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EXECUTIVE BRIEFING SERIES:
Software deployment strategies

MAXIMIZE

SOFTWARE ADOPTION THROUGH USER ENGAGEMENT

It is not uncommon for users to actively avoid new software, regardless of how much it may promise to improve daily operations. By collaborating early with users and other stakeholders, agencies can deploy systems that increase overall adoption.

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# How to deploy software that works, and that users really like

BY TOM TEMIN

Federal agencies, like other large organizations, spend a lot of time, effort and money to develop the software systems on which programs, employee collaboration and productivity, and service to the citizens depend. Moreover, agency staff and contractors have worked hard to shift development from the traditional "waterfall" methodology to more agile methods with regular, incremental releases of functional modules.

But what good is all that work if the software users are less than enthusiastic about what gets deployed in front of them? If carefully worked out features go untouched? If users hold out for the old systems? Or worse, if developers delivered what they thought users wanted, but users find the software has missed the mark?

All too often, the pitfalls of software development as depicted in the famous "tree swing" cartoon from the 1960s still manifest themselves. In short, a software solution is only as effective as its rate of adoption.

PANEL OF EXPERTS
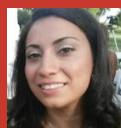
Maria Fahmi, Vice President of Technology and Engineering, V3Gate

Myca Craven, VP of Product Development, Data and Insights, Tyler Technologies

Jarrod Bruner, Program Executive, Office of the Associate Director for Administration, U.S. Marshals Service

Rajeev Dolas, Chief Technology Officer, National Highway Traffic Safety Administration, Department of Transportation

Brian Epley, Director and Deputy Chief Information Officer, Environmental Protection Agency

Krysti Wells, Director, Office of Customer Advocacy, Policy and Portfolio Management, Environmental Protection Agency

To remove friction from software adoption and boost success rates fundamentally requires involvement by the intended users. This must start from the outset of a project, when the organization develops requirements and intended outcomes. Then keeping them involved with each sprint, maintaining an agile, iterative approach to development.

Users as developers

The U.S. Marshals Service is among the federal agencies taking this approach as it develops a modern case management system. Jarrod Brunner, program executive in the Office of the Associate Director for Administration, described the approach this way: "Our strategy has been early and frequent engagement with the field. So 'built by the field, for the field' is sort of a rallying cry that we've used internally."

Bruner added, "When you've got a large, widely dispersed user base, the best favor you can do for your future self is to understand the pain points from each role that your users have."

"And talk to them like a person, not like an IT developer," Bruner said.

Bruner spoke during a roundtable discussion of federal and industry development executives convened by Federal News Network to explore the issue of how to develop software users will adopt enthusiastically. He recommended obtaining thorough input from users with a diversity of roles, from the front lines to the executive suite.

Rajeev Dolas, chief technology officer at the National Highway Traffic Safety Administration (NHSTA), stressed the need for a development approach emphasizing excellent user experience. That requires a number of techniques. For example, to the extent possible, developers should keep the logic to execute complex business rules invisible to users. They should also design UI that is as intuitive as possible while minimizing training users might need.

Dolas underscored that simply asking end users what they want, or what the interface should look like, is unlikely to be of much use to coders. A better approach, he said, is the user-experience design technique of observing users interacting with software code, before committing it to final runtime.

"What habits do users have? What will be a sweet spot for the users? What do we do to remove the critical hard, not user-friendly" parts of the interface, Dolas said. Referring to the "just-makes-your-life-difficult" types of things in a user interface, he said, "It's incredibly important that those get resolved. We want frequent interaction of the users with the software. And of course, correction if necessary, at a smallest possible level."

So fundamental is great software to efficiency and effectiveness of government, that some agencies have created structures devoted to ensuring users will embrace the software they receive. A case in point is the Environmental Protection Agency. EPA's Office of Customer Advocacy Director Krysti Wells described the office as "folks that highlight and focus on the change management of our operations initiatives." It incorporates a customer experience team that looks at software adoption with analytics and journey mapping.

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What the office discovers, it shares with EPA's technology staff. Deputy Chief Information Officer Brian Epley said his staff brings development and operations expertise to projects, while Wells's team brings expertise in communications and customer experience.

"We are two sides of the same coin," Epley said. The pandemic, which resulted in large numbers of remote employees, provided a chance to apply this collaborative approach in a critical situation. An initial video teleconferencing platform had poor customer adoption, Epley said.

"This was where Christy's team was able to kind of jumpstart that and accelerate" development of a replacement, he added. "And it resulted in not only a successful deployment, but it opened the door for our customers to recognize the value of the communications that our team provides, and also the training."

A key strategy for helping ensure successful software deployment: Enlist early adopters as evangelists and trainers for their fellow users.

"We have a customer adoption team that is completely focused on change management principles," Wells explained. The team identifies enthusiastic early users "and then brings them to the masses and to the change management approach to adoption of technology."

Multiple personas

When planning and developing a new application, or modernizing an existing one, the planning team must be sure to understand the range of user types and situations out there.

"One of the things that can be really difficult is recognizing the sheer number of people or roles or personas out there," said Myca Craven, the

vice president of product development at Tyler Technologies. "So often, there's a key place that has a pain point, and we go out and develop something for that user, not realizing that there's a bunch of different people with slightly different needs that use that same system."

Therefore, an important data gathering exercise is monitoring what people do and how they interact with the software. That can help avoid a deployment tailored for power users at the expense of those who may use a certain feature or set of features only occasionally.

Equally important is widely communicating the reasons for the new software – the use case for it such as the efficiencies it will bring – and choosing the right timeline for deployment. Maria Fahmi, the vice president of technology and engineering at V3Gate LLC, advised choosing times when end users are not preoccupied with heavy seasonal workloads, for instance. Keeping users and user groups apprised can yield what Fahmi called a "better acceptance ratio."

Also important: Accompany constant communication with what the Marshals Service's Bruner called organization humility – being open to ideas from users. He described a process of frequent show-and-tell demonstrations for various user groups that includes a feedback mechanism.

Even little things can help in this process of enhancing adoption, Bruner said. Such as giving credit to the sources of ideas for software improvement.

"Even when ideas come in that you already had, you publish the name and organization of the person that submitted it from the user base, and give them credit for providing that suggestion that we're in fact acting on," Bruner said.

These strategies transform users from people the IT staff hopes will use the software to advocates for it.

Clarity between users and developers, and regular reports – "those are all tasks that one must do when before you can execute a project," NHTSA's Dolas said. "If you have engaged users as part of user-centered design, or as part of your user experience design, they become champions for managing expectations."

This approach also lets the developer organization maintain a priority list of features, so the project team knows which features are must-haves for initial deployment, and which features or functions can come later.

Contextual training

While software design so intuitive it requires nearly no training makes for a great ideal, the practical reality is that training-free software is not always possible.

"A lot of the work we do, especially with government, is complex enough that that's a hard thing to achieve," said V3Gate's Fahmi. She described an alternative to manuals and long training sessions, particularly in the context of web-hosted applications.

"What I really want to do is if, you're stuck, I want to give you help with the thing you're stuck on where you are, without you having to look for it," Fahmi said. But

such embedded help must be executed carefully. "What I hate the most is when there's a question mark button, and I click on it, and it tells me something I didn't want to know about, or a thing that I'm not doing."

Equally important, EPA's Wells added, is ensuring help functionality stays abreast of function coding and reworking during agile development.

Finally, our professionals noted, usability, acceptance and usage itself are measurable characteristics. Gathering these metrics can validate a successful deployment, or help guide the IT group to rapid improvement. Bruner noted that by employing user-centered design or user experience methodologies, developers can obtain measurements before deployment, and thereby make adjustments ahead of deployment.

"Usability is a measurable metric," Bruner said. "You are observing the users when they're using the product that's still under development, trying to figure out how the user uses the product, the areas they struggle with, and the features that they have trouble using."

Wells said that by integrating metrics from user experience, help tickets and system operations, IT staff can make better architectural decisions about future developments. Added Epley, referring to the CIO shop, "I believe we're transforming to more of a 'with-us' culture than a 'to-you' perception." That, he said, makes users and their mission areas co-owners with a stake in the success of a software deployment.

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