State of Wisconsin

eMV PARTNER

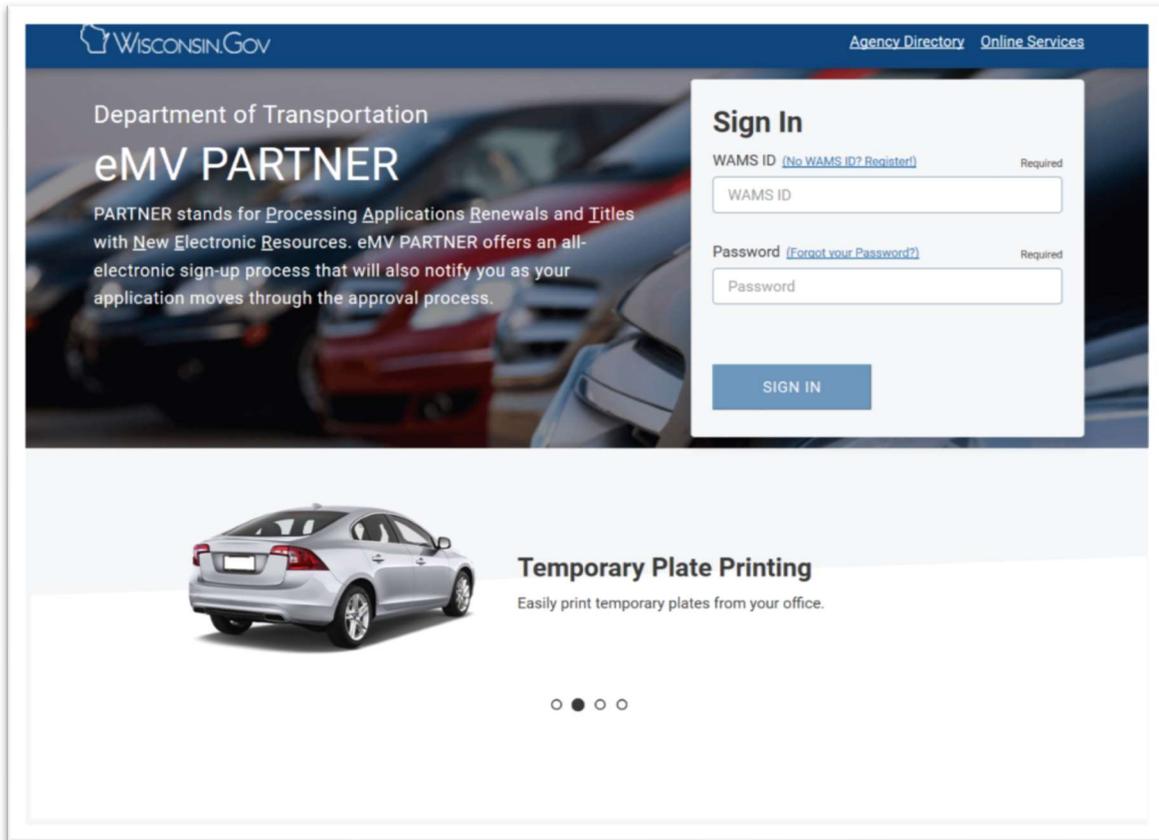(https://emvpartner.wi.gov/)

2020 NASCIO State IT Recognition Award Nomination

Category: Digital Services: Government to Business

Project Initiation: 2017

Project Completion: 2019

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Executive Summary

Each year, millions of vehicle titles and registrations are processed by the businesses in the State of Wisconsin. Wisconsin's Department of Transportation (WisDOT) is responsible for processing these transactions, as well as a myriad of other tasks and processes that are required to support the system. These include the following:

- Organization Sign Up and Contracting Documentation
- Organization Renewal
- User Administration
- Payment Processing
- System Updates
- Shipment and Issuance of Temporary License Plates

WisDOT dedicates many staff members to administer this program, and they were among the first states to require businesses to process electronically in the 1980s. Being a leader in the industry was originally made possible by the technology of the time, and WisDOT continued to build on the functions available to process electronically throughout the years. Over time, the logistics of technology (such as the need for system validation and deployment protocols involving numerous resources and checkpoints) had become as much of a barrier to their duties as it was a benefit in some ways.

In 2017 the eMV PARTNER project was kicked off, and WisDOT engaged NIC Wisconsin (NIC WI) to collaborate on a transformative new design to drastically transform and improve their customers experience and usage of the system, who are businesses in vehicle and financial industries in Wisconsin. At the same time WisDOT staff and NIC WI developed an innovative vision to help remove barriers to clear communication with their users from the point of sign up and contracting all the way through the daily messages that users will see informing them of important events or news.

Key considerations and drivers informed the redesign of key system processes, including improved security and compliance, better logging and tracking of users, and automating manual processes for improved efficiency and consistency. The team developed a comprehensive system aimed to transform nearly every aspect of how WisDOT staff and their customers would interact with the system. At the same time, the team needed to deliver important processes early on in the project to ensure a smooth and successful migration.

Leveraging an Agile approach, the team delivered early and often; incorporating user feedback along the way. About halfway through, a new fully-automated electronic sign up, registration and contracting component was launched, which allowed thousands of users to migrate successfully while the critical business functions to process titles and registrations were added to the system.

Since launch in late 2019, eMV PARTNER has already processed over a million vehicle transactions, and over the past two months it has averaged over 50,000 title transactions plus another 50,000 registration transactions per month.

Concept

Originally developed in the 1980s, Wisconsin DOT (WisDOT) was one of the first states to offer comprehensive electronic processing for vehicle titles and registrations to the motor vehicle industry. Over time, WisDOT worked to improve and iterate upon their electronic processing offerings for nearly 20 years. In 1996 they added a small number of vendors to the program – allowing them to bolster electronic processing in Wisconsin with enhanced functionality to the dealerships, banks and others offering motor vehicle title and registration services to businesses in Wisconsin.

Starting in 2005, Wisconsin offered individual dealerships and other related businesses electronic processing for titles and license plate registrations, which became required in 2007. Electronic lien processing was added in 2010. However, as these solutions were added independently over time, the efforts to maintain and support these systems became increasingly difficult as the functionality expanded while the technologies aged. Business needs grew and evolved over time, but the systems lost pace with the shift in users' expectations and the constant need to adjust these systems to accommodate new legislation, new or updated policies, and innovations in the market.

Alongside the electronic processing described above, WisDOT program staff had developed a patchwork of complex and often confusing processes, documentation, manual reviews and notifications that were needed outside the electronic processing functions. Over time, WisDOT identified the following needs that were unmet in some way by their existing solutions:

- Process to sign up and renew organizations was manual, slow and prone to error
- No way to verify user knowledge of rules and requirements prior to processing
- Cardboard temporary plates were difficult to manage and track
- Desire for better tracking and logging of user actions
- Users found coded user messages difficult to understand, and systems required development and deployments to change them, making them difficult to update
- Lack of a modern API and other automation made it too difficult to add and support more vendors
- Existing payment processing was handled outside the system using manual processes that were complex and time-consuming

Thus, the concept of eMV PARTNER was developed to improve speed, reduce the amount of manual intervention, and provide support for more businesses to use the system. Through collaboration with NIC WI, additional innovative ideas were incorporated into the system to offer self-service for common and frequent actions to DOT staff. By Q3 of 2019, eMV PARTNER had successfully launched; fully migrating thousands of businesses and their users to the new system.

Solution Architecture:

The project was kicked off in 2017 leveraging a collaborative agile approach between WisDOT and NIC Wisconsin. NIC Wisconsin brought an iterative approach to the project, using Agile Scrum methodology.

Requirement-gathering was approached using this iterative methodology. High-level system functionality (such as Sign-Up, Certification, Lien Processing, etc) were broken up into large sections and prioritized. This enabled the team to deliver sign up and contracting functions in 2018, a full year before the actual title and registration processing functions would be made available in 2019.

eMV PARTNER is built using responsive design on .NET, using high-availability servers.

As a result of this program, every aspect of how the organizations and their users who interact with the state's Title & registration processing was completely transformed. User experience was a key focus during the design process, and workflows and notifications were incorporated to provide guidance to users for each step, aimed at drastically reducing support. To reinforce this work, online resources were provided, showing many of the most common screens a user needs to interact with.

https://wisconsindot.gov/Pages/dmv/dlr-agents/dlr-ttl-reg/emvpartner.aspx
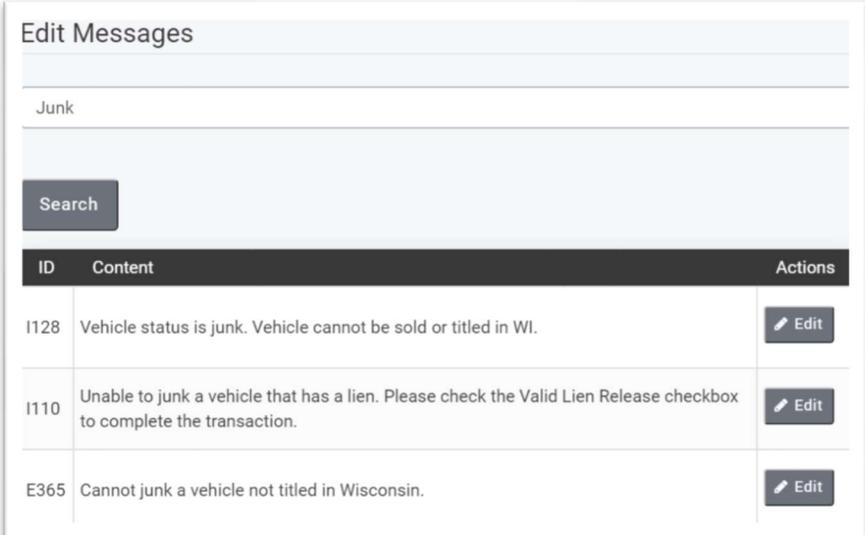
Significance

More than 5,000 businesses and tens of thousands of users interact with the eMV PARTNER system every day to process transactions related to vehicle title and registrations for the State of Wisconsin. The system successfully processes over 100,000 transactions per month, and has already processed well over 1 million transactions since its launch in late 2019.

Every day, thousands of users from key industries in the State of Wisconsin access the system. That includes dealerships, banks and other financial services, and even grocery stores. Without reliable, efficient and accurate title and registration processing, a significant part of Wisconsin's economy could be impacted.

WisDOT staff spend countless hours managing and supporting the program, these innovations have transformed their work by removing barriers to updates and improving communication with users.

- Customizable System Messages
    - Allows DOT Staff to modify all system error, warning, and information messages
    - Easy-to-use search function allows staff to quickly locate message content
    - Real-time no-deployment updates – when authorized DOT staff save updates to a message, the system updates it immediately so that the next user to trigger the message receives the new content

- Customizable Test Certification Suite
    - Test question editor – set type and correct answer of test question
    - Randomized tests – a random subset of possible questions appears each time the test is taken, and WisDOT staff can ensure some questions are always asked
    - Automated scoring – takers get immediate results
    - Training Resource connection – an incorrect answer notifies the user and helps them to learn the correct answer by pointing them to specific training materials
    - Test results viewer – test takers can easily review what they got right or wrong
    - Testing requirement – required tests that are not taken or failed prevent processing

- Customizable Message of the Day
    - DOT Staff administrators can post banner messages to notify users of important info
    - Messages can be posted in real-time or on a schedule
    - Users can be required to acknowledge reading a message
    - Banners may be targeted at specific user groups
    - All messages are saved for easy re-use in the future

At launch in Q3 2019, eMV PARTNER successfully automated and transformed every aspect of vehicle title and registration processing to better the needs of the WisDOT staff and the citizens and businesses in the State of Wisconsin alike, improving ease of use, security, reporting, and automation at nearly every turn.

The new electronic automated sign up process offered electronic contracts for businesses to sign online, and automated workflow to pass those applications through WisDOT staff review at a record pace. In the span of just 3 months, over 5,000 organizations and over 10,000 users had all completed new contracts, agreements, and sign-up and setup needed to migrate to the new solution. More than 20,000 documents are now fully electronic.

Since the full launch of eMV PARTNER, users have passed over 9000 certifications through online testing. With online certifications, these users are now fully certified with the Wisconsin Department of Motor Vehicles every three years. This ensures proper and consistent training for all users, and the system requires a passed test result before it allows that user to process which helps to improve compliance.

eMV PARTNER is also directly aligned with NASCIO's State CIO Top 10 Priorities for 2020. First and foremost is Legacy Modernization. Migrating this system to modern technologies such as .NET and providing a modern API wsdl achieves that goal. Many self-service innovations show this program's alignment with the Innovation and Transformation through Technology priority.

Impact

Improved Compliance for user activity

- Before, individual users' activity was tracked on paper, making the data difficult to access and impossible to analyze electronically for patterns that may suggest further investigation is needed.
- With the launch of eMV PARTNER and the migration of over 10,000 users, each user accesses the system using their own unique credentials, and all their activity is logged and available in on-demand reports for system administrators.

Improved compliance for user certification

- Before, users were expected to know and adhere to the laws and policies, but there was no mechanism to test that knowledge or prevent users who are unable to pass muster from processing anyway.
- With eMV PARTNER, users are required to pass sophisticated certification tests, which are tracked by the system and must be re-taken every three years. The system automates notification for success and failures, and makes it easy for WisDOT staff to look up test results, and update tests to match the pace of changing laws and policies.

Improved compliance for temporary license plates

- Before, Wisconsin issued cardboard temporary plates to registrants who were awaiting new plates in the mail. These had to be mailed to dealerships all across the state, stock of them had to be tracked, and until they were issued to a driver, they were sometimes lost due to accident, negligence, or even fraud.
- eMV PARTNER automatically generates an electronic temporary license plate that can be printed on the spot. These plates are immediately synced with law enforcement systems, improving compliance not only within dealerships but out onto the streets, making law-abiding citizens interactions with law enforcement less likely than ever due to temporary plate issues.

Operational Efficiency Improvement: System Message Updates

- Before, any changes to error or informational messages were implemented through coding. A system release and deploy was needed. Also, back end systems providing these messages were

often consumed by more than one system, so changes to accommodate specific business users of the eMV PARTNER program were often rejected due to potential impacts downstream.

- eMV PARTNER maps sometimes arcane, coded messages from the back end to a customizable set of user-friendly content that can be curated by WisDOT staff at any moment. The system never has to go down to clarify any of the thousands of informational, warning, or error messages.

Operational Efficiency Improvement: Message of the Day

- Before: The system needed a deploy to post any messages to users, so it was used sparingly and only in critical situations. Both business and technical staff needed to be available and present to deploy such a message, and at whatever hour they wanted it to go out.
- eMV PARTNER allows WisDOT staff to post messages to everyone, immediately, and in real time. They can also choose to target specific groups of users, and they can schedule messages in advance to appear prior to scheduled maintenance.

Operational Efficiency Improvement: Automated Workflow for Application Review

- Before: email contracts, download and store documents, review for signatures and missing info, frequent back and forth
- When an organization submits their application to eMV PARTNER all required fields are validated prior to submission. WisDOT staff can focus on the substance of the application, rather than poring through lengthy, hard to read PDFs. eMV PARTNER requires every necessary document to be uploaded prior to submission, so WisDOT staff aren't needed to identify incomplete applications. Once WisDOT staff pick up a submitted application in the queue, Approvals, Rejections, and other actions they may take now result in customizable and automated notification to the applicants, so they can quickly remedy an issues and obtain approval, which can now happen in hours instead of days, weeks, or even months.