CERS

Central Election Reporting System

Elections & Voter Registration Division

CASE STUDY

Pilot Project

South Dakota Secretary of State

CERS Case Study, presented by BPro Inc

The development of the CERS project began in August of 2007 with an absolute requirement that the system be completely functional AND tested by the South Dakota statewide primary on June 3, 2008.

BPro collaborated with the client the South Dakota Secretary of State (SoS) and Software Development, Web Services and Database Administration teams from the South Dakota Bureau of Information Technology (BIT).

This document is presented to give the reader a clear picture of what was entailed in the development of this web application. It states the reason for the project, the benefits and risks. It also highlights BPro's ability to work on tight deadlines and with other organizations to get projects done.

This charter presented an idealized view of the development process. During the actual building process there was the usual amount of changes as the project evolved. However, BPro was able to work with our partners to adjust the time lines and still make all the important deadlines.

Those who want more details, either on this project or regarding BPro's capabilities, please contact us at:

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Introduction

This case study communicates the scope, management approach, and organization for this project. Specifically, it details the project scope, goals and objectives, deliverables, and approaches for planning and managing this project. It also includes a high level description of resource requirements and estimated costs. A detailed requirements document, design document and project plan supplements this charter.

1. Executive Summary

1.1. Business Need and Benefits

The Secretary of State's office received notification the current software used for election processing in the Secretary of State's office is outdated. This puts the stability of the current automated election processing in the position of being difficult or impossible to prolong. Additionally new programmers do not have the necessary skill set for the software currently used for the mainframe based existing election night reporting process.

Currently the Secretary of State and County Auditors use a multitude of different systems to track candidate petition filing, ballot certification and creation, election night results reporting, and county and state canvassing. The intention of the Secretary of State involves supporting a centralized application to be used by the Secretary of State's Office and County Auditors for providing all these functions in a unified manner. The application will process statewide primary, secondary, special and general elections.

The goal is to eliminate duplicate entry of data, provide for rock-solid management of the data, allow for seamless transition between candidate data and ballot preparation, allow for seamless importation of election results directly from ballot counting machines, and to provide a system for electronic canvassing of results at both the county commission and State Board of Canvassers levels. An additional benefit of having the data in a uniform platform is the ability to allow the public to access data such as their polling place location and sample ballot via the web on the Voter Information Portal (VIP). Election night results will also be generated and disseminated more quickly.

1.2. Project Overview and Timing

This project is under a very tight time-frame. Portions of this project must be fully operational by January 1st, 2008 with the full project needing roll out prior to the general election in June. Due to the time-crunch, this project is logically split up into multiple business components to correspond with the election process.
The Secretary of State will utilize the BIT development team to gather the requirements and design the application. BPro will be contracted to develop the application units. This process will allow programming to commence earlier with the project while allowing BIT to fully gather requirements and design additional project components.

1.3. Recommendations

This project provides tangible benefits to the Secretary of State's Office, the County Auditors, the registered voters of this state, and the news media. The Central Election Reporting System will replace an existing application that is well over 17 years old which significantly exceeds the expected life for computer applications.
In summary, it is recommended to:

- Create a Central Election Reporting System (CERS) for handling statewide primary, general and special elections.
- This application will accommodate detailed results and reporting down to the precinct level.
- Divide this project into logical components which will result in delivery of this application in time for the customers to meet the critical deadlines in the election process.
- Contract for an application security recommendation to ensure the CERS integrity.
- Utilize BIT for the requirements, design, and project management for this project.
- Contract with BPro for developing the individual components of the Central Election Reporting application.
- Create specialized focus groups to ensure the needs and expectations for all consumers are fully realized.

2. Project Description

2.1. Background and Purpose

The current software used for election processing is outdated. The pool of programmers skilled in the current software continues to decline as newer development platforms have entered the market place. These factors put the stability of the current automated election processing in the position of being difficult or impossible to prolong.

Currently the Secretary of State and County Auditors use a multitude of different systems to track candidate petition filing, ballot certification and creation, election night results reporting, and county and state canvassing.

The election process consists of many manual and data entry procedures with constant re-keying of the same data. The physical results reported to the Secretary of State arrive in a variety of formats and form styles.

The intention of the Secretary of State is to create one centralized application to be used by the Secretary of State's Office and County Auditors to provide all of these functions in a unified manner. The intention will be to fully automate the most common manual procedures in consideration of the tight development time frame. The new application will be used for statewide primary, secondary, special and general elections.

2.2. Problem and/or Opportunity

The software used for providing the existing election results reporting for the Secretary of State is outdated. The pool of programmers with expert knowledge in regards to this software continues to dwindle. The existing application needs to be replaced.

The existing election night reporting system does not drill down to the precinct level. There exists past history for demand of results to the precinct level. It also does not include any processing or results for local candidates accessible to the public. This application will provide the ability to enter county, municipal, and other local district candidates providing the election is held in conjunction with a statewide primary or general election.

The general public in South Dakota expects government to provide services via the internet. This project will create a ballot component which allows a South Dakota registered voter the ability to view their ballot online.

The county auditors must create a ballot style to provide the data and a sample style sheet for the ballot printers. This application will pre-edit the ballot and create styles to reduce the potential for issues with the ballot printer. This application will provide consistent and uniform ballot data on a statewide basis.

Processing the statewide election results is a meticulous and time consuming process. The results for each race in each county is currently hand-keyed into an excel spreadsheet for tabulation. The CERS application will provide an automated statewide solution for counting and canvassing the election results. The proposed application will provide uniform reporting for the election results.

The CERS project provides a tremendous opportunity to automate and streamline many of the repetitive data entry functions in the voting process. The voting public will be afforded the opportunity to view their ballot styles online prior to voting.

The customers of the election night reporting will now be able to receive precinct level election results as well as winners of the local races at one portal.

The CERS project will replace the out-dated ST05 Election night reporting application; consolidate many disparate procedures while overall providing a more effective use of taxpayer resources at the State and local levels.

2.3. Beneficiaries / Benefits

Beneficiary	Benefits
Secretary of State Elections Division	• Streamlined election reporting results. • Election reporting generated with up-to-date current technology. • Internet based online candidate application. • Capability to provide election services in a statewide uniform delivery. • Application supported by up-to-date technologies.
County Auditors	• Capability for counties to export results from the counting machines directly into the centralized reporting application – providing they have the appropriate hardware and software. • Will not have to re-key all of the federal candidates, state candidates, and ballot initiatives into their local applications. • One common application that can be administered uniformly statewide.
General Public	• Ability to locate their polling place online. • More effective delivery of election night reporting. • Ability to drill down into election night reporting for each individual precinct. • Ability to view local race results held in conjunction with a statewide election real time during election night.
Elections Canvassing Committee	• Will not have to re-key all of the reported figures. • All reports will be delivered in the same format.

Beneficiary	Benefits
	• Ability to "approve" the canvass in a more effective manner. • No more worries about misspelling a candidates' name.
Ballot Layout Programmers	• Streamlined process for all ballot styles in South Dakota. • Should minimize questions and or changes for a ballot style.
Media	• Standard format for election reporting. • Precinct Level Results statewide • Ability to receive results for all local elections statewide held in conjunction with a statewide election.

2.4. Scope

2.4.1. Within Project Scope

1. Develop a statewide centralized election application for any statewide election. This application will process any county, municipal, or other local election held in conjunction with a primary or general election.
2. Modifications to the SOS Web site and the ST20 statewide registered voter application to accommodate the CERS application components as set forth in the requirements and design documentation.
3. Ability to import results from the county vote counting applications directly into the statewide database.
4. Capability to export results to the news media.
5. Data fields should use combo-boxes as much as possible to facilitate ease of entry, data accuracy and data security.
6. System security is an important factor. It must be impossible for any unauthorized person to add, delete, or change any data in the system or impede the flow of election results from the county auditor into the system
7. A security study will facilitate the security aspect to ensure the integrity of this application.
8. The ability to export the data into Microsoft Access so the Secretary of State can produce ad hoc queries, reports, and manage documents.
9. All data entry aspects with the Secretary of State's Office and the county auditors will be done via SSL on the intranet or following the recommendations following the security review.
10. Election night will obviously be the most crucial time for the performance of the system. System failure or slowdown is not an acceptable option on election night. Great care must be taken in the hardware and software design to ensure unimpeded operation on election night as results are transmitted from each county auditor's office into the system and the system places results on the web for public viewing.
11. The download to the media will be in one agreeable format.

2.4.2. Out of Project Scope

1. The Campaign Finance Reporting component will be integrated into the application at a later point in time.
2. Any procedures or changes not identified in the charter, requirements or design documentation without going through the formal change request process as set forth in the project charter.

3. This application will not provide more than one outlet for distributing raw data to the media.

2.5. Major Milestones and Deliverables

The following table identifies the key deliverables, their due date, the staff member(s) responsible for the delivery and the actual date the deliverable was completed. The list of deliverables should include the Project Closeout Form and the Responsible Names should be indicative of who will have sign off responsibility for the project completion and closure.

Event / Component	Responsibility	Anticipated Start Date	Due Date
Project Charter Executed	SOS / BIT / BPro	08/01/2007	08/15/2007
Races • Requirements • Design • Development • Test Plan • Testing • Production • Training	 BIT/SOS BIT BPro SOS SOS BPro SOS	 08/06/2007 09/15/2007 10/01/2007 10/26/2007 12/12/2007	 Done Done 11/09/2007 10/19/2007 11/02/2007-11/16/2007 11/09/2007
Candidate Filing • Requirements • Design • Development • Test Plan • Testing • Production • Training	 BIT/SOS BIT BPro SOS SOS BPro SOS	 08/06/2007 09/15/2007 10/01/2007 10/19/2007 12/12/2007	 Done Done 11/09/2007 10/19/2007 11/02/2007-11/16/2007 11/09/2007
Ballot Questions • Requirements • Design • Development • Test Plan • Testing • Production • Training	 BIT/SOS BIT BPro SOS SOS BPro SOS	 08/15/2007 09/15/2007 09/22/2007 10/19/2007 12/12/2007	 Done Done 11/09/2007 10/19/2007 11/02/2007-11/16/2007 11/09/2007
Voter Information Portal • Requirements • Design • Development • Test Plan • Testing • Production • Training	 BIT/SOS BIT BPro SOS SOS BPro SOS	 08/15/2007 09/15/2007 11/01/2007 11/30/2007 04/22/2008	 Done 09/28/2007 12/21/2007 11/30/2007 12/10/2007-01/11/2008 01/04/2008
Candidate Voice Capture • Requirements • Design • Development • Test Plan • Testing • Production • Training	 BIT/SOS BIT BPro SOS SOS BPro SOS	 08/15/2007 10/06/2007 11/01/2007 11/30/2007 12/12/2007	 10/05/2007 10/31/2007 11/16/2007 11/02/2007 11/09/2007-11/30/2007 12/03/2007

Event / Component	Responsibility	Anticipated Start Date	Due Date
Ballot Programming • Requirements • Design • Development • Test Plan • Testing • Production • Training	 BIT/SOS BIT BPro SOS SOS BPro SOS	 08/15/2007 09/01/2007 09/29/2007 12/10/2007 04/22/2008	 Done 10/01/2007 12/21/2007 12/07/2007 12/10/2007-01/11/2008 01/04/2008
Create Election Database • Requirements • Design • Development • Test Plan • Testing • Production • Training	 BIT/SOS BIT BPro SOS SOS BPro SOS	 08/15/2007 09/15/2007 11/03/2007 02/22/2008 04/22/2008	 Done 11/16/2007 12/21/2007 12/07/2007 12/14/2007-01/11/2008 NA
Other General • Requirements • Design • Development • Test Plan • Testing • Production • Training	 BIT/SOS BIT BPro SOS SOS BPro SOS	 08/15/2007 10/02/2007 11/03/2007 12/10/2007 04/22/2008	 Done 11/16/2007 12/21/2007 12/07/2007 12/14/2007-01/11/2008 As Completed
Election Night • Requirements • Design • Development • Test Plan • Testing • Production • Training	 BIT/SOS BIT BPro SOS SOS BPro SOS	 ??/??/2007 ??/??/2007 ??/??/2007	 10/12/2007 11/02/2007 12/21/2007 12/07/2007 12/14/2007-01/11/2008 02/04/2008
Post-Election • Requirements • Design • Development • Test Plan • Testing • Production • Training	 BIT/SOS BIT BPro SOS SOS BPro SOS	 08/15/2007 10/13/2007 10/27/2007 11/10/2007 11/19/2008	 10/12/2007 11/16/2007 12/21/2007 12/07/2007 12/14/2007-01/11/2008 02/04/2008
XML Upload file ▪ Requirements ▪ Design ▪ Development ▪ Testing ▪ Production ▪ Training	 BIT/SOS BIT BPRO SOS BPro SOS		 10/26/2007 11/30/2007 12/21/2007 12/14/2007 01/04/2008
Project Implementation / Roll Out	All	06/01/2008	06/01/2008
Project Wrap-Up	All	07/01/2008	07/01/2008

2.6. Proposed Technology Environment

This section lists the proposed software and hardware requirements for designing, developing, and implementing this project.

2.6.1. Proposed Software

This application will be an online internet based application. The following chart details the software required for developing and deploying this application.

Software Item	Description
Visual Studio 2005	All project pieces will be developed with Visual Studio 2005
Microsoft Office Tools	All correspondence should be compatible with the Microsoft Office 2002 SP3 Suite.
Adobe Acrobat 8.0	Should use the most current version of Adobe.
SQL Server	Use the SQL Server 2005 database
Source Safe	All programs should be stored in Source Safe version 6.0. BIT's current version is 6.0a build 8897.
Crystal Reports	All reporting should be generated with Crystal Report XI rev. 2 (11) for any new development.
ERM	Election Reporting Manager provided by ES&S. This is an optional product for counties to purchase which will allow the numbers from the ballot counting machines to be imported into the Central Election Reporting System.
Voice Capture	Software for obtaining name pronunciation from the candidate. Dan is search for a product.
Mapping Tools	Interface with Map Quest, Yahoo, and Google mapping applications to show polling place locations.

2.6.2. Proposed Hardware

Hardware Item	Description
N/A	06/14/2007 – No new hardware requirements at this time.
Zip Drive or optional Card Reader	For the counties purchasing the ERM software, they will need to purchase a zip drive or card reader to export the date from the ballot counting machines into their local work station to import into the CERS database.
Voice Capture	Any needed hardware to accommodate the voter name pronunciation call in system.

2.7. Assumptions

1. Appropriate resources are available for design, development, testing, training and implementation of this project.
2. No major changes will surface upon completion of the requirements and design documents.
3. The Voter Information Portal will be a 24 x 7 operation with the exception for scheduled BIT maintenance.
4. The Election Night Reporting System must be able to handle high demand on election night.
5. An independent consultant will provide an assessment to mitigate unauthorized access and attacks into the CERS application which must be finalized prior to the completion of the design documentation.
6. The existing ST05 application and existing database will sunset upon completion of this project.
7. All project documentation will be created using standard Microsoft Office applications.
8. We will adjust our plans including scope, schedule, and budget at the end of the requirements and design phases to assure realistic expectations considering time and budget constraints.
9. Any changes to these assumptions will be handled through the formal change control processes as identified in the project charter.

10. Time estimates throughout the project plan are *estimates*. Times will be refined and made more precise after the completion of each component.

2.8. Constraints

1. Programming and design must be within SOS / BIT standards.
2. This application will be online and fully available to the customer base during election night. It expected this application will be fully operational during the time frame for reporting election results.
3. There will be downtime for normal system maintenance in regards to the Voter Information Portal.
4. All scheduled maintenance will be devised to minimize the impact to the CERS customer base.
5. The consultant providing the security requirements will have their recommendations completed prior to full completion of the design documents.

2.9. Project Risk Summary

No information technology project is without risk. For this reason, we have developed a risk management plan at the beginning of this project. This plan will be maintained throughout the life of the project.

The risk assessment, conducted at the start of the project and reviewed regularly during the project, includes identifying risk areas of the project and establishing both preventive and contingency actions. These actions are built into the project plan, making risk management an every day activity.

A significant component of each risk management plan is identifying and implementing key performance indicators capable of providing early warning signs where management action is required.

Risk identification and management will be an ongoing activity involving the Project Teams as well. To identify and mitigate risks from all possible perspectives, we will regularly ask Team members to update and contribute to project risk management.

The following risk areas have been identified, and the table below indicates the risk management strategies that will be applied.

Risk Factor	Risk Level	Potential Impact	Risk Management Techniques
Final Product is not easy to use.	Low	Budget Design Schedule	• Use focus groups consisting of consumers for this application in the requirements, design, and testing phases.
Resources will be available to design, program, test, and implement this project by the due date set forth in the Major Milestones and Deliverables.	Low	Schedule	• Continue to have timely meetings as described in the project management approaches to ensure project is staying on schedule with the resources in place.

Risk Factor	Risk Level	Potential Impact	Risk Management Techniques
Security Recommendations significantly impact the project.	Medium	Budget Design Schedule	• Attempt to have the Security consultant provide preliminary findings to the project team as early as possible. • Set up a team meeting with the security consultant.
Business Process Changes.	Low	Budget Design Schedule	• Utilize the guidelines as defined in the Project Approaches section to identify and monitor any business process changes.
Key stakeholders will choose not to participate	Low	Budget Design	• Choose focus group members wisely. • Keep focus group members involved with the project.
Existing Election Process is not fully analyzed or understood	Medium	Budget Design Schedule	• Spend time learning the existing systems and working with the product management team. • Work with focus groups to better understand their perspectives.
Avoidance	Low	Schedule Budget	• Assure expert knowledge of regulations to assure that the implications of design and security approach are known
Competing Systems	Medium	Schedule	• Identify similar systems and developments. • Coordinate intent and assure that duplication of effort is avoided
Solution will not Accommodate all of the Unique Needs	Low	Budget	• Provide sufficient information about the objectives and how the approach will work for everyone. • Identify potential issues and have the business teams address them.
Schedule	High	Budget	• Get Commitment up front. • Identify staff needs clearly in the charter, requirements, and design documents. • Make Clear assignments.
Availability of Business Team and Focus Group Members	Medium	Schedule Design Budget	• Get Commitment up front. • Identify Commitment Clearly in the charter
Availability of End Users (Business Team and Focus Groups) for Design and Testing	Low	Schedule Design	• Identify the team and their responsibilities early in the process. • Acquire a sufficient number of people for the team. • Obtain agreement to continue on if some cannot attend. • Communicate the schedule clearly.

Risk Factor	Risk Level	Potential Impact	Risk Management Techniques
Assurance of Executive Level Support and Timely Decision Making	Low	Schedule Budget	• Establish Project Sponsor at the beginning of the project. • Develop project charter that articulates roles and responsibilities of all parties and the importance of these to accomplishment of objectives. • Get signoff. • Communicate project objectives and needs to all stakeholders
Scope Creep	Low	Schedule Budget	• Analyze the possible capabilities of the Election Process and determine what will be implemented. • Discuss this very clearly. • Obtain Commitment to change control from the Program Manager.
Failure of Chosen Technology or Software and Avoidance of Technical Obsolescence	Low	Schedule Budget Design	• Technical prototypes and development in several iterations sequencing the most risky fist. • Experienced Developers • Collaboration in selection of technical tools and approaches to assure that all technical participants are comfortable with the choices.
Roles and Responsibilities of Development	Low	Schedule Budget	• Assure that well-defined change control and issue management procedures are in place. • Foster a good relationship with BIT & BPro developers through partnership in the requirements, design and development phases. • Assure mutual commitment to the stated objectives through a project charter. • Establish quality assurance objectives.
Staff Turnover or Illness	Medium	Schedule Budges	• Prepare detailed requirements and design documents so new staff can pick up more readily.
Undiscovered Requirements	Low	Schedule Budget Design	• Spend plenty of time upfront capturing the business requirements • Hold timely meetings to ensure the design fully accommodates the business needs.

Risk Factor	Risk Level	Potential Impact	Risk Management Techniques
Communications Failures	Low	Schedule Budget	• Follow the guidelines as set forth in the Project Management Approach section.
Missing Stakeholders	Low	Design Schedule Budget	• Identify all stake holders up front to ensure all aspects are accounted for during the requirements and design process.

3. Project Structure and Staffing

3.1. Roles, Responsibilities, Accountabilities, and Authorities

Roles are specific positions within the project which are assigned with unique accountabilities, authorities and responsibilities. The following table describes the key responsibilities, accountabilities, and authority for the key project roles for the Central Election Reporting project.

Role Definitions based upon the Microsoft Team Model for Application Development. http://www.microsoft.com/technet/archive/ittasks/plan/teamops/team.mspx?mfr=true

Role	Accountabilities, Authorities and Responsibilities.
Project Sponsor	• Maintains ultimate authority over, and responsibility for, the project • Secures executive commitment, approvals, and funding • Disposes of issues and changes affecting project scope (i.e material effect to schedule, cost, etc.) • Approve project charter and identify project's critical success factors: review project charter and approve its use, identify those factors that can be evaluated and/or measured, and constitute success of the project
Product Management	• The goal of product management is customer satisfaction. The product management role is positioned to achieve this by acting as the customer advocate to the team and as the team advocate to the customer. It is important to distinguish between the customer and the end user—the customer is the one who *pays* for the product while the end user is the one who *uses* the product. • As the customer advocate to the team, product management is responsible for understanding customer requirements, creating the business case, establishing the shared project vision between team and customer, and ensuring that any solution that the team develops meets the needs of the customer by solving their particular business problem. • As the team advocate to the customer, product management is responsible for high-level communications and managing customer expectations. High-level communications include public relations, briefings to senior management/customers, marketing to users, demonstrations, and product launches. Managing expectations is the key role of product management once the vision is set. It is considered to be a primary role because it can determine the difference between success and failure. • The importance of effectively managing expectations can be illustrated with an example involving the anticipated delivery of 10 product features from a team to a customer by a certain date. If the team delivers only two features when the customer expects the delivery of all 10, the project will be deemed a failure both by the customer and by the team. • If, however, product management maintains constant two-way communication with the customer during the feature development and production period, changes can be made with regard to customer expectations that can ensure

Role	Accountabilities, Authorities and Responsibilities.
	success. Product management can include the customer in the tradeoff decision-making process and inform them of changing risks and other challenges. Unlike the previous scenario, the customer can assess the situation and agree with the team that delivery of all 10 features within the specified time frame is unrealistic and that delivery of only two is acceptable. In this scenario, the delivery of two features matches the expectations of delivering only two, and both parties will consider the project a success.
Program Management	• The role and focus of program management is to meet the quality goal of delivering the product within project constraints. To meet this goal, program management owns and drives the schedule, the features, and the budget for the project. Program management ensures that the right product is delivered at the right time. • As the owner of the schedule, program management collects all team schedules, validates them, and integrates them into a master schedule that is tracked and reported to the team and to stakeholders. • As the owner of the features, program management plays a role in defining which features will be delivered in order to meet the requirements outlined by product management. Program management owns the functional specification (what is to be built) and the master project plan (how it is going to be built) and facilitates their creation by getting input from each of the roles on the team. It is essential that each role contributes input, perspective, and sign-off on the functional specification and project plan. The features are then tracked against the functional specification and their status is reported to the team and to stakeholders. As the owner of the budget, program management facilitates the creation of the planned cost by gathering resource requirements from all of the roles on the team. Program management must understand and agree with all resource decisions (hardware, software, people) and must track the budget actuals against the plan. The team and key stakeholders receive status reports. • In addition, program management coordinates resources, facilitates team communication, and drives critical decisions where consensus cannot be achieved.
Development	• To succeed in meeting its quality goal, the role of development is to build a product that meets the specification and customer expectations. It is important that development focus not only on coding to the functional specification but also on meeting customer expectations. This is because functional specifications are written before any significant development or building take place, leaving them inherently incomplete. Therefore, development must innovate, but only to solve the customer's problem, not just for the sake of implementing interesting features. • Development serves the team as technology consultants and as product builders. As technology consultants, development must provide input into high-level designs, evaluate technologies, and develop proof-of-concept prototypes to validate potential solutions and to mitigate development risks early in the development process. • As builders, development provides low-level product and feature design, estimates the effort required to deliver on that design, and then builds the product. • Development estimates its own scheduling because it works daily with all developmental contingency factors. MSF refers to this concept as bottom-up estimating. Its goal is to achieve a higher quality of schedule and to increase accountability of the estimates and of the work.
Testing	• The goal of testing is to make sure that all issues are known and addressed prior to releasing the product. An issue is anything that prevents the product from meeting its requirements. This could be a fault in the code that development writes, otherwise known as a bug, a deviation in the specification that program management owns, or a defect with the documentation that user education produces. • To achieve their quality goal, testing is responsible for "reality induction," as

Role	Accountabilities, Authorities and Responsibilities.
	Jim McCarthy says in *Dynamics of Software Development*. The testing role must be able to clearly articulate what is currently wrong with the product and what is currently right with it so that the status of product development is accurately portrayed. To do this, testing must have a very good grasp of the needs of the users and a clear understanding of what the product will do to meet those needs. • To facilitate the testing process, testing develops test strategies, plans, schedules, and scripts. This helps ensure the team's understanding of what, how, and when something is going to be tested. • It is important to distinguish between testing and quality assurance (QA). Testing has a project focus and involves detailed technical work. QA, on the other hand, is often a corporate function organized under a director of quality, whose responsibility is process compliance with corporate or regulatory standards. QA may also be responsible for sharing best practices across project teams.
User Education	• User education focuses on enhancing user performance so that users are as productive as possible with the product. To accomplish this, user education acts as the advocate for the end user of the product, much like product management acts as the customer advocate to the team. • As the user advocate to the team, user education participates in the design process to deliver a product that is useful, usable, and in need of as little performance support material as possible. This also lowers the costs of supporting the product in the operations/delivery channel. Where user performance support materials are still required, user education designs, builds, and tests materials that will enable easier use. These materials can include reference cards, keyboard templates, user manuals, on-line help, wizards, and even full-featured courseware. • User education also is responsible for usability testing, tracking usability issues, and ensuring that those issues are addressed in the product design. User education must also ensure that changes in scope and design are well known and reflected in any of the relevant performance support materials.
Logistics Management	• Logistics management serves as the advocate for the operations, product support, help desk, and other delivery channel organizations in its focus on smooth deployment and ongoing management. • As the operations advocate to the team, logistics management participates in the design process to help ensure that the product is deployable, manageable, and supportable. Logistics management also is responsible for understanding the product's infrastructure and support requirements and ensuring that installation sites have met those requirements prior to deployment. Typically, this is facilitated through the creation and implementation of rollout, installation, and support plans. • Other logistics management activities include supporting the logistical requirements of the team, supporting the product throughout the beta testing process, and providing training to the operations and help desk personnel.
Focus Groups	• A focus group is an outstanding tool for validating an application is in alignment with the target audience needs. • The focus group will consist of a representation of identified consumers of this application. • Specialized focus groups may be created for dealing with specific aspects of this project. **NOTE:** Focus Groups are not a categorized role in the Microsoft Team Model for Application Development.

3.2. Project Staffing Plan

The following describes staffing requirements by role and skill as well as identifies individuals that will work on the project. This staffing plan will be updated upon commencement of development.

Team	Team Role	Team Member(s)

Team	Team Role	Team Member(s)
Project Sponsor	Project Sponsor	Secretary of State
Product Management Team	Team Leader	Secretary of State
	Team Member(s)	Elections Supervisor HAVA Coordinator
Program Management Team	Team Leader	Deputy Secretary of State
Development Team	Team Leader	BIT point of Contact
	Requirements & Design Member(s)	BIT
	Development Team Members	BPro Others TBA
Logistics Management Team	Team Leader	BIT Point of Contact
Project Team	Team Members	The project team consists of: • Product Team • Program Team • Development Team
Auditor Focus / Test Group	Team Members	TBA
Media Focus / Test Group	Team Members	TBA
General Public Focus / Test Group	Team Members	TBA

The development team consists of members from BIT and BPro. BIT primary responsibility involves gathering the requirements, drafting design documentation, and administering the project. BPro's primary responsibility involves the application programming.

3.3. Project Communications Plan

Appropriate *two way* communication with stakeholders is crucial to the success of the project. This matrix gives examples of how you may start to think about the interested parties and the suggested communication channels to be used for each group.

Team Role	Expected Communications	Frequency	Media
Project Sponsor	Status Reporting Issues Reporting	In line with Project milestones Dependant on timing and priority	Generally, formal reports to be followed up by face to face contact where appropriate
Project team	Documentation and standards Project knowledge Internal Communications	In line with plan Ad hoc as necessary	Central repository, managed by project team administration Group e-mail Team Meetings BPro will have one point of contact for organizing communications.
Focus Groups	Project Knowledge	Ad hoc on demand	Email and personal contact as applicable Formal reports on project progress

3.3.1. Email Communication Protocol

All subject lines in email related to this project should be structured with the system number and related task at hand. Should the question or concerns be in regard to the voter information portal test plan – please format the subject line in the following format:

When dealing with important questions, try limiting the email to one specific topic. This will help ensure all questions and concerns are completely addressed. If more than one topic is discussed, use two separate emails to address each specific issue.

4. Project Approaches

Our approach is to:

- Clearly define the requirements and the project scope.
- Clearly define roles and responsibilities in a team environment.
- Foster commitment to schedule and scope control.
- Document process flows to clearly describe what this project will accomplish from the users' perspective and to facilitate component based development.
- Set frequent milestones to check progress.
- Plan to design, develop, test, and implement small components and confirm the work to date to streamline the time between deliverables.
- Involve focus groups and product team actively in system requirements, design, testing and implementation.

4.1. Project Planning

The project plan outlines the activities required to produce the deliverables, and ensures these activities are clearly defined, accurately estimated, and managed at an appropriate level of detail. Each activity will be assigned to a person responsible for ensuring it is completed successfully. The project plan will be updated throughout the project, as new information becomes known. The development team leader will be responsible for ensuring all parties have a complete and up-to-date understanding of the status of the project.

4.2. Project Management Approach

Effective communication is a critical success factor for the project and will be managed as such. This section describes how the Project Team's progress will be communicated, as well as how, to whom, and in what frequency the project's status will be reported.

Mechanisms employed to conduct effective communication will include meetings, e-mail, fax, regular telephone calls, and the project website. Project Team meetings will be planned, as required, to facilitate progress and status updates.

Success of the project depends to a large degree on the buy-in and ownership of the system by the users of the system. Communicating the progress of the project and keeping end users involved is critical. To this end, the project plan includes regular distribution of project status reports to all project teams, as well as the products of the team meetings.

1. At least a bi-weekly meeting with the Project Sponsor and Program Manager to review progress and to produce decisions or take action with regard to the project. This includes the following:
    - Approvals
    - Authorization of resources

- Removing project obstacles
- Resolving conflicts arising from the implementation of the new system
- Cost, progress, change, or other project issues will be raised at Project Sponsor meetings

2. Weekly contact between the Program Team, Product Team, and the Development Team with the following agenda in mind:
    - What was accomplished
    - Any Issues or Concerns
    - Review MS Project Timelines
    - Goals for the next week
    - Agreements

3. The Development Team Leader will organize meetings between the Program Team, Product Team and the user entities.
4. Contact between the Development Team Leader and the development team should be daily or as needed.
5. The Product Team will organize the focus groups and set meetings as deemed necessary.
6. Development Team Leader and Product Team Leader will arrange for and oversee testing.
7. Utilize Microsoft Project for time frame and resource management. The project plan shall be updated weekly.

4.3. Change Management Approach

To ensure timely and effective delivery of the project, scope will be tightly managed. Project change control procedures will be reviewed with the team at the beginning of the project, to ensure they are clearly understood. This review will help establish a common understanding of the need for project change control and the mechanics for implementing a change to the scope of the project, should that be required.

A change refers to any modification and/or new development deviating from the baseline established in the project charter and design documents. All potential changes are compared against the project baseline in terms of functionality, schedule, cost, upgrade capability, maintainability, and resources. Change requests can be raised by any member of the project. Appropriate team members will discuss potential changes and will advance the request if the change is needed.

The Product Team Leader and Development Team Leader are expected to raise and resolve change requests, and maintain a project change request log. The Development Team Leader will assign responsibility for the resolution of program change requests and report progress to the Program Team Leader and Product Team Leader.

Where cumulative changes involve a budget impact that could affect the expected project cost, including both the allocated and incremental costs or a shift in a milestone of more than one week(s), approval of the Program Team Leader will be required. Normally, a formal change to the project charter will be required.

The subsequent steps will be followed with any changes to the project deliverables or objectives:

1. The change control process begins with a team member identifying a function not already identified as part of the deliverables, or a function that is part of the baseline, but because of changes, may impact cost, schedule, or resources.
2. The person requesting the change will complete the change request form and forward it to the development team to determine business value, cost/resources; once cost is determined, approval by the Program Team Leader is required.
3. Once approved by the Program Team Leader, the change request is entered into the change control log by the Development Team Leader, and is placed on the agenda for the next Project Team meeting.
4. The Program Team Leader and Project Team Leader review the change request; the cost, schedule, and resource impact will be examined and a category for the change will be assigned on the change control form; categories are as follows:

Category Action	Description
Critical	Must be completed before proceeding. Legislative or other overwhelming business reason exists; critical to project delivery.
Routine	Changes that would be preferable before proceeding, but that are minor and will not impact the end result if they are not completed The Program Team Leader, Product Team Leader and Development Team Leader will prioritize them.
Deferred	Changes that are desirable, but that can be deferred for review after completion of the project.
Rejected	Requested Changes unsupported by a valid business reason, outside the scope of the project (resources, time, budget, and contract), or unnecessary because of new functionality.

5. Once categories are assigned, the Program Team Leader and Product Team Leader will determine priorities within the categories and make recommendations.
6. Any impact to the cost, schedule, and/or resources, will be elevated to the Project Sponsor for their review and approval.
7. If there is no impact to cost, schedule, and/or resources, and the change is within the current scope of the project, the Program Team Leader and Product Team Leader have the authority to approve/reject the change request.
8. Category actions will be taken as follows:
   - Approved changes will be entered into the change control log by the Project Team Leader and assigned to the appropriate development person for further action. The change control log will be maintained throughout the cycle of the change.

   - Deferred changes will be placed on hold status in the change control log. They will be periodically reviewed to determine if sufficient time, resources, and budget are available to complete the change prior to testing and implementation.
   - Routine change that are of low priority (within routine category) will also be placed on hold until such time they can be incorporated into the current implementation.
   - Rejected change requests will be placed on closed status in the change control log, along with an explanation for the rejection.

9. Communicate the outcome to the requestor.

4.4. Scope Management Approach

A change request can also be initiated whenever there is a need to change the scope of the project, as defined in the project charter. Scope change is acceptable, provided that:

- The need for the change is critical.
- The Program Team Leader agrees the new requirement or change is needed.
- The impact of the change has been analyzed and understood.
- The resulting changes to the project (cost, timing, quality of deliverables, and human resources) are approved and properly implemented.

The scope management process will follow the same process flow as is outlined in the change control section of this project charter.

4.5. Issue Management Approach

Any Issues with the project team will be reported to the Program Team Leader.

4.6. Risk Management Approach

No information technology project is without risk. Risk identification and management will be an ongoing activity involving the Project Teams as well.

To identify and mitigate risks from all possible perspectives, we will regularly ask Team members to update and contribute to project risk management.

4.7. Quality Management Approach

The project plan identifies milestones at which go/no-go decisions will be made. These milestones will conform to the deliverables. No milestone will be considered complete until a review has been conducted, the work completed to-date, and the work planned for the next stage has been understood and accepted by the Program Team Leader and Product Team Leader.

These milestone reviews will further ensure inter-project communication has taken place, end users have been involved, and the process is sufficient prior to reaching completion of the phase.

The Development Team Leader is responsible for identifying the milestone review points and for structuring the reviews.

Milestones or deliverables will be independently reviewed and approved and will involve the Program Team Leader and Product Team Leader.

4.8. Technical Management Approach

Any technical issues will be routed through appropriate individuals based on their area(s) of expertise.

4.9. Technical System Documentation

It will be the responsibility of BPro to provide the final technical system documentation for this project. Upon final system implementation all design documents should be

updated to reflect the final system implementation. This technical documentation should be provided to Development Team Leader.

The end user documentation will include materials for the downloading the election night reporting into their applications. For example, should the media decide to have an .txt results file emailed, there should be instructions for the file layout and format.

4.10. End User Documentation

The internet based CERS application should be programmed to be intuitive and easy to use. Where possible, tool tips should be used on the various controls and online help should be provided to the end user.

User specific manuals will be created based upon experience gathered during this first election cycle with the new application. Consideration should be given that any required manuals will be available in an online html format for consumption by the entire user community.

4.11. Training Management Approach

The following table details the anticipated training provided for the defined application components.

Component	Training Methodologies
Candidate Filing Component and the Election System Component	• Product Team will prepare training materials. • Product Team will train the county auditors at the December meeting in Pierre. • This will be demonstration led training. • Consideration towards a lab based hands-on training for a select regional based expert user group. These champions will provide the first line application support for the remaining county auditors. • Ad hoc training and support will be provided by SOS upon individual customer request.
Voter Information Portal Component	• The application should not require any training considerations. • A public press release will notify the public about the existence of the registered voter service.
Election Results Reporting Component	• Product Team will prepare training materials. • Product Team will train the county auditors at the December meeting in Pierre. • This will be demonstration led training. • Consideration towards hands-on training for a select expert user group. These experts will provide the first line application support for the remaining county auditors. • The Product Team leader will communicate with the media to discuss the best delivery method. • The Product Team leader will issue a press release for the general public in regards to implementation of this component.

5. Related Projects and Inter-Project Dependencies

The following projects will impact, or be impacted by, the results of this project. The potential projects impacted and potential impacts are:

Project / System / Area	Impact

Project / System / Area	Impact
UCC Project	BIT development team will have to focus on requirements and design documents for this project.
Annual Report Project	Short delay in gathering of requirements.
News Media Applications for Elections Result Processing (AP Preference)	Some media outlets have written code to extract the results from the existing reports posted to the internet. These applications most need to be modified in order process the results. The medial will have the additional capability to drill down to the precinct level.

6. Project Success and Evaluation

6.1. Success Criteria

The project will be deemed successful provided the original objectives are met.

- Elimination of the duplicate data entry issues.
- Unauthorized access into the system is prevented with-in predefined guidelines.
- Ability to export data and import seamlessly into access or any other required format set forth in the design documentation.
- The requirements must be correct, complete, and unambiguous.
- The design document must be correct, understandable, and agreed to represent components of the Central Election Reporting application.
- The requirements for security considerations must be clear.
- The design document must state clearly the business functions to be included.
- The design plan must reflect all decisions that were made during this project.
- The design and project plan must clearly state the tasks and the estimated costs for designing, developing and implementing this project.
- The project must be completed according to the agreements represented in this document, within the schedule and budget stated.
- Registered voters use the Voter Portal for obtaining information about their polling place.
- The consumers of this application provide positive feed back in regards to this application.

6.2. Post Implementation Evaluation

The project team shall have a post implementation meeting to evaluate the CERS application with-in four weeks of implementation. The logistics team leader will be responsible for coordinating this meeting and ensuring that appropriate follow-up occurs prior to the close of the implementation process.

- Review the delivered product in terms of expectations.
- Review the delivered product to review any shortcomings.
- Review the finalized deliverables for completeness and accuracy.
- Address any unmet needs. Review change requests that were not approved.
- Address any outstanding questions or issues.
- Review feedback from the CERS customers.
- Sign off on the project implementation.