

Automating High Volume Processes for the Long Haul

Executive Summary

Due to expanded educational benefits for veterans, a technical solution was developed to expedite and streamline millions of additional educational claims. On average, the former process took up to three weeks to provide veterans their respective benefits. Now, in most instances, benefits are provided in just six days. To achieve such stellar results, a new process and an automation solution (that employed philosophies of Lean, Six Sigma and Business Process Management (BPM)) were implemented. As part of the SPAWAR Chapter 33 team, Modus21 helped deliver a Business Process Management System (BPMS) solution that has provided tremendous value to the US Department of Veterans Affairs (VA) and our veterans.

Background

Legislative and regulatory changes are typically passed without full consideration of their downstream impacts regarding effective implementation. This whitepaper details how the VA staged and managed the implementation of the Post-9/11 Veterans Education Assistance Act of 2008, which expanded the educational benefits for millions of military veterans who have served since September 11, 2001. These expanded benefits are known as the Post 9/11 GI-Bill.

One hallmark of successful transformation initiatives is strong executive support. To that end, the automated processing solution developed for veteran educational claims was performed in alignment with the VA's strategic plan. The automation of

Challenges

- Volume of new claims expected to increase by 15% - 20% annually
- Claims processing inconsistencies
- Substantial claims backlog causing significant delays in processing

Solution

- Phased deployment of a SaaS based automation application that leveraged existing VA software assets

Results

- 74 man years of claims processing capability was added in 1st 6 months
- 53% of supplemental claims are now fully automated
- Established a model for future VA software systems development & acquisition

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educational benefits was identified as one of the VA's major initiatives and was denoted as a High Priority Performance Goals (HPPG) program. The HPPG program was established by the White House as part of the US President's Accountable Government Initiative. As a high stakes program, the VA was determined to achieve the key goals that were set forth at the onset of this initiative.

The culmination of this implementation effort delivered world-class claims processing automation capabilities while leveraging existing technology assets. The capabilities delivered by this solution were recognized as a finalist for the prestigious PEX Awards in the Best BPM Project category for 2013. BPM strives to align an organization's business processes with the wants and needs of its clients. It promotes business effectiveness and efficiency while striving for innovation, flexibility, and integration with technology.

Challenges

The scale of this benefits program presented a key challenge. Since the Post-9/11 GI Bill rolled out in 2009, more than \$28 billion in benefits has been awarded to over 950,000 individuals. The volume of claims continues to increase due to the troop draw down in Iraq and Afghanistan. In 2012 alone, approximately 3.8 million claims were submitted for payment.

When the legislation was enacted, the short-term solution for claims processing was to on-board hundreds of Veterans Claims Examiners (VCEs). The short-term, manual processing solution was ineffective due to hand calculation of benefits and variability in the processing procedures across four Regional Processing Offices (RPOs). In effect, the lack of a runway to launch the program created a large backlog of claims that could only be overcome in the last stages of the long-term solution (LTS) implementation. As an example, as recently as October of 2012, it was reported that the total number of unprocessed claims had not dipped below 100,000 since July of 2011. This of course is untenable and creates undue hardship on the veteran. Besides creating difficulties when registering for classes, the benefits include a housing allowance. Not getting paid in a timely manner creates dire consequences when veterans cannot pay their rent.

The complexity of the existing IT landscape and required integration of legacy assets demanded detailed planning and careful staging of the implementation in order to successfully deploy the automated LTS.

Figure 1 depicts the five major external systems that the LTS solution integrates:

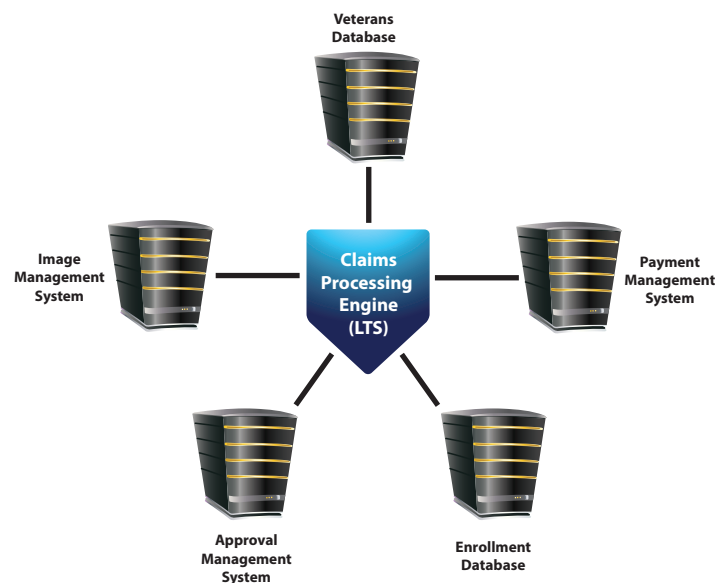


Figure 1

Tackling the Problem

The human-driven, paper claims approach provided the baseline system for study. The analysis took the form of understanding the existing and desired operating models^[1] and an assessment of the efficiency (Lean) and effectiveness (Six Sigma) of service delivery.

The operating model relates business and technology alignment. From the business perspective one can assess the level of business process standardization, whereas the technology perspective is represented by the level of business process integration. The short-term solution exhibited characteristics of a diversified operating model – each of the RPOs had some variation of claims processing rules and since the workload was divided geographically, there was no perceived need to integrate backend IT systems like the Image Management System which was replicated at each RPO. While this operating model gave each RPO the flexibility they needed, it had a direct and undesirable impact on claims processing effectiveness which led to inconsistent servicing of veterans.

Given that the goal of Six Sigma is to reduce sources of error and minimize variability, the operating model needed to change to one that enforced standard operating procedures across RPOs. The effectiveness of the solution could also be increased by eliminating manual benefit calculations to further reduce error and ensure consistency across VCEs and RPOs.

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While the calculations were not overly complicated, they did need to be performed in a certain order to obtain the correct result. In other words, two RPOs could be servicing two different veterans with the exact same level of eligibility yet the veterans might receive different benefits.

When considering the efficiency of claims processing, Lean's focus on waste identification provided useful guidance for targeting changes that could be made via IT enablement. The following five wastes were identified:

- **Transportation:** paper forms and mail service
- **Inventory:** backlog of claims on desks represents excessive Work in Progress (WIP)
- **Defects:** additional approval processes for awards above a certain threshold; necessary for detecting possible error in calculation
- **Over Processing:** human desk checks validating consistency between multiple VA systems
- **Human Capital:** under utilizing VCEs analytical capabilities due to routine work that could be automated

When decisions were made about what to automate and what not to automate, these five wastes were referenced to ensure the maximum value for the veteran was obtained.

Solution

The first phase of the solution design took into consideration issues of operating model, efficiency and effectiveness. A private cloud-based platform was leveraged to deliver a Software as a Service (SaaS) application to the

VCEs via the browser on their desktop computers. The same application was now accessible and in use at each of the RPOs. This software provided the basis for establishing a common standard operating procedure across RPOs that would be used by the VCEs to process claims. Moving to a cloud-based solution proved to be a cost-effective and responsive delivery mechanism, which allowed the solution to provide value sooner.

From an operating model perspective, the solution enabled the transition from one that was diversified to one that was replicated. A diversified operating model is characterized by having low levels of business process standardization and integration, while a replicated operating model has high levels of business process standardization with low levels of business process integration. The low level of business process integration is a reflection of the decision to utilize existing on premise IT assets at each RPO rather than moving them to the cloud. Additionally in this phase, the level of process efficiency was raised dramatically by adding the ability to submit claims electronically. These electronic interfaces greatly reduced the amount of physical paper that was being moved through the system. From an effectiveness perspective, the benefit calculations were now being performed by a rules engine, which not only ensured consistency, architecturally it helped ensure that the solution accommodated future legislative changes without the need to re-code the application or re-train each staff member at the RPOs.

Although significant benefits were derived from the initial deployment of the SaaS application, incoming educa-

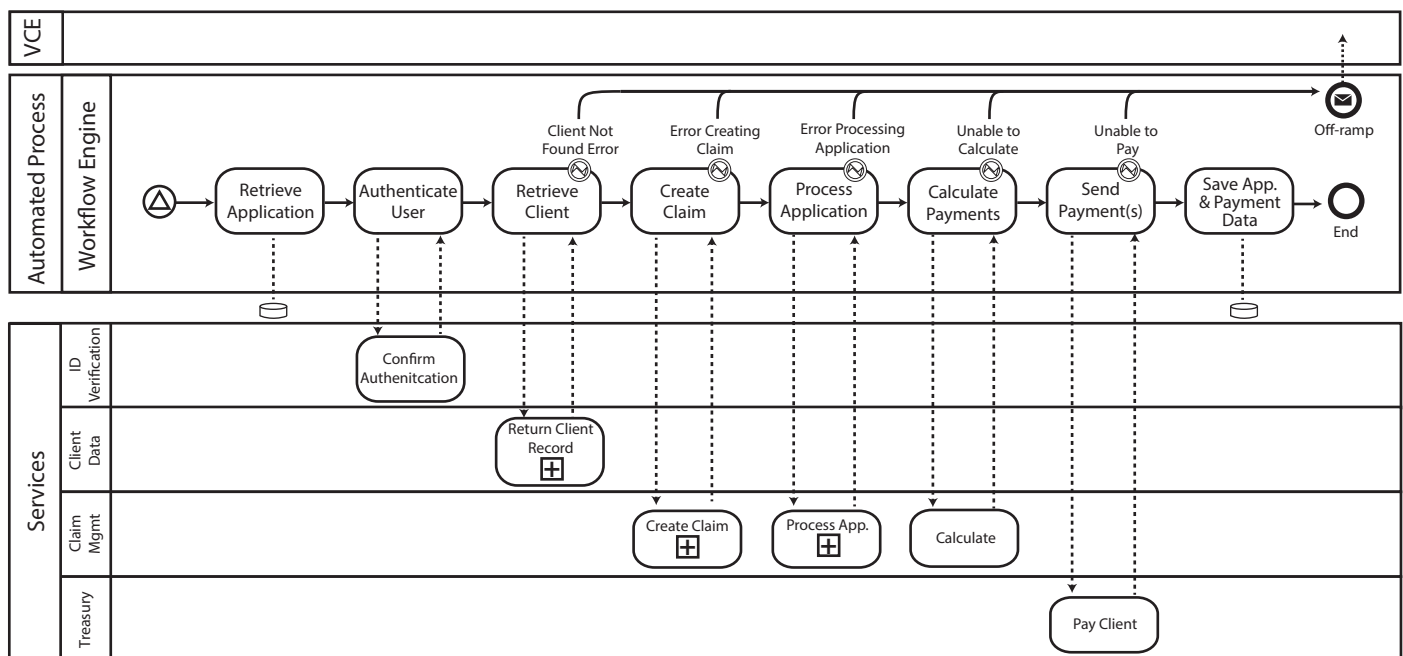


Figure 2

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tional claims were still being manually processed, albeit with software assistance. Understandably, these changes alone were insufficient to address the quickening pace of backlog growth. In the second phase, an automated claims processing engine was introduced. In effect, this solution processes claims via a BPMS based solution. **Figure 2** (previous page) depicts a high-level view of the automated process employed using the BPMS solution. Claims that do not meet all conditions for automated handling are off-ramped to the correct VCE for manual processing.

Naturally, the VA was cautious in rolling out automated claims processing; thus, they requested the ability to dynamically tune the processing. The tunable parameters became known as “knobs and switches” and served to off-ramp claims from automation for manual processing by VCEs. The switches allow settings to be enabled or disabled, whereas the knobs allow for dynamic thresholds to be established. An example switch is to off-ramp a claim if a change of student address is submitted by a school, whereas an example knob is a threshold that controls the maximum award size allowed to be automatically authorized. When the system was first deployed, conservative settings were used and 30% of the supplemental claims were fully automated. As comfort and familiarity with the capabilities of the system increased, changes were made to the tuning and by the six month mark, 53% of the claims were fully processed by automation.

The automation capability served to promote the cloud-based LTS database as the official authoritative source for information related to the processing of educational claims. As such, it facilitated an increased level of business process integration, moving the operating model from replication and toward unification. This allowed work to be more easily moved from one RPO to another based upon variations in workload and capacity. From an efficiency perspective, moving a full 50% of claims to hands-off, fully automated processing has eliminated the backlog. An added benefit was realized by reducing routine work, which allows VCEs to focus on claims that truly require more time and human judgment to process.

Figure 3 (top of page) depicts the key architectural components of the two implementation phases.

Results

The automated claims processing capabilities were deployed in September of 2012. In the first 6 months of operation, 1.2 million supplemental claims were evaluated by the claims processing engine. Of these, 560,000

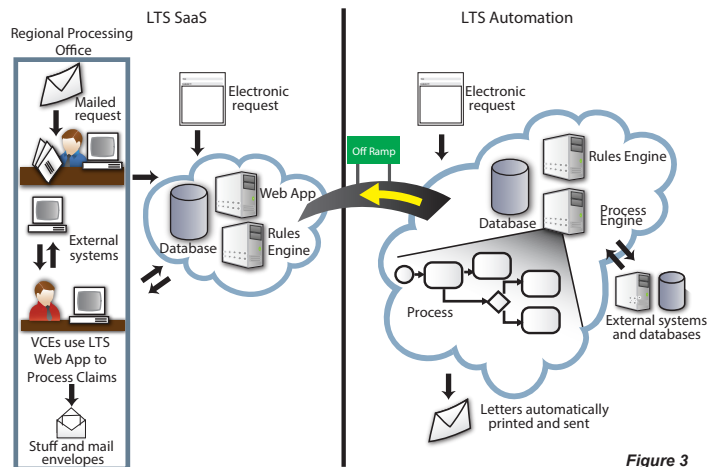


Figure 3

were fully automated without human touch. The remainder were off-ramped for VCE verification and/or manual processing. Additionally, claims processing times have been reduced from 23 days to an average of only 6 days, resulting in a 73.9% reduction in cycle time.

Besides impressive raw performance numbers, this solution also met a key objective that was defined in the VA's strategic plan. This objective was to use the LTS development to effectively create a model for future VA software systems development and acquisition. In other words, the Post-9/11 GI Bill LTS program defines an approach and technological foundation upon which the VA will build future systems and drive improvement across all education programs. Lessons were learned from both technological and software engineering perspectives. The two lists below highlight several key takeaways:

From a technological perspective:

- cloud-based infrastructure provided the underpinnings that allowed a change in the operating model which significantly reduced process variability
- the rules engine enabled the system to more readily adapt to policy and legislation changes
- the BPMS and its reliance on explicit process models helped increase the transparency of the solution and the status of any claim to users
- using a shared inventory of reusable software services between the SaaS and automation solutions ensured consistent claims processing
- finally, the approach of having configurable off-ramps to manual processing allowed the system to be tuned after deployment, allowing the VA to automate claims at a level with which they were comfortable.

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Systems engineering and software development processes used during the creation of the solution that are influencing future software acquisition by the VA are as follows:

- Business Process Modeling and Notation (BPMN) model-based development of system requirements ensured a common language to describe what work needed to be done to process a claim
- use of Application Lifecycle Management (ALM) tooling to support Agile Scrum based software development at scale (hundreds of developers at multiple locations in multiple time zones)
- the development and use of governance processes to ensure the vitality and sustainability of the delivered solution.

To learn about more of the technical details surrounding this project, please visit:

www.Modus21.com/VA.asp