

The Challenge

Prepare USDA's largest grantmaking agency to receive and process grant applications from the E-Grants Store Front, while implementing a new technology framework and modernizing legacy systems.

System Background

USDA's largest grantmaking agency needed e-grants systems that would interface with the government-wide E-Grants Store Front. TCG was selected to create the interface systems to the internal e-grants systems above seven other bidders, and were rated highest on technical and business proposal as a consequence of our understanding of e-grants, the technology, and our grants management experience. Our work will integrate the agency's internal grants database with new functionality and extensions using a J2EE framework, XML, and SOAP transactions.

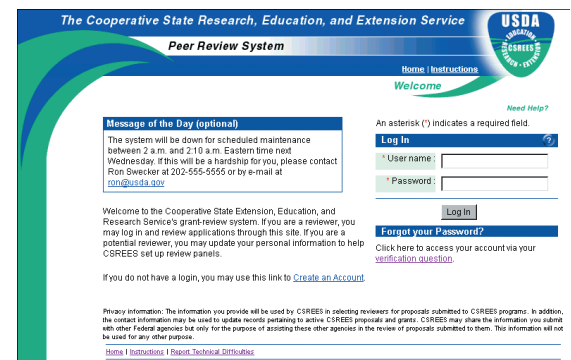
System Description

CSREES, the Cooperative State Research, Education, and Extension Service at the U. S. Department of Agriculture, is the largest grant-making agency within the department. For the last ten years CSREES has been building and consolidating internal systems to make the management of grants easier and more effective.

With the advent of the E-Grants Store Front, which will be a central broker for all grant applications within the Federal government, CSREES saw the opportunity to connect its internal systems to its applicant community, and finish the process of going beyond paper. CSREES determined that to accept grants electronically through the Store Front, it had to rethink and make electronic more of its own processes.

The project includes a peer review system, a communication and distribution system, integration with document management and internal management systems, and Web services between legacy applications and the e-grants modules.

TCG will continue to work with CSREES as it creates a communication and distribution system that will allow all parts of the agency to share grants information and to accept data from the E-Grants Store Front, both as part of the pilot and when the system is finally implemented in the fall. That work will involve a re-assessment of CSREES's internal systems, and building or reworking systems to make the process smooth and responsive.



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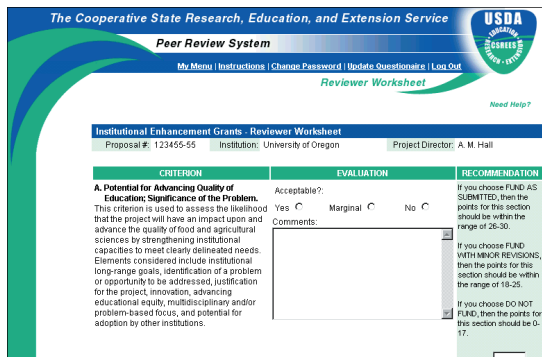
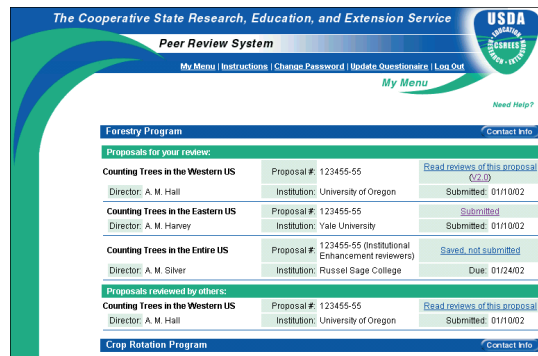
The TCG Solution

Using our experience in grants and e-grants at other Federal agencies, TCG designed a project plan that fully addressed all of the business objectives and timelines. We built upon the management systems and databases at CSREES and extended them. The project is, to some degree, predicated on the E-Grants Store Front. We decided to scale and use the Rational Unified Process (RUP), and develop iteratively, to accommodate changes in the Store Front as it is developed. Tools and procedures for configuration and change management were implemented. A J2EE architecture was developed in response to the business requirements. During the planning stages, TCG architects maintained visibility of business needs outside the e-grants project, to enable future integration and sharing of code we developed.

The project has four phases, focused on the October 2003 rollout of E-Grants Storefront capabilities. These phases capture peer review; communication, and distribution; J2EE framework implementation; data modeling; documentation and formalization of system requirements (past, present, and future); and project infrastructure support (change management, configuration management, and so on).

All requirements are gathered, managed, documented, validated, and ratified by TCG staff in cooperation with the domain experts at USDA, using RUP throughout for information sharing and modeling. Requirements are refined and validated through the use of prototypes, screen designs and system wireframes, and storyboarding.

The e-grants project integrates tightly with in-house grants and document management systems. Data is exchanged and shared between these systems using Web services and Java servlets, so that agency users can most easily retrieve and review required data for their specific functions. These systems are on a variety of platforms, utilizing Oracle databases and client-server as well as browser interfaces.



Technology Used

The system has a J2EE 3-tier architecture, utilizing Enterprise Java Beans (EJBs) on the business layer, Java servlets and Java Server Pages (JSP) on the presentation layer, and an Oracle database for all data storage requirements. The architecture is structured to enable USDA to develop the system outward, using shared components and reusing code for efficiency and scalability, and simplification of development and maintenance. Such an

architecture also ensures standards compliance. XML is exchanged between components using SOAP when required. Clients can run any operating system and any Web browser.

Outcome

The first component of the E-Grants project was deployed on budget and on time in March 2003. USDA CSREES is now poised to further its electronic grants processes, and the organization can take advantage of the J2EE architecture implemented, resulting in significant cost and efficiency savings. Experience and knowledge of RUP will help reduce overhead and overruns in future projects. Grantees will be able to apply to USDA electronically, and proposal turnaround time will be significantly reduced.