[Energy, Application Development – Mobility]

TEKSYSTEMS GLOBAL SERVICES
CUSTOMER SUCCESS STORIES

Client Profile

Industry: Electricity, natural gas and green energy

Revenue: $33 billion

Employees: Approximately 27,000

Geographic Presence: Operations and business activities in 47 states, the District of Columbia and Canada

Designing and Testing a Mobile Application for a Fortune 500 Energy Company

QUICK FACTS

Objectives

- Develop and test a mobile application that would enable the client's commercial customers to monitor and control energy behaviors and usage from their phones
- Ensure the mobile application is consistent with the client's existing energy monitoring Web application
- Utilize the mobile application as a selling tool to help drive business

Challenges

- Create a complex and versatile mobile application with many complicated mathematical functions within an aggressive timeframe
- Incorporate the framework, functions and visuals from the existing Web application into the mobile application
- Coordinate feedback and viewpoints from multiple stakeholders throughout development process
- Accommodate a set deadline based on the client's seasonal demand period

Implementation Highlights

- Adaptive, collaborative approach to applications development
- On-site project oversight and guidance by an experienced team

Technologies Supported

- Sencha Touch framework
- Apple iPhone
- Android Phones
- Tablets

Results

- Developed one of the first mobile solutions for commercial user participation in load reduction programs
- Facilitated management of customer costs by providing transparency of energy usage data and peak times
- Increased customer empowerment through improved real-time handheld, mobile access to energy market data

TEKsystems
Our people make IT possible.

EXECUTIVE SUMMARY

The client created a proprietary online solution that allowed commercial clients to manage and analyze energy usage. TEKsystems was commissioned to design, develop and test a mobile version of the online application.

Client Profile

The client is a supplier of electricity, natural gas and energy-related services focused on commercial, industrial and institutional customers. The company operates in all competitive energy markets in the United States, providing products and services that enable users to effectively manage energy costs.

Project Overview

Utilities manage the ever-increasing consumer demand for electricity by transmitting power to customers through an aging, stressed infrastructure. Smart grid initiatives seek to repair this model by transforming the way our energy is stored, shared and managed. A 'smarter grid' gathers, distributes and acts on real-time data on the behavior of all participants with the goal of improving the reliability and sustainability of electricity services. A key component of smart grid initiatives is demand response (DR): a shift or reduction of energy consumption in response to supply conditions.

Utility companies historically leveraged DR principles for certain customer segments as a way to restore equilibrium between supply and demand, reduce risk of brownouts or blackouts and offset the need for a new generation of energy. Economic DR is a specific initiative in the commercial and residential markets that encourages the customer, not the utility, to reduce demand during peak periods in order to take advantage of financial incentives. In order for these shifts to occur, customers need assistance in deciphering their energy usage. In response, energy suppliers introduced consumer products such as smart meters, smart thermostats and other monitoring devices.

The client, a leading provider of DR to commercial and industrial customers, created an innovative proprietary application to encourage customer participation in DR. The application presented a unique solution for commercial customers to access their real-time electricity usage and choose to reduce consumption during peak times. Real-time data provides greater transparency into the building management systems and allows the customer to make faster adjustments based on actual usage.

Going a step further, commercial customers seek not only real-time data but also a platform for accessing it on the go. A mobile application would accommodate the fast-paced nature of the business environment.

Situation

In order to further engage commercial customers in these load reduction programs, TEKsystems and the client developed and enhanced the client's proprietary Web application. Once the Web application was in place, the client needed to make a mobile version of the application available to its commercial customers in order to stay competitive and drive business. The client did not have the in-house experience to build the mobile application and needed a partner to address the following challenges:

Client Expertise. The client wanted the mobile application to have the key functionality present in the Web application. For example, one priority function that needed to be a part of the mobile version was adjusted time; meaning, when an event occurs the client wanted its customers to have mobile access to the immediate market impacts such as a spike or decline in prices.

Given the complexity and unique features of the Web application, familiarity and understanding of the existing underlying systems were essential.

Mobile Expertise. The resulting hybrid mobile application needed to be compatible with different mobile devices and platforms, as well as take advantage of native mobile phone and tablet features. The client required a single application that can be run on a variety of devices, while also making use of the benefits of native mobile applications to enhance the digital customer experience.

Speed to Market. Organizations aren't always making energy decisions during business hours or in front of desktop computers. While customers could access the Web application through a smartphone browser, the client understood the need for a mobile application and wanted to bring the application to market as soon as possible to satisfy current customers and attract potential customers.

Understanding. The client ran the risk of selecting the wrong partner that may lack the deep level of understanding and expertise required by the job. They needed to engage a team with a strong understanding of mobile application development, the energy industry, smart grid initiatives, DR and the goals and functions of the proprietary Web application.

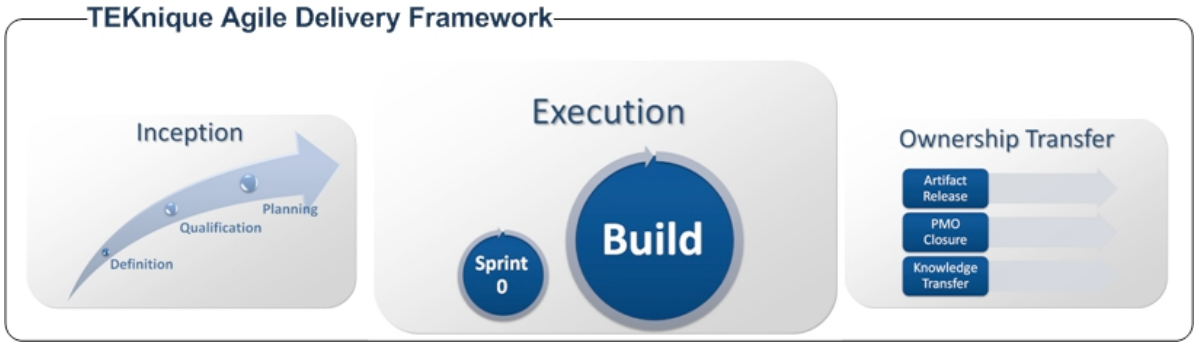
TEKsystems had enjoyed a long-standing relationship with the client and was already providing IT support center services at the time of the proprietary Web application project. Having successfully completed the Web application project, TEKsystems demonstrated its understanding of what the client wanted to accomplish with the mobile version of the application. This experience—combined with our knowledge of the client's business, our expertise in application development and mobility—made us uniquely positioned to succeed on this project and TEKsystems was awarded the engagement.

Solution

To kick off the engagement, key TEKsystems resources met with client leadership on both the IT and business sides at our Montreal Solution Centre (MSC); upfront discussions with these key stakeholders would enable us to understand core business requirements for the mobile application and map exactly where they wanted to take it. From this meeting we learned that the client had not yet established a clear vision or expectations for the mobile application and looked to TEKsystems' experience and creativity to develop an initial prototype.

Utilizing our deep technical knowledge extracted from our involvement in the rewrite of the Web application, TEKsystems was able to smoothly transition and build the team of resources over to support this mobile development project.

As with the Web application, TEKsystems proposed to build the mobile application through an Agile development process. Agile approaches work in timed cycles, or sprints, with project priorities re-evaluated and adjusted as required at the end of each cycle. This approach requires a high level of communication, collaboration and continual feedback loops with the client to complete the development tasks and deliver software that addresses business requirements.



From start to finish, a total of nearly 12 sprints were run for the mobile application. Aiming to help the client more tightly define its goal, vision and framework for the application, TEKsystems conducted demonstrations cyclically throughout the sprints. TEKsystems delivered a robust prototype of the application to the client, based on feedback and the evolving output of the sprints. The client reviewed this alpha version and ultimately revised their business requirements and general direction of the prototype.

The TEKsystems team met with the client in their Baltimore office to vet more definitive specifications for the application. The client provided mock-ups of what would become the beta version of the application. With senior leadership planning to demonstrate the mobile application to customers in approximately two months' time, it was critical that we find a way to bring the mobile application to where the client wanted it to be—all within this aggressive timeframe. TEKsystems returned to the client's offices in Baltimore just a few days later with a proposed approach and new roadmap to the finish.

To keep relevant stakeholders informed on our progress, TEKsystems held daily status calls with the client where any planned modifications were presented and the client had the opportunity to evaluate project progress, issues and any open items.

The team prepared the development environment—including Android and iOS platforms—to ensure the mobile application was being developed and tested properly as an actual mobile, not Web, application. We applied the Sencha Touch framework to the application's architecture as well as the devices and browsers the application was tested on. This framework was designed to allow developers to quickly and easily create HTML5-based mobile applications that would work consistently on the mobile device platforms defined by the client: Android and iOS. The nature of Sencha Touch allowed for writing one code, while achieving charts and graphs that did not need to be re-engineered for every device and browser. The fully functional beta version of the application was delivered for client review.

The new application offered users the ability to directly connect to their energy meter to view real-time power usage data and make energy usage decisions.

The client identified enhancements they wanted to see, defects were corrected and client validation was obtained. After four sprints (each two weeks in length), we provided the final working version of the mobile application, meeting the deadline for the scheduled customer demonstrations by senior leadership.

Throughout the program, TEKsystems carefully documented the application's architecture and communicated its' evolution to developers in order to ensure the design effectively related the application's new features. TEKsystems also made certain that the client was meeting the market requirements upheld by various applications stores as well as Google (i.e., the client had an account at Apple's App Store, a Google Account, etc.), and worked to see the application through the process of earning a spot on relevant app stores.

Results

After months of development of the initial prototype—then redesigning the entire application from scratch for a second time—the final mobile application was successfully completed on time, presented to the client on schedule and is now available at various application retail stores including Android and Apple application stores. The new application offered users the ability to directly connect to their energy meter to view real-time power usage data and make energy usage decisions. TEKsystems' mobile solution also allowed the client to provide the following benefits to its customers:

- **Functionality.** The application's dashboard and marketplace bidding platform gave customers access to real-time usage information and automated control capabilities in order to optimize their energy consumption. Initially launched for the iPhone® as an early mobile solution for commercial power users, the application is now available on other mobile platforms, providing customers with increased portability and convenience.
- **Usability and Convenience.** The application now offered end users the convenience of a mobile dashboard to track current energy usage, monitor usage trends and evaluate current market values, anytime and anywhere. This enabled customers to pinpoint opportunities for shifting operations during lower cost energy periods. The mobile application also eliminated the manual processes historically associated with participating in grid-managed DR programs. The client describes it as a "building remote control" that gives customers the ability to manage various energy activities (e.g., turn equipment on or off, adjust temperatures, etc.), all from the palm of their hand.
- **User Empowerment to Save.** As a direct result of our development of the mobile application—paired with the improvements to the Web application—the client's customers have visibility into peak pricing periods. The application provides pricing information and monitors consumption, empowering users to make smarter decisions in managing energy usage. Customers can reduce consumption during peak times, shift operations to lower-cost energy periods and bid power usage reductions directly into the markets in exchange for compensation from grid operators.

Key Success Factors

- **Deep Technical Knowledge.** TEKsystems was the client's partner of choice for the crafting of its proprietary Web application. With the knowledge acquired from this engagement, we gained an in-depth understanding of the client, the application, the technical aspects of the application and what the client sought for a mobile version. This knowledge was transferred and applied to the development of the mobile application.
- **Resilience.** The client's vision for the mobile application evolved over time. TEKsystems was resilient throughout the course of its evolution, as demonstrated by our continuous client touch points to show each iteration of the application. This provided the client the opportunity to critique and give feedback on its functionality, lending TEKsystems direction on fine-tuning the product.
- **Close Relationship with the Client.** TEKsystems kept the client constantly involved throughout this program. The client maintained a close eye on the progress of the application, providing direction on working models as well as approval on mock-ups when needed. This close relationship enabled us to rest assured that we were making the proper course corrections day-to-day and that our finished product was up to the client's expectations and fulfilled its purpose in the marketplace.

ABOUT TEKSYSTEMS®

People are at the heart of every successful business initiative. At TEKsystems, we understand people. Every year we deploy over 80,000 IT professionals at 6,000 client sites across North America, Europe and Asia. Our deep insights into IT human capital management enable us to help our clients achieve their business goals—while optimizing their IT workforce strategies. We provide IT staffing solutions, IT talent management expertise and IT services to help our clients plan, build and run their critical business initiatives. Through our range of quality-focused delivery models, we meet our clients where they are, and take them where they want to go, the way they want to get there.

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