

MODERNIZING THE AMERICAN DREAM: HOW USCIS DRAMATICALLY REDUCED VERIFICATION CASE PROCESSING TIMES

U.S. Citizenship and Immigration Services (USCIS) embraced Agile Development and DevOps to improve service delivery to aspiring citizens. Despite significant progress, however, aging systems continued to impede their long-term goals. The agency was saddled with lengthy processing times and voluminous customer-service requests for “cases” involving eligibility verification. The systems involved were outdated and required intensive, time-consuming deployment processes. With Excella’s support, USCIS pressed forward and updated three of these mission-critical legacy systems. The modernized systems have dramatically decreased case processing times, improved customer service, and introduced a new, modern technology infrastructure. Their success demonstrates that leaner government IT processes can effectively respond to 21st century needs.

Mission Driven

At the turn of the last century officials hand-processed 12 million arrivals at Ellis Island. Today, USCIS is the gateway to the United States, where 19,000 federal employees and contractors at 237 offices globally provide immigration services to over 37 million people each year. Tasked with safeguarding the nation’s immigration system, USCIS’ work demands significant attention to detail, but after years of struggling to keep up with paper forms and applications, the agency refocused its mission to improve customer service, strengthen security, and eliminate case backlogs.



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Mission Stalled

A refocused mission required stronger IT, but many USCIS legacy systems struggled to keep pace with changing demands. Cumbersome system updates necessitated lengthy release windows and undesirable outages and downtime. The need to stay up and running competed with the desire to regularly add new features and fix defects. Costs were high—according to recent congressional reports, the government spends roughly three-quarters of its \$95.7 billion IT budget simply maintaining aging systems. For an agency that processes over 37 million applications a year—under a DHS operations and maintenance [budget](#) of \$5.3B—modernizing was no longer aspirational, it was critical.

Enter Excella

Embracing best practices—Agile and DevOps—enabled USCIS to make incremental progress on the short-term goal of deploying new capabilities faster (and eventually moving all paper-based processes online), but the organization recognized early on that a total transformation required external support. Following a recent successful collaboration on the [myUSCIS digital portal](#), USCIS turned to Excella to help update the three legacy systems responsible for verifying employment:



E-Verify: An online system that allows businesses to determine an employee's eligibility to work in the US. E-Verify is used by 700,000 employers each year to verify the employment eligibility of 35 million applicants.



Systematic Alien Verification for Entitlements (SAVE): An online service that allows federal, state, and local agencies to determine a benefit applicant's eligibility for food stamps, Medicaid, unemployment insurance, and other benefits based on their immigration or citizenship status. SAVE is used by over 1,000 government agencies.



Status Verification System (SVS): A tool that allows additional verification of pending E-Verify and SAVE cases and their rapid resolution.

Moving Forward

Excella partnered with USCIS to clearly define the business problem, provided a cross-functional team with the right skills to rapidly deliver, and collaborated with a dedicated USCIS Product Owner to elicit customer and stakeholder needs. Through a series of fast-paced, iterative cycles, the team and the Product Owner delivered usable, working software. Tangible, incremental deliveries solicited effective feedback so that after six short two-week sprints, the first of the new modernized applications, the Status Verification System (SVS) had a functional release in production.



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Key Methods



Proving then Scaling: Excella demonstrated success with a single team working on SVS. This validated how best to bring Agile, DevOps, and Continuous Delivery to USCIS' unique context. The team adapted their processes to meet the agency's needs, providing a foundation that future teams built upon. As the Verifications Modernization Program grew, the effort expanded from one team to eight, working across all three products.



Cloud Re-architecture: Excella used the strangler pattern and microservices architecture to build the new systems in a cloud-based environment. This approach allowed working software to be deployed to production just three months after the start of the project. Incremental migration continued thereafter, as the teams modernized small pieces of functionality, gradually replacing each legacy application with a new version.



Fully Automated Testing: Security, stability, and reliability of the new applications were assured by automated tests and validation routines. These ran against every new code check-in, immediately catching any errors or mistakes and ensuring a high level of code quality.



Continuous Deployment: To break out of the pattern of large deployments requiring regular downtime, the Excella teams introduced continuous deployment pipelines. These ran all the necessary tests and other validation steps to ensure proper functionality and allowed software updates to be deployed to production multiple times each day, with no downtime. At the height of the project, Excella's teams deployed to production an average of 200 times every two weeks.



UX Research: Excella's UX team members conducted interviews and observed user behavior to proactively identify opportunities for improvement and difficulties with the existing user interfaces. Their analysis augmented the work of the Product Owners, enhancing the quality of the modernized applications.



Continuous Learning: Excella emphasized continuous learning and improvement, working closely with USCIS to run small experiments—across both process and technology—to quickly determine how to improve processes for solution development and delivery. The teams leveraged the best from Scrum, Kanban, SAFe, LeSS, and Scrum@Scale to better respond to change and improve delivery. Every unanticipated defect was treated as an opportunity to improve engineering practices and the codebase.



Communities of Practice: To rapidly spread and share the learning from one team to another, Excella created and fostered communities of practice within the project. These brought together team members with a shared interest in specific roles and technology domains—Ruby, Java, Cloud Engineering, Automated Testing, Agile, etc.—to regularly share new lessons and grow their skills.



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Verifiable Results

Since partnering with Excella on the verifications systems modernization, USCIS has dramatically improved its ability to meet customer demands:



E-Verify:

Client enrollment average time is now **45% faster**.¹



E-Verify:

USCIS also saw a **22.9% decrease in the number of abandoned enrollments**.¹



Status Verification System (SVS):

The new SVS has led to an overall **30% decrease in case processing time**.



Systematic Alien Verification for Entitlements (SAVE):

The new, person-centric model of the modernized application has reduced common errors such as name mismatches, improved data entry, decreased the number of cases requiring manual review, and accelerated the verification process.

¹ Both stats represent project results to date, as of May 2017.

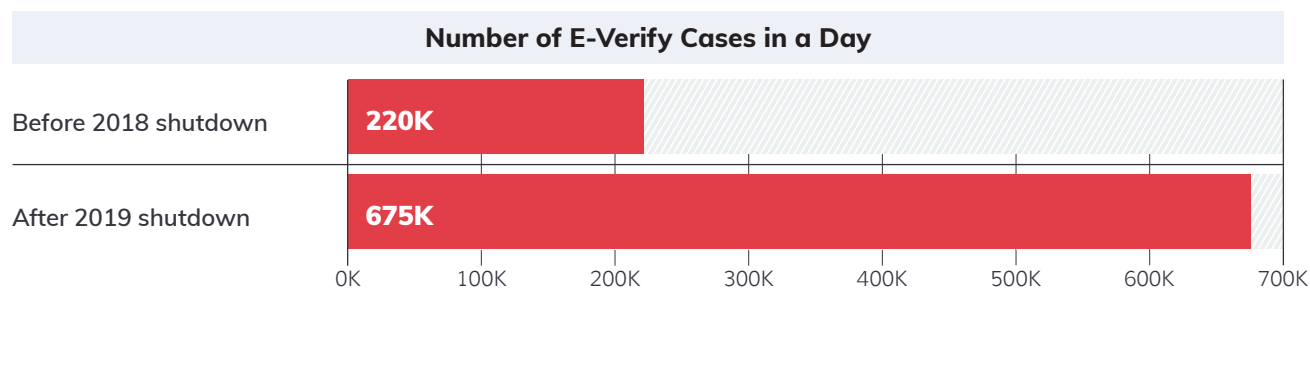


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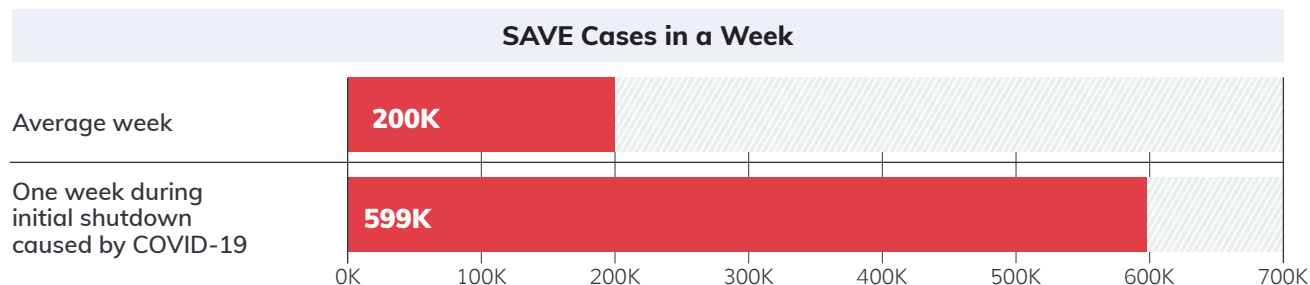
Verifiable Results

The new Verification system has achieved unprecedented levels of scalability.

Before the government shutdown in December 2018, E-Verify had never processed more than 220,000 cases in a day. In the first day after the 2019 government shutdown ended, the system processed 675,000 cases, a **300% increase** in demand. Volumes peaked at 1,200 cases a minute. The system handled the traffic with ease, with no reduction in service.



In an average week SAVE processes approximately 200,000 cases. During the initial economic shutdown caused by COVID-19, SAVE processed 599,000 cases in a single week. This **300% increase** resulted in no service interruptions or downtime.



Excella was recognized with the **USCIS Agile Bear Award for Agile Practices and Continuous Delivery (2016)** and the **ACT-IAC Igniting Innovation award (2017)** for most innovative government project.



AGILE | DATA | DIGITAL | MODERNIZATION

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Learn more at www.excella.com.