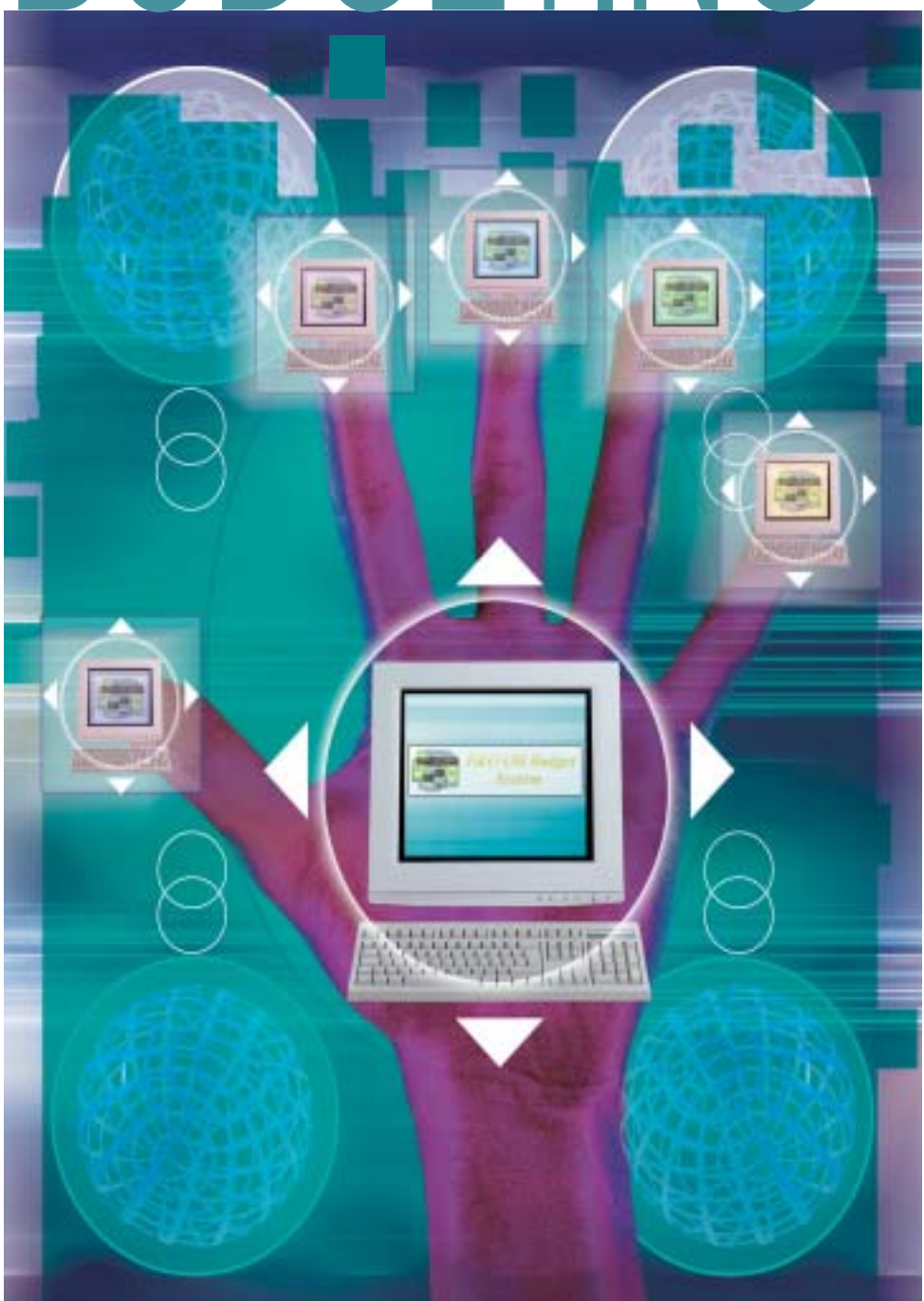


ILLUSTRATION: DIGITAL VISION

BUDGETING AND PLANNING is still a laborious procedure at many firms, done with word processing and spreadsheet templates. A word processing file and budget requests on a spreadsheet are attached to an e-mail, which is then filed on a server and uploaded into a database.

That's what we at the Facilities & Operations (F&O) Business Office of the Battelle, Pacific Northwest National Laboratory (PNNL) used to do. F&O has over 130 budget activities, each of which requires an annual work plan and budget. Our previous process required budget activity managers to know Excel and took an average of nearly four extra hours per activity to complete, 450 extra hours in all. It then took the F&O Business Office 60 hours extra to upload the plans into the database.

But in 2000, when we were preparing plans and budgets for 2001, we built a Web-based budget and planning system that provides "one-stop shopping" for all overhead

DOES THE TRICK

BY PETER T. SMITH, CMA, CFM, CRAIG A. GORANSON, AND MARY F. ASTLEY

planning, budgeting, and reporting with real-time data and up-to-the-minute reports. This new system enables Facilities & Operations management and their support staff to directly input their business plan and budget requests, eliminating the need for central business planning and budgeting staff to upload the numerous budget requests and subsequent changes.

Our application, which opens in a new "Web window," features user-friendly instructions and online prompts that help budget managers complete the task at a fraction of the time it used to take. This results in higher quality and more accurate budgeting, reporting, and analysis. Standard analysis reports are accessible the moment a budget is input, which allows budget managers to "do it right" the first time. They avoid several iterations of sending their input to a central coordinator for uploading; review by the budget manager, who makes changes; and resubmitting the budget to the central coordinator.

HOW THE SYSTEM STARTED

The Facilities & Operations Business Office provides business planning and financial coordination support to the F&O directorate in addition to other decentralized financial support functions. The F&O directorate is a laboratory support unit responsible for a $70 million facility and security budget within a laboratory doing $500 million in business annually. Of the 3,500 PNNL staff, 470 are in the F&O directorate. The Business Office comprises five staff members.

Over the course of several years, F&O's Business Office had made these noteworthy improvements:

- Developed a home page with a "one-stop-shop" of financial information.
- Teamed with project management to provide more detailed work plans, pushing the work breakdown structure to significantly lower levels and allowing for detailed cost analysis.
- Implemented cost allocation changes based on a better understanding of the drivers of cost.
- Established time-phased budgets for all overhead and service center functions.
- Reprogrammed the authorized funds monthly after budgets were adjusted through a formal change control process.
- Held quarterly overhead review meetings with F&O directorate line management.

Yet we still did our budgeting by collecting word processing and spreadsheet files of business plans, overhead, and service center budget requests. Business plans were available on a server, so management could drill down to a desired plan or drill into them through a Web reporting system. Spreadsheet files were uploaded into a Microsoft Access database from which management reports were run. These reports were accessible through the Web reporting system on the F&O Business Office's home page.

We saw Web-based budgeting as

the answer to streamlining our F&O budget and planning process. One month before our fiscal year 2001 budget and planning process was to begin, the Business Office staff convinced manager Peter Smith to develop a complete Web system that would allow direct input of budgets. Yet developing a Web-based system came with several challenges. The first step was to get Information Technology (IT) support immediately. But the only support available was 20% of an IT specialist's time (Craig Goranson). Still, we decided to proceed anyway.

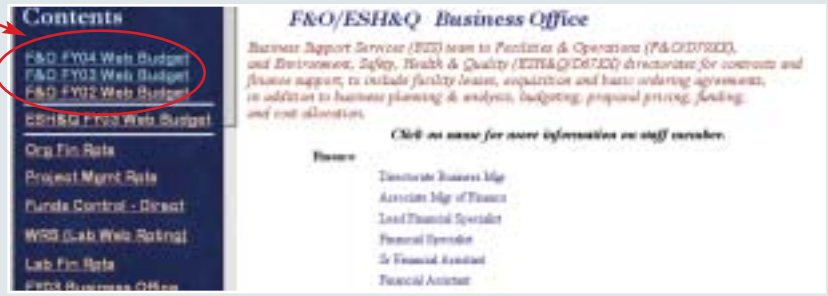
Identifying the basic needs of each user from the F&O directorate was the most difficult aspect. The development of this system soon became a collaborative effort between F&O and three other directorates: Finance, Information Technology, and Project Management. With so little time to develop Phase I, which was the input and verification part of the system, it was remarkable how these groups pulled together to produce a product that meets the needs of all users—approximately 65 budget activity managers within the F&O who have 130 budget activities, plus their management and support staff. A major part of the credit goes to Craig, who was intuitive about their needs. The best part of developing a Web-based system such as this one is that it can be tailored to meet the needs of all users.

TECHNICAL PERSPECTIVE

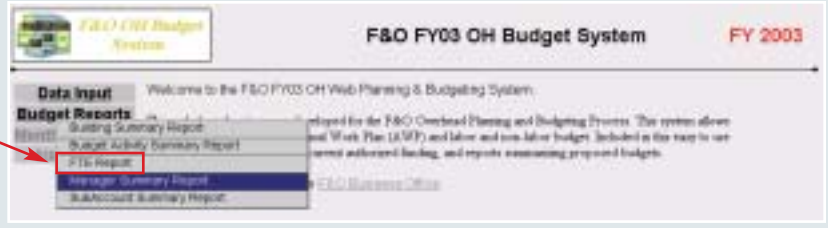
There were also many challenges from a technical perspective in developing a Web-based system to meet the needs of the F&O Business Office and its internal clients. Those who would be using the system came from many different levels of computing and Web experience with varied computer systems, operating systems, and processor speed. The overall goal was to build a user interface that was consistent and familiar and to give the user as much flexibility as possible without making the system overly complex and difficult to navigate.

The system had to be designed with two specific needs in mind for two different types of users within the F&O: the financial staff who

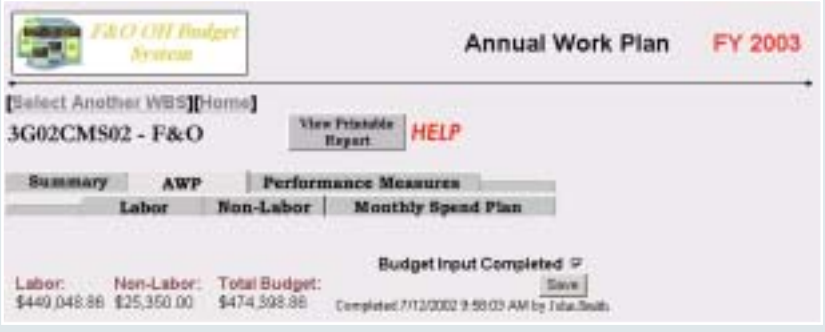
SNAPSHOTS OF WEB-BASED BUDGETING



The home page of the Facilities & Operations Business Office of the Battelle, Pacific Northwest National Laboratory. The hyperlink circled in red at left jumps to the new budget and planning system.



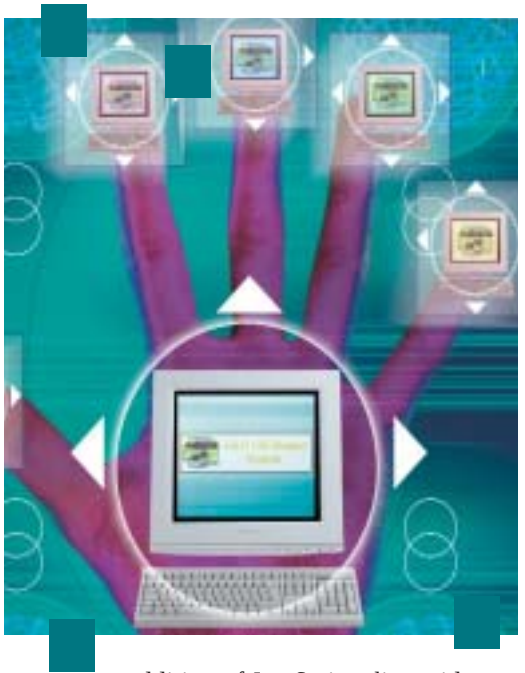
The budget and planning Web page, with links to the input window, analysis reports, and instructions. The "Budget Reports" link at left, for example, lets a user select the FTE (full-time equivalent) Report. There he or she can identify (i.e., "drill down") where staff are budgeted by name and FTE amount. With this tool, a manager can easily see which of his or her staff are over or undercommitted.



A view of the beginning input screen for work plans and budgets. It's easy to use and navigate between different input pages.

would manage the database and the project managers who relied on the system for up-to-date budget information. The system achieves a good compromise for both groups and has the ability to grow and develop to meet their future needs.

We decided at the outset to develop a system that was primarily a server-based application with the



addition of JavaScript client-side scripts to make the system easier to use. Client-side scripting is a standard capability found in virtually all modern Web browsers. Developers can embed code in the Web pages in HTML that will be executed on the user's Web browser as they interact with the Web page. This adds flexibility to Web-based applications by improving the user interface and automating calculations. The system was developed primarily using Microsoft's Active Server Pages (ASP) technology interfacing to a custom Microsoft SQL 2000 database. This allowed easy implementation of the required business logic on the server and provided a browser-based interface that was compatible across platforms.

ASP is an HTML preprocessor that processes either VBScript-code or JavaScript-code embedded in the HTML pages before they are sent to the client's browser. This allows dynamic creation and processing of data in the Web page and makes the entire reporting and data-entry site possible. We used client-side JavaScript to get around the limitations imposed on the browser-based user interface. We also installed system features such as auto-calculating fields and dynamic selection list boxes on the client's browser, which gives a friendlier feel to the software.

WHAT WE LEARNED

The technologies we used aren't cutting edge. They are well-established technologies that showed strong cross-browser and cross-platform compatibility. This allowed the product to be delivered to the widest possible audience while minimizing the bumps on the road to deployment and support.

During the system-design process you must weigh the needs of the users against the maturity of the technologies employed to develop your solution. It's often tempting to jump on the technology bandwagon and use the latest cutting-edge tools to give the richest interface possible. While new technologies might provide for a richer user interface, mature technologies incorporate improvements on earlier versions where other people encountered errors. It's better to use an older but cleaner technology than an newer, problematic one.

Our Web-based budget and planning system is continuing to evolve at Battelle, Pacific Northwest National Laboratory. Some more recent improvements are an easy-to-use tool to create monthly time-phased budgets, easy comparison to current-year budget when creating next year's budgets, and efficient edit capability to annual work plans and labor cost estimates. Zero-based budgeting has never been so easy! That is, we have complete bottom-up budgeting where every position or staff member is accounted for. Moreover, since we launched the system, we can report that the Facilities & Operations directorate enjoys a tool that is easy to use, accurate, and simple and will continue to save us time and money while providing real-time reporting for analysis and project management. ■

Peter T. Smith, CMA, CFM, is the business manager of the Facilities & Operations and Environment, Safety, Health, & Quality directorates of Battelle, Pacific Northwest National Laboratory (PNNL), a developer of science and technology applications for the U.S. Department of Energy and other federal government agencies. He is also an adjunct professor of finance at Washington State University. You can reach him at (509) 376-4673 or peter.smith@pnl.gov.

Craig A. Goranson is an engineering associate of Battelle PNNL's Business Information Systems Group. He has been involved with Web application development since the early 1990s. Craig is also an adjunct faculty member in the computer science department of Columbia Basin College in Pasco, Wash. You can reach him at (509) 375-2353 or craig.goranson@pnl.gov.

Mary F. Astley is a financial specialist at Battelle PNNL. She has over 16 years' experience in a host of finance positions. You can reach her at (509) 372-4636 or mary.astley@pnl.gov.