

THE COMPUTERWORLD HONORS PROGRAM

CASE STUDY

LOCATION:
*Harrisburg, Pennsylvania,
United States*

YEAR:
2006

STATUS:
Laureate

CATEGORY:
*Government and
Non-Profit Organizations*

NOMINATING COMPANY:
Deloitte

ORGANIZATION:

Business Solutions Center of Excellence (BSCoE)

PROJECT NAME:

BSCoE's Software Repository

Summary

The Commonwealth of Pennsylvania's Business Solution Center of Excellence (BSCoE) provides a repository of software, process, and knowledge assets that enables Agencies to jumpstart their software development projects. BSCoE allows Agencies to share their existing assets, collaborate on the creation of new assets, and benefit from the decreases in startup time and cost commensurate with a deep and mature asset base harvested from decades of software development experience.

Introductory Overview

The Commonwealth of Pennsylvania is one of the largest organizations in the world. By way of comparison, when gauged by budget, revenue realization and capital expenditures, Pennsylvania ranks up amongst the Fortune 100 companies. As with any organization of this size, IT expenditures represent a significant budgetary line item. Owing to the unique needs of the Commonwealth's lines of business, many of its applications are custom developed to accommodate a rapidly changing legal and regulatory landscape.

Over the past decade, Pennsylvania has made significant strides in standardizing their desktop software and network infrastructure, moving to a centralized managed hosting environment, and improving their back office functions through a large ERP implementation. These standardization initiatives resulted in tens of millions of dollars in savings for the Commonwealth. Custom application development, however, remained the domain of the Agencies responsible for the line of business applications and standardization in this area proved extremely challenging.

The Business Solution Center of Excellence (BSCoE) was envisioned to enable the Commonwealth to realize benefits in the area of custom application development that were similar to the benefits achieved through their desktop, network, and hosting standardization efforts. BSCoE executive sponsors recognized the unique challenges of custom application development and identified respect for Agency autonomy as a critical success factor for BSCoE. BSCoE and Agency executives crafted a federated governance model in which responsibility for asset management and reuse in the Commonwealth is shared between the Agencies and the Common-



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wealth's Office for Information Technology (OIT).

BSCoE's application infrastructure, which is shared between the Agencies and OIT, supports this federated governance model in several ways:

- Enables federated asset management, in which Agencies can maintain their assets locally and identify them for inclusion in a virtual asset pool. This allows other Agencies to discover and reuse existing assets from across the Commonwealth.
- Provides complete transparency into ongoing management of BSCoE assets, allowing Agencies to get immediate feedback on testing results, monitor issue resolution, and access the latest version of the assets.
- Augments face-to-face Agency collaboration options with a wealth of virtual options available through the BSCoE Information Portal, including online discussion threads, virtual meeting capabilities, RSS feeds, and PodCasting.
- Offers normative guidance in the way of policies, procedures, and best practices on employing standard technologies and BSCoE assets.

Benefits

To understand the benefits afforded by BSCoE, it is illustrative to first understand what activities the majority of custom applications must undertake. Comparing these activities with the services offered by BSCoE and analyzing how these activities can be simplified, reduced, or removed entirely from an Agency's scope of work provides a basis for calculating the benefits of using BSCoE.

Activities include:

- 1) Choosing an implementation technology...BSCoE provides normative guidance on implementation technology, narrows scope of search, and reduces the number of technologies the Commonwealth must commit to support.
- 2) Determining an appropriate software development methodology and creating effective artifact templates...BSCoE contains standard process artifacts, artifact templates, and actual sample artifacts.
- 3) Train software developers...The approach with BSCoE is to coordinate training efforts across Agencies. This is a synergistic and consolidated approach and results in bulk rate cost savings.
- 4) Create common infrastructure components for database access, security, etc...Common infrastructure components for both the Java and .NET platforms are provided, reducing cost significantly in this area.
- 5) Understand what Agencies with similar business needs have done. For example, both the Department of Transportation and the Fish and Game Commission issue licenses...BSCoE brings together Agencies in both face-to-face and virtual environments and encourages the discussion of common processes, approaches, and challenges.
- 6) Find preexisting assets that could meet identified needs...BSCoE provides a mechanism to search for assets and contributions from Agencies across the Commonwealth.
- 7) Develop, test, and deploy business software...Agencies can focus their efforts on what really



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matters, building and deploying line of business applications.

BSCoE offers a significant reduction in the amount of work conducted in preparation for the development of the actual business software. Standard industry metrics reveal that this work is about 40% of the effort on a typical custom application development project. Assessing BSCoE's contribution at a conservative 50%, Agencies stand to achieve cost savings of 20% on their application development initiatives.

The timing of BSCoE could not be more opportune for the Commonwealth. Pennsylvania's Agencies are currently engaged in an unprecedented series of system renewal efforts. Many of the Commonwealth's largest systems, including the Department of Transportation's driver licensing and vehicle titling system, Welfare eligibility system, Unemployment Compensation system, Child Support system, and Workforce Development systems are built on aging legacy platforms that are extremely expensive to support. Efforts are currently underway to re-platform these systems to newer technologies, such as Java and .NET. These large enterprise applications will all require multi-year initiatives to complete system replacement. On each of these large system renewal projects, BSCoE offers the potential for multimillion dollar savings.

The Importance of Technology

At the same time that the Commonwealth is undertaking these massive system renewal efforts, they are also faced with a challenge of a different kind – an aging IT workforce where, at this point in time, 30% of the workforce is eligible for retirement. The jumpstart provided by BSCoE assets allows Pennsylvania's junior IT staff to quickly begin producing business software and enables them to focus their time spent with senior IT staff on acquiring the business knowledge necessary to develop and support the applications of the future. Also, the formal collaboration options provided by BSCoE allows junior staff to begin communicating and collaborating with their colleagues across Agencies faster than ever.

Originality

The most exceptional aspect of this project has been the energetic involvement of the various participants from the rather large array of agencies across the Commonwealth. At the tactical level in particular, developers are seeing the value of reusability along with the elimination of redundant efforts. Collaboration is being done extensively.

Another key aspect of the project is in its evolutionary nature. By virtue of ideas being espoused by personnel from across the Commonwealth, both at the strategic and tactical levels, changes in approach are evaluated and sometimes adopted. This further garners buy-in from the sundry participants across the enterprise.

Although Pennsylvania's BSCoE initiative is one of the first state-level Centers of Excellence (CoE), CoEs have a much deeper history in the federal government and private sector. What makes BSCoE original and unique across both the public and private sectors is its approach to governance and communication. BSCoE borrows its governing and communication metaphors from several sources, owing to the unique makeup of the BSCoE team that have helped shape the project.

- The federated governance metaphor is borrowed from the U.S. federal / state model of govern-



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ment. Agencies are afforded local autonomy and control of their projects and contribute at the federal level. Central project governance, analogous to the U.S. federal government, is provided by the Commonwealth's Office for Information Technology (OIT).

- Transparent product management is very common in the Open Source community, where all parties are allowed to see (and contribute to) the inner-workings of the project. This approach helps to build buy-in and trust amongst project stakeholders who see that the product managers have nothing to hide. It also fosters a strong sense of quality since everything done on the project is subject to public scrutiny.

- Web-based communications leverages some of the latest mass media "push" communications technologies, including RSS feeds, live virtual meetings, and PodCasts. These are great mechanisms to communicate with busy IT professionals who may not have the time to make it to regular meetings or outreach sessions.

Success

From June 2005 through March 2006, BSCoE rolled out a set of BSCoE technology standards, standard .NET assets, a standard software development methodology (SDM), a software repository to share these assets and accept new contributions, and a portal to manage communications. Over the next 3 months, we expect to roll out a standard set of Java assets, provide more regular communication via the portal, and roll out local centers of excellence at 2 Agencies to support federated asset management.

As with all new technology initiatives, especially those governed centrally, there was some initial resistance from the Agencies. Key factors in winning the Agencies as allies were the federated asset model that allowed Agencies to retain control of their own assets, Agency involvement in the project at every level, and an approach that encourages transparency and openness. As of March 2006, the Agencies embarking on the largest system renewal efforts are all key BSCoE team members and are committed to utilizing BSCoE assets and capabilities in their efforts to replace their aging legacy systems. With this enormous victory under its belt, OIT is attempting to reach out to additional smaller Agencies and to understand how BSCoE can meet their unique needs over the coming 6 months.

Difficulty

Like many other state government projects, BSCoE had to overcome significant challenges. From changes in project sponsors and transition of the project between departments, to an HR shortage, budget constraints, and shifting priorities, BSCoE had many hurdles to overcome. While many of these changes are common in public sector information technology projects, their impacts were magnified by the level of change BSCoE was attempting to affect. There were three challenges that we felt were compelling to present due to the nature in which they impacted BSCoE:

- Siloed Agency Structures – To create a truly meaningful asset repository, two things are imperative: Agencies that are interested in contributing new assets and Agencies that are interested in discovering, consuming, and improving upon existing assets. When BSCoE first started, many Agencies had trouble communicating internally across their own projects; let alone with other Agencies. The BSCoE project sponsors were able to quickly involve both executive (i.e. CIO-



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level) and lead technical staff from the major Agencies to play key roles in BSCoE. This involvement brought together many Agencies that had previously not communicated and enabled an exchange of ideas to take place that has benefited not only BSCoE, but each of the constituent Agencies as well.

- Contractual Impediments – Contracts for several large system renewal efforts were awarded prior to the establishment of BSCoE. Because these existing contracts made no mention of BSCoE, any introduction of BSCoE was viewed as a potential scope change that could cost money and not save money. Though discussions and negotiations, project management for these projects were convinced that using BSCoE would be beneficial to their projects and have adopted or are in the process of adopting BSCoE. Now, BSCoE use is included in the standard contractual terms and conditions in most of the requests for proposals (RFP) and requests for quotes (RFQ) being issued by the Commonwealth.

- Fund Pooling Challenges – Beyond a set of basic services, many of the ongoing BSCoE activities require funding from outside the Office of Information Technology (OIT). Agencies were interested in using many of these services but, at first, no suitable mechanism existed for charging back these shared services to Agencies. Borrowing from support mechanisms implemented by several large shrink-wrapped software companies, BSCoE introduced “platinum services”. Using this mechanism, Agencies could purchase blocks of time for BSCoE specialists (e.g. an Oracle database expert) to assist their projects in a targeted fashion without having to incur the long term expenses of staffing that resource permanently on their project. At the same time, this removed the burden on OIT for carrying a full staffing contingent on payroll to address Agency-specific needs.