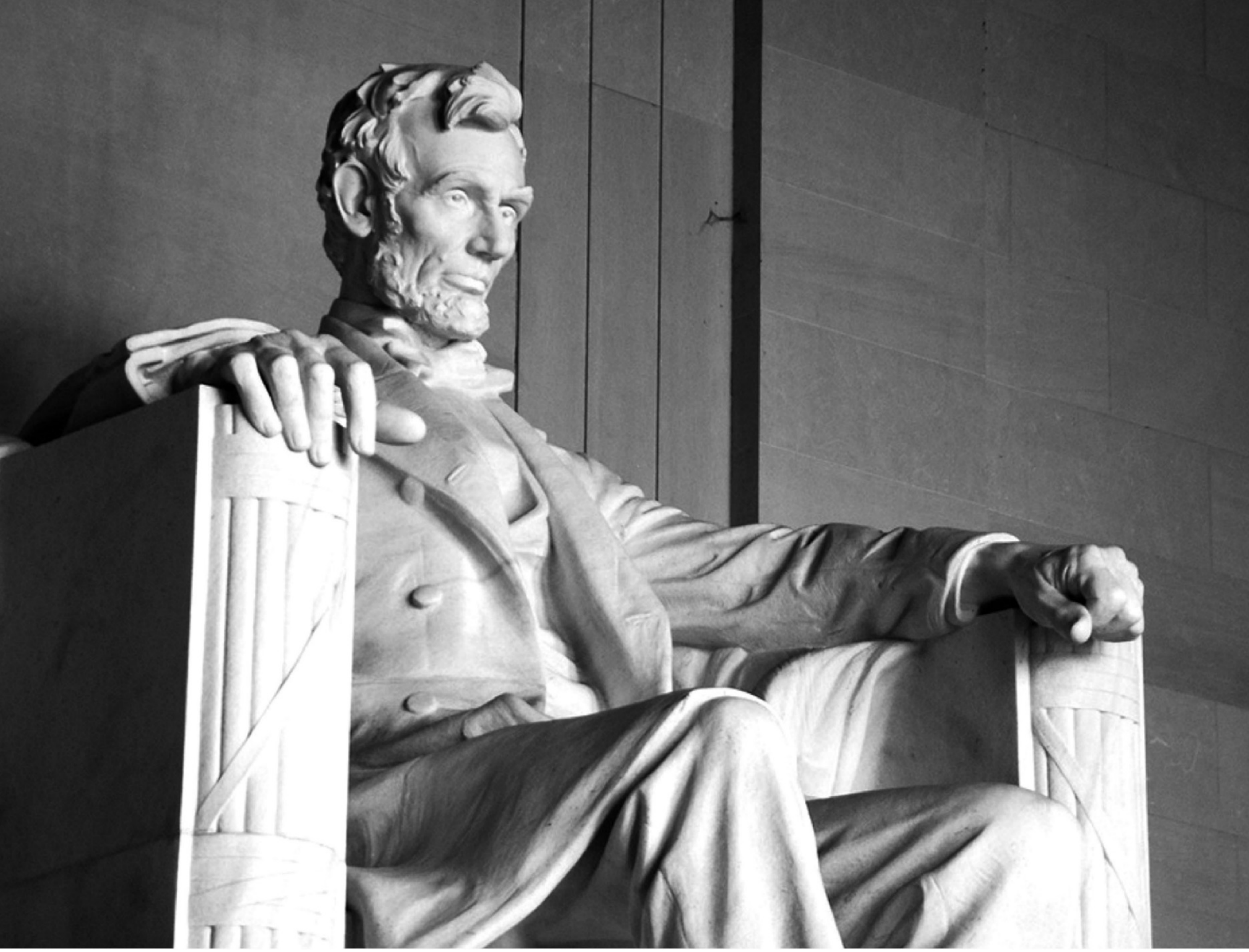

Building the Member Services System

A successful showcase of Agile/Scrum principles in project management

Title:	Member Services using Agile/Scrum
Category:	Enterprise IT Management Initiatives
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SRS State Retirement Systems of Illinois

State Employees' Retirement System • General Assembly Retirement System • Judges' Retirement System

EXECUTIVE SUMMARY

The State Retirement Systems of Illinois (SRS) manages retirement accounts and benefit payments for 156,000 current and former state employees, judges and General Assembly members, encompassing employees of over 200 state agencies.

In 2010, SRS began a reengineering project to update our 35+ year-old legacy systems. While working on the reengineering project, we discovered a need for an additional system that would simultaneously help our employees and our stakeholders – the members. The "Member Services" system application would allow our members to have real-time access to their benefit information via a secure external web application. Up until this point, our members and their retirement coordinators had very limited access to their data – mainly in the form of phone calls, emails, annual statements, and paper forms.

The Member Services system application is designed and developed by using an n-tier architecture model with the core-design principle of separation and reuse of business rules. Agile project management, paired with Scrum practices, allowed us to deliver functionality to our users early and often, provided updates to the management team at any time during development and enabled the development team to embody collaboration and ownership in the project. By taking this approach, we were able to assess the project throughout its lifecycle, ultimately enabling us to meet our stakeholder's true needs, delivering new products and functionality continually throughout the project.

The Member Services system now has over 38,000 users, with 6,000-20,000 users logging in monthly. All major external stakeholders now have access to their data and benefits information, including detailed retirement benefit calculations, projected retirement dates, earnings history, beneficiaries, correspondence, statements, payment history, and health benefits. The project had a payback period of only 2.7 years and was 25% under budget. We were also able to display the Agile/Scrum development methodology to numerous other state agencies who plan to use it as a model for their future application development projects.[1]

CONCEPT/BUSINESS PROBLEM

SRS employees are tasked with providing responsive, accurate services to our members, aiding them in retirement planning and benefits after retirement. With an increasing number of current employees requesting benefit information, either because they were interested in retiring or were being proactive in retirement planning, the legacy systems made that a difficult task. As a result, in 2010 SRS made the decision to replace our 35+ year-old COBOL and IMS-based legacy systems with a single, custom-built modern .NET application, known as "SRS Central." This project not only focused on rewriting the old systems, but also more importantly reengineering all internal processes that were manual and labor intensive. Because of the importance for the agency to see progress and system improvements throughout the process, the Agile/Scrum project management (PM) model was used.

Due to the manual nature of the legacy systems and processes, efficiency, human error and communications were serious issues that needed to be evaluated during planning of the new SRS Central system. As we progressed in the reengineering project, we realized we could solve this issue by building a "Member Services" system application, enabling our members, who consist of active employees, retirees, survivors and agency employers, to view their information online rather than requiring them to call or wait for an annual benefit statement.

This state-run project used a PM approach[1], including a combination of PM knowledge areas and an iterative development methodology, emphasizing core Agile/Scrum principles. These principles included evolving requirements, adaptive planning, early and frequent delivery, continuous improvement (products and processes), face-to-face communications, product (not schedule) driven, and self-organized teams. This combination enabled us to utilize some key PM practices, while allowing a more flexible, product-deliverable focused development environment.

The Member Services application architecture consists of Microsoft .NET 4.5 framework, using C# in an n-tier MVC[2] (Model-View-Controller) pattern. By utilizing an object-relational mapping tool called Entity Framework (EF), our developers were able to more efficiently access our data in a MS SQL Server. Microsoft's Team Foundation Server (TFS) is a versatile tool that allows us to have version control, track work/story items, and automate builds/deployments. This development model allowed us to keep business logic and presentation separate, while leveraging and reusing the services/methods that had been used in the development of the SRS Central system.

To meet ‘Ease of Use’ requirements for our diverse user-base, we were able to tie into an existing statewide active directory identification system, Public ID. The Public ID system is used by a number of other state systems, enabling us to do a single sign-on giving members access to multiple systems linked in our application. Some of the information they can access includes health benefits and web-based paystub applications. Our user-interface (UI) design utilized flat-design[2] principles, and supports viewing on multiple devices (i.e., desktops, tablets and smartphones) by using responsive web design[3] and Bootstrap framework[4]. Our system also uses a robust role-based privilege/authorization system. For network security, SRS uses multiple proxy servers, application/network firewalls and full database encryption.

By utilizing existing development work that had been completed as part of SRS Central systems, we were able to reduce our development time and cost. Our application pattern design emphasizes class and code reuse whenever possible, giving us the ability to expose all of the business logic/rules and data with minimal rewrites. We assigned three full-time-equivalent (FTE) contract employees to the project and had other employees pick up stories/tasks as needed. The original budget, as outlined in our project charter, was estimated to be $898,000 for the 18-month project. We were able to come in significantly under budget at $667,000, mainly due to our effective and efficient team, Agile/Scrum PM model and our flexible design, outlined above.

Communication was a key factor to the resounding success of the project. Our communication plan called for feedback and involvement from key stakeholders throughout the project. We relied on face-to-face meetings with stakeholders to come up with requirements and effective design. In addition, our developers utilized “daily Scrum meetings” to ensure all team members were communicating and sharing important, timely information. Our user communication plan included an extensive email marketing campaign, newsletters, YouTube instructional videos and webinars. We tracked our metrics by using systems data and google analytics.

PROJECT SIGNIFICANCE

This project impacts all employees of the State of Illinois, both past and present, including every state agency. The Member Services website encourages employees to plan for their retirement and their spouse/dependent's future, enables retirees and survivors to manage their finances more interactively and proactively, allows agency employers to get accurate, up-to-date information to assist their employees in retirement planning and enables agencies to project employee retirement dates for continuity planning. SRS's internal staff also benefits by reduced call volumes, allowing them to focus on other value-added services they can provide to our members with the peace of mind that the member still has access to that information.

The project has also served as an example for numerous other agencies for our use of the Agile/Scrum PM model. Our approach has been shared several times in meetings and presentations with multiple agencies. We recently presented our Agile/Scrum PM model to the local chapter of the Project Management Institute (PMI)[1], which includes representatives from numerous state agencies, as well as private sector representatives. Several state agencies plan to implement similar Agile/Scrum practices and the model architecture at their agency.

The project is part of SRS's strategic plan to upgrade, modernize and reengineer all legacy applications and processes, improving our overall efficiency, data access and transparency to all major stakeholders. The system also improves the accuracy of our data and benefit calculations. This project also fits into a larger strategy driven by the State of Illinois, delivering on several key areas including Workflow Automation, Website Technology, Mobility and Agile methods and tools. The project also aligns with three of the top 10 NASCIO priorities – legacy modernization, budget and cost control, and Agile and incremental software development.

PROJECT IMPACT

All members now have access to current data and benefit information. The internal SRS staff have experienced improved efficiency, as well as a reduced number of member inquiries via phone, email and appointments, improving the services we provide to our members in a multitude of ways.

System use metrics:

- More than 38,000 members have registered to use the systems
    - 32% of active members
    - 28% of retirees
- An average of 13,000 members log in to the system every month

Improved member/customer service, according to our member survey:

- 81% of our members can access their information online without calling SRS
- 81% of our members rate the system as "Excellent/Very Good"

A few of the overwhelmingly positive comments from our members:

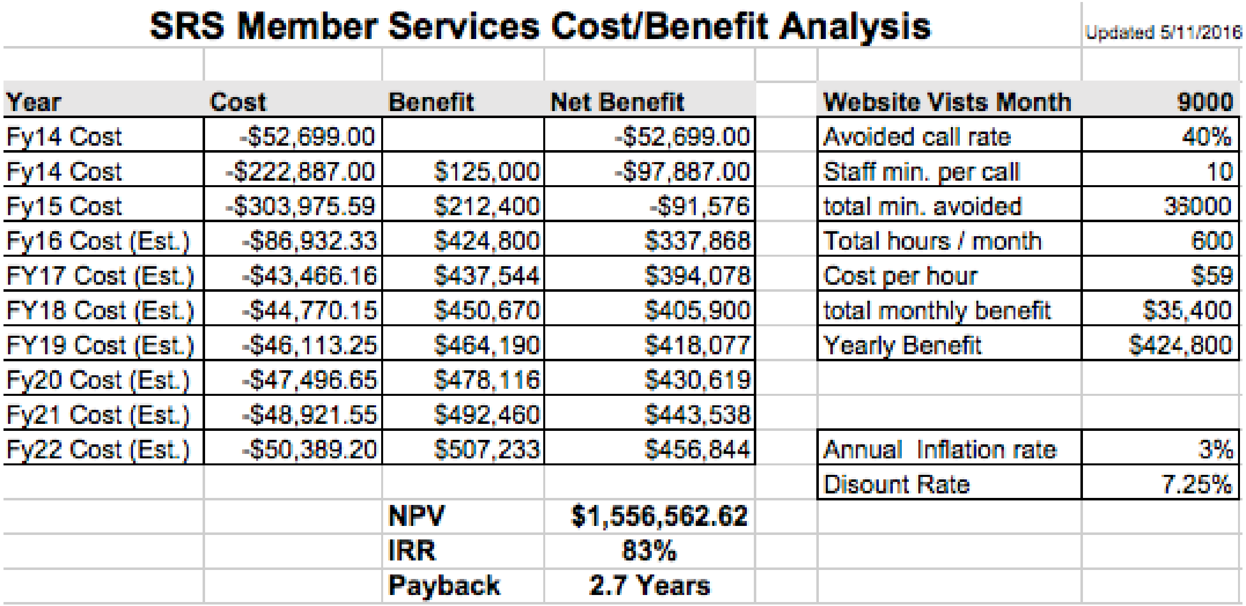
- "Great website!!!"
- "Excellent implementation for all staff."
- "I thought it was an awesome site. Very straight forward and easy to navigate. GOOD JOB"

SRS' financial analysis data (see Table A) supports the project's overwhelming success.
Financial and cost/benefit metrics:

- The project came in **under budget by 25%**
- Net present value (**NPV) of $1.55M**
- Internal rate of return **(IRR) of 83%**
- **2.7 year payback** period

From an enterprise perspective, an even bigger benefit, although harder to quantify at this time in exact numbers, is the use of the Agile/Scrum project methodology as an example for other State of Illinois agencies. This project has the potential to positively impact many other State of Illinois projects in the future.

Table A.



SRS Member Services Cost/Benefit Analysis

Updated 5/11/2016

Year	Cost	Benefit	Net Benefit		Website Vists Month	9000
Fy14 Cost	-$52,699.00		-$52,699.00		Avoided call rate	40%
Fy14 Cost	-$222,887.00	$125,000	-$97,887.00		Staff min. per call	10
Fy15 Cost	-$303,975.59	$212,400	-$91,576		total min. avoided	36000
Fy16 Cost (Est.)	-$86,932.33	$424,800	$337,868		Total hours / month	600
FY17 Cost (Est.)	-$43,466.16	$437,544	$394,078		Cost per hour	$59
FY18 Cost (Est.)	-$44,770.15	$450,670	$405,900		total monthly benefit	$35,400
FY19 Cost (Est.)	-$46,113.25	$464,190	$418,077		Yearly Benefit	$424,800
Fy20 Cost (Est.)	-$47,496.65	$478,116	$430,619			
Fy21 Cost (Est.)	-$48,921.55	$492,460	$443,538			
Fy22 Cost (Est.)	-$50,389.20	$507,233	$456,844		Annual Inflation rate	3%
					Disount Rate	7.25%
		NPV	**$1,556,562.62**			
		IRR	**83%**			
		Payback	**2.7 Years**			

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3. https://en.wikipedia.org/wiki/Flat_design
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5. https://en.wikipedia.org/wiki/Bootstrap_(front-end_framework)