



The Pennsylvania Turnpike Commission



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**Jeff Wilson | Senior Engineer Project Manager,
Pennsylvania Turnpike Commission**



Background

The Pennsylvania Turnpike Commission (PTC) was created in 1937 to construct, finance, operate and maintain the Pennsylvania Turnpike. In 1940, the 160-mile roadway opened for business to become America's first superhighway. Today, PTC oversees one of the nation's busiest and longest highway systems with annual toll revenues totaling \$1.6 billion, ranked fourth in the U.S.

PTC's mission – with its 552 turnpike miles – is to operate a safe, reliable, customer-valued toll road system that supports national mobility and commerce. The PA Turnpike's Capital Plan is scheduled to average over \$720M per year (\$600M for construction) for the next 10 years. Projects include highways, bridges, tunnels, facilities, technology, fleet and toll collection.

Review of Systems and Processes

In 2004, as the number of new construction and maintenance projects continued to increase, PTC implemented an enterprise collaborative project management system to better manage the scope and volume of these projects. The application it selected was one of the first [cloud-based construction planning software](#) solutions and the leader in the category at the time. As an early adopter of cloud-based technology, PTC ultimately made this application its standard on all projects. While the application served the Commission well at the time, the vendor was ultimately acquired, and product development and enhancements slowed dramatically.

"We certainly had misgivings about the situation, but there just wasn't a better option on the market, and migrating to a competing system would've brought us back to square one," said Jeff Wilson, Senior Engineer Project Manager.

In 2010, PTC reviewed its existing systems and processes and concluded it needed to consolidate systems and move to a next-generation [construction project management](#) and collaboration platform. PTC gathered requirements from its design, construction, facility management and IT teams. It then went through an extensive RFP and vendor evaluation process.



About Pennsylvania Turnpike

- FY 23 Gross Toll Revenue - \$1.6 billion, which is fourth in the U.S.
- \$600 million annual budget for new projects and maintenance
- Designated a National Civil Engineering Landmark by the American Society of Civil Engineers

Project Objectives

- Reduce costs and improve efficiency
- Consolidate systems into next-generation project management/collaboration platform

A Solution for the Future

After completing the evaluation process of three vendors, PTC ultimately selected Kahua. “In Kahua, we saw some key differentiators, most importantly, the ability to easily build custom applications that conform to our business processes rather than us tailoring our business processes to the system,” said Wilson.

Kahua’s key differentiators that PTC found very compelling included:



Seamless Integration

To realize the value of the investment PTC made in various systems, integration among these applications was critical. Because the Kahua Platform was built using open APIs, PTC found that it could easily integrate its Kahua applications with its legacy and other third-party applications.

“Kahua’s team included personnel with deep knowledge of our engineering business practices which streamlined the implementation,” Wilson said.

Kahua professional services handled the configuration and updates to the core system, and the system went live in 2013 ... on time and on budget.

Hub-to-Hub Collaboration

One of the biggest short-comings of PTC’s legacy system was the hub-and-spoke architecture, which was causing data ownership issues among PTC’s subcontractors, architects, and engineers.

Instead of hub-and-spoke, Kahua is designed as a hub-to-hub configuration. With hub-to-hub, each company has its own Kahua database, allowing all project partners to truly collaborate, share documents and data, and assign and manage project tasks using the workflow capabilities of Kahua. In this model, each entity owns its own data and can customize workflows in its Kahua database to match its own company standards.

Platform-as-a-Service (PaaS)

Kahua was designed as a [Platform-as-a-Service](#) (PaaS) and not just a pre-defined project management application. With PTC’s legacy solution, developing new applications or modifying existing ones was a tedious, time-consuming process requiring developers to set up a database for each new application, user accounts and security, reporting, UI design, etc. With Kahua, those infrastructure components already existed in the platform, freeing the user to focus on the business process, forms and workflow, enabling much speedier app development.

Additionally, Kahua’s online marketplace, the kStore, contains a variety of apps that had already been built and tested on the Kahua Platform, such as Design Review, Checklist and Value Engineering.

Results

Prior to the selection of Kahua, PTC performed a detailed analysis of its systems and processes to establish a baseline for tracking performance improvements with the new solution. The more noteworthy and tangible improvements included:

Resources Saved

In 2008, a cost-benefit study was performed to support the decision for the PTC’s Engineering Department to go paperless. The net cost-benefit averaged \$6.4M per year (adjusted for inflation, using U.S. CPI Data).



Streamlined Business Processes

In addition to receiving positive feedback about Kahua's intuitive user interface, PTC conducted a before/after analysis of the number of clicks required to complete some of its key business processes. As a result of Kahua's modern interface and workflow automation, PTC was able to reduce the number of clicks to complete the Submittal Process by over 50% while seeing a 30% click reduction for its Submittals and RFI processes, which creates considerable time savings for users.

The capabilities most utilized by PTC include:

- File Manager
- Submittals: The PTC has a custom-made workflow for Submittals with a built-in notification
- RFIs: PTC has a custom-made workflow for our RFIs with a built-in notification
- Communications
- Meetings
- Right of Way Tracker: This is an application developed for the PTC Design Unit in Kahua's kBuilder low-code application platform



Integrate, Not Re-Create

Since Kahua already has many out-of-the-box integrations with a number of leading technologies, seamless integration was far less complicated than with PTC's legacy systems. With Kahua's open API, PTC was able to easily integrate with leading technologies, including Bluebeam, DocuSign, PTC's Microsoft tools such as Windows Explorer, Outlook, and Excel, and PTC's custom PowerApps for environmental inspections (DIRT) and stormwater management (SWAMP).



Rapid App Development

Because Kahua's Platform enables rapid application development, PTC was able to automate additional business processes that could only be performed manually. One of the first apps that PTC developed was the [Right of Way Tracker App](#), which was developed on the Kahua platform in less than four days. PTC was also able to easily modify a number of other Kahua apps to conform to its business processes and workflows. In addition, PTC can take advantage of a number of other apps available in Kahua's online marketplace, the kStore, that have been built by customers and their network of certified third-party developers.



PTC's current Submittals application was built specifically for the Commission on the original Kahua platform. It is now looking at utilizing the Submittals Items application with a custom extension.

Through the implementation of Kahua on all new projects, PTC has saved over \$6.4 million per year. In addition, PTC has realized additional benefits, including improved usability by reducing the number of clicks, seamless integration with its legacy and third-party applications and a platform for developing and launching apps quickly in support of its operational needs.

Choose Kahua

Kahua is a leading provider of capital program and construction project management software, enabling innovation that is changing the way that capital programs are planned and delivered. Global organizations use Kahua's collaborative solution to improve efficiency, lower costs and reduce project risk throughout the entire lifecycle of their capital programs. Our purpose-built solutions for owners, program managers and contractors enable rapid implementation that minimizes time-to-value and enhances user adoption. With the industry's only low-code application platform, customers can easily customize existing Kahua apps or even build their own new apps to run their business at peak efficiency today and rapidly adapt as business conditions dictate.

Learn more and request a demo today or email us at: connect@kahua.com



DEC 2023