Category: Enterprise Information Architecture
Nomination: Marshall University's On-line Voting for Better Government

Online Voting for Better Government
State IT Management Initiative

Nomination Form

May 23, 2003 extension to deadline granted.

Title of Nomination: **Online Voting for Better Government**

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Online Voting for Better Government

Executive Summary

Marshall University has several regional campuses located throughout southern West Virginia serving a population of over 16,000 students. One of the challenges of having multiple rural campuses has been achieving the desired voting participation in various elections sponsored by students, faculty and staff. In addition, paper ballots are expensive, inconvenient, require manual tallies, and are a challenge to implement in multiple locations.

From January to March 2003, Marshall University progressed from paper ballot elections with separate manual authentication and election eligibility verification processes to standardized, secure, integrated, real-time and reliable on-line elections. The system provides voting privacy, security and the integrity over the Internet. Some units have even selected to include pictures of candidates and biographies on the voting page. The administrative interface has been scaled to the entire enterprise and all authentication, verification, voting, and reporting happens in real-time.

Authentication and voter eligibility verification is accomplished using the university portal's LDAP structure and existing integration with Banner, Marshall University's Enterprise Administrative Information System. Authentication and verification using the Student and Human Resources databases assures that only current term students and employees with no administrative or financial holds may participate in the voting process and ensures that only a single vote is cast per individual. Although the students, faculty and staff are required to authenticate, no identifiers are maintained in the voting database that could directly connect the individual to the votes they cast, preserving the anonymity of the voting process. Should there be a need for a manual count of votes; auditing mechanisms are in place that would allow an itemized view of each vote cast.

Marshall University purchased an off-the-shelf voting system. Then interfaced, enhanced and implemented the product into the university portal and enterprise administrative system to ensure a scalable and extensive integrated enterprise-wide on-line voting solution. All information is protected with Secure Socket Layer (SSL) encryption. The system uses VBScript and Active Server Page (ASP) technology, an Oracle database back-end, and is browser independent.

The on-line voting system has provided significant improvement in election methods, reduced election administration and costs, improved election maintenance and support, leveraged existing core technologies, and enhanced the university's on-line portal community. In addition, online voting via the Internet in a secure and integrated environment has expanded participation in e-democracy, including our student government, faculty senate, graduate council and classified staff council elections. It also serves as an excellent test-bed for creating an enterprise e-government strategy that encompasses technical as well as ethical considerations.

a) Description of project, including length of time in operation.

Marshall University has several regional campuses located throughout southern West Virginia serving a population of over 16,000 students. One of the challenges of having multiple rural campuses has been achieving the desired voting participation in various elections sponsored by students, faculty and staff. In addition, paper ballots are expensive, inconvenient, require manual tallies, and are a challenge to implement in multiple locations.

Marshall University has traditionally served as a leader in the state of West Virginia's higher education system on innovative projects dealing with information technology and integration of that technology into the institution's environment and existing architecture. Keeping with that tradition, Marshall University committed to providing standardized online voting for their Student Government and Faculty Senate elections during the spring of 2003. Within three months, "eVoter" was purchased from The University of South Florida, interfaced, significantly enhanced and integrated with the university portal and enterprise administrative information system to ensure a scalable and extensive integrated enterprise-wide on-line voting solution. Client satisfaction is attributed to strong leadership, communication, and cooperation during the abbreviated testing, marketing and deployment stages of the project's life cycle.

Several small working groups were developed and included representatives from the planning units committed to implementing electronic voting. These representatives worked closely to communicate needs, goals and objectives associated with their particular election. Involved parties included the Student Government Association in conjunction with the Office of Student Affairs; Faculty Senate; Graduate Council; and the Classified Staff Association. Each working group included representation from Computing Services and the Center for Instructional Technology. Significant contributions from these key players displayed the high level of buy-in that existed in the organization.

Software installation and basic configuration was completed mid-February 2003. The Spring 2003 Student Government Election began on March 11th, 2003. Prior to the election, the application was enhanced to accommodate election eligibility rules specific to Marshall University Student Government election by-laws and to provide write-in vote capabilities and corresponding reports. Due to the tight integration with Banner, Marshall University's Enterprise Administrative Information System, existing Banner reporting capabilities and security settings were leveraged to provide the election administrators with the ability to produce the write-in report on demand.

Providing customer centered on-line voting services that could adapt to the customer's dynamic relationship with the institution, was a key element in our strategy. By offering the e-voting application through the "myMU" portal, Marshall University was able to preserve its single sign-on service offerings. Students, faculty and staff are already familiar with the authentication credentials needed to access the existing self-service environment, e-learning platform and campus portal. The ability to tie the voting application into that environment was pivotal to the implementation's success.

The "eVoter" application that Marshall purchased was designed solely for Student Government elections. However, there was an increasing demand from several other university organizations to offer electronic elections. Therefore, the "eVoter" application was modified to provide a scalable method for election development and configuration to accommodate the varying constitutions and election by-laws. Once completed, other on-line voting demands could be met.

In April 2003, both the Faculty Senate and Classified Staff Council held their elections using the improved on-line voting application. Like the Student Government election, the Faculty Senate election was totally electronic. However, the Classified Staff Council had a need to offer a paper ballot option due to the diverse core technology competencies of that group's constituents. This need propelled another enhancement. Again, the existing Banner reporting capabilities and security settings were leveraged to provide the election administrators with the ability to produce a newly developed eligible voter roster report and a report of those who have actually voted. These reports were then used by the poll worker to verify election eligibility and certify that the individual requesting a paper ballot had not already voted using an electronic ballot.

The next group interested in using the on-line voting application was the Graduate Council. Their need was unique in that they wanted to allow only the active members of the council to participate in the election. The election was being held to select the council's President, Vice-President, Secretary, and Treasurer. To accommodate this request, the on-line voting eligibility verification process was enhanced to leverage the committee member participation module that is provided within Banner.

* an overview of the on-line voting environment is included in Figure 1, located on the last page.

b) Significance to the improvement of the operation of government.

- Less Election Administration - Prior to the implementation of the on-line voting application, election administrators spend countless hours and substantial funds developing and producing paper ballots. Moreover, many hours were spent counting and verifying votes.
- Increased Election Participation – When institutions provide seamless interaction between services to faculty, staff and students, it encourages participation and increases confidence and trust in the 'system'.
- Strategic Alignment for Future Trends – Accessibility may change how elections are structured. Our responsibility is to engage the client, in our case faculty, staff or students. With increased ability for patrons to observe and participate in e-democracy, numerous opportunities will arise to implement other elements. Universities serve as an excellent test-bed for creating an enterprise e-government strategy that encompasses technical as well as ethical considerations. Institutions must develop enterprise-wide thinking that leads to easy, seamless access for citizens.

c) Benefits realized by service recipients, taxpayers, agency or state.

- Aggregation of information and services
- Dissemination of information to the right person at the right time
- A method of easily turning manual campus election services into Web election services
- Improved administration to regulate, manage and secure elections
- Reduced material and printing costs created by the elimination of paper ballots
- Lowered barriers of access to distant students by empowering them to participate in the community of on-campus, traditional students as they proceed with their governance
- Improved customer service
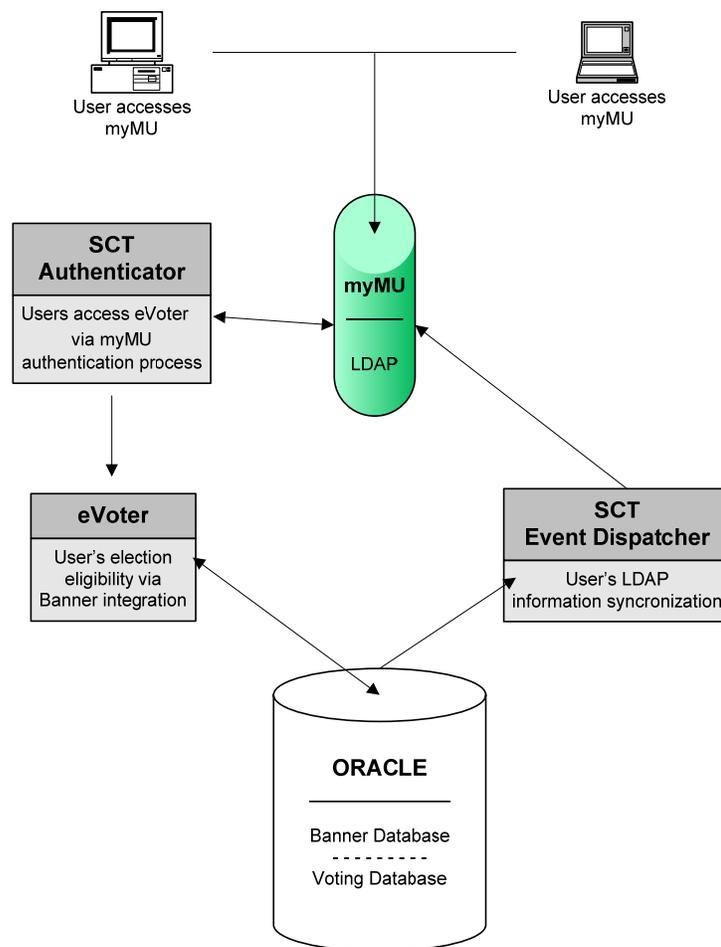- Improved customer satisfaction

d) Return on investment, short-term/long-term payback.

- All eligible members of the campus community can participate in an online election, from anywhere at anytime. This level of accessibility promotes the institution's commitment to service and to the success of its governing bodies.
- With the proper approach, operational efficiency frees up an institution's resources so they can be spent in other areas. When an institution keeps its operations as efficient as possible and eliminates waste, it can offer a greater breadth of services without increasing staff workload. Cost savings associated with resource time required to produce paper ballots as well as the physical resources will more than cover the costs of the purchased software over a three year product life cycle. Commodities such as paper, ink/toner, envelopes, etc. are no longer required to deliver pertinent services toward the continuance of academic governance.
- By purchasing off-the-shelf software, Marshall University was able to save thousands of dollars in estimated development time. Though time was spent modifying the purchased software to work within the institutional architecture, this time was far less than the time estimated to build such an application from scratch. In addition, purchasing a software package that was compatible with the enterprise administrative information system saved countless hours of integrating data between potentially incompatible data sources.

Figure 1

The Big Picture

The following graphic illustrates the components involved in the On-line Voting Solution

SCT Authenticator
Users access eVoter via myMU authentication process

myMU
_____
LDAP

User accesses myMU

User accesses myMU

eVoter
User's election eligibility via Banner integration

SCT Event Dispatcher
User's LDAP information syncronization

ORACLE
_____
Banner Database
- - - - - - - - -
Voting Database

Legend:		
myMU is the Entersprise Portal	**Banner** is the Enterprise AIS	**eVoter** is the Enterprise on-line voting application