

U.S. FOREST SERVICE

Opportunities for providing modern digital services

Although our discovery interviews and observations with Forest Service staff focused on the ePermitting system, they also yielded a number of useful insights about the Forest Service's readiness to provide modern digital services to its customers.

This handout offers a high-level summary of the strengths and opportunities to build the foundation for robust digital services.

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Strengths

Our research uncovered two main strengths—factors that could aid Forest Service staff in executing our recommendations.

The fact that these strengths exist highlights the staff's dedication to providing an excellent customer experience, and reflects the team's interest in—and willingness to contribute to—modernization efforts.

1 The staff's focus on customer needs and interest in adapting their processes to better serve their customers.

In our interviews with Forest Service frontliners and district staff, we found many advocates for identifying and removing process obstacles in order to provide faster, easier-to-understand service to outfitters, guides, and other permittees.

2 Segments of the Forest Service are leading business process modernization efforts that will provide important foundational improvements for Forest Service customers.

For example, the SUDS modernization effort promises to introduce better data-management practices and a streamlined workflow to special-use permitting while maintaining legal and regulatory compliance.

Opportunities

Our research also identified a number of ways that the Forest Service could lay the groundwork for future modern digital services efforts.

1 Include customers and frontline staff in designing systems.

Including frontliners, customers and other system users early in the design process will ensure that the system will actually accomplish its goals without creating unexpected downstream consequences and cumbersome or ineffective business operations.

RECOMMENDATION

Scope projects according to best practices of user-centered design instead of traditional requirements-gathering approaches.

Traditional requirements-gathering approaches focus on existing policy and a few subject matter experts. This approach often misses the “realities of the field.” User-centered design doesn’t dismiss policy requirements or SMEs; rather, it emphasizes conducting interviews with and observing a swath of the system’s frontline users and then involving them in small iterations of a system’s design. This process ensures that the system actually supports frontline staff’s needs to meet user goals and, in turn, project goals.

2 Design systems for what you need now, not all all possible future scenarios.

Forest Service staff see that information systems take years to build and should also reflect forecasted needs and options for flexibility. The resulting systems are very large and complicated.

RECOMMENDATION

Contract and build in an iterative, modular way. In other words, build systems in small, functional pieces.

For example, instead of issuing a RFP for a single, large information system, the ePermitting project has broken its system and contracts into modules that the team can build and test independently of each other. Qualified vendors or Forest Service enterprise teams can deliver these modules faster and gather feedback from users sooner, avoiding “building a system that can do everything, but in a difficult way” (as one interviewee said). This approach can also help the Forest Service address the most important customer needs sooner, as each module takes comparatively little time to develop.

3 Create the infrastructure and development environments necessary for quick prototyping of new tools and applications.

It can take months (or years) to build the infrastructure for a new system. For example, creating a development environment within the typical infrastructure for the ePermitting project took four months and was ultimately unsuccessful. Staff avoid creating pilot or test systems, which would enable them to explore ideas in a low-cost way.

RECOMMENDATION

Take advantage of new government platforms or commercial platform as a service cloud providers, like cloud.gov, that enable people to quickly spin up systems.

New services, like 18F's cloud.gov, which model private-sector PaaS allow agencies to quickly access servers and infrastructure they need to test ideas all while saving money and continuing to comply with government regulations.

4 Unify, to the extent possible, the customer-facing permitting process.

Various Forest Service divisions' business owners feel responsible for ensuring their system meets policy, but no single division is responsible for the end-to-end permitting experience. Because each division is concerned about meeting requirements, the permitting process as a whole is sometimes considered duplicative, tedious, or difficult for customers.

RECOMMENDATION

Empower product leads to make changes to various systems, business processes and organizations.

Ideally, product leads could lead activities to help independent business functions understand how their processes interact and overlap.

Foundational opportunity:

Modernizing TIM

The first step in expanding Forest Service digital services should be improving the legacy systems they build on. Iteratively updating TIM to resolve its known pain points will keep it from disrupting and complicating larger digital service efforts. Ultimately, this will lead to greater success of those efforts.

Frontliners and other Forest staff say legacy systems, especially TIM, worsen the customer experience.

1 TIM is frequently offline, slowing work and disrupting customer transactions.

TIM frequently goes offline during customer transactions, reconciliation processes, and reporting processes. These outages disrupt customer experiences and slow backend work.

2 TIM does not pass any information between different systems.

Instead, frontliners have to manually re-enter information in multiple systems. Poorly integrated systems require lengthy reconciliation processes and increase the likelihood of human error.

Issuing a permit — a frontliner's perspective

After issuing permits in TIM, frontliners create transactions in the POSS register using the same information. Every day, each frontliner reconciles their TIM entries and POSS transactions. Every week, frontline supervisors also reconcile TIM entries and POSS transactions. At the end of the season, data managers attempt to reconcile TSAs with FMMI deposits. This time-consuming reconciliation sequence exists because issuing a permit requires not one, but two systems.

3 Use established design conventions.

When TIM's parent system, Oracle Forms Fusion Middleware, was originally created, few software design conventions existed to guide the interface design process. Today, such conventions are well established and TIM does not follow many of them, which makes it difficult for new TIM users to comprehend the interface.

TIM and modern design conventions

Show the system's current status.

When a user clicks a button in TIM, nothing in the interface changes. The user waits and wonders if anything happened.




Use plain language.

Although frontliners say "permit type," TIM uses "product code." Instead of "tags," TIM uses "load ticket." Discrepancies between TIM's terminology and frontliners' preferred terms can cause major confusion.

Provide understandable error messages.

TIM returns a "duplicate child record" error messages when there's a duplicate ID number. This is just one example of the confusing error messages TIM provides.

Use standard icons and buttons.

 opens a dropdown in TIM, but is not used anywhere else in Windows. (Like ) Most users don't know what  means.

Streamline common tasks.

Entering contact information requires users to switch between typing answers and clicking to select answers from dropdown menus (instead of simply typing answers without leaving the keyboard). Instead of showing users all permit issuing fields on a single screen, TIM requires users to move between screens to complete common tasks, like issuing a permit.

4 The right people can't access TIM at the right time.

Law enforcement and forest protection officers cannot directly access a list of valid permits without speaking with another staff member. If they encounter a questionable permit in the field, they have to wait until they return to ask another employee to help. Building the next generation of TIM will take time, but two short-term actions could reduce how TIM complicates modernization efforts:

Recommendations for TIM

Integrate business, reporting, and financial systems so they automatically pass information to each other.

Without better integration, even digital-services-based processes may require staff to manually re-enter some data, increasing frontliner workload and requiring manual reconciliation processes.

Upgrade existing legacy systems to have upwards of 99% uptime.

Without better uptime, modern digital services cannot have real time connections with legacy systems. This disconnect will prevent deeply integrating modern digital services (like ePermit) into existing business processes. Although a TIM replacement will take years, modern services like ePermit depend on some of these legacy systems now.

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