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Process Automation Helps VA Serve Veterans' Families

Months to minutes: VA speeds benefits services with automation

- Increasing automation rate by more than 65%
- Reduced average claim processing time by over one third
- Time to value less than four months

Overview

The U.S. Department of Veterans Affairs (VA) provides a variety of benefit services to nearly 22 million U.S. Veterans and their families. As part of VA, the Veterans Benefits Administration (VBA) provides a wide range of compensation and supplemental income benefits such as pensions and disability payments, life insurance, education funding (e.g., the GI Bill), loan services and more.

In delivering pension, Dependency and Indemnity Compensation (DIC), and burial benefits to Veterans and their families, VA sought a way to address a growing backlog of claims created by a combination of onerous manual processing, highly specialized domain expertise requirements for claims processors, and competing priorities for key knowledge resources.

Factors increasing claim volume and processing time such as new Blue Water Navy legislation and the coronavirus pandemic increased the urgency for a solution that could be delivered quickly, freeing specialized resources performing highly manual processing for priority re-assignment while maintaining benefit decision accuracy and improving processing time.

VA worked with Booz Allen Hamilton (Booz Allen) to define a solution that integrated machine learning and business process automation using Camunda Platform to expedite pension, DIC, and burial claims processing, with the first release hitting production less than four months from project startup. In continuous improvement cycles, Booz Allen delivered over 25 releases, **increasing the automation rate by more than 65% and reducing average claim processing time by over one third, with some claims completing processing the same day they are established.**

Addressing a Claims Backlog in a Unique Year

Over the last few years, VA has invested heavily in digital transformation to modernize and replace outdated technology, take advantage of industry best practices, and streamline business processes. VBA's Compensation and Pension Service's team of more than 15,000 personnel (aka Veterans Service Representatives or VSRs) evaluate claims eligibility, handle appeals, rate Veteran disabilities, and award benefits to Veterans and their families. Within those processes, heavily manual reviews of information from multiple system sources can create process bottlenecks. In particular, rating Veteran disabilities for determination of service connection (a disability incurred or aggravated in the line of duty) is meticulous work. Teams must navigate dozens of interdependent policies and procedures based on myriad forms of disabilities and service records.

In early 2020, the COVID-19 pandemic presented unique challenges for VA in both maintaining level of service for these processes, and modernizing benefits delivery to address their challenges, with VA and many other federal government agency employees forced to work from home. Considerations such as network access and system performance would exacerbate any issues encountered in processing, and in collaboration. Further, hardship placed on claimants due to the pandemic escalated the need for faster benefit delivery. The Initiatives to reduce claims processing time for death and burial claims took on renewed urgency.

In order to shorten benefits claims processing and clear claim backlog, VA needed a new, highly modern solution. VA tapped Booz Allen for its expertise and past experience developing VA's Benefits Integration Platform (BIP), a cloud-based solution coordinating tools and applications for processing benefits. With BIP, VBA has decommissioned many legacy applications and developed new solutions that better serve Veterans. Working with VBA's Pension and Fiduciary Service team, Booz Allen sought to modernize pension, DIC, and burial claims processing with an automation engine orchestrating legacy systems services and manual evaluation steps, augmented by a binary classifier machine learning capability to replace human judgement in determining service connection for cause of death for burial and dependency indemnity compensation (DIC) benefits.

Transforming Benefit Claims for the Future

Together, VA's Office of Information and Technology (OI&T) and Booz Allen determined that coding workflows and decision rules in Java would take significant time and be error prone, and cause a maintainability problem for VA. The team used a model-driven design approach, opting to model business processes using standard Business Process Model and Notation (BPMN), and business rules using standard Decision Model and Notation (DMN) to establish a common understanding between the business subject matter experts and the IT Agile delivery teams, expediting transition from requirements gathering to implementation and minimizing the risk of disconnects and defects.

After a comprehensive market analysis and vendor evaluation, VA selected Camunda Platform as its process automation and microservices orchestration platform. Camunda supports BPMN 2.0 and DMN 1.3 standards and highly complements the existing BIP tech stack including Java, Spring, REST, and Oracle. The industry-standard modeling, tech stack integration, and minimal proprietary design elements minimized Booz Allen's learning curve and time-to-deliver in generating a working proof-of-concept for business acceptance. Further, adoption of the industry standards would result in solutions easier to manage, upgrade and reuse across the organization.

Scrum teams first used Camunda's open source edition to rapidly design and model five distinct processes covering claims intake, eligibility determination, claim development (collection of additional evidence), disability rating, and awards generation and authorization. A particular challenge driven by business requirements was to collect all potential issues with a claim in order to determine an outcome, rather than ending automation after the first business rule fails. Chaining together multiple DMN tables, the process collects and aggregates complex eligibility decision rules into one list to run through a final DMN table to evaluate automation decisions based on business-defined rule precedence and routing. From start to finish, initial proof-of-concept development took less than eight weeks to deploy the new benefits claims processing solution as a separate application harnessing the BIP framework. Where letters were manually generated from templates and text fragments, VA now uses fully automated controls harnessing data inputs combined with decision rule outcomes.

Fast Results Yield Better Service

Combining Camunda with agile development and DevSecOps saved hundreds of hours of coding. BPMN and DMN functionality in Camunda enabled rapid prototyping and testing, and full visibility and alignment as to where changes should occur. For example, when just two days before a software release it was realized that a policy change impacted an existing DMN table, development, acceptance testers, and the business users were able to quickly agree on required changes in order to deploy, validate, and ultimately promote those changes to production with the scheduled release. As another example, when errors were encountered late in acceptance testing, the development team was able to use Camunda's Cockpit to identify exactly what happened, show the quality assurance team how it could be fixed, and then together fix and test the resolution in less than an hour. The release moved forward as planned, saving potentially days or weeks of troubleshooting.

Using the tools provided by BIP, the associated framework of pipeline tools, and Camunda, Booz Allen moved from development to production in eight weeks. Over time the solution has also enabled VBA to create executive dashboards and operational reports to provide full control over and visibility into operations, supporting program requirements for troubleshooting, rapid change management, and analytics. With this data, the solution provides executive insight regarding operations and process patterns enabling greater efficiencies and improved outcomes. Driving cycles of continuous improvement, Booz Allen, in collaboration with business SMEs, has assessed automation outcomes using the increasingly robust reporting, including Camunda capabilities such as Cockpit. Reviews have identified granular DMN rules ordering and BPMN process flow changes that are able to be turned around in as little as one week, resulting in over a 65% increase in fully automated claims from FY2020 to FY2021.

Over the last year, Booz Allen has delivered over 25 releases into production, substantially decreasing the average claim cycle time and the associated claims backlog. For some claims, automation determines a claim decision within hours of establishment, allowing the VA to speed services to Veterans and their families in their time of need.