

Legacy Systems: The Case [Management] for Modernization

White Paper

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CHAINBRIDGE
SOLUTIONS

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Introduction

Investigation adjudications and personnel security agencies are moving towards holistic data management to address the need for complete and accurate information that will form the foundation of **Trusted Workforce 2.0** (TW2.0). New policies and requirements related to TW2.0 will drive the need for updates to existing personnel security systems that enable intentional decision-making while mitigating risk, detecting patterns, and optimizing efficiency. These systems must collate information from diverse sources to enable agencies to make swift and collaborative decisions. As the world of personnel security and the associated activities that govern background investigations evolve, so must the systems that manage the inevitably increasing volume and complexity of that data.

The mission-critical case management systems at the heart of these enterprise processes are often complex, with a significant legacy codebase. These systems lack the features of modern personnel security systems, limiting insight into their data, flexibility to change workflow to address upcoming policy shifts, and an intuitive user experience.

This white paper examines legacy case management systems from the perspective of subject matter experts, drawing from Chainbridge Solutions' experience of modernization of legacy applications, and describes the path to modernization and what it can provide for Personnel Security across the federal government.

Legacy Case Management Systems

“Legacy” is often thought to be synonymous with “old”, but a legacy CMS system isn't always defined by its age. It can also be due to its:

- inability to meet the needs of the business, such as lack of insightful reporting,
- security vulnerabilities and failure to meet regulatory compliance,
- lack of support,
- high operations and maintenance costs,
- intermittent data integrity concerns that degrade confidence in the system,
- unreliable or slow operational performance even with standard tasks,
- complex custom code that is difficult to change, maintain, or document,
- gaps in functionality and long time-to-live for requested features, or
- limited integration capabilities with newer technologies in your application ecosystem.

These systems become “legacy systems” because despite past successes, they can longer change: a long history of maintenance and business rules resulted in compounded custom code that may not be documented (“the best documentation of the system IS the system!”) and only known by experts involved in the development of those changes. Enhancements are often engineered rapidly to satisfy immediate demands and without consideration for the underlying architecture, meaning highly customized code made the system increasingly rigid and brittle and creates vulnerabilities in your application ecosystem and introduces compatibility obstacles as newer technologies become the standard. Anything that could not be accomplished by the system was done in *another* system

or, worse yet, on paper, breaking the cardinal rule of software: everything should be electronic in business to keep up with the demands of today.

Onboarding users to operate or maintain a legacy system presents unique challenges and frequently requires users to possess special skills or extensive training – creating more work and introducing risk of error. Legacy systems are notorious for their accumulating technical debt. Technical debt is defined as underlying problems in an application, typically of a technical nature, that compound over time and eventually result in a legacy system that cannot be upgraded, or worse, safely or affordably modified.

Legacy systems often face challenges in meeting the strategic objectives of the enterprise. Workflow fragmentation across multiple agencies and stakeholders can contribute to a lack of visibility into delays and impacts on judgment quality. Policies can change quickly and regularly, creating the need for system updates, which stretches the capabilities of an already stretched system. Our experience tells us that personnel security systems have not scaled sufficiently to keep up with the accelerating pace of business change, as case management continues to evolve into a highly integrative and collaborative end-to-end process.

An enterprise case management system is known to be approaching the end of its life cycle when it prohibits adoption of new features, grows increasingly expensive to maintain, and presents a significant barrier to enterprise efficiency and streamlined business processes. The risk of non-compliance with future mandates inside or outside of the enterprise is very real, as is the potential loss of efficiency gains that could be achieved through continued improvement of the legacy system.

The risks of ignoring modernization go beyond the incredibly high cost of maintaining a patch-by-patch approach indefinitely, beyond the limited capabilities that slow down business, and beyond the challenges of data silos with limited visibility. Legacy systems are prone to application instability, and raise the question of not *if*, but *when* an application failure will cause harm to the enterprise mission.

Chainbridge Solutions proposes a path to modernization, where the modern system can evolve to meet the strategic business goals of the enterprise today and in the future, is agile, secure, and meets performance expectations; and provides greater visibility through powerful reporting capabilities.

Modernization Benefits

Investing only in the ongoing costs of maintenance, opportunities for innovation to drive agility and efficiency go unaddressed. Despite singular enhancement efforts, meeting business needs remains a

A Modernized Case Management System can address the technical debt of the current application, introduce best in class features, and allow the enterprise to adapt to TW2.0 changes

challenge as the volume and complexity of case data increases. and modernizing personnel security systems is vital to ensure enterprise efficacy, optimize performance, and facilitate collaboration and information sharing to make timely, informed decisions.

An updated system running on the latest version of Entellitrak, with the best features that Chainbridge Solutions delivers to other

personnel security customers, offers personnel security agencies numerous benefits, including:

- A workflow engine able to transform alongside changing needs,
- Correspondence management that does not require developer assistance,
- Better integration management for bidirectional data exchanges,
- Reporting that can be managed by end users and does not impact production performance,
- Robust access control that can limit team and user access down to the field level,
- Notifications and enhanced tracking inboxes to ensure the right people have the right information at the right time,
- Near real-time analytics and management dashboards that push information to leadership,
- A streamlined data model that optimally organizes data and allows quick access to critical information, and
- Intuitive UI to empower collaborative and efficient interactions with data.

Features for a Modernized Personnel Security System

Chainbridge Solutions has deployed 16 personnel security systems to federal government customers. Over the years, our team of experienced business analysts and developers have learned which features have the most significant impact on the workflow of personnel security teams.

Manage seamless API integrations: Chainbridge Solutions creates Entellitrak pages that allow customers to view and manage all the integrations within their system. For example, we built a USAccess SIP API integration for a large civilian agency. By establishing an interface, the application can *push* and *pull* candidate data in batches to enroll, unenroll, update, and request several actions.

Implement Continuous Evaluation: As agencies begin to require the integration of Continuous Evaluation, a key personnel security process established by the ODNI, Chainbridge Solutions has swiftly responded to the demand and built the API integration for some of our innovative agency customers.

Utilize a robust rules framework to manage all things workflow: Chainbridge Solutions implements the Workflow Rules Engine (Rules Framework, or RF) as a standard part of our Entellitrak builds. RF enables highly complex and configurable workflow rules by easily defining states, transitions, and effects to support the life cycle of the object.

Leverage eFile: eFile is a secure way to support system intake for users who are not consuming a license and will not access system data. Examples of eFile would be an employee who submits an Incident Threat Report, or an applicant who completes their own intake forms. We expanded eFile capabilities for several agency customers to allow applicant intakes with temporary credentials with case agent visibility throughout the life cycle.

Modernize the user experience to transform efficiency: Case Management is not simply a means to streamline business processes – it IS where business gets done, and intuitive UX means enabling a powerful and personal interaction with data. By drawing from industry-best practices of consolidating multiple pages and incorporating usage data feedback in design improvements, we've built a Quick Access panel to allow users to bookmark cases and view their recently viewed cases in the application, creating intuitive and familiar interactions and eliminating redundant searches and navigation.

Object forms, by default, are designed as multi-column layouts with the option to include a workflow visual to intuitively communicate pertinent details about the overall object status and high-level information from child objects.

Centralize correspondence management with expanded capabilities for document

management: By implementing a document tree of a candidate's documents, the case agent is able to quickly group and organize files, as well as create and delete documents directly. Custom HTML templates ensure a consistent look and feel to correspondence dispatched from the system and the issuing office, with customization made easy without custom code or requiring developer assistance.

Facilitate collaborations and transparency with Enhanced Inboxes and powerful

notifications: Enhanced Inboxes are custom inboxes generated through a SQL query and displayed on the Dashboard, configurable by role or organization. Inboxes can be grouped, sorted, and can be shown at once or the user may toggle between available enhanced inboxes. In addition, custom styling alerts users to the completion status (red if overdue, yellow if due within 90 days, green if not due for more than 90 days).

Intuitively present metrics and reports: We have developed powerful management dashboards conducive to the kind of sophisticated, organized, and efficient access to data that leaders need at the ready. Dashboards can be customized by role, business unit, or user, and designed to display the most relevant data to quickly identify trends and areas of focus. This one-page summary of KPIs, reports, and charts supports various types of metrics to display data that is most meaningful to executives and which requires little to no interpretation of results. Charts are also enabled to allow data drill-down which provides a detailed view of the result set without the need to navigate to a different screen. Role-level configurability allows customization of statistics to those particularly relevant to a given job function, which enables the system to meet the needs of an individual user. This configurability leads to improved system performance through the elimination of multiple and redundant report executions, searches, and page navigation, aligning with industry best practices of consolidating multiple pages to a single-page layout.

Sound Approach

Chainbridge Solutions has created roadmaps and successfully modernized legacy systems for many federal agencies, migrating thousands of business rules, and scaling the application. Our experience tells us that a legacy system cannot be modernized iteratively by tweaking the existing application. It requires too much time, money, and risk. The most efficient and cost-effective modernization approach for a legacy system is to build a new system that mimics the current functionality and adds features like the ones featured in this whitepaper. Leveraging Tyler platform components, the Entellitrak product kit, and existing Chainbridge Solutions code, our team can rapidly build a new, modern personnel security solution. In parallel, we maintain the legacy system for users with basic support, with most of our resources focused on building the new system, ensuring the proper transfer of business rules and data.

Moving Forward

The path to modernization starts with Tyler Technologies' partner community. Tyler partners are companies dedicated to services, not licenses. When the government leverages Tyler partners, they are getting the best of both worlds: Entellitrak expertise, combined with a services-oriented culture that is in our DNA. Chainbridge Solutions sits at the top of the partner list, the only Platinum

partner in their ecosystem and the most qualified partner based on certifications and past performances.

Entellitrak is a powerful, flexible platform that empowers Chainbridge Solutions to tailor each system to meet the exact needs of our customers. All the recommendations in this paper have been built on the Entellitrak platform; there are no theoretical suggestions.

Your enterprise would benefit from an interactive workshop that addresses how a modernized legacy personnel security system can transform the way PERSEC and component offices get their work done. When Chainbridge Solutions hosts workshops, we begin with a demonstration of fully functional sites, giving the government a feeling for what we have delivered to other customers. This perspective helps enterprises recognize that peer agencies have experienced similar problems, and it provides an insight into how Chainbridge Solutions has delivered features that have solved those problems. From there, our subject matter experts cover topics that span present day background investigation work, all the way to Trusted Workforce 2.0, offering suggestions for closing gaps while being mindful of enterprise priorities and constraints. Empowered with this insight, enterprises can confidently and independently identify what capabilities should exist in a modernized system that will support the personnel security processes for the next decade.

Modernization Complete

The benefits of modernization are many, the path forward is clear, and the only remaining question is which vendor can deliver. Chainbridge Solutions is a Platinum Partner that prides itself on Entellitrak excellence, a commitment to customer service, and a track record of system modernizations that are deployed to production and embraced by their users. There is no other company with as many Entellitrak background investigation and personnel security system deployments under their belt than Chainbridge Solutions—not even Tyler Technologies. Chainbridge Solutions brings a wealth of Entellitrak and personnel security knowledge to the table. In addition, as a woman-owned small business (WOSB) and SBA 8(a) certified company, many customers enthusiastically engage with us using direct award or limited competition paths, streamlining the acquisition process and realizing a system modernization sooner than expected. We also offer many other vehicles by which agencies can procure our services. With Chainbridge Solutions as your partner, your enterprise can count on a modernization effort that will change the way you work, adding efficiencies, saving money, and retaining a happy, productive workforce.