APERO SOLUTIONS

Apero Solutions Inc. specializes in ERP software that controls business processes for wholesale distribution businesses. Built on the Progress® OpenEdge® platform, Apero's Latitude suite was in need of modernization. The character-based application was trusted and respected by users, but many of Apero's clients wanted to access it through browsers, connect it to other systems, take advantage of graphical interface features as well as link to mobile devices. Apero undertook an ambitious modernization project, making the decision to expose Latitude's core business logic as web services. Using OpenEdge Development Studio, the Apero team created Web & REST services for Latitude's business logic. Now, virtually any device, application, or user interface can easily integrate with Latitude. The modernization has produced strong results, with Apero now able to develop new Latitude features in a fraction of the time it took previously. For example, a major client connected a new web store to Latitude on the back end in 1/10th of the expected time.

UPDATING A TRUSTED ERP APPLICATION FOR THE WEB/MOBILE AGE

Three years ago, Apero Software faced an existential decision that would affect the company's growth prospects, perhaps even its survival, in future years: How should the company modernize its trusted Latitude Distribution ERP software, which had been powering the operations of global wholesale distributors for over twenty five years?

Built on the Progress OpenEdge platform and database, Latitude offers modules that contain and manage an entire wholesale business, including general ledger, receivables, payables, inventory management, purchase orders, replenishment management, inventory re-value, commission management, bill of materials and more. The character-based application is extremely reliable and trusted by its users. However, it is not able to function in a user environment that has essentially moved on to web, mobile, and other graphically-oriented interfaces. A major modernization project was mandatory. The question was how to approach such a monumental challenge.

AIMING AT MULTIPLE MOVING TARGETS

As they assessed possible paths forward in modernization, Apero's management and development teams realized that they were aiming at multiple moving targets in terms of functionality. "Our goal was to modernize the product with a new user interface (UI)," said Sophy Nathanail, CEO of Apero. "But in reality, we were trying to do much more than that. We needed to future proof our core Progress OpenEdge-based system. We only wanted to do the modernization once in this decade."

CHALLENGE

Modernize and "future proof" a character-based Progress OpenEdge wholesale distribution ERP suite to enable rapid, simple integration of core business logic with any device, application or interface.

SOLUTION

Moving the suite to service-orientation with Progress OpenEdge 11.3, exposing business logic as REST services.

BENEFIT

Customers now enjoy a graphically rich user experience; Connectivity with virtually any other device or software; development cycles for new modules and custom integrations sped up from 6X to 10X.

✳ PROGRESS

Apero carefully thought through its requirements for modernization, collaborating closely in the process with advisors from Progress. The new application had to be available in both a character-based UI (CHUI) to satisfy the existing user based and graphical, browser-based UI (GUI) for new and more exacting users. Mobile editions of the application would also have to be relatively simple to develop. The application had to integrate easily with third party applications, such as customer relationship management (CRM) systems and data warehouses. In the near future, Apero hoped to release a Software-as-a-Service version of its applications. All of these requirements were based on technologies that were rapidly evolving. Future-proofing Apero meant establishing an architecture that would be adaptable to unforeseen developments in the IT industry.

LEVERAGING SERVICE-ORIENTATION AS A SOLUTION

Based on guidance from Progress, Apero decided to approach modernization of Latitude using service-orientation as its main design principle. The earlier versions of Progress OpenEdge used to build the original Apero software had placed some of the application's business logic in the user interface. When assessing how to make the application work with any number of new interfaces, this approach became untenable. Apero had to separate its business logic from the presentation layer.

"We had always had a development platform called Workbook," said Oscar Perez, Lead Developer for Apero. "We tried to keep our business logic and UI more or less separated in the Workbook framework. That way business logic could be maintained in one place and potentially reused from different applications. This didn't always work, but it was an excellent start towards exposing the business logic as web services."

Perez's team decided to upgrade to Progress OpenEdge 11.3 and use the OpenEdge application server to expose the existing business logic as REST web services. The goal was to retain as much of the existing business logic code as possible, because it had been debugged, tested, and proven in production for many years. It would be wasteful and risky to recreate logic unless absolutely necessary. However, the process did ultimately involve a fair amount of re-engineering, replacing the code that had been embedded in the UI and moving the logic into services that could be called from any client or interface. The team "wrapped" business rules as new object classes using the newest version of OpenEdge Development Studio, which has enhanced ability to debug app server calls.

Perez added, "As part of our modernization project, we also wanted to explore possible applications in the mobile world. To do this, we started working with the Progress OpenEdge Mobile development environment. We were amazed at how quickly we were able to create a product catalog Mobile App that could be run on either Android or IOS. Regardless of operating system, the apps could call the same REST services that we initially designed to be called from our Rich Web User Interface. Progress's OE Mobile UI development 'everything-in-the-box' feature played a significant role in the ease and speed of building what became our SalesXpress Mobile APP delivery."

As Apero exposed its business logic as REST web services on the back end, they realized the goal of a seamless, intuitive user experience in a browser with a lightweight C# component built using Microsoft VisualStudio.Net. This enabled the application to render easily in hybrid mode, with the browser making back end calls from both the CHUI and GUI as needed. The browser version of the application uses the Sencha EXT JS framework for JavaScript. Perez's team opted to use Sencha rather than JQuery, which is typically employed with OpenEdge.

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CEO
Apero Solutions

ACHIEVING IMMEDIATE SUCCESS

The modernization mission has taken time and is an ongoing project, but once it launched, the benefits were immediately visible. Perez's team was able to build a mobile app called SalesXpress, which enabled sales people on the road to access the Latitude suite for order entry, status checks, and so forth. Using Progress OpenEdge Mobility, the app calls the REST services on the back end. These services had already been set up for use in Web Store and in the rich UI web interface for connectivity. With the new service-oriented approach, Apero was able to develop SalesXpress in about 1/6th the time it would have taken to code it in the earlier version of OpenEdge.

Apero users are now benefiting from the new Apero application. The company's biggest customer, the Florida-based electronics distributor Intcomex, had been a major driver of the modernization program. Select Intcomex user groups are now able to access the graphically rich web interface. Over the next few months, the browser based environment will be expanded to full company operations allowing users a richer experience with features such as incorporate product photos, performance charts and custom graphics.

Another large Apero customer, a hydraulic supplier in Miami, wanted to integrate their Latitude ERP system to a new Web store. They wanted the product information and order processing functionality they relied on in Apero available in this new, third party e-commerce suite. With the service-oriented design in effect, Apero was able to provision access to back-end services and make it possible to connect the ERP to the Web Store in about 1/10th the time and expense that might have been necessary without these published services. Ordinarily, this would have been a multi-month project. With some minor tweaks, it was relatively simple to get the web store to call on Apero's REST services.

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>
> *Oscar Perez*
> *Lead Developer*
> *Apero Solutions*

ABOUT APERO SOLUTIONS

Apero Solutions Inc. is a dynamic company specializing in business and technology solutions for the hard goods distribution industry. We are committed to our products which provide you with integrated solutions designed to fit the ever changing needs of the wholesale distributor. Apero strives to deliver what customers expect from technology. We partner with our clients in determining and advising the most effective setup for our Latitude ERP software, RF warehouse, web and mobility solutions that will ultimately deliver a fully integrated business package. www.aperosolutions.com

PROGRESS SOFTWARE

Progress Software Corporation [NASDAQ: PRGS] is a global software company that simplifies the development, deployment and management of business applications on-premise or in the cloud, on any platform or device, to any data source, with enhanced performance, minimal IT complexity and low total cost of ownership.

WORLDWIDE HEADQUARTERS

Progress Software Corporation, 14 Oak Park, Bedford, MA 01730 USA Tel: +1 781 280-4000 Fax: +1 781 280-4095 On the Web at: www.progress.com

Find us on facebook.com/progresssw twitter.com/progresssw youtube.com/progresssw

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