Title:
DPS Direct – Vehicle Inspection Connection (VIC)
Texas Department of Public Safety & Texas.gov

Category:
Digital Government: Government to Business (G to B)

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Executive Summary

Over time, the Texas Department of Public Safety (DPS) Regulatory Services Division (RSD) has assumed operations for eight disparate business units, some from other agencies that were disbanded through the normal course of state efficiency practices. Each unit had its own unique databases, processes, and forms which presented significant business and technical challenges for DPS. End users were also inconvenienced with having to navigate numerous websites, remember multiple logins, and provide duplicative information on paper-based forms.

DPS began to focus on consolidating these legacy regulatory programs, including vehicle inspection services, private security, concealed handgun licensing, metals registration and controlled substance registration, into a unified vision that could more effectively license and regulate these programs. To augment the consolidation, DPS envisioned a single sign-on, web-based user interface and single, back-end database that they would self-maintain and use to manage all the regulatory services.

DPS turned to Texas.gov for a custom, yet economical solution. Using a self-funded model and leveraging an existing master agreement, DPS did not have to tap into appropriated funds or undergo a lengthy procurement process. Instead, they collaborated with Texas.gov on an innovative, multi-faceted approach to procure, fund, define, and develop the integrated enterprise solution – DPS Direct – that would achieve their vision.

With an existing contract expiration rapidly approaching, the team began work on the first DPS Direct program – an enhanced application for vehicle inspection services called VIC (Vehicle Inspection Connection). VIC would replace a legacy system that was text-based and difficult to navigate. DPS sought to provide over 6,000 privately-owned inspection stations across Texas with a straightforward, modern system that would simplify the process of conducting and reporting vehicle inspections. The system would also support ancillary services, including certificate sales and issuing and renewing licenses for inspectors and inspection stations. Working together, DPS and Texas.gov developed a flexible, configurable system that was specifically designed to increase the speed and efficiency of the entire vehicle inspection process.

Beginning in April 2012, dedicated staff from both organizations worked together to deliver the first VIC service in record time with minimal disruptions to a mission-critical state program. A communication plan was developed and implemented to keep key stakeholders, including station owners, informed and up-to-date on the progress of the transition using a variety of communication tools. Due to the hard deadline required to deliver the first VIC service, the Agile software development methodology was selected and three project teams wrote and developed code in fifteen (15) two-week sprints. This collaborative effort created remarkable efficiencies, significantly streamlined processes, and dramatically improved the speed-to-market.
Business Problem and Solution
The Department’s vision required a broad, over-arching enterprise solution that would allow them to effectively and efficiently manage, license, and regulate the operations of numerous, and formerly disparate, business units. And, they needed the solution very quickly. There were several significant challenges along the way, including agency and state budget constraints, feasibility of the new solution that DPS required, and a very short timeframe to launch the new system. Their long-term vision required:

- A **single system** to manage all RSD functions
- **Data migration** from disparate systems to a single RSD database
- Ability for DPS to **self-maintain** the system and database
- **Single sign-on** for constituents
- **Consistent look and feel** across services
- Potential for use with **mobile devices**

Due to the looming expiration of a third-party vendor contract for the vehicle inspection system, time was of the essence to implement a solution. With an existing, successful partnership already in place with Texas.gov for the provision of several other online services, DPS turned to Texas.gov in late 2011 to determine if they could achieve the requirements of the vision within the allotted timeframe. In just seven days after meeting with DPS, Texas.gov delivered a proof of concept (POC) that satisfied DPS requirements and the collaboration began.

Due to the time constraints, the team selected tools and methodologies that were both efficient and effective. Texas.gov used **Grails** and **HTML5** to develop the POC and retained these tools for the project. Grails, a Java development tool that generates code, hastened development; while HTML5 enabled local data storage and provided offline capabilities – this was particularly important since more than 50% of the 6,000+ vehicle inspection stations use dial-up modems.

Featuring the self-service configuration that DPS requested, the initial application for VIC successfully launched on schedule in August, 2012 and established a blueprint for future RSD applications. VIC offers online interfaces for:

- **Inspection Stations** to record and print inspections, purchase inspection certificates, maintain user profiles, and apply for or renew inspector and inspection station licenses.
- **DPS Operations and Shared Services** staff to fulfill certificate orders and manage inventory.
- **DPS Compliance and Enforcement** personnel to perform audits and manage cases.
- **DPS License and Regulatory Services** employees to manage VIC users, inspector licensing, and training.
The goal for the first DPS Direct application, VIC, was to create a more efficient solution for the system’s various users. Certain factors, such as the reality of dial-up modems, dictated a simple user interface and design. The team utilized visual indicators rather than text-heavy pages to guide users through the process of performing a vehicle inspection. The end result is a streamlined, user-friendly application that was reduced from forty (40) web pages in the legacy system to just nine (9) web pages in the new version.

To ensure a smooth transition and delivery of a product that would meet their needs, DPS engaged with inspection station users often to confirm the new VIC system met their needs. Their efforts included:

- Surveying station owners about requirements
- Recruiting stations for pilot testing
- Presenting a paper prototype to a pilot group to validate the design and process flow
- Conducting tests with the pilot group using the actual system and using their feedback to refine the system
- Performing rigorous quality assurance testing both internally and by an external team that focused primarily on security
- Developing and implementing a communication plan that outlined a course of action to keep DPS staff, inspection station owners and inspectors, and other stakeholders informed throughout the process via accurate, timely communications
- Providing clear, concise, and consistent information about the following items:
  - Why a new system was necessary
  - Value and benefits to Texans, the state, DPS, and stakeholders
  - How the new system would impact the various stakeholders
  - Features, functionality, and implementation timeline of new system

Data from a customer survey offered within the application suggests that users are highly satisfied with the application’s performance:

- 97% found the instructions to be clear and informative
- 97% said that the system performed as expected
- 95% were satisfied with their overall experience

Here’s what users have to say about the system:

- “I found it extremely fast and easy to use. Thanks for making it so easy.”
- “Excellent and convenient.”
- “Thank you for making the process easy online.”
- “This service is outstanding.”
Great system.”
“*It was simpler than I thought. Awesome experience!*”

Protecting personal data and processing payments securely was another primary focus of the project. VIC utilizes an electronic payment engine built specifically for state and local government by NIC, the parent company of Texas NICUSA, LLC, the private partner for Texas.gov. The payment engine is certified as Payment Card Industry (PCI) Data Security Standards (DSS) Level 1 compliant and also complies with numerous other Payment Application Best Practice standards. This payment engine provides a single, secure interface for the processing and management of payments through the application. Station owners and citizens can rest assured that the data transmitted through VIC is safe and secure.

**Significance of the project to the improvement of the operation of government**

DPS and Texas.gov collaborated on an innovative, multi-faceted approach to procure, fund, define, and develop the integrated enterprise solution – DPS Direct – that would achieve the agency’s vision. By working together closely – from the initial planning and development stages to successfully launching the system and its first application – DPS and Texas.gov pioneered a new, more collaborative approach to government modernization in Texas.

As a team, they implemented innovative, leading-edge technologies, chose non-traditional tactics, and overcame countless challenges. This collaborative effort created remarkable efficiencies, significantly streamlined processes, and dramatically improved the speed-to-market to achieve DPS’s vision. Although VIC is just the first phase of DPS Direct, the project will eventually comprise single sign-on functionality for a suite of DPS regulatory services. As future phases are completed, end-users will be able to complete multiple services online in one convenient transaction.

Using the project’s architectural guiding principles – designing the system with the end state in mind – the development of VIC has laid the groundwork for transitioning additional business units and regulatory processes to the DPS Direct enterprise solution. As future phases are completed, end-users will be able to complete multiple services online, such as a concealed handgun license application and a private security guard license renewal, in one convenient, secure transaction.

The innovative DPS Direct enterprise solution and its first application, VIC, exemplified innovation in many areas, including:

- **Technology** – The use of Grails was imperative to the initial POC exercise. Since Grails provides basic functionality through code accelerators, the developers spent less time writing code and more time developing the critical business logic necessary for a viable solution. The use of HTML5 enhanced the
end-user experience, enabled local data storage, and provided offline capabilities which were critical to stations that only had dial-up access.

- **Reuse** – The architecture for the DPS Direct solution was focused on reuse, enabling the team to reuse key code elements for other future services and giving DPS the ability to alter the code themselves to match the specific requirements for those services.

- **Agile Approach** – Taking an agile approach to development and project management was driven by the very tight project timeline. Classic Scrum roles including Product Owner, Scrum Master, and a Scrum development team as well as governance via bi-weekly reviews, retrospectives, and planning activities ensured that decisions were made quickly and the project remained on track and within scope.

**Benefits of the Project**

DPS Direct was developed and implemented at no direct cost to the agency. Utilizing the self-funded model offered by Texas.gov, DPS was able to realize its vision of an over-arching enterprise solution without using appropriated funds. Functionality that was added to VIC, such as the ability to track certificate orders, and print receipts and other documents, has significantly reduced the number of calls DPS receives from users requesting information and assistance. This time savings has allowed DPS to reallocate their resources to more important tasks.

VIC is used by more than 6,000 privately-owned vehicle inspection stations across Texas and more than 26,000 users, including licensed vehicle inspectors, owners, buyers, and DPS personnel. The new inspection system reduced the number of web pages that users must navigate from forty (40) to nine (9), enabling them to save significant time on every inspection. VIC also features a single dynamic web page that serves up the proper inspection categories and points of inspection depending on the type of inspection being performed. This is a significant improvement over the prior system which forced inspectors to scroll through 20-30 web pages to check each individual item as “pass” or “fail”. Now, if an inspection passes, inspectors only have to click a single button. In a state with more than 20 million vehicles, VIC offers significant time savings for both inspectors and inspection stations.

**High-volume Performance**

Performance measures from the VIC systems from September 2012 through April 2014 include more than:

- **15 million vehicle inspections** successfully reported,
- **340,000 certificate orders** fulfilled,
  - 30,000 active users,
• 6,400 vehicle inspector license applications and 695+ inspection station license applications submitted online, and
• 8,300 station licenses renewed online

Revenue-sharing Model
With Texas.gov’s revenue-sharing model, the VIC application has contributed $15,358,382 in new revenue to the state’s General Revenue Fund from September 2012 through April 2014.