



TITLE:

Washington Healthplanfinder Facilitates Health Insurance Exchange

CATEGORY:

Enterprise IT Management Initiatives

STATE:

Washington

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Executive Summary

Established in 2011 in response to the passage of the Affordable Care Act, the Washington Health Benefit Exchange (Exchange) is a public-private partnership that strives to deliver high-quality, affordable health insurance coverage for all Washington residents. It operates via *Washington Healthplanfinder*, a robust, innovative platform that enables individuals and families to browse, compare, and enroll in health and dental plans. The state-based exchange works in close coordination with both state agency partners (i.e. Health Care Authority, Office of the Insurance Commissioner, and Department of Social and Health Services) and external vendors (i.e. private insurers, provider directories) to ensure that consumers have an informed, seamless experience.

Since its initial launch, the Exchange has continued to enhance and optimize its application to provide health and dental insurance to more than 1.8 million Washingtonians. Along with its systems integrator, Deloitte, the Exchange has piloted and successfully executed enterprise-wide initiatives that augment the organization's IT capabilities and streamline its operational processes. These projects have better positioned the Exchange to respond quickly and effectively to consumer demands, regulatory policies, cost-effective operations and technological advancements.

The Exchange took on an initiative to upgrade its aging hardware and on-premise hosting and move it to the cloud. This would allow the Exchange to adopt and meet industry challenges and provide the flexibility to scale up or down with ease while avoiding long term capital expenses. The Exchange chose Azure Government Cloud as their choice of public cloud option. Working with Deloitte, Microsoft and Oracle, the Exchange completed a full software and framework upgrade to reduce asset vulnerabilities, reviewed the complete infrastructure set-up to reduce redundant software and consolidate excess environments, and introduced new security measures to maximize data integrity and information privacy. This overhaul reduces maintenance costs significantly, with forecasted savings of \$5 million every five years from hardware refresh costs alone. In addition, up-to-date operating systems, modularized environment, centrally managed accounts, anti-virus protection, security scanning, central logging, and upgraded Oracle stack provides the Exchange a modernized platform with future growth in mind.

Through innovative and industry leading IT initiatives, the Exchange continues to improve its core operating capabilities, revolutionizing how individuals can access affordable and reliable health insurance coverage.

Description of Business Problems and Solutions

The Exchange was created to manage and operate *Washington Healthplanfinder*, a state-based marketplace for Washington residents to browse, compare and enroll in health insurance coverage. During the past few years, the Exchange has embarked on multiple enterprise-wide IT management initiatives to enhance its operational efficiencies. In doing so, it has ensured that every Washingtonian has maximized access to high-quality, affordable insurance.

Cloud Migration and Data Security

Originally developed on a three-tier architecture (web, application and data), *Washington Healthplanfinder* utilized industry leading Oracle SOA products to ensure security and compliance with CMS requirements for MITA (Medicaid IT strategy) compliance. The system was built over 175 servers comprised of environments from development through production, including disaster recovery. Its infrastructure utilized redundant firewall and IDS/IPS devices and Oracle's security stack for highly secure user authentication and authorization. As a health insurance marketplace, it was critical for the system to employ standards to ensure the security of data such as Personally Identifiable Information (PII), Internal Revenue Service (IRS) data, and Federal Tax Information (FTI).

As data challenges and market demands grew, however, it was critical for the Exchange to reconsider its existing system architecture. The existing hardware was not scalable and limited the Exchange in storage, compute and capacity. In addition, the current hardware set-up required HBE to make an upfront capital investment in the environment capacity build-out, keeping open enrollment in-mind, while the same capacity stayed largely underutilized for the rest of the special enrollment period.

The Exchange chose to undergo a complete overhaul, transitioning fully to a secure cloud under Microsoft's Azure for Government offering. This represented a complete redesign of the infrastructure that included a full software and framework upgrade that involved collaboration with Deloitte (the Exchange's systems integrator), Microsoft and Oracle. Over the course of 16 months, the Exchange managed the services of these vendors to ensure a seamless and successful migration. The transition resulted in a fully integrated central backend administrative domain, with all workloads utilizing this central authentication and authorization system. The migration also resulted in four PaaS systems, new NLBs and Next Gen Firewalls that implemented Micro-segmented

network. The Exchange took ownership of the OS down managed services and all backend support technologies. This has allowed for much more visibility and the ability to drive security and performance standards. With this transition, the Exchange has significantly reduced its maintenance and upgrade costs, saving over \$5 million every five years in hardware refresh costs alone. Additionally, by eliminating traditional infrastructure limitations, *Washington Healthplanfinder* can deliver new enhancements to consumers in a faster and more secure fashion. The Exchange also has now moved away from managing the underlying hardware of the solution, thus allowing itself additional time to strategize and deliver a better consumer experience on *Washington Healthplanfinder*.

Security was also a top priority for the Exchange as it transitioned *Washington Healthplanfinder's* infrastructure to the cloud. The Azure network was built with a zero-trust policy to eliminate any gaps in system security and ensure users only had access to functions for which they had prior review and approval. With micro-segmentation as framework, and the strategy to encrypt wherever possible, the Exchange has instilled minimal access to the various components in the *Washington Healthplanfinder* Cloud by integrating security directly into the cloud infrastructure. Additionally, the Exchange introduced a Secure Software Development Lifecycle (SSDLC) process that included steps such as an Architecture Board Review (ABR) and threat modeling to protect data integrity and instill consumer confidence. Performance improvements increased, measuring up to four times faster than the previous system.

Significance to the Improvements of the Operation of Government

The Exchange recognizes the importance of operational process efficiencies as a state agency to serve Washington residents effectively without waste. Not only does it remain compliant with all federal and state-level regulations, the Exchange also constantly evaluates options to execute initiatives for better enterprise-wide IT management.

With the migration to Azure Government Cloud, the Exchange has more flexibility to manage and maintain its system infrastructure. Environments (i.e. DEV, TST, TRN) were systematically reviewed to determine which ones could be consolidated or decommissioned. Both hardware and software improvements were made with inbuilt upgrades so *Washington Healthplanfinder* has the most up-to-date features. The Exchange can also manage the capacity needs of *Washington Healthplanfinder* by scaling up or scaling down based on the demands of the marketplace. The ability to migrate to a Government Cloud solution provides the Exchange with all the required controls to meet, and in some cases exceed, the security needs of CMS and IRS, such as MARS-E 2.0, without major impacts to performance and system capabilities.

The introduction of an SSDLC process ensures data security will always remain a priority for the Exchange. By establishing an architecture board review and formalizing threat modeling, the organization is better equipped to anticipate issues, address vulnerabilities and prevent breaches.

Bringing 'Managed Services' of the system in-house to the state allows the Exchange to dictate the strategy and processes to manage the underlying infrastructure, and drives the performance, flexibility and scalability of the services offered to the citizens of Washington. Building in-house expertise has been invaluable to speeding up resolution and technical root cause. The systems are better understood and long-term movement can be made through some iterations. Utilization is viewed in real time and tweaked to best use resources and money.

Benefits of the Project (Financial and Non-Financial)

Washington Healthplanfinder, providing more than 1.8 million Washington state residents with quality, affordable health insurance coverage, is recognized as one of the nation's top state health insurance exchanges. The Exchange continues to enhance its IT capabilities, which have yielded significant benefits:

- **Transitioned fully to Azure Government Cloud:** Migration to cloud allows the Exchange to be more nimble in addressing the ever-changing demands within the health insurance landscape without requiring significant hardware dependencies. *Washington Healthplanfinder* is the first state-based marketplace to transition to a 100% Government Cloud-based infrastructure that adheres to the highest security standards and is built on the best of breed technology.
- **Strengthened security standards:** A zero-trust policy ensures verification at all points of access to keep sensitive health and personal data safe.
- **Reduced maintenance costs:** An average of \$1 million per year will be saved from hardware refresh costs alone.
- **Optimized infrastructure software and environments:** Review of existing system infrastructure allows the Exchange to manage the number and scale of the environments based on demand. This is significantly important as the system operates under high volume during the open enrollment period.
- **Reduced asset vulnerabilities:** Collaborating with Deloitte, the infrastructure vendor, WaTech and the Department of Social and Health Services, the Exchange has been able to reduce the number of vulnerabilities from 1,078 to less than 150.

Additionally, the Exchange introduced innovative offerings to provide a more comprehensive end user experience:

- Consumer decision support tool (CDST) that recommends the best plan for a household based on estimated yearly costs and in-network coverage of prescriptions and providers. During 2018, 50% of new users in *Washington Healthplanfinder* used CDST to make an informed qualified health plan selection.
- Provider search feature that allows individuals to see which providers are in-network for each plan.
- Expedited workflows for individuals to report special life events.
- Payment feature that enables users to make their initial binding payment with a carrier immediately after plan enrollment.

Looking forward, the Exchange is focused on additional initiatives to optimize organizational performance and efficiencies. Modularity, software replacement, and consolidation of software are some of the upcoming enhancements planned for *Washington Healthplanfinder*.

Maintaining and enhancing *Washington Healthplanfinder* is a tremendous effort, possible only through the Exchange's robust IT management capabilities. Each initiative to transform the operations and services is evaluated carefully for the value it could deliver, both internally for the Exchange and externally for Washington state residents.

Consequently, the Exchange has identified and optimized a set of best practices and processes enabling it to support a complex and dynamic ecosystem of federal and state agencies, external vendors, carriers, providers and individuals. As the marketplace continues to mature, the Exchange will employ these enterprise IT management initiatives to likewise adapt and guarantee accessible and affordable high-quality health insurance for all Washingtonians.