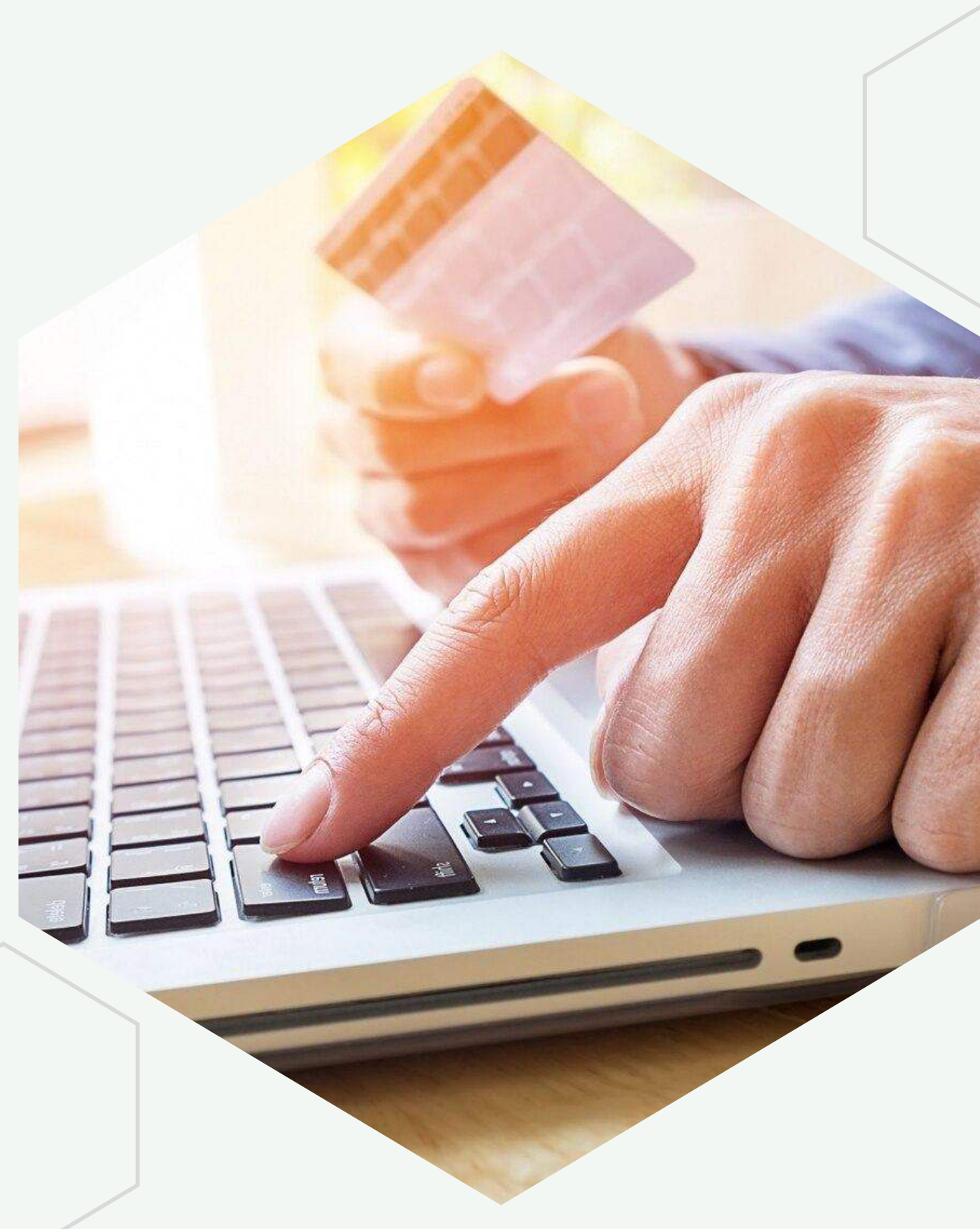


Case Study

Modernizing Operations with an Electronic Voucher System



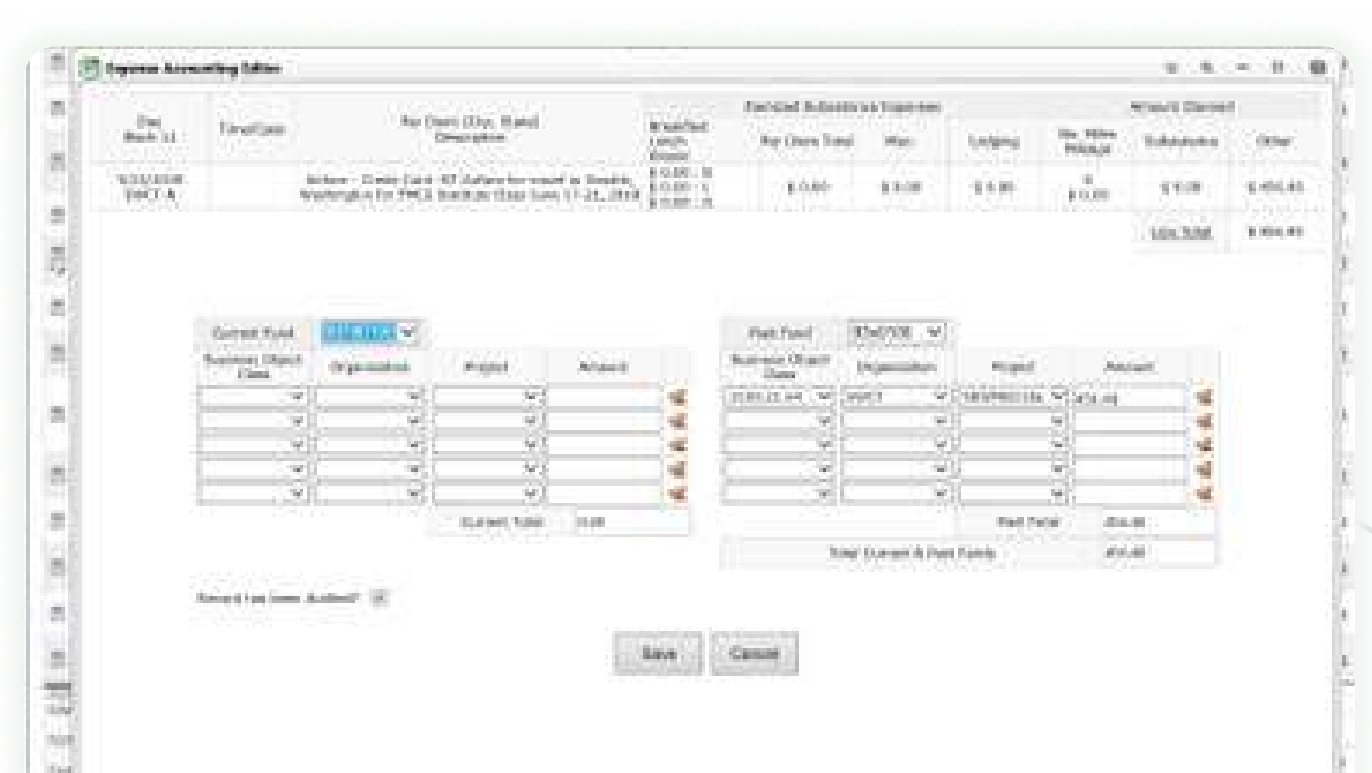
The Customer

And Their Challenge

The Federal Mediation and Conciliation Service (FMCS), based in Washington, DC, is a crucial independent agency dedicated to preserving and promoting labor-management peace and cooperation. With a vast network of ten regional offices and over 60 field offices, FMCS provides essential mediation and conflict resolution services to various sectors, including industry, government agencies, and communities.

FMCS faced a significant challenge with their outdated manual paper process for processing travel and miscellaneous expense vouchers. Invoices could only be submitted by mail, with paper checks then issued and sent via traditional postal services. Even receipts were managed through the mail. This outdated and cumbersome process urgently required a transformation to a more efficient and modern system.

The goal was to develop and maintain a secure, cloud-based Electronic Voucher System (EVS) that allows users to submit travel or miscellaneous expense vouchers. Each voucher contains essential details, including staff information, voucher specifics, transportation costs, expenses, comments, and attachments. i3Solutions was tasked with replacing the outdated paper-based system with a streamlined electronic process, to enhance both efficiency and accuracy in voucher processing.



The Solution

Electronic Voucher System (EVS)

i3Solutions crafted a comprehensive solution to meet FMCS's needs, revolutionizing their voucher processing workflow with the new Electronic Voucher System. Before implementation, i3Solutions conducted a thorough review of the existing processes to identify inefficiencies and areas for improvement. This transformation was driven by the integration of Business Process Management (BPM) principles, ensuring that the system not only digitized the process but also optimized it for greater efficiency. Through this meticulous approach, i3Solutions enhanced the overall workflow, enabling a more streamlined, accurate, and responsive system.

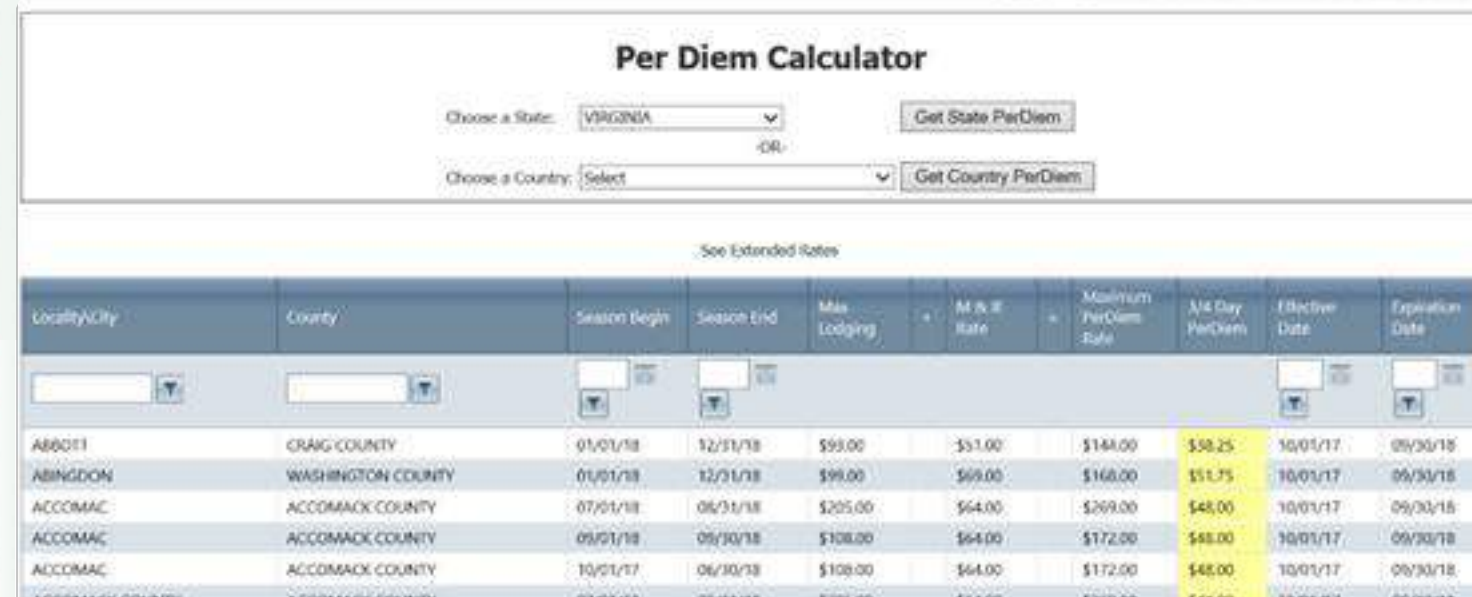
A key enhancement was the shift from their manual, paper-based process to a fully electronic system. Freed from the constraints of postal services, vouchers can now be efficiently reviewed, authorized, audited, and paid within the streamlined digital platform.

To simplify and streamline the process further, i3Solutions implemented a one-voucher-at-a-time rule, preventing multiple unsubmitted vouchers and reducing potential errors. The addition of a search feature allows users to easily retrieve previous vouchers, enhancing accessibility and record-keeping.

Administrators gained control over user management, departmental oversight, role assignments, and per diem rates. The system seamlessly integrates CONUS and OCONUS per diem rates for lodging and meals provided by the Defense Travel Management Office. This integration, done in XML format, ensures data integrity by automatically updating rates annually.

The accounting components of the system were carefully addressed, ensuring that accountants could effectively manage fiscal year budgets, field budget allocations, and fund numbers. They were also given control over lookup values for key parameters, including block 11 codes, budget object classes, departments, expense accounting relationships, mileage rates, organizations, payment forms, and projects. These lookup values, vital for the creation and updating of vouchers, were configured to update automatically each month, enhancing tracking and auditing processes.

Throughout the software development lifecycle, i3Solutions worked closely with FMCS, overseeing every aspect of the project. The result is a modernized Electronic Voucher System that significantly improves the agency's operational efficiency.



Technologies

Used in the Solution



ASP.NET, combined with the C# programming language, serves as the foundation of the Electronic Voucher System. ASP.NET offers a powerful framework for creating dynamic web applications, while C# enables efficient server-side programming. Together, they provided a secure and scalable web-based solution, ensuring smooth and seamless interaction between users and the system.



Microsoft SQL Server functions as the relational database management system (RDBMS) for the EVS. T-SQL (Transact-SQL) is employed as the query language for interacting with the SQL Server database.



jQuery streamlines scripting tasks, simplifying complex JavaScript code and enhancing the responsiveness of the user interface. JavaScript plays a crucial role in dynamic content updates, form validations, and real-time status tracking, contributing to an interactive user experience.



SQL Server Reporting Services (SSRS) is utilized to generate detailed, customizable reports, offering valuable insights into voucher processing, user activities, and other pertinent data. This combination ensures robust data management and comprehensive reporting capabilities.



Employed for front-end development, Bootstrap ensures a responsive design that adapts seamlessly to various devices. CSS, working in tandem with Bootstrap, dictates the visual layout and presentation of the application. This combination results in a consistent, visually appealing, and branded user interface.



Integrated for secure online payment processing, pay.gov facilitates the electronic payment aspect of the voucher system. This integration processes payments securely through the online platform, reducing the reliance on traditional paper checks and mail-based transactions.



Entity Framework, a powerful Object-Relational Mapping (ORM) framework, simplifies database interactions in the EVS. It provides a higher-level abstraction for database operations, reducing the need for complex SQL queries. This not only accelerates development but also enhances the maintainability of the system's data layer.



Visual Studio served as the integrated development environment (IDE) for building the Electronic Voucher System. It provided a comprehensive set of tools for code editing, debugging, and deployment. Visual Studio streamlined the development process, offering a centralized platform for the collaborative efforts of the i3Solutions team.



Asynchronous JavaScript and XML (AJAX) are vital in boosting the system's interactivity. By allowing asynchronous data exchange between the server and user interface, AJAX enables real-time updates and enhances responsiveness. This ensures a smoother user experience, particularly when navigating the system's features and functionalities.



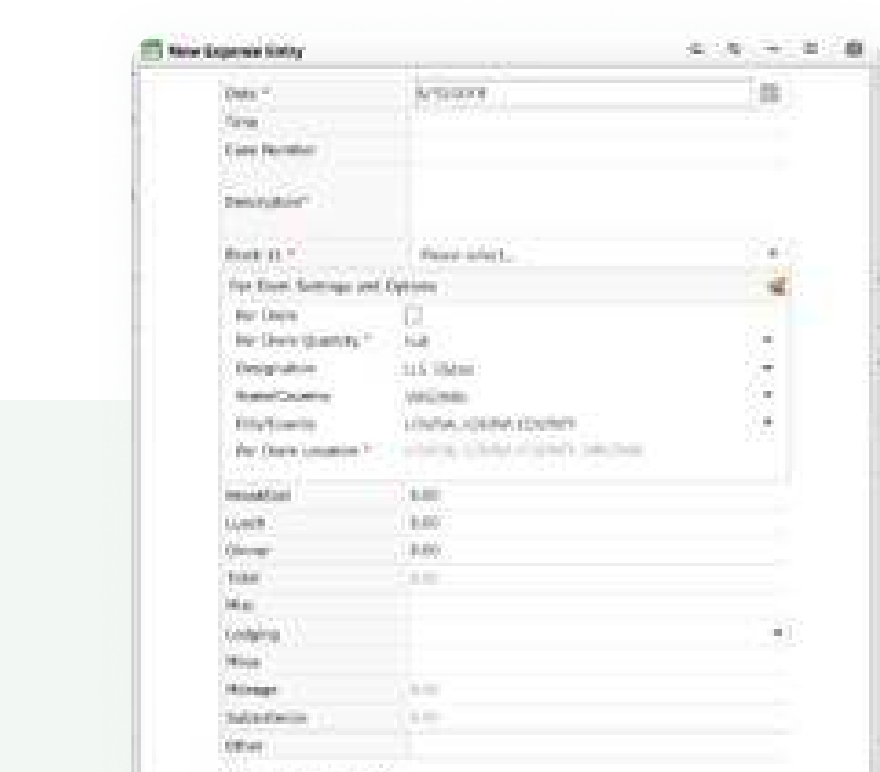
Telerik, a UI component library, is used to enhance the user interface of the EVS. It provides a set of pre-built components and widgets that improve the look and feel of the system, providing a more intuitive and visually appealing user experience.



Word and ActivePDF are used to generate and handle forms and documents in PDF format within the EVS. This capability is crucial for creating printable versions of vouchers and associated documents, ensuring compatibility and ease of sharing across different platforms.



Simple Mail Transfer Protocol (SMTP) is utilized to ensure effective email communication within the EVS. This includes email notifications for various system events, such as voucher submission, approval, and payment. SMTP integration enhances communication and keeps users informed about the status of their vouchers.



Voucher Number	Amount	Department	Travel From	Travel To	Rate Category	Reviewed By	Voucher Status
18052-2228	240.00	Region 07	05/01/18	05/01/18	06/04/18	Daphne Tucker	Submitted
18052-2229	144.00	Region 07	05/01/18	05/01/18	06/04/18	Reviewed	Reviewed
18052-2232	144.00	Region 07	05/01/18	05/01/18	06/04/18	Cindy Artoog	Submitted
18052-2233	144.00	Region 07	05/01/18	05/01/18	06/04/18	Cindy Artoog	Reviewed
18052-2234	144.00	Region 07	05/01/18	05/01/18	06/04/18	Submitted	Submitted
18052-2235	144.00	Region 07	05/01/18	05/01/18	06/04/18	Submitted	Submitted
18052-2236	144.00	Region 07	05/01/18	05/01/18	06/04/18	Submitted	Submitted

Voucher Number	Approved Date	Name	Department	Approved Amount	Approved By	Approved By	Voucher Status
18052-2228	05/04/18	Carli Cazanoff	Region 08	18,400	05/01/18	Linda Gonzalez	Authorizer Approved
18052-2232	06/04/18	Joseph Mawardi	Region 08	18,276	05/01/18	Linda Gonzalez	Authorizer Approved
18052-2233	06/04/18	Ronald Collette	Region 08	18,006	05/01/18	Linda Gonzalez	Authorizer Approved
18052-2234	06/04/18	Kathleen Murray	Region 01	18,410	05/01/18	Peter Donatello	Authorizer Approved
18052-2235	06/04/18	Paul Chabot	Region 01	18,005	05/01/18	Peter Donatello	Authorizer Approved
18052-2236	06/04/18	Joseph Kelleher	Region 01	18,811	05/01/18	Peter Donatello	Authorizer Approved
18052-2237	06/04/18	Carli Cazanoff	Region 08	18,400	05/01/18	Peter Donatello	Authorizer Approved

Measurable Benefits and Business Impact

Increased Efficiency

i3Solutions' implementation of the Electronic Voucher System brings transformative benefits to FMCS by replacing manual, paper-based processes. This transition eliminates inefficiencies associated with traditional mail submissions, streamlining the voucher processing process. The adoption of a one-voucher-at-a-time rule further reduces errors, ensuring accurate and efficient processing of vouchers.

Centralized Control

With the Electronic Voucher System in place, administrators and accountants at FMCS gain centralized control over critical aspects of the system. This includes user management and budget oversight, offering greater visibility and control over financial processes. Additionally, the system's automated monthly updates of lookup values significantly improve tracking and auditing efficiency, enhancing overall financial management practices.

Improved Accuracy

The integration of per diem rates from the Defense Travel Management Office into the Electronic Voucher System ensures both accuracy and process simplification. By incorporating standardized rates directly into the system, FMCS relies on up-to-date information without manual input or error-prone calculations. This integration not only ensures accuracy in financial transactions but also simplifies the annual updating process, reducing administrative burden.

Modernized Workflow

The Electronic Voucher System modernizes workflow by replacing paper-based processes with a fully digital platform, which speeds up processing and reduces manual errors. Automated features and real-time updates streamline tasks and enhance accuracy, while centralized control and advanced reporting capabilities improve overall efficiency and decision-making.