LANSA®
Advanced Software Made Simple

ISSUE 43

Review

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Software-as-a-Service • Modernization • Mobile Technology

Getting SaaS ready is easy for some

Kawasaki's assembly staff goes Mobile

RORC scores 3 out of 3: Good, Fast & Affordable

Mincron's modernized ERP system generates new sales

Bemis' agile IT team scores one success after another

Macmillan shortens integration projects by a factor of six

ZON fruit & vegetables raises the bar for GS1 compliance

How to justify IT projects to your CFO

CONTENTS

THE LANSA REVIEW
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LANSA®
ADVANCED SOFTWARE MADE SIMPLE

In this issue:
Modernization, SaaS and Mobile

A WORD FROM PETE DRANEY
Symposiarch

Welcome to LANSA Review issue 43. The contents of this edition are truly reflective of the very broad spectrum of solutions that LANSA successfully delivers to its customers.

For software developers like the folks in the R&D teams at LANSA, there is nothing more gratifying than to have customers that are willing to go on the public record to testify that LANSA's software has hit the sweet spot for which it was intended.

Windows-based POS/Retail system

RORC President and CEO, Joe Jurich delivers the ultimate accolade for our core Visual LANSA product: "There is an old adage, that when building systems three factors are always desired: Good, Fast and Cheap. In reality, you can pick two knowing that the third is the trade-off. For instance, it may be good and fast, but it won't be cheap. Or, fast and cheap, but it won't be any good. With LANSA, we achieved all three. The deliverables are very good. They were built much faster than we could have built them in any other language. And the end result was significantly cheaper than it would have cost using other methods." Video clip with Joe Jurich at http://www.lansa.com/casestudies/rorc.htm.

Mobile on the Assembly Floor

Kawasaki Motors Manufacturing Corp. (U.S.A) Information Systems Supervisor, Jay Kamradt, salutes LANSA's new flagship mobile product, LongRange: "Our developers found LongRange easy to learn and development was fast. We got our first series of apps out in just 2 months, including installing, going through the tutorials, development, testing and implementation. The experience of users on the floor is that the LongRange developed apps are intuitive, reliable and stable. We haven't had any issues or a need to revisit code. The apps are now a crucial part of our new procedures. and we cannot run the assembly plant without them."

From Six Months to One Month

MacMillan Publishers Australia's Application Software Manager, Angela Scully, continues with her high praise for LANSA's Business Process Integration solution : "With LANSA Composer we had our return on investment well within the first year. It has given us the ability to create efficiencies in processes that were previously too hard or expensive to streamline. Projects that used to take six months now only take one month. Wherever we have time consuming manual activity, or wherever we have an IBM i related data collection process that runs needlessly on Windows, I see a potential LANSA Composer project."

A few more words about LongRange

And, speaking about LongRange, perhaps I should add a few more words about our new mobile development tool. Those of you who are users of Visual LANSA will no doubt agree with Joe Jurich's comments above. But we have not yet been able to successfully convert every RPG developer into a LANSA developer.

So, with the mobile computing wave becoming a tsunami, we decided to develop a version of LongRange for the RPG fraternity, so that they can continue with RPG (and COBOL) and still get the benefits of LANSA making mobile software simple. Of course, LongRange also allows LANSA developers to build native mobile apps, but now RPG/COBOL programmers have access to the same LongRange toolset as well. So, what exactly is LongRange?

- It's a development tool that enables you to build mobile business solutions that run natively on iOS and Android devices. Not Web/browser based solutions, but native apps.
- It quarantines you from having to worry about changes to operating systems, screen sizes and orientation, and device specific features. LongRange handles all of this automatically.
- It's a development tool focused entirely on IBM i developers. It uses your current RPG (COBOL) and DDS skills. It does NOT require you to learn additional (and possibly unachievable) skills like HTML5, CSS3, PHP, JavaScript, Java or Objective-C.
- It enables your app to use all the device-side features of the mobile device (e.g. barcode scanning, signature capture, geolocation).
- It enables you to write an app once and to run the app on multiple mobile platforms. So maintenance is much less expensive.

Announcing:

LongRange, LANSA Commerce Edition Mobile and LANSA Data Quality Inspector

LANSA announces three new and innovative products, all three based on mobile technology.

LongRange is a mobile application development tool that enables IBM i developers to use their existing RPG, COBOL or LANSA skills to build and maintain stylish, hi-performance mobile business solutions for native deployment on Apple and Android devices. With LongRange, IBM i programs have access to mobile device facilities, allowing developers to incorporate features such as signature capture, barcode scanning, audio/video, and geo-location into their mobile business solutions.

A LongRange app is a native app but it does not come with the usual disadvantages associated with native apps. With LongRange you don't have to re-publish an app every time the business logic changes; you don't have to develop a separate version for each device type; you don't have to learn Java, Objective-C or other new development skills.

Deployment is by downloading the LongRange app from an app store and configuring communications with your IBM i server. Updating mobile apps is the same as updating any IBM i program. Once updates are applied to your IBM i production system, they are instantly available to users of the LongRange mobile app, without them having to download or update anything on the mobile device..

For companies utilizing IBM i technology in their operations, LongRange will significantly shorten the time-to-market and noticeably lower the total-cost-of-ownership of their mobile solutions. For LANSA developers, there is a version of LongRange which is not restricted to IBM i.

LongRange is explained in more depth in the Architects Corner on page 22.

LANSA Commerce Edition Mobile is a native mobile eCommerce application for the IBM i. LANSA Commerce Edition Mobile is developed using LongRange and it capitalizes on LANSA's well established Commerce Edition solution.

Over 10 years ago, LANSA found itself coding custom eCommerce Websites over and over again, for an array of industries, even though the functionality of each site was basically the same. This led to LANSA's R&D team applying its experience to build LANSA Commerce Edition, a turnkey eCommerce solution constructed on a suite of prebuilt B2B and B2C components, designed to integrate and extend information in back office ERPs to a desktop browser.

If you are not familiar with LANSA Commerce Edition, it's all explained at www.lansa.com/products/b2c-b2b-ecommerce.htm

Fast forward to 2012 and we noticed a similar trend, but this time in mobile eCommerce. This was the catalyst for LANSA to develop Commerce Edition Mobile – a native Apple or Android app that shares all of the same proven backend componentry as LANSA Commerce Edition.

Commerce Edition Mobile has been designed to integrate with JD Edwards, Infor ERP LX, XA, System21 and other ERP systems to support customers, remote sales forces and other roles.

Features included are Product Catalog, Personal Catalog, Order Templates, Signature Template, Shipment Tracking, Invoice Payments, Freight calculator and generation of PDF Catalogs.

The solution comes with all the source code, allowing IBM i developers to customize the application and quickly roll out native apps for mobile eCommerce.

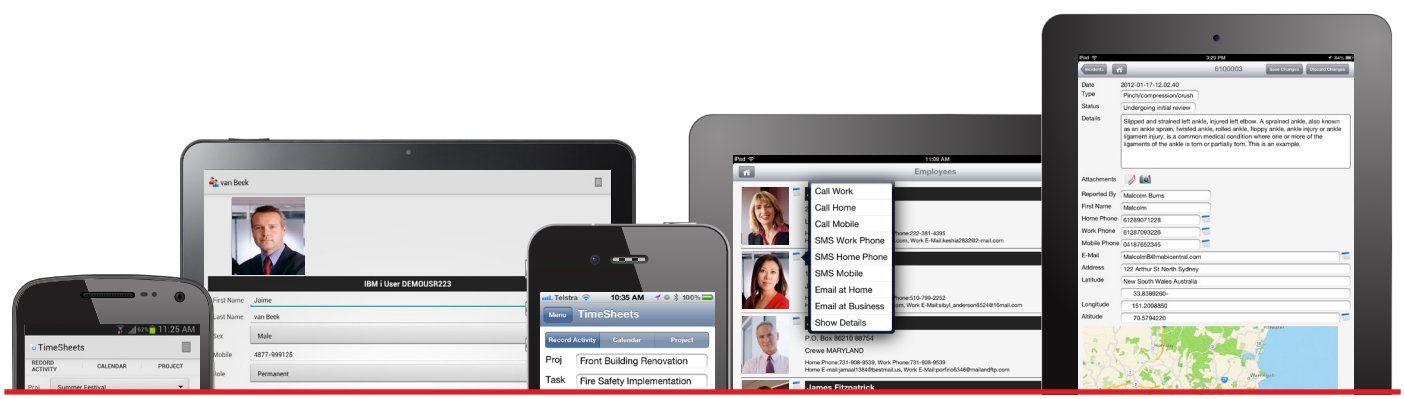
LANSA Data Quality (DQ) Inspector is a FREE mobile app for conducting physical product inspections. Data quality is a top priority for organizations in the supply-chain and getting it right first time delivers cost benefits throughout the entire process.

DQ Inspector is a data capture app, built for iPhone, iPad and iPad Mini devices. It fully supports GS1 and GDSN standards, a key component of which is the validation of inspected items against GS1 Data Quality Framework (DQF) measurement tolerances associated to packaging types. It is the first of its kind and revolutionizes the product inspection procedure as performed in conjunction with the GS1 DQF.

The solution increases data quality by automating the capture of physical attributes and compiling comparative inspection results that can be used for data quality reporting. Using wireless devices for barcode scanning, weight recording and dimensions capture that connect directly with DQ Inspector via Bluetooth, users can record product attributes without hand-keying data. Manual input is possible as well.

DQ Inspector is a native iOS app that operates in both a networked and offline environment. It has an embedded file management and communications system that allows users to import product inspection sets in a variety of formats, including MS Excel, from either a server or from email attachments. The user can perform an inspection against that data and return the results file via the same route.

This data can be consumed by a Product Information Management (PIM) system, an ERP solution or a Business Intelligence tool to initiate workflow activities and generate GS1 compliant data quality reports following the principals defined in the GS1 DQF.



Kawasaki's assembly staff goes Mobile

Kawasaki
Let the good times roll.

Kawasaki Motors Manufacturing Corp., U.S.A.'s consumer products division in Lincoln, Nebraska (KMM), has replaced its card-based Kanban system with an electronic solution. The new eKanban solution was developed by KMM's in-house development team and integrates with KMM's IBM i-based ERP system. Assembly and warehouse staff access the solution from iPads with native mobile apps developed with LongRange from LANSA, a mobile app toolkit for IBM i developers. Staff on the floor also use the mobile apps for cycle counting, and other warehouse and assembly related tasks.

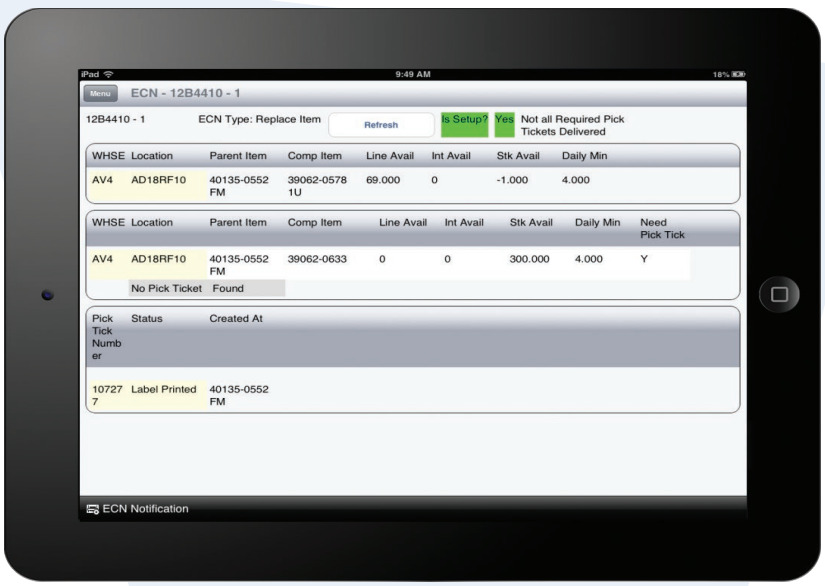
Jay Kamradt, Information Systems Supervisor at KMM, says "The solution is saving over US$ 3,500 per day and we expect very quick ROI. Our developers are very experienced at enhancing the functionality of our ERP system, which was the largest part of this project. Initially we didn't think we had the skills to develop the native mobile apps ourselves, as LongRange only became available towards the end of our project. The mobile apps were developed by 3 of our IBM i developers. We launched our first series of apps within 2 months of going through the LongRange tutorials."

The Challenge

KMM manufactures All-Terrain Vehicles (ATV), Personal Watercrafts (Jet Ski®), Utility Vehicles (Mule™), Recreational Utility Vehicles (RUV - Teryx™) and wheels for ATVs and utility vehicles. These products are shipped throughout North America and exported to Japan, Europe, Australia, New Zealand and to other locations around the world.

KMM operates on a 'just-in-time' basis to eliminate expensive warehousing. In this lean manufacturing environment, Kanban is used to signal the need to move parts from the warehouse to the production floor.

Traditionally Kanban is implemented using cards that are attached to a parts box. When a box at the assembly line becomes empty, it is returned to the factory store with the Kanban card still attched. The factory store then replaces the empty box at the assembly line with a full box and contacts the supplier to replenish the amount of parts mentioned on the returned Kanban card. When the supplier's order is delivered into the factory store, the Kanban card is attached to the box, completing the cycle. The process is meant to provide the exact number of parts required, with just a small buffer of spares.



The mobile apps play a key role to record and track inventory on the assembly lines.

Until recently, KMM used a manual Kanban card system at its 4 assembly lines. KMM uses up to 4,500 Kanban cards per day and the labor costs of staff handling those cards was estimated to be $3,000 per day.

There were other inefficiencies to the manual card system as well, according to Kamradt. "Cards could get lost, resulting in late delivery of parts. Also, there was no way of stopping staff from turning in Kanban cards early. Workers were sometimes hoarding 3 to 4 days of inventory at the assembly line, when they only needed a buffer of 4 hours."

"The solution is saving over US$3,500 per day and we expect very quick ROI."

"We have the in-house experience to customize our ERP solution, but we didn't think we had the skills to develop native mobile apps ourselves. The project was well underway when LANSA made its LongRange mobile development tool available and we were keen to get on the beta program."

eKanban Efficiencies

With some guidance from a LANSA professional services consultant, KMM developed its first LongRange mobile app. The app allows the assembly inventory specialists, nick named parts-police, to scan-in or enter deliveries of parts at their assembly line and to monitor the balance of parts. When the assembly of a certain unit starts, the ERP system is notified and it allocates the parts needed. Since it is now recorded exactly how many parts are kept at each assembly line, the allocation will automatically trigger a pick transaction when the inventory of a part at a line falls below a specified minimum.

Kamradt explains, "Previously once parts left the warehouse, we didn't have any means to record where on the assembly floor they went or how many were accumulating there. Now we have an accurate real-time recording of parts, whether in the warehouse or on the assembly floor."

"Having the mobile app allows for total accuracy. We now keep only 4 hours worth of parts on the floor and for bulk items even less. In addition, we now have a better and safer work environment. In the past the assembly

lines could become a safety hazard cluttered with boxes and parts. The freed-up space also allows for more flexibility, opening up the possibility to produce additional models on an assembly line."

"When we started the project we did an ROI analysis. We use up to 4,500 cards each day and 8 to 10 people would get involved in each kanban cycle. Based on the card being handled on a average 10 seconds each time and average wages being $30 per hour, we estimate to save $3,000 per day, or $747,000 per year, in labor costs directly related to staff not having to handle the manual kanban cards."

KMM expects to save another $190 per day, or $47,500 per year, because there is no need any more for someone to walk around cutting a slit into each box and inserting a card. Now barcoded labels are printed and affixed to the box. Other estimated savings include reduced labor for analyzing part shortages 5 hours per day and for running hot parts 16 hours per day, adding up to more than $155,000 per year.

"We believe our ROI on eKanban is going to be very short, less than six months," says Kamradt.

More apps and more savings

The LongRange tutorials, together with their first working app as a best practice example, provided enough training for KMM's developers to start on their next mobile project.. A team of 3 IBM i developers built 5 more apps. All the apps are native, touch-enabled with dropdown lists, check boxes, buttons to start the scanner, and so on. The apps were implemented at the first assembly line 2 months into the project and soon after at the other lines..

An app for scrap reporting allows assembly supervisors to scan in scrap items throughout the day and, where needed, enter comments. Previously they would compile a handwritten list at the end of the day of the items they found in the scrap bin. Then a clerk at the quality control department would spend most of a day rekeying the lists from all 4 lines.

"Automating the process using mobile technology saves our quality department a lot of time and makes the information that we track far more accurate," says Kamradt.

An app for cycle counting allows workers to adjust the inventory while on the floor and generate a pick ticket if needed. Another app allows workers to record the moving of inventory within the warehouse. Previously these movements were simply not recorded, because there was no workstation on the floor. Workers would lose time trying to locate misplaced inventory. Now the recording of inventory is far more accurate.

An app for online/offline reporting lets the assembly line supervisor scan when an assembled unit needs to be pulled off the line for repair and enter the reason. "In the past those units would just sit next to the assembly line and it was unclear when they got there or why. The real-time recording results in better quality control," says Kamradt.

Jay Kamradt, Information Systems Supervisor at KMM, next to an assembly inventory specialist using her iPad with the LongRange developed apps.

"Users on the floor find the LongRange developed apps intuitive, reliable and stable."

An app for engineering change notifications (ECNs) allows for the real-time recording of when a changed bill-of-materials comes into effect. "If anything comes up from a quality standpoint, we now know exactly which VINs (Vehicle Identification Numbers) are affected," says Kamradt.

Conclusion

Paul Kramer, Assistant Manager Information Systems, explains "Using in-house skills, we initially thought our only choice was going to be mobile Web apps, but that would have made it more difficult to use an external scanner and would also be less user friendly. Mobile access is only part of the eKanban puzzle, but it is a very visible and essential part. With LongRange we were able to handle the entire project ourselves, including mobile access."

"Our developers found LongRange easy to learn and development was fast. We got our first series of apps out in just 2 months, including installing, going through the tutorials, development, testing and implementation," says Kamradt.

"As far as the users on the floor, their experience is that the LongRange developed apps are intuitive, reliable and stable. We haven't had any issues or a need to revisit code. We developed the apps, they are in production and they have been running fine. The apps are now a crucial part of our new procedures and we cannot run the assembly plant without them."

"Over the years we dedicated a lot of IT resources to make things better for the office workers. The production area is where we make our money and we decided that it's time to start improving their processes. What we have done today is just the beginning," concludes Kamradt..

"My advice to other IBM i shops is to jump in with both feet to provide users with mobile apps. It won't take you long to realize the benefits." ■

Snapshot

Customer: Kawasaki Motors Manufacturing Corp, USA Consumer Products (KMM). www.kawasaki.com

Challenge: As part of an eKanban system, KMM needed to develop a series of mobile apps running on iPads that could integrate with the corporate ERP system and access an external scanner.

Solution: Use own in-house development team and existing skill-set to develop native apps with LongRange.

Key Benefits: Savings of $3,500 per day in labor, safer and uncluttered assembly lines.

Product Used: LongRange.

RORC scores 3 out of 3: Good, Fast & Affordable

Having been hindered over the years by having to revisit perfectly good business logic every time there was a major upgrade in the operating system, the database or development language, RORC (Retailed Owned Research Company) decided to redevelop its 15 year old Visual Basic-based retail system from the ground up with a development environment that would shield it from forced code revisions and having to maintain multiple versions.

RORC selected Visual LANSA and is now very successfully rolling out its new single-source Point-of-Sale and back office solution to over 700 retail locations across the USA, who have a mixture of Windows operating systems.

The Challenge

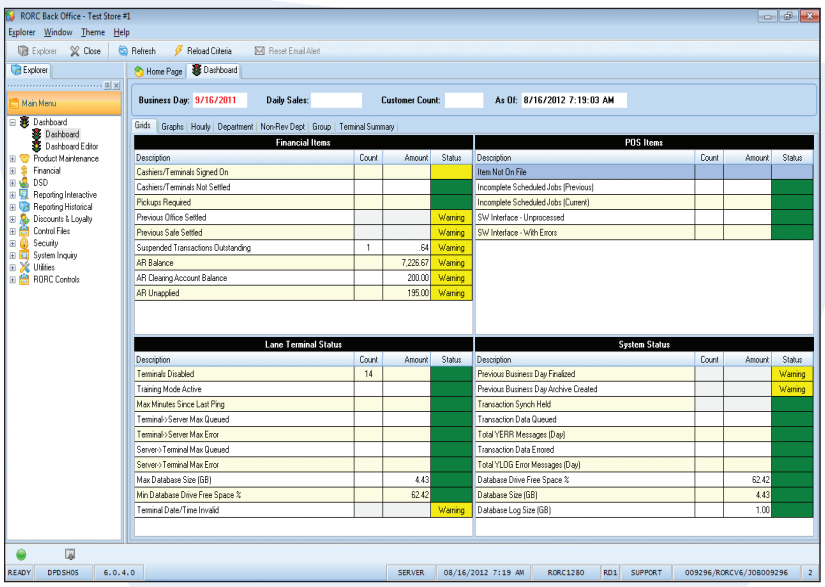
RORC is a co-operative, jointly owned by three wholesale distribution center co-ops, which translate their retailers' service needs into new product requirements and fund RORC's work to build solutions for their member retailers. Joe Jurich, President and CEO at RORC, refers to RORC's organizational structure as a co-op of co-ops.

RORC was established in 1985. In the early eighties the retail industry had started to move away from mechanical cash registers towards electronic systems that could scan goods at the checkout. "If a retailer wasn't scanning, the customer looked at them as if they were old fashioned. At that time there were only a few big name players in the retail automation market, charging over US$10,000 per lane to install a POS scanning system. While large retail chains could afford such an investment, those costs were usually prohibitive for independent retailers", explains Jurich.

In 1985, a group of wholesalers wanted to do something to help their retailers with in-store systems and subsequently founded RORC. RORC started with a back office price management system, which it named StoreWin. After that RORC developed viPOS, a simple POS scanning system that could run on a low-end PC. Based on input from its member retailers, both the back office and POS system evolved over the years.

"For significantly less cost per lane, our retailers could install scanning. The bulk of the cost was for hardware." says Jurich. "Historically we developed in VB (Visual Basic) with an MS Access database. Our solution had been doing well for 15 years, but its user interface needed updating, the configuration options were not flexible enough and MS Access was stretched to do things it was never intended to do."

RORC investigated whether there were any suitable packaged retail automation solutions available, but found that, after 15 years, they were still too expensive for its retailers. Moreover, a lot of the functionality of the packaged solutions was geared towards chain operators, with features that independent retailers could not use. RORC decided to redevelop its solution from scratch and started researching development environments.



The dashboard provides a status overview of financial items, POS items, lane terminals and the system.

> **"Being able to port to another platform is great for any solution provider."**

Development Environment Options

"We were looking at moving to .NET, but found it was not going to eliminate a major VB problem: Code stability."

"Over the years, every time Microsoft reinvented VB or Access, which on the average is every three years, we found ourselves working countless hours rebuilding perfectly good business code, because the current version of the source was incompatible with the new IDE, database or OS," says Jurich. "We were spending a lot of time and resources, without any new functionality to show for it."

Jurich researched a number of other development options and found out about LANSA. "What we liked about LANSA was that it would take care of the low level plumbing code and that it would insulate our business logic from operating system and database incompatibilities. We could write the business logic once and - down the road if we wanted to - port it to another database or even to another operating system. And we could do all that maintaining a single set of source code, which is great for any solution provider. We also liked LANSA's Framework and 4GL productivity, because we were on a tight timeline to develop a new solution quickly," Jurich says.

Because RORC's solution needs to work with a lot of devices, such as scanner scales, cash drawers and receipt printers, an intensive proof of concept was needed. After some small adjustments were made to speed up the communication with those devices, LANSA passed the test. ➔

The Project and Solution

A project team was put together consisting of three business analysts (one from each wholesaler), four developers (existing VB programmers and college recruits) and a mentor from LANSA Professional Services.

RORC's retailers range in size from small 'mom and pop' stores with just one or two checkout lanes, to stores with over 30 lanes. The requirements of the small retailers differ enormously from the larger stores. In addition, the three wholesale co-operatives each have their own standards and procedures. RORC's solution therefore needed to be very flexible.

The analysts took the existing system and dissected it completely. They then categorized features as 'what retailers liked about the current product', 'what they hated' and 'what needed to be fixed or added'. With that input, a new system was designed from the ground up.

After 30 months, which included requirement analysis, system design, development and testing, the bulk of the solution was ready for a pilot implementation at the first retailer. "This implementation went very well, with only minor issues. The second site went live soon after, without any technical problems," says Jurich.

For those not familiar with grocery retail automation, functionality is quite complex. The back office system provides price management, inventory management & replenishment and sales statistics. It keeps a balance of cash 'on the floor' (at the cashiers), in physical safes and for back office operations. Productivity reporting is elaborate and includes detailed statistics on how many items each cashier processes per minute, how much time is spent on giving change, and so on.

The POS system handles a variety of electronic devices and integrates with third party applications, such as frequent shopper programs, couponing and store security applications. When interfaced to a loyalty or e-coupon application, the solution sends information and receives instructions ranging from receipt messages to special prices. All that has to occur very fast. "When you scan an item, you have less than a second to display the correct price," explains Jurich.

Stable, Functional and Productive

"So far, 20 stores have implemented the new system and the feedback has been very positive, The main benefits for the retailer are the stability of the new system, new functionality and a productive modern user interface."

"Both the back-office and POS system are developed with LANSA and use SQL Anywhere as the database. Retailers can power off the backend server or a POS client in the middle of the day inadvertently, then turn it back on and everything recovers. Commitment control

RORC president and CEO Joe Jurich (left) and AWI VP of IS Glenn Kriczky (right) with Foodland owner Ron Monahan and his RORC system.

"The POS system integrates with a variety of electronic devices and with third party applications."

is a huge positive in the new design," continues Jurich.

"It is a fairly complex application, with lots of functionality and implementation options, but at the same time it is also very intuitive. Training is straightforward and takes about 20 minutes for a cashier, and another 20 minutes for the store manager."

"From an IT point of view, the LANSA-developed solution is far simpler to manage than the VB solution. The code is object-oriented now, which makes it easy to maintain. By insulating us from having to worry about underlying version incompatibilities in the operating system or database, we saved both time and removed a prior headache – code instability," Jurich says.

One of the biggest benefits comes from the system being data driven, rather than hard coded. This allowed RORC to provide a custom look and feel within the same application, by only displaying those fields and options that are enabled for a specific user.

Three out of Three

"The user interface has been drastically updated, processes simplified, and user configurable flexibility has been added throughout the system. We refer to the system as designed for independent retailers, by independent retailers," says Jurich. "It allows an independent retailer to implement a system that rivals, and in some cases surpasses, the functionality used by the chains, but at a much smaller cost."

"Having highly capable business analysts involved really enhanced our ability to deliver a great system in a timely manner," concludes Jurich.

"There is an old adage, that when building systems three factors are always desired: Good, Fast and Cheap. In reality, you can pick two knowing that the third is the trade-off. For instance, it may be good and fast, but it won't be cheap. Or, fast and cheap, but it won't be any good. With LANSA, we achieved all three. The deliverables are very good. They were built much faster than we could have built them in any other language. And the end result was significantly cheaper than it would have cost using other methods." ■

Snapshot

Customer: RORC (Retailed Owned Research Company) is a cooperative that builds retail automation systems for its member retailers. www.rorc.com

Challenge: Lack of user configurable flexibility and code instability due to underlying version incompatibilities.

Solution: Redevelop from scratch a Visual Basic based system with Visual LANSA.

Key Benefits: One set of source code for a solution that is highly configurable, deployed by over 700 retailers that run a mixture of Windows operating systems.

Product Used: Visual LANSA.

Macmillan shortens integration projects by a factor of six

Macmillan

Business processes that include multiple data formats and platforms can be complex and convoluted. Trying to streamline and automate these processes may require the skills of more than one person, making the project more time consuming and expensive than needed. As each person stays within the boundaries of their expertise and platform, the resulting 'integration solution' is often far from integrated, with numerous temporary files and multiple points of potential failure.

Macmillan Publishers Australia recognized this issue and is now using LANSA Composer to handle its business process integration projects. By centralizing the transformation and transportation of data and the orchestration of the involved processes, projects can now be realized by a single IT team member. This has shortened the average project by a factor of six and made the delivered solutions simpler with less opportunity for failure.

Semi-automated and Convoluted

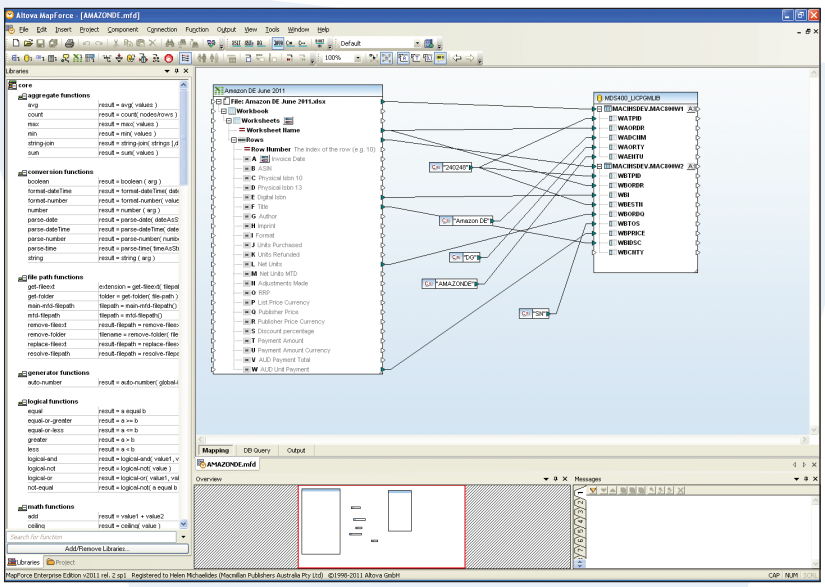
Macmillan Publishers Australia is part of the global Macmillan Group, one of the largest international publishing houses in the world, well known for its high quality academic and professional, educational, fiction and non-fiction publications. Macmillan Education, Nature, Palgrave Macmillan, Pan and Picador are powerful brands, established in over 70 countries. In Australia, Macmillan's Macquarie Dictionary brand is of iconic status.

Macmillan Publishers Australia (referred to as Macmillan hereafter) employs 300 staff at its head office and main warehouse in Melbourne and at its sales offices across the region. Macmillan's main focus is to publish local material and to distribute overseas publications to the Australian and New Zealand markets.

Macmillan's core distribution system is a customized version of IBS Bookmaster, an IBM i-based ERP solution for the publishing industry. In addition Macmillan offers a number of services that are Windows-based, such as the individual Web sites for each of its brands/ customer groups, through which a growing number of orders arrive.

Book stores use a mixture of EDI, Web, fax, phone and email orders, while sales reps may still collect the occassional paper order, especially when visiting schools.

EDI orders go straight to Macmillan's IBM i, but Web orders are captured on Windows servers. Macmillan faced the same issue as many other companies, which is: How to find efficient, automated, streamlined ways to get data from one source or platform into another?



Using LANSA Composer, Macmillan mapped data to existing file formats, so nothing had to be changed in the core Bookmaster system.

Before Macmillan implemented LANSA Composer, the company's Windows programmer would need to develop a program to extract orders in XML format from a specific Web site and store them on an FTP server. Another Windows program would pick up the XML orders and transfer them to a text file format. Then those text files would be copied to the IBM i, where the RPG programmer had to create a program to convert them to an EDI format that Bookmaster can handle.

Angela Scully, Application Software Manager at Macmillan, explains, "It was semi-automated and a quite convoluted multi-step way of transferring data. Also, it was an expensive way, because two resources needed to get involved, collaborate on functional and technical issues and schedule project time next to their daily tasks. This made projects far more time consuming then they should have been."

"I can comfortably say that we had our return on investment well within the first year."

"Our Windows guy is primarily a Web developer, with little interest in IBM i database systems, so he should not need to get involved all the time. I was looking for a way to up-skill our IBM i developer and provide her with the tools to automate the process of transforming data to and from various Windows servers."

Macmillan briefly explored enterprise service bus (ESB) solutions, but found them too complex and expensive. Around that time, Scully was invited by LANSA to a Business Process Integration workshop, which she attended. "I was impressed by how many different integration problems, data manipulations and point-to-point file transfers LANSA Composer could handle. I also liked that you don't need programming skills to use it. The investment was very reasonable and we went ahead with the purchase fairly quickly," Scully said.

Two platforms - One Resource

Macmillan's RPG programmer, who didn't have any experience beyond developing 5250 style applications, was able, after a short training course in LANSA Composer, to put together a streamlined and automated solution to collect XML orders from the Windows FTP site, map and transform the orders to EDI files, kick off an

RPG program to make some refinements and process the orders into the IBM i ERP system.

"This was her first LANSA Composer project and it took her one month in elapsed time, next to her normal day-to-day tasks," says Scully. "Several similar projects followed and those took only a few days."

A second project was to automate the data entry and processing of the monthly sales reports that Amazon.com and other eBook resellers send. These resellers supply their sales reports in different spreadsheet formats, each of them now having their own automated transformation process. Previously these spreadsheets were manually rekeyed, which took at least two days each month, with often a third day for double checking the results.

"Now it's done in under an hour and well before the financial month cut off. The process is straightforward and the data gets uploaded 100% error free all of the time," says Scully. "This project provided immediate payback."

In both projects, data was mapped to existing file formats. Nothing had to be changed in Bookmaster or at the data source. "We're not re-inventing processes, we're just automating them and making them more efficient," says Scully.

The next project Macmillan is looking at doing is to automate the processing of email orders generated by one of its low volume Web sites. The orders, currently entered manually, are in a prescriptive format, so transformation will be easy. Another candidate is to generate individual orders for combined export orders that are shipped directly from the printer.

In addition to automating inbound data flows, Scully sees opportunities for outbound data automation, such as supplying ONIX data. ONIX is an industry standard for storing and for sharing title information between publishers, distributors and booksellers. It contains bibliographic, pricing and other product information, and needs to be supplied in XML format. Scully plans to create and transmit the XML data directly from the IBM i, even automating the process to pull in some of the required data from a Windows SQL database.

Single Point of Control

"Our RPG developer has always been highly professional and productive, but she just didn't have the tools or skills to work with Windows processes and files," says Scully. "LANSA Composer has harnessed that productivity and has expanded it outside the IBM i. It has empowered her to handle integration projects that include multiple platforms and database formats, on her own."

Scully feels that one of the major productivity gains is due to the fact that LANSA Composer requires business analysis skills, rather than developer skills. "That level of expertise really shortens the communication leg and makes it a very productive environment," she says.

Macmillan Publishers Australia employs 300 staff at its head office and main warehouse in Melbourne and at its sales offices across the region.

"LANSA Composer has enabled us to maximize and extend the capabilities of our small team."

"Previously, integration projects used to take two developers several months. Now our RPG developer can produce a working model for a brand new integration project in a matters of days. All you're doing is data mapping, adding some business logic and setting up some process orchestration. Transformations that are similar in nature to a previous project take less than a day. "

Macmillan has a very small IT department and wants to keep it that way. "LANSA Composer has enabled us to maximize and extend the capabilities of our small team. It's almost like having an extra resource," Scully says.

It is not just Composer's productivity that Scully values, it is also the quality and simplicity of the integration solutions it has helped to create. "We have essentially eliminated the Windows platform as a sandpit, eliminated the need for Windows-based interim data storage and eliminated multiple points of failure. We have shortened the end-to-end process and made it simpler, with less opportunity for failure."

Scully continues. "From a single point of control we can now monitor the entire process. In the past, it was hard to track down where things had gone wrong. It would require the attention of both our RPG and Windows developer to solve a single process problem."

Raised level of Expectation

"LANSA Composer has been a worthwhile investment. It has given us the ability to create efficiencies in processes that were previously too hard or expensive to streamline," says Scully. "It has been very enabling. I can comfortably say that we had our return on investment well within the first year."

"Projects that used to take six months now only take one month. I can already notice a raised level of expectation with our users," concludes Scully.

"Now I'm looking for more integration opportunities in the business and I can see plenty. Wherever we have manual data entry or other time consuming manual activity, or wherever we have an IBM i related data collection process that runs needlessly on Windows, I see a potential LANSA Composer project." ■

Snapshot

Customer: Macmillan Publishers Australia. www.macmillan.com.au

Challenge: It always required two developers to streamline business processes that include both the IBM i and Windows platforms.

Solution: Provide the IBM i developer with the tools to automate the process of transforming data to and from various Windows servers.

Key Benefits: Average integration project time reduced by a factor of six.

Product Used: LANSA Composer..

How to justify IT projects to your CFO

Steve Collins
LANSA North America

This article is based on a series of 3 blog articles titled "How to justify Application Modernization to your CFO". Very similar cost/benefit justification principles apply to other IT projects, such as supporting users with mobile technology, extending your system to the Web, process automation, and so on. But you could of course argue these are all variations of modernization projects, so the original blog title covers it all.

Step 1. Find the Right Initiative

Become proactive and set up regular brainstorming meetings with business users. Brainstorm from several perspectives. Focus on inputs and outputs rather than how things are done today. Ask 'What if' questions and picture yourself there. How would operations look? Would you drive more revenue? Reduce costs? Be more responsive?

Step 2. Start Planting Seeds Early

No CFO will approve a significant project the first time they hear of it, or if it comes from only one source. Gain preliminary support from business users and be ready to make some reasonable adjustments in that process. Inform the CFO of your initiative, what you have done so far, that it looks promising but requires more work. Offer a milestone date by which you expect to be able to present it.

Step 3. Do Homework to Justify a Project Scope

Interview business users to gain support for the vision and to garner willingness to assist in subsequent project stages. You want to be able to show the CFO that Bill in Manufacturing and Jill in Marketing support the project. Build a preliminary business case, but keep it simple and back it up with figures.

Step 4. Gain CFO Support for a Deeper Project Scope

With the sponsor(s), co-present the business vision and business case. Size the project's estimated effort/costs and benefits. Explain work done to date, what is still needed, identify the project scope and lists its deliverables. End by highlighting the desirable future-state and how it supports the organization's mission. Ask for the green light to proceed with the study and book the first executive update meeting.

Step 5. Conducting a Project Scope

To summarize very briefly, the output from this step includes: Business vision statement, Non-functional & functional requirements, Design (which may include a data model, User interface, workflow, and more), Report of project risks and how they will be addressed, Prototypes to address identified risk areas and draw out early feedback, Project plan with all known tasks, resources and dependencies. and the Project management methodology to be used. Step 5 is a blog article by itself.

Step 6. ROI Calculations

Return on Investment, or ROI, is the ratio of money gained or lost on an investment relative to the amount invested. There are various formulas to calculate the returns. The one below is practical and realistic for most projects.

Predict Measurable Impacts

Although the Project Scope forced a deep dive into the requirements, design and planning, don't forget it's really all about creating business value! Here you list all the business impacts that you expect your project to deliver. Make them measurable where possible, ideally as dollar figures.

The numbers should come from business users and they should be realistic and complete. For example, the introduction of new sales channels may attract new customers, but may also reduce revenue from traditional orders.

LANSA case studies are full of measurable impacts. For example, Kawasaki's project to introduce mobile apps for its assembly staff (see page 4) started with a ROI analysis. Kawasaki calculated that it used 4,500 kanban cards per day and that each card is handled by 8 to 10 people, for about 10 seconds. Based on average wages being $30 per hour, Kawasaki estimated it would save $3,000 per day, or $747,000 per year in labor costs directly related to staff using mobile apps for eKanban instead of handling the physical kanban cards.

Calculate Gains in Present Value

Gains resulting from a project implementation are expected to be realized in future months and years. However, capital costs for the project itself will be spent far sooner. To answer your CFO's question 'What is it worth today?', you might want to express numbers in Present Value (PV).

To calculate PV, you need to set a discount or interest rate (a.k.a rate of return). For

Return on Investment, or ROI, is the ratio of money gained or lost on an investment relative to the amount invested.

argument's sake, let's assume 5%. The formula to take compounded interest into account would then be PV = FV/1.05^n, where "FV" is Future Value and "n" is the number of years into the future So 2015, being two years into future PV=FV/1.05^2 and so on. This will reduce your predicted gains, as gains achieved in the future are worth less than gains achieved today.

Calculate Expected Risks

Just as your predicted gains are based on expected values, you need to calculate the expected negative impacts for each risk as identified in your Project Scope. Putting aside that you plan to bring risks forward through prototyping and model offices, let's keep things simple. For each identified risk, you need to approximate:

- The % likelihood of the risk being realized
- The cost to the business should the risk be realized.

Then, you multiply them to get the expected loss for that risk factor. For example, if the risk of users rejecting the system during initial training is estimated to be 20% and the cost of system modifications and additional training is estimated to be $250,000, then the expected value of that risk is $50,000.

If the risk of downtime in the first quarter is estimated to be 15% and the estimated costs $450,000, then the expected value of that risk would be $67,500. You may have several downtime calculations, as the risk might be higher at the beginning, but possibly with a lower associated cost if the company can revert to its old system. Downtime costs then need to be annualized.

Although we could predict risks for five years, for simplicity, let's assume for this exercise the expected value of all the risks is $1,144,500 and that the risks are not applicable after year one.

Expected Gain > Expected Cost?

As part of the Project Scope, the Project Plan should list all the project costs, such as costs for analysis, design, construction, testing, training, implementation, and ongoing maintenance & operational costs. Let's assume the total project cost is $1,500,000 and the ongoing maintenance/operational costs is $100,000 per year, starting in year two, adjusted for PV.

After all your hard work, this step should be simple, and hopefully satisfying:

ROI = PV of Expected Gain - PV of Expected Cost - PV of Expected Value of Risk

So, in the simplified example of this exercise, ROI = $10,169,037 - $1,854,595 - $1,144,500. That is, the expected ROI of the modernized system in Present Value is $7,169,942. Any expected ROI above zero is worth the consideration of your CFO, but this one should be a no-brainer.

		2013	2014	2015	2016	2017	Rationale
Better Workflow	Mobile apps instead of paper	$800,000	$800,000	$800,000	$800,000	$800,000	Reduced labor
	Better accuracy	$450,000	$450,000	$450,000	$450,000	$450,000	Less time spent on correcting errors
Human Resources	Faster training	$200,000	$200,000	$200,000	$200,000	$200,000	Intuitive, no formal training or travel
	Easier recruiting	$200,000	$200,000	$200,000	$200,000	$200,000	Different skill set and younger recruits
Sales	Revenue new Web B2B & B2C orders	$800,000	$960,000	$1,152,000	$1,382,400	$1,658,880	New Web channel, slow at first, 20% grow
	Revenue traditional orders	-$400,000	-$480,000	-$576,000	-$691,200	-$829,440	Gradual move to lower cost Web channels
Expected Gain	**Expected gain**	**$2,052,013**	**$2,132,014**	**$2,228,015**	**$2,343,216**	**$2,481,457**	**Total**
	Present Value, at 5% annual interest	$2,052,013	$2,030,490	$2,020,875	$2,024,158	$2,041,501	$10,169,037
Expected Costs	Proj. cost incl maintenance	$1,500,000	$95,238	$90,703	$86,384	$82,270	$1,854,595
Value of risks	Expected Value all risks	$1,144,500	$0	$0	$0	$0	$1,144,500
ROI	Return on Investment	**-$592,487**	**$1,935,251**	**$1,930,172**	**$1,937,774**	**$1,959,231**	**$7,169,942**

Any expected ROI above zero is worth the consideration of your CFO, but this one should be a no-brainer.

Monitor Actual ROI, Compare

As a LANSA Professional Services Consultant, I like to stand up in the Project Scope presentation meetings and tell the executive team that they must hold me and themselves accountable to meet again 12 months after go-live to measure the actual ROI. Most organization's executives seem surprised how quickly time goes by when I call a year later to schedule that follow up meeting.

Measuring the actual ROI and comparing it to the predictions will bolster your credibility and help your cause the next time you want money for a project. So, track all the actual project costs, related changes in revenue, related changes in operational costs, risk factors and related losses suffered.

Survey the system users, their managers and other stakeholders for their general impressions of the project, the new/modernized system, how it has impacted their roles and how they believe it has impacted their business. Ideally, run the survey twice, maybe five months after go-live, and again at 10 months. Use different but equivalent question sets, and consider keeping the first survey anonymous to coax out the truth from those that may feel a conflict of interest.

I like to build the skeleton presentation before any of the business impacts can even be measured, and show it to managers and key users. I include their names in the presentation to highlight the fact that they will be highly visible to the executives, and that their role matters. Then I show the skeleton presentation to the CFO to get feedback on what I plan to measure and report on:

- Original vision and key business objectives
- Status update – what was achieved, when
- Impact Assessment – business benefits realized, losses suffered, survey results, ROI achieved
- Call to action – what changes are recommended, how the executive team can assist, and so on.

Ideally, your presentation will include charts. Also collect user quotes, including quotes for benefits that cannot be easily quantified. Make sure to include the name and job title of the person who provided the quote For example:

- "Customer Service has much improved due to easy accessibility to client data."
- "Having complete visibility of how documents progress through the system helps us to spot the bottlenecks and manage the process with precision."

Of course, after legs grow weary of standing ovations and all backs have been thoroughly patted, it might be an opportune time to let the audience know that you have more cool new initiatives in mind!

Having been through this entire process more than once, I can tell you that there's nothing more rewarding for a solution provider than presenting arm in arm with IT and business users, following through on our commitment to the executives, and especially to the all-important CFO.

On-Demand Webinar

"How to justify a Modernization Project using ROI" http://bit.ly/Justify-to-CFO-Webinar

Blog Articles

http://blog.lansa.com/tag/cost-justification
Step 1- 4 episode 1
Step 5 episode 2
Step 6 episode 3

Mincron's modernized ERP system generates new sales

The decision as to what application modernization technique to choose can be complex for any company, but the choice is even harder for software vendors. Their future depends on attracting new customers for their solution, but they also have to consider the upgrade path and associated risks/benefits for their existing customers.

Mincron Software Systems had to make a decision about its modernization strategy for its RPG-based ERP system. Nearly three decades of industry knowledge and three million lines of code underpin Mincron's time-tested solution and form the foundation for its success. With so much at stake, Mincron thoroughly researched all modernization options and decided for a staged modernization plan with RAMP from LANSA. After delivering its RPG-based system in a Windows framework and adding new functionality on top, all came to fruition with new sales. Using LongRange from LANSA, Mincron then went a few steps further and was one of the first ERP vendors to deliver an integrated native mobile application for its customers on the road.

Three million lines of code

Mincron Software Systems (MSS) is a leading provider of software and business service solutions for wholesale distributors, logistics companies and other businesses requiring integrated enterprise software solutions.

Most of Mincron's customers are wholesale distributors of hard-goods, such as HVAC (heating, ventilation, and air conditioning), plumbing, electrical and industrial products. Greg Neal, Mincron's director of product development, explains "Our customers range from small businesses to large Fortune 500 companies. Our customers' customers are typically contractors, whose jobs may range from small residential repairs to large commercial projects. Needless to say, our solution needs to be flexible and scalable."

Over the last 30 years Mincron has grown tremendously the functionality of its flagship MSS/HD (Hard-Goods Distribution) solution to include industry-specific functionality. In addition, Mincron has developed integrated applications for warehouse management (MSS/WM) and light manufacturing (MSS/LM) for workshops. Mincron's customers all have the source code and many of their customizations have been fed back to Mincron to be incorporated professionally into the master version. Today MSS/HD consists of over 3 million lines of RPG code and 2,500 screens.

While Mincron extended its solution with Web commerce, EDI and RFID to keep up with business demand, the user interface had not been updated and was still 5250 style green-screen. The legacy interface was hindering new sales.

Neal explains, "You cannot go into an opportunity, demo a green-screen solution and expect to make a sale. New prospects don't want anything to do with it and existing customers are getting worried about hiring and training new staff. So essentially a few years ago our very survival relied on us modernizing our application."

"Within three months we delivered stage one of the modernization project."

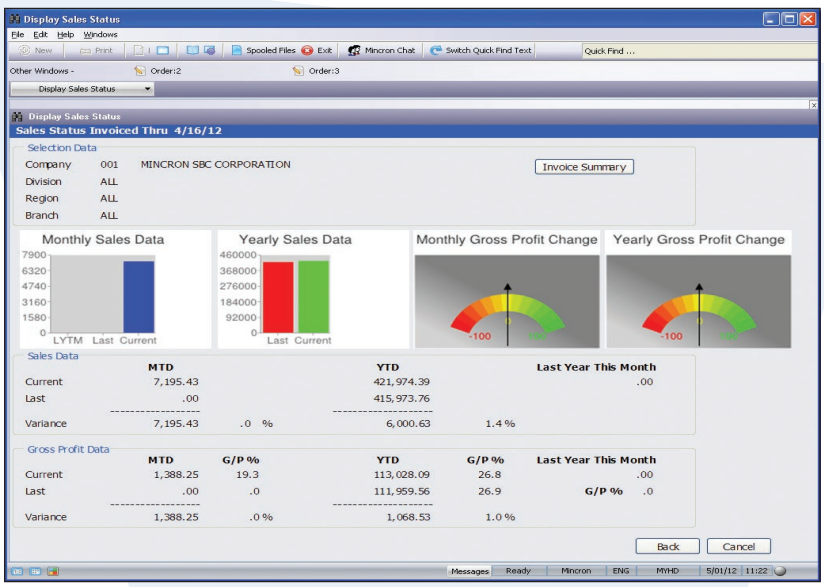
"We did not have the time or the resources to sit down and start from scratch and just rewrite 3 million lines of code," continues Neal. "We didn't want to do something as drastic as that either and throw away decades of work and a time-tested solution. A drastic move like that would also mean a risky upgrade path for our existing customers. So we had to figure out a more evolutionary way to get our solution to where we wanted it to be. And since new sales is the lifeblood of any company, we had to do it quickly."

Which Modernization Strategy?

Greg Johnson, team leader for new technology at Mincron, was put in charge of evaluating modernization techniques. He explains "Early on in our research we looked at a tool that promised to translate RPG code to Java, but we didn't get the results we hoped for. A second evaluation was based on Web refacing technology. It made the individual screens look better, but the overall navigation and functionality had not improved."

"We were looking for a technology that would allow us to deliver our solution as a true Windows style of application. Something that would allow us to take advantage of the desktop environment, integrate with Outlook and Excel and build new gadgets into our product."

Then LANSA's modernization tool RAMP came on the radar. "The concept of the RAMP Framework was just perfect for our situation. It allowed us to totally restructure the complex application navigation of over 750 menu options



RAMP allowed Mincron to execute its existing RPG system in a Windows environment and immediately start building native Windows components on top and plug them in as they went.

with a far more intuitive tree structure, tabs and search filters in a native Windows framework. RAMP's embedded refacing component would allow us in a very short time to modernize our 2,500 screens and snap them into the framework. In a second phase we could revisit those screens and enhance them further, or we could replace them gradually and piece-by-piece with true native Windows applications and snap them into the same framework," says Johnson.

As to whether RAMP falls into the refacing or development category, Johnson feels RAMP's framework approach gives the best of both worlds. "Through the framework you're not just improving individual screens, but the overall navigation of the entire application. Another big plus is that RAMP allows you to add new functionality. Some of the tabs contain old functionality and some new, but the navigation, look and feel is consistent."

The Modernization Project

Within 3 months after attending a RAMP training course, a small team (Neal, Johnson and 3 developers) delivered stage one of the modernization project to the sales team: A fully functional Windows version of MSS/HD, now called MyHD, containing all menu options in RAMP's navigation tree structure, but still with the aXes default GUI layout for the ERP's 2,500 RPG-based screens.

The team then turned its attention to the first beta customer site and spent 7 weeks preparing, installing, training and assisting the customer to go live.

Meanwhile Mincron started working on stage two, enhancing the screens to make them not only look like Windows screens, but also behave like true Windows screens. Plus Mincron was adding new functionality.

The project of enhancing 2,200 screens (300 were left in their default GUI layout) took 10 months, with a core team of 5 full time developers, assisted by 4 to 5 other staff during peak times.

New Sales and Existing Customers

MyHD stage two was released to the sales team and two months later Mincron signed up its first MyHD customer. "It ended up being a fantastic product and we continue to make it better. Our sales guys are very happy. Everything came to fruition when we started to get brand new sales." says Neal.

Mincron's existing customers are getting excited as well. According to Neal, existing MSS/HD customers, who are lightning fast when using green screens, are harder to please than new customers. "You really have to add value and provide new functionality before existing customers are willing to give up their green screens," he says.

Most of Mincron's customers are wholesale distributors of hard-goods, such as HVAC (heating, ventilation, and air conditioning), plumbing, electrical and industrial products.

"We did not have to put innovation on hold while working on a 'big bang' release."

Going Mobile

During the screen enhancement stage, one of the team members investigated the use of aXes Mobile and created a simple mobile Web app over Mincron's ERP solution. It included a customer search, product search, order inquiry and order entry. It was fully functional, but just meant as a prototype.

It did lead to some interesting discussions internally and with customers, debating whether mobile apps should be Web, native or hybrid. Based on research and customer requirements, Mincron formed the opinion that mobile Web apps are fine for basic inquiry and update access to its ERP system, but for performance, reliability and integration with device hardware functions, Mincron decided to go on the path of native mobile apps. using LANSA's LongRange. (This is a separate success story.)

All Boxes Ticked

"For the sake of our business, we had to do more than make things look pretty," says Johnson, During their elaborate search for a modernization strategy, Neal and Johnson came up with a list of criteria they were trying to achieve and feel confident the criteria were met with RAMP from LANSA:

- Marketability: Proven actual new sales.
- Integration with MS Office / Windows: Out-of-the box with Visual LANSA.
- Performance: So fast that even seasoned green-screen users are impressed.
- Incremental development & delivery: Change was by evolution rather than revolution. "We did not have to put innovation on hold for a few years while working on a 'big bang' release," says Neal.
- Timely delivery: With a first modernization stage released in 3 months and a second stage in 10 months, the answer is clear.
- ROI: After what was a reasonable investment in dollars and time and with new and existing customers lining up for MyHD, Mincron's President, Wendy Berger, is happy as well.

"RAMP almost sounds as too good to be true," concludes Johnson. "It allowed us to execute our existing RPG system in a Windows environment and immediately start building native Windows components on top and plug them in as we go. LANSA gave us the development path that we want to go forward with." ■

Snapshot

Customer: Mincron Software Systems, Houston, Texas, develops software solutions for the hard-goods wholesale distribution industry. www.mincron.com

Challenge: Staying competitive with its flagship ERP solution.

Solution: Modernize and extend.

Key Benefits: Increased sales for Mincron, productive UI and Windows integration for customers.

Products Used: RAMP, Visual LANSA, LongRange.

Bemis' agile IT team scores one success after another

Some IBM i shops seem to get caught in a self-fulfilling downwards spiral. It may start with a few RPG developers who don't want to learn anything new, or who are not given a realistic opportunity to do so. User requests for modernization and innovation are not met and eventually this results in the platform itself getting a negative image. The system goes officially into 'maintenance mode' and efforts are being focused on getting off the platform, starting from scratch with something new.

Bemis Manufacturing decided on an upwards spiral capitalizing on its existing infrastructure, but redeveloping where needed. Its agile RPG team trained in LANSA and has delivered one successful project after another. Four IT college graduates joined the team, becoming familiar with LANSA and IBM i in a few weeks. Bemis business users are now experiencing productivity gains of over 20%, as well as improved effectiveness of decision making,

RPG & Standalone PC applications

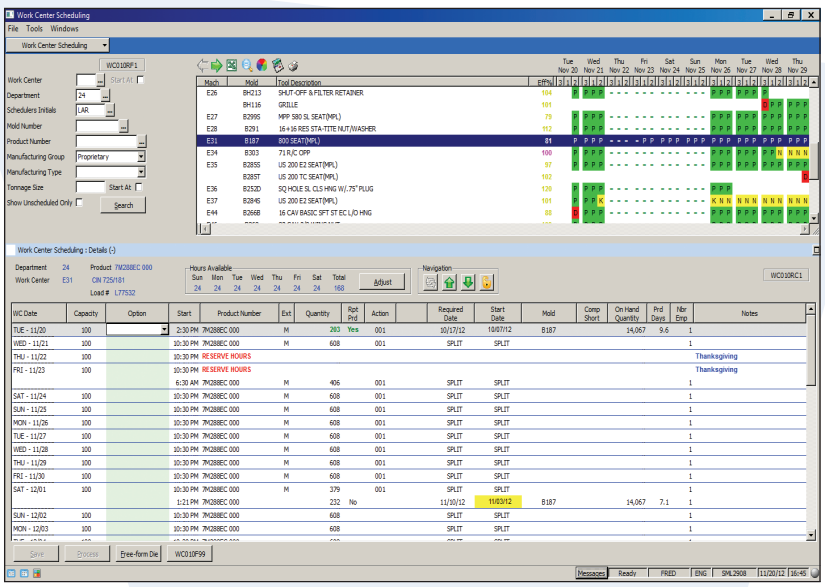
Bemis Manufacturing Company, with its headquarters in Sheboygan Falls, Wisconsin, USA, is a family-owned business that traces its roots back to 1901. Bemis produces and markets bathroom products, custom plastics, healthcare products and precision parts, serving markets worldwide. At the core of its business are bathroom products and Bemis is the largest toilet seat manufacturer in the world.

In the early eighties, Bemis started out with the PRMS ERP package on an IBM S/38, but the solution has been so heavily customized over the years that it can hardly be called PRMS anymore. The ERP system, now running on IBM i, was developed over a well-designed database, but the RPG programs had limitations, especially the user-facing programs.

Susan Leonard, Director Systems Programming & Operations, says "Users often had to open multiple programs to collect the data they needed, or step through consecutive screens. RPG also didn't allow users to hyperlink documents or images to the ERP information."

In addition to the RPG code, there were a few thousand MS Access, MS Excel and other PC applications that were never supported by IT. These standalone applications, mostly in the manufacturing area, were the result of users resorting to all kinds of tools as a way to get a solution without having to wait for IT resources.

A few years ago a new initiative started to 'Simplify Our Systems' (SOS). A cross-functional team came up with a list of 150 improvements that they would like the IT department to do to make the systems easier to use.



Work Center Scheduling is used by the production schedulers to plan the manufacturing floor by day, shift, work center, mold and product.

Bruce Hagen, VP of IS, explains "The improvements ranged from very simple to very complex. It was clear that most of them could not be delivered with RPG. Coincidentally we were receiving LANSA's email invitations for Webinars and whitepapers and we decided to have a closer look at it. We saw an opportunity to use the LANSA products to address the system simplification project, which today we describe as system modernization."

"Moving between tabs, sorting on columns and Excel export buttons are standard features."

Agile and Scrum

Bemis' eight RPG developers were then trained in LANSA. Most of them were new to event driven programming and learning curves differed for each individual. Overall they became familiar with LANSA fairly quickly.

The last four developers that joined the modernization team were college graduates, who didn't attend any formal LANSA classroom training. "Learning from the tutorials, they were able to build production ready programs by the second week of employment" says Leonard. "LANSA is straightforward and quite similar to what they had been taught in college."

Developers are split into three natural teams of four, each team working on its own project. The team members themselves ensure there is a balanced mix of experience in each team. Once a team has been told what their next project is, they do all the planning themselves.

Bemis has been using agile development for seven years and it is working extremely well for them. Very early on in a project the IT teams start to schedule weekly face-to-face meetings with their business users to show them the project's progress. Stephanie Held, one of the developers, explains, "Users not only get to see the programs, they actually get to interact with them. They can conceptualize the solution, discuss it in a group and provide really good feedback. Development is now a joint effort."

Where to start?

The IT team arranged the modernization projects on the watermark of a tree, with essential manufacturing applications at the bottom of the trunk and less essential applications spreading to the branches. ➔

"A lot of the general modernization requirements were not specifically scheduled for, as you get them automatically when you develop in Visual LANSA, such as being able to sort on columns, export to Excel and hyperlink to documents or Web sites," explains Leonard.

Starting at the trunk of the tree with the manufacturing applications, the teams found that numerous procedures were duplicated and that multiple versions existed. "Redeveloping those standalone mission critical PC programs, received priority over modernizing 5250 screens. There were many more benefits to be gained by consolidating them into one way of doing things and by integrating them with our IBM i system," says Leonard.

One of the larger MS Access to LANSA consolidation projects was for **Quality Specifications**. This system provides operators with instructions how to produce a high-quality product. It may contain machine settings, pictures of good products versus bad products, packing instructions, and so on.

"Previously there were six different ways of doing the same thing, today there is just one way. The system has been setup very flexibly, allowing for consistency across divisions, but also for nuances. Using LANSA it was also very easy to attach documents and images to our IBM i systems," says Leonard.

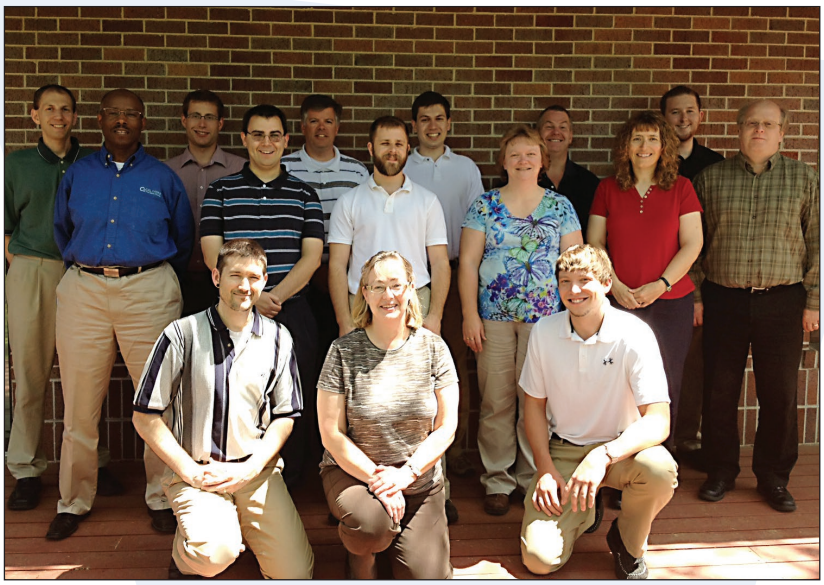
Another project involves **Capacity Planning**. Users select the product, time period, machine size, tools and other criteria and press a button to let the LANSA application do the calculations and produce the graph. "Previously users would have to export data to a CSV file, reformat data in Excel, put in their calculations and create a graph. They had to do that every time they wanted to graph," says Leonard. "Now it is amazingly easy and far more accurate."

A **Forecasting System** lets users import data from Excel into the LANSA application, simulate what-if scenarios and re-graph the data. Users can save different scenarios centrally on the IBM i server.

"We also redeveloped several legacy RPG applications in LANSA," says Leonard. "The new applications are far easier to use and drastically reduce the need for training. For example, a quite complex **Work Center Scheduling** application was recently implemented at our Lenoir plant, without IT staff having to travel to provide training."

Other applications are totally new. For example **Requesting Time-off** was previously a manual process. Now workers can view relevant rosters and apply for time-off at a kiosk in their lunchroom.

Bemis is also working on a **B2C eCommerce project**, called 'Classic Colors'. It allows customers to select a toilet seat matching the colors of the bowl from a large range of colors.



The development team. Back Row: Brian Mauk, Bill Justman, Dean Reinemann, Garrett Eaton, Scott Eickert, Brian Rettmann. Middle Row: Calvin Steward, Kevin Welsh, Andrew Zastrow, Cindy Schuler, Stephanie Held, Dave Harms. Front Row: Michael Gallipeau, Gail Schroer, Troy Loberger

"Over 100 business users now spend less time learning and navigating the system."

They can pick a few colors and have them mailed as paint chips in the actual material of their chosen toilet seat. They can match the paint chips with their bathroom, pick the color they like best, go back online and finalize their order. The solution is expected to decrease the number of returns because of color mismatches. This project was done with LANSA Commerce Edition, a product that provides all the code for a standard eCommerce site, which can then be customized.

High Visibility of IT Team

"The LANSA applications have a consistent and intuitive look and feel. Moving between tabs, sorting on columns and Excel export buttons are now standard features. This results in over 100 business users spending less time learning and navigating the system. And with features like dynamic graphics, it has not only improved overall productivity, but also the effectiveness of users and decision making," says Hagen.

Bemis' users agree. Wayne Pilz, who uses a modernized **Engineering Database** application, says his team can implement new product setup at a much faster rate than previously. Scott Willadsen, who uses **Work Center Scheduling**, estimates the new system saves him 20% of his time. He especially likes the way charts are redrawn when the data changes, giving an instant insight into capacity and trends.

"The word of mouth from our users in terms of how the LANSA applications have really simplified their work and how they look forward to developing new applications, has resulted in a lot of visibility. Our CEO has become a major sponsor and supporter of IT and LANSA," says Hagen

Likewise the developers are also happy with the quality and productivity of their work with LANSA. "No one wants to go back to RPG, although at this stage RPG maintenance cannot be totally avoided," says Leonard.

Leonard summarizes the overall experience of application modernization as very positive, but also warns that it is an evolution that takes time. "Initially there was resistance, especially from die-hard 5250 users. But once users started to realize what kind of applications we could give them with LANSA, they became very involved and started asking for more." ■

Snapshot

Customer: Bemis Manufacturing Company, with 1,600 employees, is an international manufacturer serving markets worldwide. www.bemismfg.com

Challenge: Modernizing a legacy IBM i-based ERP system and redeveloping a few thousand PC applications to become an integrated part of that ERP system.

Solution: RPG team and college graduates use LANSA to gradually redevelop its legacy RPG system and standalone PC applications.

Key Benefits: Improved productivity and effectiveness of decision making for users. Happy and very visible IT team, sponsored by CEO.

Products Used: Visual LANSA, LANSA Commerce Edition.

ZON fruit & vegetables raises the bar for GS1 compliance

ZON FRUIT & VEGETABLES

Data quality and consistency are hard to achieve when dealing with natural products. As a result many fresh fruit and vegetable suppliers just leave the default values in the item attributes when they publish their products on the Global Data Synchronization Network (GDSN).

ZON fruit & vegetables, based in the Netherlands, went beyond this type of superficial GS1 compliance and is the first in its sector to not only fill all item attributes with real values, but to also close the entire loop from GDSN publication to EDI invoicing. Using LANSA Data Sync Direct, ZON is implementing its new procedures with a well known Dutch grocery retail chain via the GS1 DAS data pool. Raising the bar for other players in the agriculture industry, ZON's unambiguous data quality helps to minimize misunderstandings about products through the entire chain and allows retailers to better manage transportation requirements and shelf space.

The Challenge

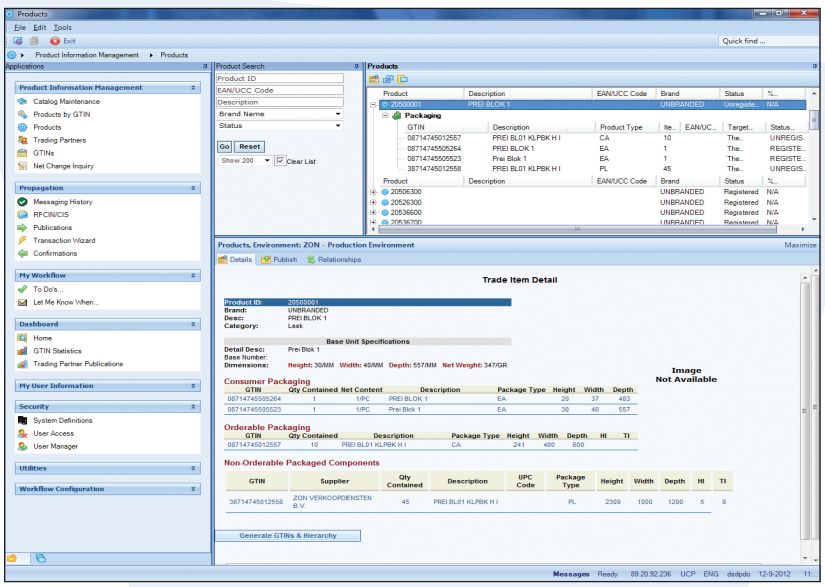
ZON is one of the largest food horticultural co-operatives in Europe. With its roots going back to 1915, ZON has developed into an international sales organization and active mediator in the chain from producer to customer. ZON offers cooled storage, transport, cross-docking and other logistics services from its two distribution centers. ZON's real-estate arm owns and operates 'Fresh Park Venlo', a business park where over 130 fresh food companies, such as growers, traders, transport and packing companies, rent facilities from ZON.

ZON's sales division uses a range of sales instruments to sell its growers' products quickly and efficiently. The auction is one of these instruments. In addition, ZON offers contracts on a weekly, monthly or seasonal basis where parties commit to a predetermined product volume against a fixed price. Last but not least ZON uses telephone sales and mediation, usually to move products on short notice.

All logistics and financial transactions related to the delivery of products by growers, warehouse movements and tranport to customers, are handled by a heavily customized version of USVA, an IBM i-based auction administration system, complemented by in-house developed systems for contracts, mediation and various on-line facilities provided to customers and growers.

Michèl Thewessen, Manager ICT at ZON, explains, "We are a customer focused organization, which is reflected in our ICT systems. We have fine tuned these systems over the years to serve our auction customers, who are mostly wholesale traders. We will continue to improve our service to them, but through our contracts and mediation sales, we now also cater for a growing number of retailers."

"The retail industry has many additional requirements. It is a market we are keen to develop and several of our recent projects have been focused on meeting retailers' needs. GS1 is a recent example of such a project."



With Data Sync Direct, ZON can manage various GTINs for the same product, all with different levels of packaging.

"The technical implementation was done in two days."

ZON has been GS1 certified for several years, but none of its retail customers asked for strict implementation. GDSN publication happened only just before invoicing, instead of keeping the assortment of published items continuously up-to-date. Also, 50 of the 70 required item attributes were filled with default values. This allowed ZON to get started with GS1 DAS (the GDSN-certified data pool for the Netherlands), but it hardly guaranteed data quality.

The trigger to improve came when a leading retail group asked ZON for EDI invoicing. "Initially their focus was on invoicie related EDI traffic only and not on the processes that precede invoicing," explains Thewessen. "However, one of the retailers within the group saw the project as an opportunity to close the loop and improve the entire process, from GDSN publication to EDI notifications and invoicing. We were keen to prove to the retail world that we can be a front runner in meeting their needs and saw the GS1 and EDI project as an opportunity to do so."

Sharpening up GS1 Standards

ZON selected Data Sync Direct, a combined Product Information Manager (PIM) system and Global Data Synchronization Network (GDSN) solution, designed to cater to the needs of demand and supply-side implementations. A major reason to select Data Sync Direct was its ability to integrate tightly with ZON's ERP system, but also the fact it could easily be coupled to another ERP system, if that need arose in the future.

Thewessen explains "The technical implementation was done in two days, including installation, integration with our ERP and communication with GS1 DAS. The process of

collecting information for the item attributes that had been missing and the discussions about what rules should apply to those attributes, was far more time consuming."

As an example of one of those discussions, Thewessen mentions the issues a tray of cauliflowers raised. Should you express the consumer's unit as a single cauliflower or, as some retailers prefer, express it in grams of cauliflower? And what are the measurements and weight of an average cauliflower, or a whole tray of them, since both depend on the way the stalks are cut? Another example was the definition of rentable pool-pallets, quite common in the industry, but there were no suitable attributes available to describe them.

ZON went with these types of questions to Frug I Com, an alliance of organizations in the fruit and vegetable chain, whose mission is to optimize information exchange between parties in the chain, by establishing standards for labeling and electronic data exchange. ZON also went with its questions and suggestions to GS1 Netherlands, who assigned a panel of experts to sharpen up the GS1 standards for data quality in the fruit & vegetable industry. In effect ZON helped to establish some of these standards.

"Except for the long time we spent on defining the item attributes, the rest of the project went smoothly. Integration with our ERP was easy and Data Sync Direct's user interface is productive. We are already synchronizing part of our item assortment with the first retailer and are in discussion with other retailers." says Thewessen.

Easier to find, transport and shelf

Wil Westerburger, Operational Manager at ZON, explains "Key to expanding our share in the retail market is to differentiate ourselves. Product quality, price and innovation remain most important, but you also need to differentiate yourself in the way you offer your products and conduct your business."

"We do that by making sure our logistical services are well managed, our tracking-and-tracing facility is watertight and our EDI capability robust. We are aware of market developments and willing to invest in their early implementation, not waiting for industry deadlines. Our ICT services in general, and our GS1 capability specifically, are important ways to differentiate ourselves to existing and potential retail customers."

Frank Stevens, sales support manager, comments "It was a massive amount of work to collect all the information, but we now have one set of unambiguous data that is used through the entire chain."

"Customers will be able to use very specific search arguments in the GDSN and find our products. Hundreds of suppliers may show when you search for 'tomatoes', but when you search with the right codes for a specific type of cherry tomato, pre-packaged to a certain consumer unit weight and on a stackable pallet, we might be the only supplier. "

Michèl Thewessen, Manager ICT at ZON (left) and Wil Westerburger, Operational Manager at ZON (right).

"We now have one set of unambiguous data that is used through the entire chain."

"Having all those details available makes our products easier to find and doing business with us more transparent. It also makes it possible for retailers to plan shelf space. Plus it's easier to arrange transportation, especially in the case of export."

Being able to handle the entire cycle from GDSN publication to EDI invoicing avoids misunderstandings and saves time for the customer, as well as for ZON. Previously, placing an order would require fax, phone or email communication and ZON's staff would often have to spend time explaining packaging options. And still, the delivery might be different from what the customer expected. Correcting such situations would be expensive and create more fax, phone and email traffic. Now the customer has access to the exact details and their orders arrive via EDI. ZON immediately checks availability and responds with an EDI confirmation. "There is no human intervention, no miscommunication and procedures run quicker and smoother," says Stevens.

Conclusion

As it comes with a PIM facility, ZON currently stores and maintains all the attributes that weren't available in its ERP system, inside Data Sync Direct. But in the future ZON may decide to maintain all or some of those attributes in its ERP system. Data Sync Direct can support either way and collect-from or feed-into multiple data sources.

"It was not easy being the first in our industry to go for 100% GS1 compliance. We specifically welcomed the support of LANSA's consultants and the contributions they made in this process. Their support went far beyond technical assistance and included suggestions on how to handle all kinds of data quality issues," concludes Westerburger.

"We have been a leading party in setting the GS1 standards for our industry and we have applied those standards to our own systems. We are prepared for any new requirements that may come our way, from retailers and traders." ■

Snapshot

Customer: ZON fruit & vegetables is one of the largest food horticultural cooperatives in Europe. www.zon-business.com/en

Challenge: Achieving total GS1 compliance and consistent data quality in the fruit & vegetable sector.

Solution: Help to improve GS1 industry standards and go beyond superficial compliance.

Key Benefits: Improved data quality and more efficient procedures for ZON and its customers.

Product Used: LANSA Data Sync Direct

Getting SaaS ready is easy for some

Marjanna Frank
LANSA Review Editor

SaaS (Software as a Service) is flourishing. More and more companies are turning to SaaS and other on-demand solutions to respond to business needs faster and more cheaply. SaaS is a software delivery model in which software and associated data are centrally hosted on the Cloud and accessed through a Web browser. Customers pay only for what they use and can configure their own environment via a self-service model.

Simple examples of SaaS are web-based email systems such as Hotmail, Gmail and Office365, mostly targeted at consumers. Payroll and Human Resource Management systems have been long-time proponents of SaaS. Salesforce.com is a SaaS-based CRM system. Today there are SaaS offerings for almost every application type, with several ERP and Marketing Automation solutions in the SaaS Top 10.

From the customer's point of view, by eliminating the need to install and run applications in-house, SaaS lessens the burden of ongoing hardware and software maintenance, operation and support. SaaS also reduces the up-front expense of software license purchases, replacing it with subscription-model and/or on-demand pricing. Additionally, SaaS and other cloud and hosting services take high availability and disaster recovery planning to the level of a professional data center.

SaaS also has its detractors. Some may worry about security and safety, the level of legal protection in the country where their solution is hosted, the lack of opportunity to customize the solution and the feeling of not being in control of upgrades and new releases.

From the software vendor's standpoint, SaaS has the attraction of tapping into a larger market (not restricted by hardware or operating system), establishing an ongoing revenue stream, easier roll-out of new software releases and stronger protection of intellectual property.

Preparing applications for SaaS readiness is not as simple as Web enabling a solution. A true SaaS application has a multi-tenant architecture. The ability to have multiple organizations (called tenants in the Cloud nomenclature) co-exist on the same application instance, without compromising the security of data for those organizations, defines the application as multi-tenanted.

Preparing applications for SaaS readiness is not as simple as Web enabling a solution. A true SaaS application has a multi-tenant architecture.

Why IBM i and Why LANSA?

This showcase contains interviews with several independent software vendors (ISVs) who explain their experience with SaaS, specifically where they used LANSA to develop their SaaS solution or aXes to provide access.

All interviewed ISVs agree that IBM i is an excellent platform for SaaS. The IBM i architecture with its library lists, security levels and many other features is "made for SaaS".

ISVs also commented that LANSA's application architecture makes delivering SaaS easy. On the server side, LANSA automatically handles multi-user access and multi-tenancy. LANSA manages a single instance of an application shared by concurrent users, creating different library lists to establish separate, secure logical databases. On the client side, LANSA's visual framework enables a rich, Windows-like user interface to be run inside a standard browser.

Of course it is also a matter of good design, but LANSA does make it straightforward to build flexible and parameterized applications that may look and behave quite differently depending on the user profile, even presenting in a different language using LANSA's multilingual facilities. Any web content, SOA component, 5250 screen, ActiveX control or Web service can be snapped into the LANSA framework.

Human Resource Management

NorthgateArinso (NGA) is a leading global Human Resources (HR) services provider offering innovative HR business solutions. In 2010 NGA acquired Neller, a leading provider of Payroll, HR and Labor Management systems for the Australian and New Zealand marketplace since 1976. Neller had experienced stellar growth with its set of Preceda solutions, counting over 1100 customers at the time of the takeover.

In the late 1990s, Neller's growth began to ease, simply because the Preceda offering already dominated its segment. Preceda ran only

on IBM AS/400 computers. To get a foothold in the wider market, independent of server platform or company size, Neller decided to offer Preceda as a SaaS application. Having already successfully used LANSA to provide a Web front-end to its installed base, LANSA was selected for the hosted environment.

The new offering, then called Preceda Hosted, has been a very profitable business model, adding a new high-growth revenue stream to Neller's existing business. From 2001 to 2010 the number of Preceda customers tripled and the SaaS offering now contributes over 70% of Preceda revenue. Today the solution is called Preceda OnDemand, and with NGA's backing and state-of-the-art data centers, continues to grow strongly. NGA has also introduced the Preceda SaaS offering in Asia and Europe, and in the U.K. adoption has been especially rapid.

Sam Xydias, Vice President, Regional Products Engineering at NorthgateArinso, said, "Preceda OnDemand is a perfect fit for organizations looking to realize the benefits of a comprehensive HR system without the associated IT overheads. On the server side, LANSA and IBM i are a natural fit to securely handle multi-tenancy. On the client side, LANSA's browser interface means there is nothing to install. The combination of being developed in LANSA and deployed on proven and virus-resistant IBM server technology, provides a rock-solid technology platform that consistently delivers very high standards in service availability."

Nippon Dynamic Systems (NDS) is a well-known Japanese software house, IBM Business Partner and ISV. Its ISV activities focus on Human Capital Management (HCM), with e-Shugyo, an all-inclusive Labor Management (Time & Attendance) application, as its flagship HCM product.

e-Shugyo has a LANSA-based optimized Web browser interface that suits both on-premise and SaaS implementations. Since launching e-Shugyo's SaaS offering in 2006, volumes have steadily grown. With 35,000 employees from 130 companies using the SaaS deployment option, NDS's observation is that prospective customers now have a strong preference for the SaaS model.

Mr. Hirayama, NDS president, said, "LANSA allows us to focus on the business functionality, rather than the underlying technology of application development. Our e-Shugyo SaaS offering has similar benefits for our customers, allowing them to focus on their business rather than IT infrastructure."

Cloud solutions allow companies of all sizes to make use of options that are standard for a modern data center, but that can be hard to justify on-premise because of complexity and cost.

Finance and Insurance

ACBS® a division of Fidelity Information Services since 2003 and a LANSA customer since 1991, is the global leader in high-end systems for originating, syndicating, servicing, trading and settling of corporate loans, especially large syndicated loans. With nearly 100 clients, including 8 of the top-15 world banks and 23 of the top-50 world banks (as ranked by Tier 1 Capital, in the July 2012 issue of 'The Banker'), over 30 percent of syndicated loans worldwide are processed by ACBS Loan Systems.

The ACBS (Advanced Commercial Banking System) servicing application is primarily LANSA-based and is deployed on Windows and IBM i platforms at customer sites, or as a SaaS solution. The SaaS option is used by around 20 organizations, mostly smaller financial institutions that prefer a regular service fee rather than the capital investment required to license and deploy ACBS on-premise.

Paul Little, VP Client & Technology Services - ACBS at Fidelity Information Systems, says "We're finding that most prospective clients want to focus on managing their business and are happy to let us manage the technology in a hosted environment."

AllClear Insurance Services Limited, based in Essex in the U.K., is a market leader with its AllClear Travel insurance, which provides medical travel insurance for people with pre-existing medical conditions who find difficulty in getting travel insurance elsewhere. The company used LANSA to take its insurance product to the Web and to develop and host branded travel insurance Web sites, as well as member benefit sites. AllClear is now hosting over 100 branded travel insurance sites.

Nikki Hunt, Head of IT at AllClear Insurance Services, explains that the original AllClear systems design made it easy to extend and re-badge for third parties. "There is hardly any programming involved in setting up a new branded site. We do most of the customization by adding data files and defining rules and rates. All in all, we can have a new customer up and running within two days.

"We also host sites for another company in our group, Oakwood Promotions Limited, which runs affinity-based benefit schemes and motivation reward programs for about twenty organizations. Using LANSA Commerce Edition we can set up a new member-benefit site from scratch in about three days," says Hunt. "Without LANSA's Web ability, we could not have grown to where we are today. We were the first to offer branded insurance and member-benefit sites. While others have followed, no one has had the same success."

MDC, established in 1987 and based in Dublin, Ireland, offers a wide array of IT services and specializes in interactive and transaction-based Web applications for the financial services industry. Insurers and brokers use MDC's LANSA-based InsureIT and BrokerIT frameworks to build Web-enabled 'quote and buy' insurance products that integrate in real-time with any IBM i or Windows-based back-end Policy Administration System (PAS), if not used with InsureIT's own PAS. The solution also

includes real-time data exchange with multiple rating engines and insurers.

MDC's insurer and broker customers can use the solution on-premise, or as a service hosted in MDC's data center on IBM i servers. Customers include Allianz Ireland for most of its online consumer and B2B insurance products, TopQuote for its Car insurance, Glennon Insurance Brokers for its motor and household insurance, Brian J. Pierce for its Taxi Insurance, and numerous brokers for their travel insurance.

Education

MarkManager is an on-screen marking solution developed by the Office of the Board of Studies (OBOS) New South Wales, Australia. It allows authorized markers to view and mark online a scanned image of students' written exam responses, and student responses entered or spoken online. It also provides real-time statistics, including marker reliability data, to monitor and manage the marking process. The solution has delivered significant benefits to the NSW education community during its progressive adoption for High School Certificate (HSC) marking since 2009, as it promotes equity, accuracy and consistency of marking.

MarkManager is built with LANSA's development tools and LANSA Integrator is used extensively to create and prepare a multitude of PDFs that are delivered to the markers for marking. LANSA Pty Ltd has worked with OBOS to commercialize the solution. MarkManager's architecture supports web-based access to a secure and scalable IBM Power Systems server running IBM i. Customers can implement MarkManager on-premise, or on a SaaS basis supporting both multi-tenanted and fully virtualized implementations, hosted by OBOS in a secure Private Cloud environment.

Following its commercialization, MarkManager was successfully used on a SaaS basis in 2012 by the Western Australia School Curriculum and Standards Authority for online marking of selected WA Certificate of Education (WACE) examinations. A number of other SaaS engagements are in process.

Mitra Bhar, Manager IT at OBOS, says "It is important that we continue to investigate how advances in technology can provide improvements in our examination and assessment programs. LANSA's technology and the IBM i platform help us to provide accurate, highly reliable and secure solutions."

Other SaaS Solutions

PFW Systems Corporation, an ADP company, headquartered in London, Ontario, Canada, is a leading provider of management software for equipment dealerships. PFW has been using LANSA since 1994, initially to enhance its classic COBOL/RPG-based Dealership Management solution and add Web extensions, and later to redevelop it completely. PFW's current dealer management offering, released in 2006 and called IntelliDealer, is totally developed with Visual LANSA and is 100% browser-based, allowing PFW to offer IntelliDealer as a service in addition to on-premise licensing.

Frank DeDecker, Director Product Management & Market Relations at PFW, says "Giving customers both options gave us access to a wider market and has contributed to stellar growth. It allowed us to increase from 800 customer locations in 2006 to nearly 1500 locations today. Most of our new customers, probably over 95%, are choosing for SaaS. Many of our on-premise customers also plan to migrate to SaaS when the renegotiations for their hardware come up.

"The SaaS option is good for those dealers that want to get off the technology treadmill. Our data centers have duplicate servers, with redundancy and disaster recovery on separate sites and networks. It's hurricane proof, as testified by one of our customers based in New York state, the most severely hit region by super storm Sandy in 2012."

"PFW and LANSA worked together with IBM at the IBM Rochester Benchmark center to stress test IntelliDealer and mimic the SaaS workload. Having all the experts together allowed us to very efficiently fine tune performance and make adjustments where needed. The IBM i architecture was built for SaaS and with only minor configuration changes and adjustments to IntelliDealer's design, we were able to take full advantage of that architecture."

For its SaaS offering, PFW entered in 2006 into a strategic alliance with ADP (Automatic Data Processing, Inc.), one of the world's largest providers of business outsourcing with over $10 billion in revenues and more than 600,000 clients. The alliance worked very well and in 2009 PFW became a wholly owned unit in the ADP Dealer Services division.

Rippe & Kingston Systems, Inc., headquartered in Cincinnati, Ohio, USA, is an international information technology solutions and services firm with clients in 43 states and 9 countries. Several of R&K's solutions are developed with LANSA and available on IBM i, Windows or SaaS.

R&K has several hundred law firms using its LANSA-based LMS (Legal financial and practice Management System). LMS has been a well established on-premise solution for nearly 30 years. More recently, with over 125 SaaS implementations, LMS topped the Cloud charts as well. R&K's enterprise contract management solution, Contract Guardian, also developed with LANSA, is used by nearly 60 healthcare organizations, of which the vast majority have opted for the SaaS implementation.

Last but not least, R&K provides a GDSN (Global Data Synchronization Network) solution that is based on LANSA's 1WorldSync certified Data Sync Direct. More than

A good SaaS solution provides hurricane proof protection on the server side, with disaster recovery on separate sites and networks. Customers only have to worry about the client side.

150 customers have opted for the Cloud implementation, exceeding the number of R&K's on-premise customers of the solution.

Thomas Davidson, owner and Vice President at R&K, says, "We have been able to utilize LANSA's any device scenario, giving customers the choice of tablets, Smartphones and desktops to access their data. Our IBM i Cloud customers can take full advantage of the platform's scalability, which has given us a big competitive advantage, especially in the legal area. Our customers can grow from 10 to over 100 lawyers and don't have to worry about hardware upgrades. Adding customers isn't a hassle either."

"SaaS and Cloud have been really effective for us, using smart software and data base design, the right development tools and the right infrastructure. I estimate that in dollars 60% of our new business is SaaS or Cloud based, in number of accounts it is probably closer to 70%. We anticipated that it would be mostly the smaller businesses that would embrace the Cloud, but larger companies are getting tired of IT complexity as well and are equally likely to opt for the Cloud."

ACCEO Solutions Inc., based in Montreal, Quebec, Canada, offers Scoopsoft, an integrated management system designed for organizations in the distribution, forestry, petroleum and mining sectors, as well as franchise chains, such as restaurants, at the head office level. Scoopsoft is used by over 50 customers (most with multiple sites), including a fast growing number of SaaS customers.

In the early nineties Scoopsoft started out as an RPG solution, which was then enhanced with LANSA for a Web-based CRM portal. Over the years many of the 5250 and RPG components have been redeveloped with Visual LANSA Framework, while the remaining components have been modernized with LANSA RAMP.

The modernized and redeveloped components reside in the same browser-based framework, which allowed ACCEO to tap into a wider market, by offering Scoopsoft as a service, in addition to on-premise IBM i implementations. According to Renel Morin, Account Manager at ACCEO, the SaaS solution is popular with companies of all sizes. The fact that Scoopsoft is hosted on IBM i servers is considered an additional benefit by customers, as it is a proven secure platform with consistent high availability.

Evolution Systems is an independent Australian owned Cloud Services Provider with a strong focus on providing solutions to organizations with an IBM Midrange infrastructure. At the core of its business is its wholly owned data center located in Sydney, from where the company offers a range of Cloud solutions on IBM Power i systems, Windows and Linux.

ISVs that chose LANSA have overcome the technical and financial barriers of SaaS and are now enjoying accelerated growth and more predictable income streams.

Evolution uses LANSA's aXes instant-Web-enablement tool for those customers that require secure browser access to their 5250 applications in the Cloud from any combination of desktops, tablets and smartphones. Geoff Boreland, founder and managing director of Evolution Systems explains "For example, one of our customers uses a 5250 emulator to access their System/21 ERP system, which has been tailored to suit their business over the years. They had a specific requirement to allow secure browser access to their ERP to a 3rd party. With aXes we were able to not only meet that requirement, but also to remove the ability of the 3rd party to perform any updates. We could do that without changing a single line of code in the ERP."

"We can pass on economies of scale by taking advantage of IBM i's advanced virtualization technology, PowerVM. aXes Web-enablement software facilitates the fast and simple provisioning of new customers and additional users. It suits our hosted services with on demand scaling, whether up or down."

eC-LINK.com Pte Ltd is a Singapore based software house specializing in ERP and supply chain management software for small and mid-sized enterprises. eC-LINK redeveloped its original ERP solution, which was built in 1993 with LANSA for iSeries, with Visual LANSA. The new eC-LINK ERP solution is available in Chinese and English on Windows, IBM i and as a SaaS solution.

eC-Link is a popular solution in Singapore and Malaysia and counts over 40 onsite and SaaS customers, including Nippon Steel Chemical Company, Kishimoto Sangyo, Tipex, Socma Trading, Kavo Dental Equipment, Pely Auto Aircon Parts and Tee Yih Jia Food Manufacturing in Singapore and Malaysia.

Fred Leow, president of eC-LINK.com, said, "In a market where customized enterprise solutions often take over a year to implement, I am proud to see the majority of our customers 'go-live' within months. Being able to offer our solution as a service, takes another level of complexity away for our customers, not having to worry about hardware, backups, security, and so on."

Conclusion

LANSA, especially when used on the IBM i platform, has made it easy for ISVs to add SaaS to their product mix by minimizing the effort and costs to get SaaS ready. ISVs that chose LANSA have overcome the technical and financial barriers of SaaS and are now enjoying accelerated growth and more predictable income streams. ■

Why go mobile and why choose LongRange

Richard Lancaster
LANSA Product Center

Mobile devices have become extremely popular with consumers for accessing email, interacting with social media, online shopping, games, music and more. The uptake of mobile technology in the business world is rapidly increasing as well, as companies use mobile apps to streamline business processes and improve productivity.

Building a mobile app is a new programming experience, especially for traditional RPG and COBOL IBM i developers. These developers generally have a deep understanding of the business and its existing IT systems, but may have little knowledge about building apps for mobile devices.

LongRange, a mobile app development product from LANSA, provides a bridge that transforms IBM i applications into apps for mobile devices. Developers can build and maintain native mobile apps for Apple and Android devices using their existing RPG, COBOL, CL, C or LANSA development skills. In addition, LongRange apps can embed Web pages from any source and the LongRange API can work with JavaScript.

LongRange gives the advantages of native mobile without the usual disadvantages. That's possible because the business logic of a LongRange native mobile app is driven from LongRange on the corporate server.

- **The advantages:** performance, reliability, productive user interface, full utilization of device features such as geo-location, signature capture, barcode scanning, photos, video, audio and phone.
- **Avoid the usual disadvantages**: With LongRange you don't have to re-publish an app every time the business logic changes. You don't have to develop and maintain a separate version for each device type. You don't have to learn Java or Objective-C or other new development skills.

Business opportunities

It's not hard to guess that the best business opportunities for mobile are in the areas of streamlining business processes and improving productivity for employees who travel and for staff who are on their feet all the time. Mobile apps are also frequently used to improve service to customers and partners.

Below are example scenarios of LongRange customers using their mobile apps. In all these examples, the mobile apps access and update information directly in corporate IBM i server systems. In most cases the apps replace paper based procedures that were laborious and error prone, or they streamline procedures that could previously not be dealt with in real-time.

Asset Management: Auditors use apps to scan the asset's bar code, update relevant details, and store those details with a photo.

Workflow: Any workflow procedure where multiple people are involved in preparing, reviewing, approving or fulfilling a transaction.

Business Intelligence: Managers use apps for real-time access to reports on staffing, inventory and sales.

Customer service: Customers and business partners use apps to place orders, inquire in the status of a delivery, and all other usual self-service tasks.

Sales: Visiting sales reps use apps to access product information, view a customer's sales history, and place orders.

Retail: Sales assistants, while serving a customer, use apps to view product details, such as availability, pricing and delivery time.

Employees use apps to submit their time sheets, activity reports, leave applications and expense claims. Workplace incidents can be submitted as well, with photos if needed.

Insurance claim assessors use apps to take photos of the accident scene, make notes and photo annotations, access and update customer data and upload the claim for processing.

Delivery & distribution: Drivers use apps to view delivery and route details, capture electronic signatures and post those with real-time delivery updates.

Quality control and stock intake: Inspectors use apps to confirm deliveries and to record any quantity or quality differences.

Repairs & maintenance: Technicians use apps to update the maintenance history of a product, consult diagrams and repair instructions, take photos, and order parts.

Stock replenishment: Sales reps who visit customers use apps to do stock takes, generate a suggested order, review and amend the order with the store manager, and place the order.

Assembly/Manufacturing: Assembly staff use apps for scrap reporting, engineering change notifications and to signal the need for stock/part replenishment at the assembly line. ➔

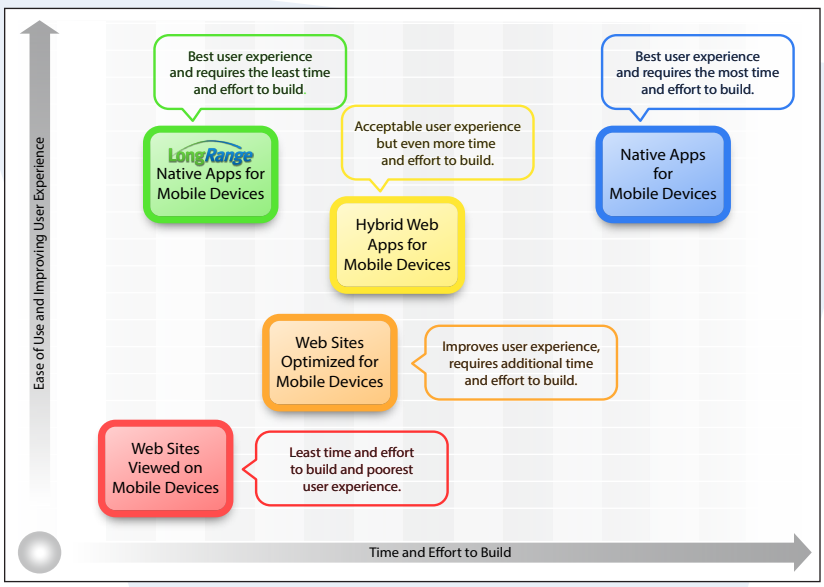


Figure 1: There are multiple ways to develop apps for mobile devices. Each option is known to require different levels of time and effort to build, and provide different levels of user experience.

Warehouse: Warehouse staff use apps with barcode scanning for the recording of inventory moves and for cycle counting.

These are just a few examples. to give you some idea where mobile apps can provide efficiency and productivity improvements to business activities.

Why LongRange

IBM i developers who use LongRange are generally productive in a very short time. They have no new development language to learn and they are already familiar with the back-end application with which the mobile app needs to integrate. Therefore, LongRange developed apps have a relative low total-cost-of-ownership and a quick time to market.

There are multiple ways to develop apps for mobile devices. Each option is known to require different levels of time and effort to build, and deliver different levels of user experience, as illustrated in the diagram in Figure 1.

Browser apps that interact with an existing Web site that has not been optimized for mobile access, are quick to implement, but the ease of use will be questionable at the best. Web sites that are optimized for mobile access provide a better user experience, but will still not have access to device features like signature capture, geo-location and bar code scanning..

Hybrid apps are a combination of Web and native, where a native app acts as a container for the browser app. The container interfaces with the device hardware and allows the Web app to use device features it could otherwise not access. Developers use HTML, CSS and JavaScript for Web apps and hybrid apps.

Native apps provide the optimum ease-of-use, performance and user experience. When productivity is vital, or when signatures need to be captured, barcodes scanned or other hardware features need to be utilized, a native app is the only option. However, unless LongRange is used, building native apps takes longer than the other options. Developers need to use device-specific development languages (e.g. Objective-C, Java and C#) and they must build a separate version of the app for each device type (Apple, Android, Windows, etc)

Without LongRange, IBM i developers who are already skilled in RPG or COBOL must learn these additional native programming languages or Web development tools before they can build mobile apps. This will increase both the costs and the time to deliver mobile apps.

LongRange allows IBM i developers to build native apps for multiple mobile platforms using their existing skills, making them productive immediately. LongRange also comes with a range of templates, sample applications and RPG/COBOL/DDS code.

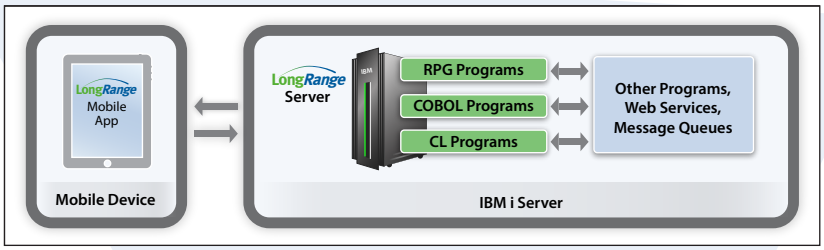


Figure 2: LongRange consists of a server-side management service (LongRange Server) and an app that runs natively on a mobile device (LongRange mobile app).

Technical Overview

LongRange consists of a server-side management service (LongRange Server) and an app that runs natively on a mobile device (LongRange native mobile app). Users download the app to their mobile device, connect to the server and are ready to use the mobile business solution.

When a mobile user invokes a form view in the LongRange native mobile app, the action sends a request to the LongRange Server, which calls the associated RPG, COBOL or CL program. These programs can also call other RPG, COBOL, Java or CL programs, and interact with Web services, message queues, etc. From a developer's perspective the programs are just like any other IBM i program. The program performs its processing and issues a send screen command to LongRange Server. (Note: the LANSA version is not restricted to IBM i servers).

The LongRange Server sends the screen to the app, which displays the screen on the mobile device. The LongRange native mobile app is faster than mobile Web apps when rendering screens and responding to user actions, providing a high performance solution.

The LongRange Mobile app processes input and output from IBM i programs with a significantly enhanced user interface, extended with touch, automatic portrait/landscape rotation and screen resizing for phone or tablet. IBM i programs can use the mobile device hardware capabilities, such as camera and geo-location, and the app can send and receive data between the mobile device and the server.

The app contains components for navigation, tabs, views and commands. It provides the infrastructure of the application. Developers snap programs into the application schema using LongRange Studio.

Tabs provide concurrent views of information from multiple programs, allowing users to quickly switch between views. There are 3 types of views rendered in the LongRange native app:

- Form views are screens generated by RPG, COBOL or CL with DDS programs.
- Web views are HTML applications or Web pages.
- Document views show document files and folders either on the mobile device or on a remote server.

Developers can build applications using only IBM i programs in form views, or composite applications using a combination of views.

LongRange Studio: Developers use LongRange Studio to define the static parts of an application, such as the menu item captions and icons, form captions and which IBM i program to call when a menu item is selected.

Deployment and Management

Deployment is by downloading the app from an app store and configuring communications with an IBM i server.

Updating mobile apps is the same as updating any IBM i program. Once updates are applied to your IBM i production system, they are immediately available to users of the LongRange mobile app, without them having to download or update anything on the mobile device. This is a major advantage of managing LongRange apps out in the field, in comparison with standard native apps that require mobile users to download a new app for every program update.

Security

Security is an integral part of the product. LongRange supports:

- IBM i security and authentication mechanisms up to and including the highest security level (level 50).
- Encrypted User identification and passwords.
- Log-in from specific devices only (an administrator can instantly remove a device from the list of accepted devices).

LongRange Server supports Secure Sockets Layer (SSL) and Transport Layer Security (TLS) protocols which allow for secure authentication, encryption, non-repudiation and VPN technologies

Download a free trial from:
www.longrangemobile.com
In depth instructions:
www.longrangeuniv.com

LongRange

Not Your Ordinary Mobile App Development Tool

These *native* mobile apps were built with RPG, COBOL or LANSA, and LongRange.
You need no HTML, no JavaScript, no CSS, no PHP, no Java and no Objective C.

www.longrangemobile.com

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