Category: Infrastructure

State: California
Department: General Services
Lead category: Infrastructure
Category area: Construction

Project Title: Alternative Options for Data Issues in Government: The Division of the State Architect (DSA) Efforts to Increase Effectiveness and Transparency Through Use of Cloud Based Subscription Service Instead of Traditional Enterprise Systems.

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Project date: Various implementations from 2013 through 2015.

Executive summary: When Chet Widom was appointed as California's State Architect in 2012, DSA faced substantial challenges. Though state law requires all public school construction be overseen and approved by DSA, and sets standards for DSA certification, it also allows school districts to occupy uncertified facilities. As a result of this loophole, over 16,000 school facility projects were uncertified as of December 31, 2010. This issue resulted in scathing news articles and DSA was highly criticized in a report by California's State Auditor.

It was clear immediate action had to take place. However, a traditional information technology (IT) database enterprise solution would be both time and resource intensive. Instead, DSA took an innovative approach by using a cloud based subscription service solution.

Not only did use of this cloud based subscription service allow DSA to quickly and successfully address major pressing issues, it also resulted in taxpayer savings in the hundreds of thousands, potentially millions of dollars.

Project description: DSA developed various systems through use of a cloud based subscription service to improve communication, information collections, collaboration and the sharing of vital information to/with stakeholders and clients. Implemented in summer 2013, DSA continues to use these systems and explore other ways to effectively the service. Other programs and division within the California Department of General Services witnessed DSA's success and have used the same tools for use in their respective program areas.

Why initiated: Negative news stories about uncertified school buildings and a subsequent audit ordered by the California legislature created a need for immediate and viable solutions. DSA had to discover a way to assure citizens that all California public school buildings were safe.

During the exploration and development of solutions to remedy certification issues, DSA staff determined that a lack of documentation and communication problems were two primary reasons why school facility projects were not certified. DSA also needed a way to create transparency and inform the

public on the certification status of existing school buildings.

DSA determined it would change its certification process by using an inspection card process, a process similarly used by virtually every building inspection department in the country. By switching to an inspection card process, DSA could achieve concurrent certification by prohibiting further construction of school facilities from advancing if a particular phase was not sufficiently completed.

At certain stages of construction, required documentation must be provided by various parties. In some instances under the old process, paper documents were lost and not all involved stakeholders were aware of document submittals.

Though DSA knew implementation of an automated document submittal system would be highly beneficial, the traditional information technology (IT) enterprise approach would most likely take a significant amount of time to implement and would likely have significant short and long term costs for development, maintenance and licensing. Because immediate solutions to the certification issue were necessary and available funds were limited, other options had to be found.

After determining that data and documentation necessary for certification was open and public data, DSA came up with an innovative approach: the use of a cloud based, subscription service to provide the ability to collaborate, communicate and share documentation. Using a cloud based subscription service, DSA staff developed DSABox, a solution that facilitates automated submittal of documents and also allows authorized project stakeholders to view all uploaded documents relevant to the specific project.

DSA determined that DSABox contained appropriate security protocols that highly restricted user access in addition to providing easily obtainable auditing reports on user activity.

DSA also had a need to better inform the public on the certification status of existing school buildings. There was a clear need for transparency to clearly show that DSA had done everything it could do ensure certification.

Faced with the costs and time development pressures of creating a traditional IT enterprise solution, DSA leveraged the cloud based subscription service to create "DSA CertificationBox". The solution allows the public to access information regarding all uncertified public school facilities in California via DSA's web site. CertificationBox allows users to identify uncertified school buildings and the precise reasons why those buildings are uncertified. Again, by leveraging the subscription service rather than a traditional database, DSA saved substantial funding and staff time in development, deployment, storage and maintenance.

Additionally, DSA used the same tools to create InspectorBox. This system allows school districts to review the performance and evaluations of construction project inspectors who are certified by DSA. California law requires school districts to hire DSA-certified project inspectors for oversight on school construction projects.

Results achieved: Implementation of the inspection card process and its use of DSABox component

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commenced on June 1, 2013. Since that time, the certification rate of California public School facilities has risen from 69 percent to over 90 percent, and the rate continues to climb each day.

DSABox is also used to help certify projects completed prior to implementation of the inspection card process, dating back to the 1980's. Use of DSACertificationbox to collect necessary documentation has resulted in the certification of over 40 percent of the older, "legacy" projects, those uncertified projects that existed before 2012.

Use of the subscription service costs the state approximately $3,000 annually for licensing. Licenses are only required for administrators who are DSA staff. As of July 31, 2016, over 20,000, architects, engineers, contractors and other stakeholders are categorized as "collaborators" and do not require additional purchases of individual licenses. Additionally, there is no cost to the state for data storage or system maintenance. In fact, for the time being, there is no limit on the amount of data stored. The long-term costs of a traditional enterprise data system for development, maintenance and storage would most likely reach into the millions of dollars.

The Box service also allows the system to be used across multiple platforms. It can be used through a traditional workstation but can also be easily used by one out in the field with a tablet or other mobile device. This flexibility allows instantaneous uploading and viewing of documents and data, saving considerable amounts of time for both DSA and its stakeholders. Use of tablets in the field allows DSA field staff to spend more time on project sites and the ability to personally visit more construction projects, thus resulting in a higher rate of certified projects.

Project timeline: In late 2012, before commencement of the inspection card process, DSA successfully piloted use of DSABox on receiving and sharing documents through the existing certification process. After viewing the success of the pilot, mandatory DSABox use was drafted into the future inspection card process. The inspection card process started on June 1, 2013 and DSA CertificationBox was developed and operational in 2014. Implementation of InspectorBox commenced in 2015.

Significance to the improvement of the operation of government: DSA created a solution that highly improved DSA's core function, the certification of school facilities. Use of DSABox also provided an automated mechanism for document submittal from stakeholders instead of use of paper, thus eliminating the potential for lost documents.

DSA CertificationBox also increases transparency of government for the public by providing an easily accessible mechanism to provide information regarding uncertified school facilities.

DSA InspectorBox provides a critical tool for school districts to hire competent project inspectors to oversee school construction.

In addition to vastly improving the number of certified school buildings, DSA's new solution and processes result in faster and more efficient means of communication, cost savings (postage and personnel), as well as increase sustainability through decreased use of paper products.

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Benefits realized by citizens and/or state government: Both the state and the public have experienced:

• Significant cost and process efficiencies.
• Substantially increased performance (certified facilities).
• Increased transparency.
• Increased sustainability.
• A flexible system that can be used across multiple platforms that allows use in a variety of settings.