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Review

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Yachiyo Industry reforms IS department with LANSA

Government of Bermuda brings students home

KLM Equipment Services reduces airport costs

Boddie-Noell manages over 380 restaurants with LANSA

National Envelope provide a unified view across systems

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LANSA®
ADVANCED SOFTWARE MADE SIMPLE

Doing more with less

A WORD FROM PETE DRANEY
Director and CEO

In these trying times, as organizations worldwide trim their sails and fight to stay afloat, IT is certainly being asked to share the burden of reduced expenditure. LANSA customers should be in a better position than many of their competitors to avoid slipping backwards or, at best, marking time in the delivery of IT solutions to the business.

If you have ever taken the time to read the customer testimonials in each edition of the LANSA Review or "wandered" down the highways and laneways of www.lansa.com, you will have noticed that we have no problem getting our customers to sing LANSA's praises.

The overwhelming theme of all of these customer testimonials is that, with LANSA, you can do more with less.

KLM Equipment Services (KES), a leading provider of Ground Support Equipment (GSE) services, based at Amsterdam Airport Schiphol, manages and maintains thousands of pieces of equipment, ranging from simple baggage dollies to massive main-deck-loaders. LANSA's productivity means that a small team of two can develop and maintain the systems needed to manage all of Schiphol's GSE, initially with LANSA for iSeries and more recently with Visual LANSA.

Michiel Blok, information systems manager at KES, says, "To develop a huge system like ours in a 3GL would almost be impossible, or would require many more staff. The power of reuse and impact analysis that comes with LANSA is enormous. The fact we can develop and maintain a huge system like ours with a small team of two, indicates how powerful LANSA is."

National Envelope Corporation, the largest envelope manufacturer in the world, uses Visual LANSA and LANSA Integrator to provide users with a unified view over 20 locations, four ERP systems (JD Edwards, Baan and two home grown systems) and three databases (DB2/400, Informix and SQL Server). Most development and JDE integration was performed by a single developer, assisted by other programmers only for integration support for the other backend systems. From concept to pilot, the project took roughly three months.

Scott Steinacher, Web/Data architect at National Envelope, said, "In lean times, productivity is more important than ever. We can't afford to spend hours writing low-level code if a tool can do it for us. LANSA's IDE comes with an editor, compiler, debugger, data dictionary and page designer; and because it supports frameworks, it provides a structured, rapid-development environment. It's the most pragmatic development solution I've seen for the IBM i."

Boddie-Noell Enterprises (BNE) is a leading player in the casual restaurant business, managing over 380 restaurants across five brands, including 340 Hardee's restaurants and 30 Texas Steakhouse & Saloon restaurants. BNE's Restaurant systems are developed and maintained by a small team using Visual LANSA Framework. As a result of the efficiencies the system provides, the administration of all 380+ restaurants is managed by just ten staff members.

Phyllis Hardee, director of programming services at BNE, said, "Coming from COBOL, RPG and green-screen, there was a learning curve to develop graphical Windows applications. But with Visual LANSA Framework our developers picked it up pretty fast. Using a single LANSA language and methodology my team has been able to develop and support the applications that help our business grow and be more efficient. I am very proud of my team and what we've accomplished."

In the showcase article you will read that Shoe-D-Vision, a cooperative of over 320 shoe retailers in Denmark and Norway, has an IT team of only three to build and maintain a central ERP system, a Windows and SQL Server based retail back office system installed at the stores, and a Web solution to communicate with the retailers, all using LANSA.

The other customers featured in this issue also illustrate the same theme: fewer staff producing more deliverables with simplicity and consistency of design.

LANSA — Doing more with less.

Announcing: Visual LANSA Framework for .NET

Framework Based Development

Frameworks provide developers with the foundation to enable a quick start to building an application. The framework takes care of the generic functionality and underlying technology, freeing the developer to concentrate on delivering the business components. Without a framework, the developer will spend much of the development effort on constructing the foundations and plumbing for the application. While this approach may suit the developer's craving to write code, it does not serve the business or its shareholders well.

In contrast, the Visual LANSA Framework provides prototyping tools that help the developer assemble the application with user participation and approval all the way through the development cycle. The developer will expand the application gradually and does not need to throw away the prototype. LANSA's holistic approach to prototyping, designing and implementing an application ensures that all of the development effort goes towards delivering a business outcome.

The Visual LANSA Framework for .NET (VLF.NET) extends framework capability so that a developer can code once and deploy the application in a Windows rich-client context, as a Web application or both. The deployed application is a compiled C# executable that runs fast (not interpreted) and is safe (.NET CLR compliant with digital signature).

What is VLF.NET?

LANSA has designed VLF.NET to facilitate the development of commercial applications. VLF.NET offers a snap-in component architecture that facilitates agile development. The framework caters for business objects and includes segments to handle filters and searches, search result sets and handlers to allow users to work with instances of business objects.

As an example, with a 'customer' object, the filters and searches provide the means to choose subsets of customers by name, location or any of the attributes associated with the customer object. The result set returns a list of individual customers that match the criteria. The handlers manage tasks like editing a customer, showing current orders for the customer and a map showing the customer's location.

The snap-in architecture allows developers to build discrete handlers as components and to snap these components into the framework when the component is ready for deployment. Multiple developers can work on components simultaneously to reduce the elapsed development time. VLF.NET comes with ready-to-use components that allow developers to associate events with business objects, as well as components to include Google maps and other mashup-style applications.

On deployment, VLF.NET runs as a compiled C# executable that is digitally signed. The compiled executable runs faster than an equivalent HTML and JavaScript application that has to be interpreted. The application deploys on demand with near zero deployment overhead. The user interface operates in an AJAX style and interaction with the server occurs in the background. You can rearrange the layout and choose from Themes to control the color scheme.

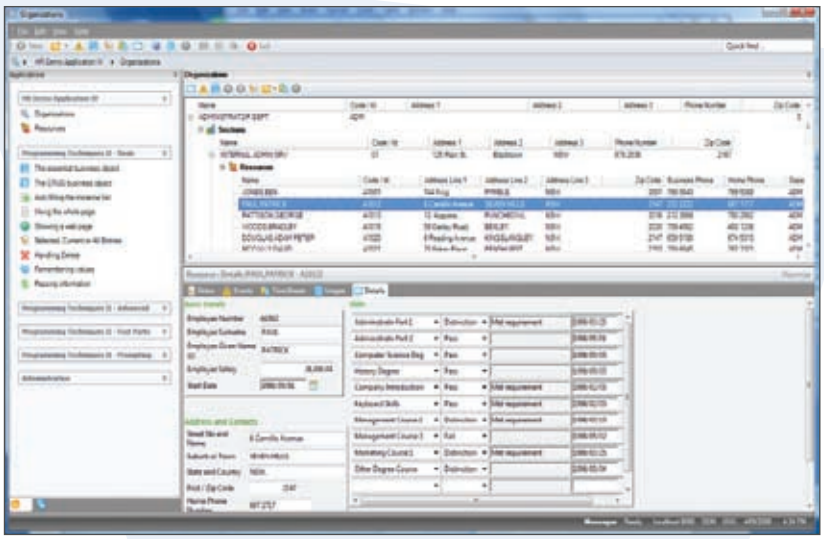
Inject New Life into IBM i Applications

In addition to being used for new development, VLF.NET can also be used in combination with RAMP, LANSA's modernization tool for 5250 applications. Developers can snap a handler for the 5250 application into the framework and RAMP will manage the user interaction with the 5250 application, presenting the green-screen as a graphical interface. Within the same framework, the 5250 application will now work side-by-side with applications built for a rich-client or Web user interface.

VLF.NET also caters for developers who need to work with the IBM i by providing snap-in components to manage spool files and link documents with business objects, (e.g. to link a digital image of an invoice with a customer and store them in the IBM i database).

Benefits of VLF.NET

- Component architecture supports snap-in capability for building composite applications (mashups)
- Supplied with readymade components for common tasks
- VLF.NET generates C# code that produces .NET CLR executable applications
- Compiled C# applications run faster than interpreted JavaScript
- Enhanced security — the digital signature ensures the safety of the application
- Near zero deployment overhead for both the Windows rich-client and Web applications
- Support for multiple application servers including IBM i
- Themes to enhance the visual aspects of the applications
- Users may rearrange the layout of the components in the user interface



Visual LANSA Framework delivers an authentic rich client experience to Web applications, built on C# and the .NET Framework.

Yachiyo Industry reforms IS department with LANSA

Yachiyo Industry, headquartered in Sayama City, Japan, is a leading manufacturer of automotive parts, such as fuel tanks, sunroofs as well as pressed and molded parts. In 2004, the company embarked on a reform program and spent three years transforming the structure of its information systems department.

With the ultimate goal of bringing business systems development totally in-house, the company selected LANSA, and in three months, delivered its first Web development project for the parts molding process system at the Kameyama plant. The company now plans to apply the application to some 50 parts process systems at its factories in five locations across Japan.

Rapid Expansion

Yachiyo Industry's computer history goes back to the 1970s, when NEC office computers were installed at two of the company's locations in Aihara (Saitama Prefecture) and Suzuka (Mie Prefecture). Both NEC machines were replaced with IBM mainframes in the 1980s and subsequently by IBM System i machines in 1997 and 1998. Since then, the System i has served as Yachiyo's core platform for applications that support head office administration, sales, distribution and manufacturing.

Yachiyo's business has been rapidly expanding over the last 10 years and systems were put in hastily without spending much thought on architecture and standards. Most IS projects were outsourced and the IS team was given little opportunity to build in-house skills.

When **Mr. Kazuyuki Uchiyama**, Manager Information Systems Department, took the helm in 2003, he realized that the IS department needed a transformation. "The IS department had fallen into such a decline that I openly declared that in its current state we may as well replace all the staff," says Mr. Uchiyama.

"Their infrastructure work mainly centred on supporting some 1,200 PCs and the team wasn't equipped to handle networking that well. Development and hosting of Web-based business systems was all outsourced and the role of Yachiyo's IS team was just to coordinate that."

Another issue that concerned Mr. Uchiyama was the lack of a standard development environment. Programs were written in a variety of different development languages, such as COBOL, RPG, LANSA, Visual Basic, Java and C++.

Yachiyo manufactures and sells automotive parts, such as fuel tanks, sunroofs, pressed and molded parts as well as complete automobiles.

"Moreover, despite the fact that there were only about a dozen staff members in the IS department, they were divided up into even smaller groups according to programming language. This meant they were unable to get involved when it came to programs written in other languages. As a result it was not possible to work collaboratively on initiatives involving the Information Systems department as a whole."

"LANSA's central repository helps to dramatically reduce the number of lines of source code, simplifying the development process."

A Three-year Plan for Reform

After applying the concept of Mieruka, which means that problems are identified and brought out in the open for discussion, Mr. Uchiyama created a reform plan for the Information Systems Department and set out to achieve the following goals over a three-year period:

- Standardization of operations and becoming a more 'visible' Information Systems department.
- Upgrading of infrastructure to provide 24X7 availability with zero downtime, while also improving network performance and processing speed by an ambitious factor of 10.
- Standardizing the development environment and adopting a business-centric philosophy, with the ultimate goal of doing all business systems development in-house.

For the standardization of operations, team members were assigned along the lines of business divisions, rather then being sub-divided by technical skills. Also, the roles and details of responsibilities for each team and team member were clearly defined. The role of the Information Systems Department as a whole was redefined, not just to provide IS services, but to align the information

systems both in Japan and overseas with business and to provide highly efficient, high-quality IS services to support and facilitate the company's global strategy.

The infrastructure was upgraded in December 2005. The network line speed was increased by a factor of ten and duplexed. At the same time, the old AS/400 model 620 was upgraded to a System i5 550 model, with 10 times faster processing speed. Lotus Domino was 'redundantly configured' and a network monitoring system was also installed.

LANSA was selected as the standard development environment. "We chose LANSA Xi as our standard development environment to overcome the lack of uniformity in our program portfolio and to consolidate the scattered programming skills in our IS department to just one," says Mr. Uchiyama.

"LANSA had been introduced to our company in the late nineties to get Y2K ready. So we were already familiar with LANSA's level of development productivity and maintenance efficiency. Evaluating LANSA's newest release in 2007, LANSA Xi, made us realize how LANSA had evolved even further."

"The LANSA Repository allows for central definition of business rules. This makes it possible to dramatically reduce the number of lines in program source code. It simplifies the development process and makes LANSA easy to learn for all development staff. I ranked LANSA high on those points and decided to make LANSA our standard development environment for the future."

The First LANSA Project

Yachiyo's first system to be developed using LANSA Xi was the parts molding process system at the Kameyama location.

Ahead of this project, nearly all of the IS department staff attended two weeks of LANSA training. During this period, all development stopped, so the staff could concentrate on the training.

The team then commenced development of the Kameyama plant parts molding process system. This system manages the entire production planning process and interfaces with the bill of materials, raw material delivery schedules and actual shipment variations.

Mr. Kazuyuki Uchiyama, Manager Information Systems Department, Yachiyo Industry Co., Ltd.

"We selected LANSA Xi with the ultimate goal of bringing business systems development totally in-house."

Taking equipment capacity, other resources and processing conditions into account, the system then produces plans for the loading and processing of materials and inspection of goods. These plans are continuously updated with the actual inspection results.

The system updates the inventory of parts, produces shipment documentation and labels and provides reports for operations, quality control, distribution and management.

The system includes 175 files and 156 programs. The average number of lines of code for online screen programs is 500, for batch/print programs it is 300 and for data upload and others it is 60.

This system, Yachiyo's first in-house developed Web-browser project, took only three months from commencing training of the developers to implementation by the users.

Yachiyo purchased LANSA Xi on 19 January 2007, commenced training of IS staff on 29 January, started design and development on 16 February, user training on the 23 April and parallel implementation on 28 April 2007.

IS More Visible and Business Aligned

"Compared to development using Java or .NET we were able to do the development in around one third of the man-hours. We were able to develop this system in-house quickly and at an extremely low cost, while we had been quoted 100 million yen (around US$960,000) by an outside supplier," summarizes Mr. Uchiyama.

"Being able to complete a significant Web development project in a mere three months, with a team that had no previous Web development experience, is a fantastic result."

"Based on the success of the system at the Kameyama plant for the parts molding process, similar systems will be implemented at the Kashiwabara, Suzuka, Yokkaichi and Hamamatu plants for the metal pressing, welding, molding and painting processes, altogether spanning 50 production lines."

"By realizing Mieruka for the IS infrastructures and the selection of LANSA as the standard development environment, we have achieved our goals. The IS department is more visible and business aligned. The information system is fast, secure and available 24x365. We have proven we can do major business system development projects efficiently in-house."

"The best outcome of the transformation is, that by using one standard development language, LANSA, all of the IS department's staff were able to talk to each other. I think that this will boost further development," concludes Mr. Uchiyama. ■

Company and System Information

- Yachiyo Industry Co. Ltd is involved in the manufacture and sale of automotive parts, completed automobiles and accessories. The automotive parts business includes fuel tanks, sunroofs, sheet metal products and plastic parts. Honda Motor Co. is Yachiyo's main customer. Yachiyo is headquartered in Sayama City, with subsidiaries throughout Japan. Overseas locations include Canada, the US, the UK, Thailand, Vietnam and China with India planned. For more information visit www.yachiyo-ind.co.jp
- Yachiyo Industry uses a IBM System i model i5 550.
- This case study is based on the article "LANSA Xi used as standard tool to develop Web system in three months", as published in iMagazine Japan, by Ms Kyoko Iida. For more information visit www.imagazine.co.jp
- LANSA Version 11 is known as LANSA Xi in Japan.

Government of Bermuda brings students home

The Government of Bermuda has implemented www.careers.gov.bm, an interactive Web site that links Bermudian students and graduates to local employers. The project was initiated through CURE (Commission for Unity and Racial Equality) in close cooperation with other departments. The site, which integrates using Web services with the Department of Immigration, was built by LANSA Professional Services and implemented with the help of Bermuda Information Technology Services (BITS).

Dr Myra Virgil, Director of the Department of Human Affairs, says, "The site helps to broker relationships between employers, students and graduates. It assists the employers in locating educated and skilled Bermudians and communicates with them about jobs, training, internships and other opportunities. Students can now make arrangements with employers and come back to the island with a career plan."

Making the Information Available

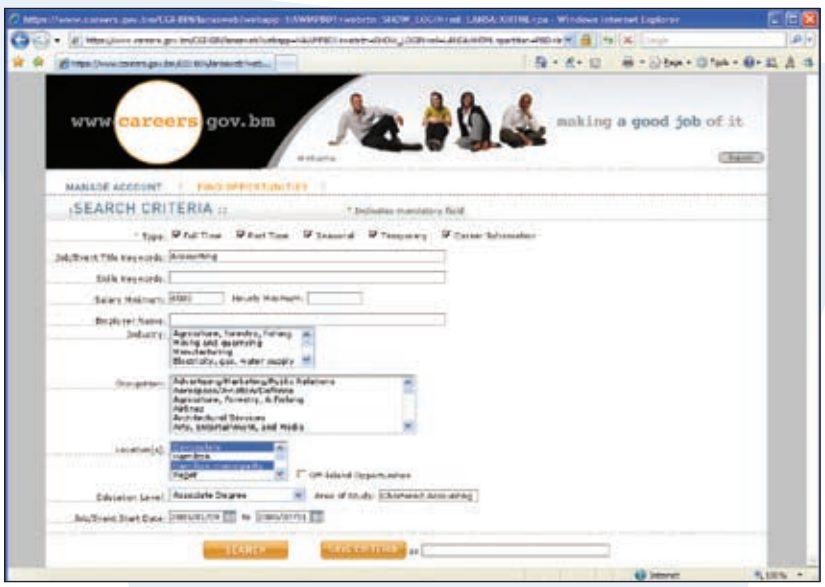
Bermuda, an overseas territory of the UK, is a group of islands located in the North Atlantic Ocean, east of South Carolina and north of the Caribbean islands. Its land mass is 53.3 sq km and its population is about 66,000. Bermuda's economy is primarily based on providing financial services for international businesses and luxury facilities for tourists.

Bermuda enjoys the third highest per capita income in the world and has less than a one percent unemployment rate. Salaries are high and the island is generally considered a great place to live and work. Yet it is a challenge to persuade young Bermudians who study overseas to return after graduation.

As a result, the international business community tends to rely on overseas staff for senior positions. Bermuda has over 9,000 expatriate work permit holders, mostly in upper level management. This imbalance discourages Bermudian students to return home and is a concern to the Government.

Virgil, the main driver of the Careers Web site and heading CURE at the time, explains, "Only a small percentage of upper level management jobs are held by Bermudians; the majority are held by permit holders. This gives Bermudians the feeling that visitors are doing better and it discourages our own students from seeking a career on the island."

"Employers would rather recruit Bermudians, as it is an expensive and lengthy procedure to arrange work permits for overseas job candidates. Moreover, there is a strict six year term limit, so you are going to have a lot of turnover. Employers would rather recruit someone who is going to stay."



The Government of Bermuda has implemented www.careers.gov.bm, an interactive Web site that links Bermudian students and graduates to local employers.

Employer representative groups indicated that in order to make better use of Bermudian skills they needed a better way of finding out who is studying overseas, what is their degree and skill set and when they will be returning to Bermuda. Previously, some of this information had been captured on immigration departure cards that were scanned. But the information was incomplete, out of date and not available in a usable format.

> **"The site helps to broker relationships between employers, students and graduates."**

Virgil formed the idea of using a Web site to get an electronic flow of information going between employers and students. "I wanted it to be more than just capturing student data and posting jobs. Employers would need to be able to post all kind of opportunities, such as summer internships, training and future employment openings. Through forums, younger students would have to be able to ask questions and get employer mentoring and advice, such as, what subjects to study and what career steps to take, if they are aiming for a specific job."

With a rough model in mind, Virgil drafted a concept document and drove approval to get budget. From there, with further input from other departments and stakeholders and technical direction by the Department of e-Government and the Information and Technology Office, the project took shape. LANSA Professional Services and BITS were selected to build the solution.

David Atwood, Director of e-Government, explains, "We selected LANSA because they had a deep understanding of what our requirements were and came up with additional ideas that were valuable. LANSA and their business partners had already been involved in various other Government projects such as the online Tax Commission system, Drivers Licensing and Vehicle Registration for the Transport Control Department and an Application Processing and Permit Tracking system for the Department of Immigration." ➔

The Careers Web Site

The site has been built with LANSA Web Access Modules (WAMs) and Ajax technology for a rich user experience. LANSA Integrator works behind the scenes to facilitate the exchange of documents.

Once students log on and create an account, they can post cover letters, upload résumés, access employment resources and search for jobs. Even after students sign off, the system continues to match them to potential opportunities, emailing results as new jobs and career information is posted.

Employers can manage online profiles, post and update job and training information, employment applications and access registrant information. As an example, they may contact students studying economics in different countries and notify them of upcoming opportunities within that field.

In designing the site, the team had to resolve several concerns, such as preserving confidentially by programming for blind matching of student and employer searches.

The Bermudian status of students was more complex to verify. Students are asked to enter their name and passport number when they register, but many Bermudians, especially overseas students, have dual nationality and may hold another passport. To verify the Bermudian status of a student, the careers system uses LANSA Integrator and Web services to communicate with the Department of Immigration's system.

Initially Atwood was considering email messaging for students who could not be matched immediately, as he was worried about scope creep and the project budget.

"To communicate using Web services, we had to collaborate with both Immigration and the vendor of the MPI (Master-Person-Index) product. But I am happy that we followed the Web services transaction route. It wasn't hard to set up and it guarantees that registration requests will not fall in between the cracks."

"Development was pretty rapid. The entire solution took just a few months," explains Atwood." Also, the original requirements were well done."

The careers site is deployed on an IBM System i, as are many of the other systems of the Government of Bermuda. "The System i is solid and secure and you don't need as many people to run it," explains Atwood.

Marketing the site was a critical success factor. In addition to magazine, newspapers and search-engine advertising, the site has appeared in video ads in cinemas and on the radio.

"Development was pretty rapid, the entire solution took just a few months."

"Currently we are running the site in a hosted System i environment. By hosting it externally, we took away some of the delays that may have occurred in setting up the infrastructure ourselves. Also, most students are in America and Canada, another reason why hosting works well."

Marketing the site to students in innovative ways was a critical success factor, and Insight Visual Communications brought an in-depth plan to the Government. In addition to magazine, newspapers and search-engine advertising, the site has appeared in video ads in cinemas and on the radio during holidays when students return home. Bermuda's premier has visited a number of universities and has been active in getting students involved.

Long-term Foundation

"Employers have commented that the site helps them locate young educated Bermudians at various stages of their study and career, the exact audience they are aiming for; people they can develop and mentor and who are committed to the community," explains Virgil.

"Students can now make arrangements with employers and come back to the island with a career plan."

"The site may seem slightly out of CURE's and Human Affairs' mandate, but one of the major factors for equality in the workforce is access to resources and access to people. Knowing about the right training, the right opportunities, the right access to certain companies helps our students to go up the ladder and get a fair shot at those upper level management jobs."

"The solution also addresses a longstanding data management challenge. For many years, information was limited to what students filled out on their immigration cards. Now using the latest Web technology we have the capability to collect up-to-date data about students, both overseas and local," concludes Virgil.

"I believe that the careers system will provide years of service in facilitating a mutually beneficial career dialog between students and employers."

"The solution has been modeled on best practice for Web-based self-service and is easy to use. It provides a long-term, sustainable foundation for ensuring that we capture the extent of available human capital in Bermuda and that this information is available to all parties concerned," concludes Atwood. ■

Company and System Information

- Bermuda is a British overseas territory in the North Atlantic Ocean. Bermuda has one of the world's highest GDP per capita. Total population is about 66,000 with over 7,000 guest workers (2007 survey).
- For more information about BITS (Bermuda Information Technology Services) and Insight Visual Communications, visit **www.bits.bm** and **www.insight.bm**
- For more information about the careers site visit **www.careers.gov.bm**

KLM Equipment Services reduces airport costs

KLM Equipment Services (KES), an independent subsidiary of KLM, the national Dutch airline, is a leading provider of Ground Support Equipment (GSE) services. Based at Schiphol, one of Europe's top airports, KES manages and maintains thousands of pieces of equipment, ranging from simple baggage dollies to massive main-deck-loaders. LANSA's productivity means that a small team can develop and maintain KES's system, initially with LANSA for iSeries and more recently with Visual LANSA.

Michiel Blok, Information Systems Manager at KES, says, "Using LANSA and a small development team of two, assisted by four contractors during project peak time, we have built our own system that provides us with a major competitive advantage. While a lot of new functionality was introduced, the number of programs was nearly halved due to efficient user interface design and reuse of components."

The Need to Modernize

KES provides a wide range of services in all areas related to Ground Support Equipment (GSE) services, with a focus on minimizing operational costs for customers and maximizing availability and utilization of equipment. KES's main areas of service include maintenance, fleet management, leasing, trading of equipment, consultancy, spare parts, rental and airside services such as refuelling and equipment pick-up/return.

KES manages 15,000 vehicles of which over 3,000 are motorized, with the majority of the equipment based at Schiphol. KES's maintenance and consultancy customers include major airlines, airline handlers, KES's own lease division, Schiphol and many other airports around the world.

Since the early nineties, all of KES's operational systems have been developed with LANSA for iSeries, the predecessor of the Visual LANSA.

"Back in 1992, LANSA's short learning curve and productivity were the main deciding factors," explains Blok. "We developed the entire equipment support system with just two developers in less than 6 months."

Since then, the system has grown tremendously with new modules for Fleet Management, Leasing, Trading, Commercial Consultancy and Fuel Distribution, all still developed and maintained by the same team of two.

Although the system had been extremely well designed, the green-screen user interface and lack of Windows integration started to affect user productivity, especially for new employees. KES decided to redevelop its systems. After an extensive evaluation and trial of Java and some other tools, KES selected Visual LANSA.

"We were already accustomed to LANSA's intuitive 4GL and repository. Java felt like a step backwards in comparison. It was more complex and required a lot of low level coding. I wanted to keep my team small and productive and decided for LANSA."

"The main reason to move our systems to a Visual LANSA Windows environment was to provide a more intuitive user interface with tree views, drag-and-drop, word wrapping and the ability to present more information in a single screen," says Blok. "Another reason was to give customers Web access."

KLM Equipment Services manages and maintains thousands of pieces of equipment, ranging from simple baggage dollies to massive main-deck-loaders.

"The fact we can develop and maintain a huge system with a team of two, indicates how powerful LANSA is."

Smooth Implementation

"Our two developers, assisted by four contractors during project peak times, used Visual LANSA to redevelop the original system and add several new modules," explains Blok. "Actual development took about one and a half years."

"While a lot of new functionality was introduced, the number of programs was nearly halved due to efficient user interface design and reuse of components," explains Blok.

The design of the new system's database was kept largely the same as the existing database. Because KES was planning a phased implementation, the old system had to be updated with some of the new changes, resulting in partial duplication of development effort. However, it also meant that there was no need for extensive data conversion, which made the implementation of the new system a low risk event.

Staff members familiar with Windows only needed a few minutes to find their way around the new system, according to Blok. "Overall the reaction was positive. Users find it an enormous advantage that they can view more information on a single screen. Also, they find navigation easy using the tabs and links." ➔

Efficient Procedures

A large part of the new functionality is in the area of inventory management, spare parts and procurement. Previously KES used Movex for this, but the ERP's functionality was overkill for KES and required users to fill out many screens and parameters that were irrelevant to them.

"The new procurement module is easier to use and many times faster. Previously, creating a purchase order could take 10 minutes. Now it takes on average only one minute," says Blok.

Warehouse management has become more efficient as well. Warehouses and workshops are each presented with a small graphic on the screen and users can graphically drag-and-drop a delivery to the desired warehouse. Previously it required the input of the item number and location code. The drag-and-drop transfers are much faster and less prone to typing errors.

The planning module allows for scheduling of inspections, repairs, maintenance and modification jobs at over 100 workshop bays. It also caters for the scheduling of runners, who offer the service of driving/towing vehicles to and from the bays. KES employs 100 technicians and 26 runners.

KES's technicians carry laptops that allow them to view and update equipment maintenance history. These applications had to be designed with a slow GPRS connection in mind, as strict airport safety regulations disallow Wi-Fi networks.

One of the LANSA applications collects data from the Airport Equipment Fuelling System. All motorized equipment has been fitted with a transponder and each tanker has an antenna that enables it to identify authorized vehicles. The details that are collected by the tankers are uploaded to KES's system for fuel consumption statistics and billing. KES's five tankers handle over seven million liters of diesel each year.

KES also used LANSA to provide its customers with a Web site where they can log repair requests. Previously, repair requests consisted of written fault reports that were attached to the vehicle. As the manual system could not enforce rules, fault reports were often incomplete, for example only stating: "Not working". It would also happen frequently that drivers called in vehicle problems from their mobile phone, neglecting any procedures.

KES receives over 17,000 repair requests per year and the Web site has significantly streamlined procedures. Efficiencies are not just limited to the workshop, but also flow on to administration.

Michiel Blok, Information Systems Manager at KLM Equipment Services in front of the workshop at Amsterdam Airport Schiphol.

"The wealth of information also lets us offer razor sharp fees to our customers."

KES's Competitive Advantage

With over 15 years of statistical information, KES can provide its customers with high quality management information, such as accurate analysis of running cost per hour or per kilometer for many types of equipment. This information also allows KES to offer very competitive maintenance and leasing prices.

"We can provide significant savings for our customers. Some of our airport customers have seen their GSE and fleet cost come down by over 50 percent. The system helps us and our customers to make better buying decisions. There are virtually no other GSE service providers who can offer equipment consultancy at the level we offer."

Another area of savings KES can provide its customers is in managing spare parts. KES has agreements with several equipment suppliers for inventory management and distribution of parts. Being based at a major aviation hub provides KES an ideal location for this service.

"By managing both the inventory for parts suppliers, as well as providing customers with parts availability and maintenance services, we can maximize availability," explains Blok. "The same economy of scale also applies to our purchasing power. We could never manage this without our LANSA system."

Staying in the Lead

"To develop a huge system like ours in a 3GL would almost be impossible, or would require many more staff. The power of reuse and impact analysis that comes with LANSA is enormous. I find it difficult to quantify LANSA's productivity, especially for Windows development, but the fact we can develop and maintain a huge system like ours with a small team of two, indicates how powerful LANSA is."

"We could have bought SAP, but having our own system gives us a competitive advantage. The equipment information we gather is unique in the ground support equipment industry and helps our customers to make the right decisions."

"The wealth of information also lets us offer razor sharp fees to our customers. Supported by the LANSA-based system, the leasing of equipment has grown to become one third of our total revenue and is still growing," concludes Blok. ■

Company and System Information

- KLM Equipment Services (KES) services the entire fleet of ground support equipment at Amsterdam Airport Schiphol, which with 48 million passengers and 1.6 million tonnes of cargo passing through each year is one of Europe's top airports.
- KES employs 170 staff, of which 120 technicians and runners working in shifts.

For more information visit: **www.kes-gse.nl**

Boddie-Noell manages over 380 restaurants with LANSA

Boddie-Noell Enterprises Inc. (BNE), headquartered in Rocky Mount, North Carolina, is a diversified, family owned company with interests in a variety of restaurants including over 340 Hardee's franchise restaurants, 30 Texas Steakhouse & Saloon restaurants, nine Moe's Southwest Grill franchise restaurants, six Café Carolina and Bakery restaurants and one Highway Diner. BNE uses Visual LANSA Framework for virtually all development in its restaurant business.

Phyllis Hardee, director of programming services at BNE, said, "Using a single LANSA language and methodology, my team has been able to develop and support the applications that help our business grow and be more efficient. The systems we have delivered are flexible and user friendly and help us to manage over 380 restaurants across five brands with a small group of managers and accounting staff. I am very proud of my team and what we've accomplished."

From COBOL and RPG to LANSA

The BNE story began in Fayetteville, N.C. in 1962 when Carleton Noell and his two nephews, Mayo and Nick Boddie, opened one of the first Hardee's restaurants. Fast food was a relatively new concept back then, but BNE's commitment to friendly service and great-tasting charbroiled burgers established it as one of the industry's leaders.

BNE has been steadily growing since and added other restaurant brands to its holdings. Today the company also develops commercial and resort properties and is one of America's largest family owned companies with over 12,000 team members.

Since the late eighties BNE had been running its restaurant business on an IBM mainframe with in-house developed applications, but the systems lacked flexibility. Simple matters like setting up a new discount or a new restaurant required involvement by the IT department, let alone adding a new brand. Moreover the system was not Y2K compliant and when the year 2000 approached, BNE decided to migrate its system from the mainframe to the AS/400 and then redevelop.

"Initially we just brought all the programs over to the AS/400 and made them Y2K compliant, without further improvements, knowing that we would revisit the system later to redevelop it properly," explains Phyllis.

"We didn't consider RPG and COBOL a good way forward. We were looking for a language that we could use across the board, something that all our developers could relate to and something that would help us create modern and good looking applications."

"LANSA stood out and after intensive research we decided to go with LANSA to redevelop our systems."

"We opted to use Visual LANSA Framework, because we liked the Outlook-style screens it creates with the searches, filters and tabs. Users can easily swap between sales, invoicing and other application areas, without having to navigate through multiple menus," says Phyllis. "Over time we built a lot of applications and it's all organized very neatly with a tree structure on the left and tabs on the right,"

"We like the Outlook-style screens Visual LANSA Framework creates."

Quick and Accurate Information

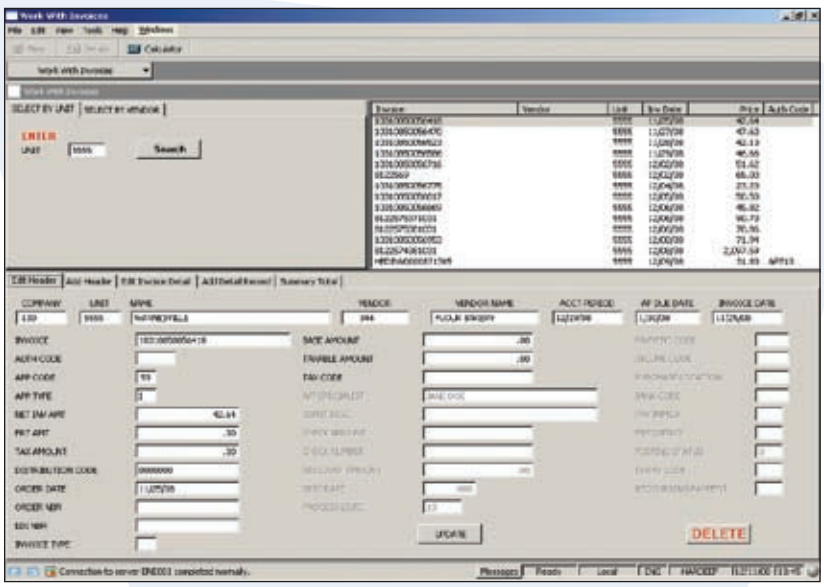
One of the first applications that BNE developed with Visual LANSA Framework was the Unit Master application, which serves as the anchor for all other applications. It houses all of BNE's restaurants with links to the brand they belong to and a variety of codes and parameters that direct the system how to process transactions for each restaurant.

Through the night the restaurants are 'polled' for their daily sales and marketing data, which is mostly generated by the Point-of-Sales (POS) systems, complemented with additional inventory, payroll and cash register information that is entered via forms and spreadsheets. The restaurant data is then fed into the LANSA-built corporate system.

The programs provide BNE's accounting specialists with an easy online facility to find and analyze exceptions, such as cash imbalances.

"The exception reporting is a real time saver," says Phyllis. "The system recognizes abnormalities and gives the accounting specialists the opportunity to drill down to further details. Most problems are solved right away."

The marketing data that is captured is extensive. Every time the sales key is pressed at a restaurant's cash register, information about the order is saved. "This allows marketing to analyze demographics and food preferences,



BNE's Visual LANSA Framework developed system helps them to manage the administration of over 380 restaurants across five brands with a small team of 10 account specialists.

such as popular food/drink combinations. The information allows us to fine-tune our decisions and measure the effects of promotions and discounts, "says Phyllis.

Reduced Workload

BNE's Vendor Invoice system is another Visual LANSA Framework application that has resulted in efficient procedures and substantial savings.

All of BNE's vendors are encouraged to send their invoices electronically. "We accept anything that we can get a vendor to provide us electronically, including spreadsheets and flat files," says Phyllis.

Initially the vendor provides a master file of products and prices, which BNE processes into their Vendor Price Master system. Once a vendor has been set up, all invoices that the vendor sends will be matched against the master file and the responsible account specialist will be alerted of inconsistencies.

"We use it for all our vendors, whether they deliver food or uniforms. The system makes it easy to investigate invoices that don't match and also provides detailed statistics.

"The system eliminates a tremendous workload, as the account specialists don't have to enter invoices manually or count and compare invoices in case things don't add up. Accuracy has improved greatly and vendors are getting paid quicker."

"The systems we have developed with Visual LANSA Framework help us to manage the administration of over 380 restaurants across five brands with just ten account specialists."

Flexibility Puts Users in Control

Phyllis and her team have designed the system for ultimate flexibility, allowing users to easily add new brands, new payment methods and so forth.

"Everything is table driven and nothing is hardcoded," explains Phyllis. "When we opened our first Moe's Southwest Grill, all we had to do is setup a few new tables. When the first polling came in everything just worked, without us having to add or change any code. We can just plug in a new brand and we are all set."

The same flexibility applies throughout the system. Users can setup new product

The BNE development team, clockwise: Phyllis Hardee, Deborah Webb, George Staton, Roland Letchworth, Frank Folsom, Jimmie Hudson, Wayne Wobbleton, Randy Griffin, Paula Wright.

"We can just plug in a new brand and we are all set."

categories and define new discount rules, such as 'second burger for half price' and specify the GL account to which that discount should be posted. Food specialists can simulate a recipe change and run reports to calculate what the cost effect would be.

"Whether it is setting up a new brand, a new product or a new recipe, our users are in control and can do it themselves," says Phyllis. My IT team is out of the picture because no program changes are required. I can't stress enough how important it is for our business to have that kind of flexibility".

eService is Next

Now that most of the restaurants have broadband access, BNE is planning to provide applications over the Web. Initially these will be on the payroll side, allowing staff to choose their own benefits, change their contact data and access their roster. Also on the agenda is providing Web access for entering claims, such as employee work compensation. Eventually all Outlook forms at the restaurants will be replaced with Web applications, providing the benefits of real-time access and validation at the source.

"We will be using the same secure Visual LANSA development environment, but this time we will deploy the application with a browser interface rather than a Windows interface," explains Phyllis. "We are really excited to go in the eService direction and plan to do the project with our own team. It will remove the need for rekeying information and a lot of other inefficiencies."

"Coming from COBOL, RPG and green-screens, there was a learning curve to develop graphical Windows applications. But with Visual LANSA Framework our developers picked it up pretty fast. We continually refresh our training as LANSA makes new versions available to make good use of the release enhancements that come along."

"With a small team and a single LANSA language and methodology we have been able to develop and support the applications that help our business grow and be more efficient. I am very proud of my team and what we've accomplished, and I know there is a lot more to come," concludes Phyllis. ■

Hardee's · TEXAS STEAKHOUSE & SALOON · Moe's southwest grill · CAFE CAROLINA AND BAKERY · DINER

Company and System Information

- Headquartered in Rocky Mount, N.C., Boddie-Noell Enterprises Inc. (BNE) is a diversified, family owned company with interests in a variety of restaurant and land-development projects. The company is the largest privately held franchise operator of Hardee's restaurants. BNE employs over 12,000 people. For more information visit: www.bneinc.com
- The LANSA-based systems integrate with Lawson Financials and with the Xpient and Micros POS systems.

National Envelope provides a unified view across systems

National Envelope Corporation, founded in 1952 by William Ungar, has grown to become the largest envelope manufacturer in the world and one of the largest women-owned businesses in the United States. Based in Uniondale, New York, the company operates facilities across the US and produces more than 180 million envelopes per day. National Envelope uses Visual LANSA and WAMs to provide browser-based access to its ERP systems, LANSA Integrator for a variety of data assimilation tasks and LANSA Commerce Edition for eCommerce.

Scott Steinacher, Web/Data Architect at National Envelope, says, "We used Visual LANSA and Integrator to develop a sophisticated, browser-based application that provides our user community with a unified view of enterprise data. The system has improved customer service, reduced license fees and simplified training. Using the same tools from LANSA, we can also publish and consume Web services, exchange XML documents, and perform many other tasks without intensive coding."

The Need to Integrate

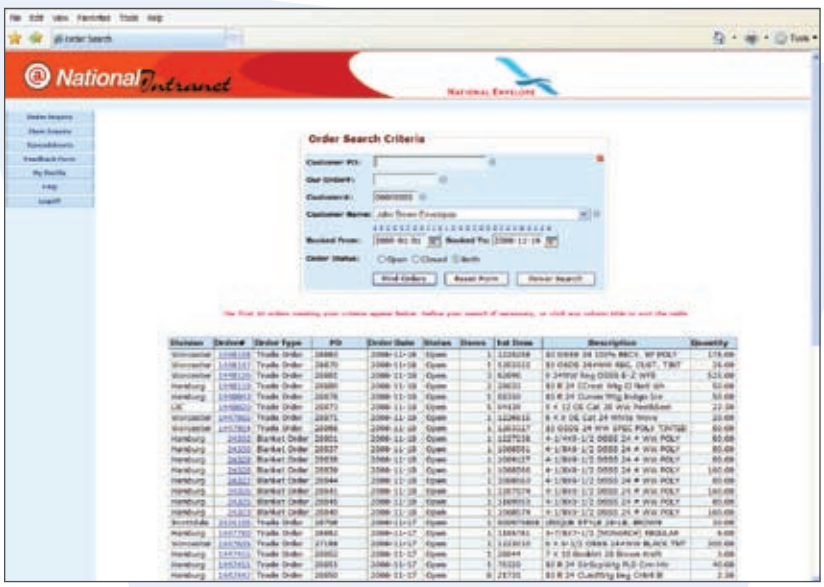
National Envelope has grown dramatically since the nineties through acquisitions and, as a result, it maintains two ERP packages (JD Edwards and Baan) and two home-grown legacy solutions. The company relies heavily on the System i and logical partitioning and even runs its Informix-based Baan application on the platform.

"Integrating data from diverse systems was one of the challenges faced by the technology group", explains **Aaron Brown**, IT Director at National Envelope. "Users on both sides of the firewall wanted a unified view of data from across the enterprise."

However, the unique characteristics of each system made it difficult to provide a cohesive view of that data. To help minimize transportation costs, customers can place orders at a location nearest to them. Since customers also often have offices across the country, their orders may reside in multiple systems.

"We wanted to provide a better service experience, especially for those customers who chose to use the phone. They should only have to place one call to their nearest National Envelope office and their questions should be answered immediately," adds Brown.

With that goal in mind, the technology group used Visual LANSA Web Access Modules (WAMs) and LANSA Integrator to create a system that would provide browser-based access to order, production, inventory and shipment data across the company.



With Visual LANSA WAMs and LANSA Integrator, National Envelope has developed a sophisticated browser-based application.

"Technology that improves service and helps the bottom line is sorely needed in today's climate."

Integration Across Multiple ERPs

The new system, aptly named "Unity", culls data from four ERP applications and three databases (DB2/400, Informix and SQL Server). What's more, it gives users access to millions of PDF documents such as invoices, statements and work orders. Unity runs natively on the System i under Apache.

Unity's main focal point is a single Web page with just four tabs. The Shipments tab displays delivery information, the Production tab provides manufacturing details, while the Order Header and Detail tabs present information about the customer and orders. Within each tab, data appears in grids that can be re-sorted by clicking on any column. Each grid also features subject-sensitive links that can be used to drill down to more detailed data.

In addition to viewing data on Web pages, Unity users can generate and distribute spreadsheets with a wide variety of selection criteria, including date ranges, order types, customer and product attributes. The spreadsheets are not simple 'CSV dumps' that contain flat text data. Thanks to LANSA Integrator's Excel services, columns contain true dates and numbers and are professionally formatted with fonts and colors. LANSA Integrator's SMTP service then delivers the spreadsheets to one or more recipients via email.

As the project progressed, a small group of pilot users helped fine-tune Unity. Most LANSA development and JDE integration was performed by Steinacher, while several programmers provided integration support for the other backend systems. From concept to pilot, the project required roughly three months. ➔

During development, Steinacher made extensive use of Visual LANSA's Tab, Grid, Anchor and other Weblets. "Weblets are very helpful because they eliminate the need to write JavaScript or VBScript," says Steinacher. "LANSA Integrator also proved invaluable. Without having to code at the sockets level, we can populate spreadsheets and Web pages with data from multiple backend databases. Conversely, from a single source, we can push data to multiple backend systems."

"Overall, LANSA exploits the System i and Windows beautifully. It's really the best of both worlds – the ease-of-use of Windows coupled with the reliability, security, scalability and performance of the System i."

Better Customer Service

Sales reps and other users rely on Unity to access data from across the company. For example, a staff member in an East Coast plant can now easily view orders at a facility in California. The need to call around has been greatly reduced.

"With LANSA WAMs and Weblets, we created an intuitive, modern application that offers lots of context sensitive help and instructions. It even has its own FAQ to answer common questions. There is virtually no need for training," says Steinacher.

Theresa Kasesnik, an Account Executive at National Envelope's New York facility, agrees. Kasesnik piloted Unity and contributed to its success. Given that most of her business revolves around custom orders, she receives lots of phone calls about envelope specifications.

"With Unity, I can locate orders instantly," says Kasesnik. "For example, if a customer calls about the release or repeat of a specific order, but all he or she knows is that it was for a 9-by-12 'white wove' envelope, I can find all the orders that match that specification, regardless of where they were processed. I can then zoom in on the results with other criteria. Being able to view what was ordered at other locations and at which price, really helps me to make more informed decisions and give better advice to customers."

"I can even view the actual invoice in PDF format. And when I am in a tab, I can sort the information any way I want. This makes it easy to analyze data right in my browser."

"I estimate that Unity has increased my efficiency level by 20 to 30 percent. For the customer, that means getting all their questions answered in one phone call," concludes Kasesnik.

National Envelope's state-of-the-art envelope manufacturing facility in Ennis, Texas, USA.

"We can't afford to spend hours writing low-level code if a tool can do it for us."

Ed Ringer, Senior Vice President of IT at National Envelope, points out that, from a cost perspective, it is a big plus that Unity is browser-based. "Both Baan and JD Edwards charge license fees per user. With LANSA, we developed a solution that reduces our need for additional licenses. Technology that improves service and helps the bottom line is sorely needed in today's climate", adds Ringer.

Lasting Success

National Envelope's introduction to LANSA was in 2001, when the company wanted to provide its customers with Web-based access to their orders. At that time, the company selected LANSA Commerce Edition for JD Edwards. In addition to placing orders directly, customers use the site, dubbed @ National, to view orders, shipments, inventory, invoices and other critical information. The application also emails order confirmations and shipment notifications to customers.

"LANSA Commerce Edition was very appealing to us because it came with the source code," explains Steinacher. "We didn't want to build an eCommerce site from the ground up because shopping cart functionality is essentially a commodity service. At the same time, we didn't want to be dependent on a vendor for maintenance tasks. LANSA consultants showed us how to maintain the site ourselves."

"And here it is, seven or eight years later, still running strong and meeting our needs."

Productivity is Key

Going forward, National Envelope will continue using LANSA to deliver innovative solutions. "Our focus is always on the customer", says Brown. "For the technology group, that means using our expertise to help the company build tighter relationships with its customer base. Whether it's letting customers view data over the Web or integrating their systems with our own, LANSA helps."

"In lean times, productivity is more important than ever", concludes Steinacher. "We can't afford to spend hours writing low-level code if a tool can do it for us. LANSA's IDE comes with an editor, compiler, debugger, data dictionary and page designer. Because it also supports frameworks, it provides a structured, rapid-development environment. It's the most pragmatic development solution I've seen for the System i." ■

Company and System Information

- National Envelope Corporation, headquartered in Uniondale, New York, is the largest manufacturer of envelopes in the world, with facilities located across the U.S.
- Unity is integrated with JD Edwards, Baan/Informix and several homegrown applications. All these systems reside in logical partitions on the System i. Unity also integrates with several Microsoft SQL Server-based applications.

For more information about National Envelope Corporation, visit www.nationalenvelope.com

Scalandes modernizes to deliver business value

E.LECLERC SCALANDES

Scalandes, the purchasing and logistics arm of E. Leclerc, one of France's major retail co-ops, supplies the stores in the South West of France and Portugal from its warehouse in Mont De Marsan. For over 10 years, the company's back office systems on the System i have evolved and grown with LANSA, such as with real-time XML integration of the national catalog. To further improve user productivity, Scalandes, together with its software partner Sprint Logiciels, have modernized the system using RAMP and Visual LANSA.

Bernard Cambou, IT Director at Scalandes, says, "Our system has grown over the years and covers all the business areas. It forms an ivory tower that no one would like to replace. By applying the 80/20 rule and modernizing the most important programs first, we have significantly increased user productivity and responsiveness, without having to redevelop the entire system."

Revamping Screens not Enough

"I had two goals in mind when we started the modernization project of our core application," explains Cambou. "Firstly, I wanted to deliver added value to our business by providing more efficient data access to those users who constantly need to make decisions based on information."

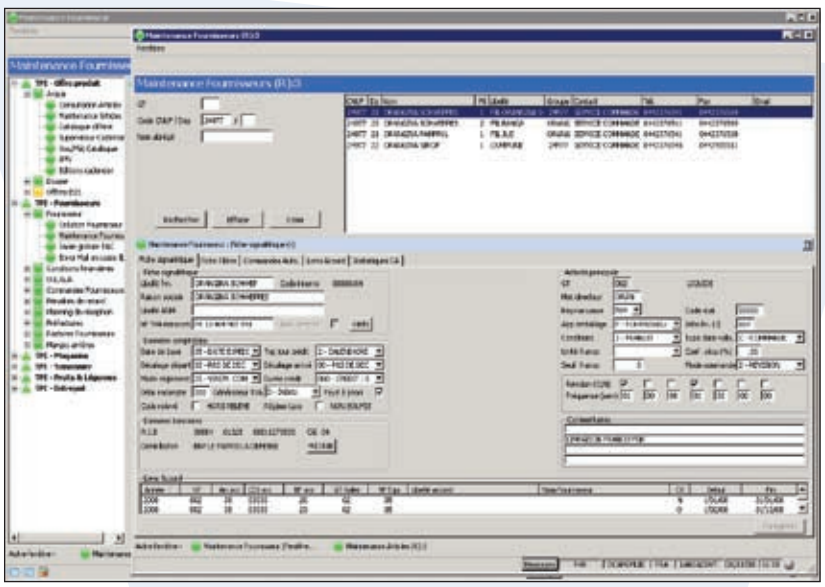
"Secondly, I was looking for a way to remove the barriers between Windows and System i applications."

"The financials, historical information, competitive data and other statistics are stored at different locations throughout our systems. Therefore it was very difficult to get a quick and clear overview. This was hampering our users in making the right decisions and responding in a timely manner."

"Product purchase information was spread out over 15 green-screens. Now it's grouped over just two tabs. Having a consolidated view is necessary to make sound and quick decisions. The users would eventually collect the information they needed, but it took time because it was only available in bits and pieces. That made it hard for our users to take decisive actions when needed and slowed down our responsiveness as a business."

"Users were asking us to move from character-based screens to a graphical user interface, but I didn't want to limit the project scope to just revamping 5250 screens. I wanted to regroup data from multiple screens into a single screen and create a far more useful interface for the user."

"I wanted to rethink our system in a business manner without having to rebuild it. I wanted to reuse the existing system assets. No replacement, no redevelopment and no implementation of a packaged ERP system. I wanted to simply improve user productivity and responsiveness and, most importantly, not lose any of the system's functionality."



The Visual LANSA Framework provides a portal of composite applications presenting users with a tree view that includes all functions, regardless of where those functions are deployed.

"We chose RAMP to get maximum reuse of the system's functionality."

80/20 Rule Provides Starting Point

"We chose RAMP and Visual LANSA to get maximum reuse of the system's functionality and stability," says Cambou. "We simply re-designed the user interface and the way the information is displayed, while preserving our existing system assets," explains Cambou.

The Visual LANSA Framework provides a portal of composite applications that can be deployed either as Web or Windows rich clients. Users are presented with a tree view that includes all functions, regardless of whether those functions are deployed on the System i, Windows or ActiveX. Visual LANSA Framework gives them access to those functions with a single unique and standard graphical interface. The Visual LANSA Framework was crucial to Scalandes's success.

Cambou comments on the user feedback process, "We organized a workshop where the users and the IT team worked together on a new design for the user interface. This was our opportunity to group together what belongs together and remove redundancies. We rebuilt the main menu based on ideas and feedback from the users. We worked through each business line one by one. Some users were worried when they used the new system for the first time. However, they all quickly got used to it."

Stéphane Labrousse, director of Sprint Logiciels and project manager for Scalandes' system modernization project, adds, "Indeed,

we took inventory of all business functions and together with the users we reorganized these in the Visual LANSA Framework."

"In a business application environment, the 80/20 rule is common: 20 percent of the functions are used 80 percent of the time. That '20 percent' is the place where you should start your modernization project. You need to have a very good understanding of the users' day-to-day activities to decide on your starting point," continues Labrousse.

"With Visual LANSA, we have developed a new way of visualizing and sharing information. Visual LANSA and Visual LANSA Framework are very powerful development tools. Plus, using RAMP, we can keep our 5250 assets and have them dynamically revamped in the same Windows framework. The new LANSA portal gives our users a productive and single graphical point of entry that shaves several minutes from each of their transactions."

Benefits in Quality and Quantity

"The benefits you can realize are both in terms of quality and quantity. First of all, the quality of our customer service and procedures in general have improved. We have dozens of users who now have a better way of answering the inquiries of our customers, the stores. Our staff can instantly see the status of orders and deliveries. All information is available with a single click. Previously the information was dispersed over several screens," says Cambou.

"On the quantitative aspect, the actual time and dollars we save, that is more difficult to measure; but I can say that the gains are significant."

Labrousse adds, "The business users as well as the IT department quickly adopted the new LANSA tools and LANSA-built application. Everybody is benefitting in terms of productivity. Also, users find their work more interesting now that repetitive tasks have been removed. The number of requests we get from the users testifies to their involvement and passion for this modernization project."

"We had no previous experience in Windows development. In spite of that, it was easy to adopt event driven and object oriented programming."

Scalandes, the purchasing and logistics arm of the E. Leclerc co-op supplies over 580 individually owned hyper-markets, supermarkets and department stores.

"Our users wouldn't want to go back to the old system for anything in the world!"

"LANSA's practical and business oriented approach is important for us. Visual LANSA offers enormous capabilities for reuse of components. Any calculation or other piece of logic can be reused by a 'single right click' on multiple forms. We are able to reuse components in any context. For example, we reused them in a dashboard dedicated to statistics, frequencies and variation ratios or breaking events. Visual LANSA's development technology is intuitive and comes naturally".

Delivering Business Value

"We met our goal; we reused the existing system; we improved on it; we have not lost any functionality and all the data is available with a single click," says Cambou.

"Our users wouldn't want to go back to the old system for anything in the world! That's the proof — we really improved their day-to-day work."

"As for the future, after having brought a lot of efficiencies to the operational level, my next goal is to provide more value at the decisional level. With Visual LANSA, we have the right tool to develop management dashboards and consolidate information."

"I also want to reduce the users' reliance on Excel. When you extract data for manipulation in Excel, you always run the risk of errors and misinterpretations through manually rekeying and filtering of data."

"As soon as we get the data in our system, we will bring reliability and the capacity to act promptly at decisional and policy making level. We will also improve the way we present information, which is important for understanding the results and making decisions."

"In conclusion, I would like to say that this project confirms my original idea that simply revamping screens does not provide any real value, the screens just look different. A modernization project should concentrate on delivering business value," concludes Cambou. ■

Company and System Information

- The E. Leclerc co-op was established in 1949 and supplies over 580 individually owned hyper-markets, supermarkets and department stores including 70 outside of France with a turnover of 30 billion Euros. For more information visit: www.e-leclerc.com
- Scalandes is the purchasing arm of E. Leclerc. Scalandes has an annual turnover of about 600 million Euros and employs 280 people at its headquarters in Mont De Marsan. Scalandes supplies over 50 stores, mostly in the South West of France and 20 in Portugal.
- The IT team, lead by Cambou, consists of six people who take care of application maintenance, help desk and network management. Application development is outsourced. There are over 200 end-users, of which 50 are using the central purchasing application.
- Sprint Logiciels, who delivered the modernization project for Scalandes, is a system integrator based in Anglet near Biarritz. The company specializes in the retail and supply chain sectors. For more information visit: www.sprint-solutions-informatiques.com

Export Development Canada on the road to SOA

Export Development Canada (EDC) is Canada's export credit agency, offering innovative commercial solutions to help Canadian exporters and investors expand their international business. EDC uses ACBS, a largely LANSA-based commercial lending and trading system, and using LANSA Integrator, has recently delivered two successful SOAP Web services integration solutions. EDC also uses LANSA to customize and extend ACBS to meet specific requirements.

Paul Kriz, program delivery manager business solutions & delivery, EDC, says, "What really helped us to deliver our integration solutions fast, is that we partnered with LANSA and had a senior developer on site for three weeks. In that period we were able to create the main structure, a proof of concept, for our Web services. We want our organization to move to a Service Oriented Architecture with Web services. LANSA is part of that plan whenever we need to integrate with ACBS."

Streamline and Automate

EDC's mandate is to grow and develop Canada's trade and export. EDC does so by providing financial services both on the financing side to the foreign companies who purchase Canadian goods and on the insurance side by protecting companies against loss and other risks. EDC works in partnership with both government agencies and the private sector to increase the competitiveness and success of Canadian companies abroad.

Kriz explains, "Because we operate both as an insurer and a bank, we have a variety of systems and platforms. Most of the solutions you find at large banks and insurance companies, you will find here too."

EDC's systems consists of in-house developed solutions as well as purchased applications. Their preferred development platform is Microsoft.NET and SQL Server. Packaged solutions include Advanced Commercial Banking System (ACBS), a mostly LANSA-based commercial lending and trading system from Fidelity National Information Services running on an IBM i, PeopleSoft Financial and HR as well as Siebel CRM, running on Windows with the Oracle database.

"We wanted to streamline and automate processes that go across multiple systems and open up the ACBS iSeries platform for two-way communication using SOAP Web services. We looked at potential solutions and briefly considered another product, but going down that path would have required specific development. We wanted something that could work out-of-the-box and decided that LANSA Integrator would suit our needs best."

Nearly 7,000 Canadian exporters and their global customers use EDC's services each year.

"We have greatly improved the timeliness of the delivery of information."

Smooth Disbursement Procedures

EDC's first Web services project was to automate the disbursement process, as it involves multiple business areas.

When a customer requests funding on their contract, several checks and actions are put in place. When conditions are met and the final approval is given, the disbursement information is sent to EDC's corporate banking division, which is then responsible for actually funding the transaction.

Previously the disbursement notification to the corporate banking team was a manual procedure that was prone to delays and required rekeying of information.

"We wanted to have the business event of approving a disbursement, which happens in the ACBS system, automatically trigger the sending of the actual instruction to our corporate banking team. Similarly, we wanted our loan team to receive an automated confirmation back that their request for disbursement had been received and processed by the banking team," says Kriz.

Using LANSA Integrator, EDC has integrated the disbursement process across systems. "Now, as soon as approval is given, that information is transferred automatically and immediately to the corporate banking function, without the need for rekeying and without any delays," says Kriz. In addition EDC designed a SOAP service that includes extensive validation and error checking to relay information back into ACBS about the proof of delivery.

Some of the challenges for the project were to develop a standardized Web service framework that can integrate with applications external to the iSeries; enable multiple integration protocols like Web services and XML along with multiple transport protocols such as HTTP, FTP and email and develop a generalized design for logging and error handling. ➔

Behind the scenes a Web service, composed with LANSA Integrator, consumes the information that goes from ACBS through EDC's Enterprise Services Bus (ESB) messaging service to GDS (Generation document and Dispatch Services). GDS invokes an Adobe engine to compose the disbursement request in PDF format, archives it in a database and sends an Outlook email notification with the PDF attachment to corporate banking.

"The streamlined process eliminates the need to enter the disbursement twice. Secondly, we have greatly improved the timeliness of the delivery of information," says Kriz.

Improved Customer Statements

EDC's second LANSA Integrator project has improved the technical delivery method of customer statements.

Previously ACBS produced printed account statements that were manually mailed or faxed to customers. As most lending is to the customers of the Canadian exporters, EDC has many foreign organizations it deals with and fax is in most cases the preferred communication method.

Using LANSA, EDC consolidates ACBS invoices into customer statements. But instead of sending these statements to the printer for manual faxing, EDC now uses a Web service that invokes the creation of a graphical PDF document, which is then automatically dispatched to an electronic fax facility.

"We have improved the quality and efficiency of the delivery method. Instead of manually sending an ordinary text based statement, we now electronically fax nice looking customer-friendly documents. Using LANSA Integrator, a SOAP Web service is triggered with XML containing formatting and dispatching information. We were able to reuse the SOA framework and meta data developed for the disbursement process."

"The same Web service is used to handle both real-time adhoc statement requests, as well as statements generated in our end-of-day procedures"

The dispatch service has email capability as well, but email is not viewed as secure enough to guarantee confidentiality. Many countries still rely on faxes.

Extended Functionality

EDC purchased ACBS in 1997 and has a team of three LANSA-trained developers who take care of ACBS extensions, integration and support. EDC wanted to avoid changing the solution's core logic and the ACBS architecture lends itself very well for extensions.

Export Development Canada streamlined and automated processeses across multiple systems using LANSA Integrator.

"Partnering with LANSA has put the right footing in place."

Kriz and his team followed the same framework within Visual LANSA for client presentation as used by ACBS, so the look and feel of EDC's extensions is the same as the core ACBS application.

As a specific example of a fairly extensive customization, EDC has extended ACBS in the area of Bank-Borrower relationships. Because EDC has a relationship with the Canadian exporter, as well as with the customers of the exporter, ACBS needs to understand this triangular relationship.

"Both Visual LANSA and LANSA for the iSeries work well for us," explains Kriz. "We had no problems with LANSA and have always been very pleased with the training and support. We have not yet fully leveraged LANSA's tight integration with .NET, that's an area I may want to explore."

On the Road to SOA

"What really helped us to deliver our integration solutions fast, is that we partnered with LANSA," says Kriz.

"We had a senior developer from LANSA's Toronto office on site for three weeks and in that period we were able to create the main structure and proof of concept for our Web services. We were not just leveraging LANSA's expertise in technology, but also bounced off ideas and leveraged their experience in similar projects."

"Partnering with LANSA and having them participate at the early stages of the project in design and development has put the right footing in place. At the same time, it provided our developers with guidelines and prototypes, so they didn't have to start from scratch. To me it has been a very successful model, it helped us deliver our projects more rapidly."

"The next project where we plan to use LANSA Integrator is integration between our Siebel CRM and the loans and financing information in ACBS. We want to integrate these two solutions far more tightly and use the same Web services concept to expose ACBS information where it is needed."

"We want our organization to move to a Service Oriented Architecture (SOA) with Web services. We want to create new functionality, better integration and improved delivery mechanisms for our clients. Going in the SOA direction, we should eventually be able to just orchestrate these services into new business functions or applications and leverage the reuse aspect of the design. LANSA is part of that plan whenever we need to integrate with ACBS," concludes Kriz. ■

Company and System Information

- Export Development Canada (EDC), a government owned Crown corporation, is Canada's export credit agency. EDC is financially self-sustaining and does not rely on tax dollars for its operations.
- Nearly 7,000 Canadian exporters and their global customers use EDC's services each year. For more information visit: www.edc.ca

Making money and saving money with LANSA

INDUSTRY SHOWCASE
by Marjanna Frank

IT divisions may see their budgets reduced as a result of economic uncertainty brought on by the financial crisis. Many companies are looking for ways to trim spending and improve their bottom line. Although information technology usually represents a small fraction of corporate spending, management inevitably turns its attention to IT budgets for cost cutting. However, IT investment can deliver more value to a company's top and bottom lines than savings gained from simply cutting IT budgets.

There's no doubt that many companies will put off decisions on big capital investments in hardware and total system replacement. What business and IT will be looking at during uncertain times is extracting more value from the systems they already have by extending them with targeted IT investments that will create new efficiencies and increased revenues in the short term.

The next 'big thing' in IT will not be from technology. It will be a business focus on improving the top and bottom line.

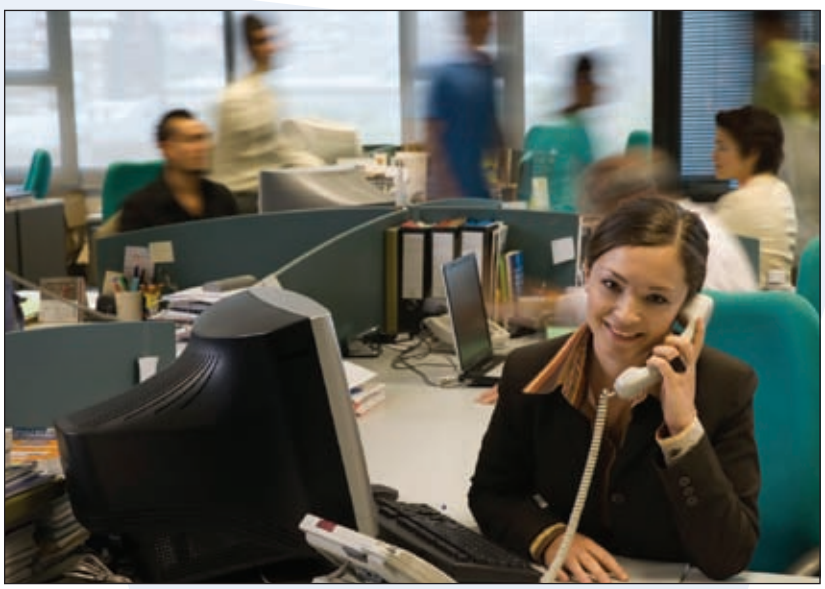
With this in mind, IT projects are likely to be re-prioritized. Now is a better time than ever to reuse existing systems and to extend and modernize these systems with cost-effective enhancements that will pay for themselves in the short term and provide genuine value.

Following are examples of cost reductions and increased revenue that our customers have achieved with targeted, and in most cases, relatively modest, IT investments.

Better Customer Service

By providing customers, agents and dealers with Web self-service solutions and by allowing for a variety of electronic data exchange formats, companies can achieve a significant improvement in customer service, as well as immediate savings.

Savings include reduced volumes of phone, fax, mail and email traffic, less rekeying of data and better accuracy. Customers with simple enquiries don't have to be put on hold and customer service staff have more time for complex inquiries. Another frequently mentioned benefit is improved customer relationships by moving the responsibility for data quality to the source, thus avoiding expensive corrections in case of misunderstandings.



By providing customers with Web self-service solutions, companies can achieve a significant improvement in customer service allowing staff have more time for complex inquiries.

Shoe-D-Vision achieved an almost instant Return on Investment by using the Web to communicate with its customers.

Shoe-D-Vision, with its head office in Århus, Denmark, is a cooperative of shoe retailers with over 320 stores in Denmark and Norway. Shoe-D-Vision used LANSA to build a Windows and SQL Server based retail back office system installed at over 80 retail groups, each with several point-of-sale systems connecting to it. Shoe-D-Vision's central ERP system, also developed in LANSA, has been extended with Web access to retailers for stock and account inquiries, order placement and polling of interest for new shoe lines to carry.

"Now shops can see which shoes and what sizes we have in stock and place orders directly in our ERP system, at any time they want. We get far fewer phone calls, email and faxes. Also, we stopped mailing invoices. The system provided a ROI in under four months," explains Asger Simonsen, IT manager at Shoe-D-Vision.

"We are very proud of the efficient business systems we have delivered. The shops pay us to make sure we have the right systems and tools to provide a competitive advantage. We certainly have been able to do that and on a very modest budget. LANSA lets us deliver and maintain a Windows system for the shops, an iSeries-based ERP system and a dynamic Web solution, all with a single tool set and a small team of three developers, including myself."

Barrus secured a new and exciting partnership by delivering an EDI solution in under three months.

E.P. Barrus Ltd, located in the UK, designs and manufactures engines and distributes a diverse range of products including MTD lawn and garden machinery, moto-roma scooters and motorcycles, Mercury, Mariner and Yanmar marine and industrial engines.

A few years ago, Barrus needed to urgently implement EDI to secure a new and exciting

business arrangement with B&Q, the largest do-it-yourself chain in Europe. But Barrus's customers also include dealers, small shops, large retail chains, manufacturers and the Ministry of Defense, all with their own unique requirements (and limitations) for exchanging transactions. Barrus selected LANSA Integrator and implemented the B&Q EDI solution in under three months, followed by many more integration solutions to their other trading partners.

Dave Hansford, IT manager at Barrus, said, "We selected LANSA Integrator because it gave us the flexibility to accept and send business transactions in a variety of formats and communication methods. Another plus was that it hides the complexities of EDI and XML, allowing us to implement new BPI technologies with our own IT staff."

"The margins in our industry are very tight. Increasingly we need to work harder for less and efficiency is becoming even more important. Technology plays an important role in achieving efficiency. There has to be a business reason to implement new technology and it has to give a return on investment."

Weidmüller lifted the percentage of online orders significantly by using LANSA Commerce Edition.

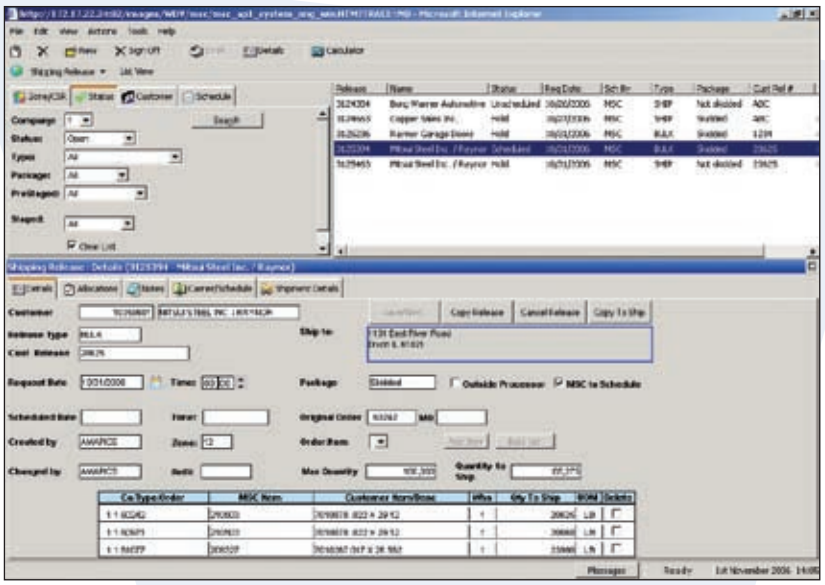
The Weidmüller Group is a leading provider of solutions for the transmission of power, signals and data in industrial environments with locations in over 70 countries. Weidmüller in North America, based in Richmond, Virginia, serves over 750 distributors and direct customers. Weidmüller lifted the percentage of online orders from under 30 percent to over 50 percent by replacing an inflexible eBusiness solution for its JD Edwards World ERP with LANSA Commerce Edition.

Selena Garner, customer service manager at Weidmüller, says, "We are now well on the way to achieving our target of 60 percent online orders. Just as importantly, the volume of inquiry calls has also dramatically dropped. The site has helped bring in new customers. It's not only easier to deal with us than it was in the past, it is also easier to deal with us than it is to deal with our competitors."

"Our company is expanding rapidly and sales have increased greatly over the last two years. Even so, the solution has freed up at least eight hours of labor each day."

Shortening the Supply Chain

In today's competitive environment, the supply chain and logistics processes of businesses need to procure supplies and distribute products faster, with better customer service, minimum inventory and increased accuracy. Working together, almost as a single entity, entire supply chains must satisfy expanding requirements. IT is a key enabler in improving the flow of information, goods and services between parties.



Material Sciences Corporation used Visual LANSA Framework to extend its ERP system and reduced its delivery and invoice cycle from 7 days to 15 minutes by streamlining procedures.

Material Sciences Corporation (MSC) reduced its delivery and invoice cycle from 7 days to 15 minutes by streamlining procedures.

MSC, headquartered in Chicago, USA, is a world-class supplier of noise and vibration reducing coatings used in a diverse range of applications. Customers include major automobile, appliance and disk drive manufacturers. MSC works with outside processors who take MSC material for additional processing. Inventory, billing and order fulfillment remain under MSC's control. Shipping to the customer is generally directly from the outside processors.

MSC used Visual LANSA Framework to extend its ERP system with Web access for customers and outside processors, a wireless shipping release system and other enhancements. LANSA EDI Direct is also used to exchange EDI transactions with business partners.

Bob Needles, an independent consultant acting as IT project leader, said, "The customer support portal has raised customer service and the outside processor portal has streamlined production reporting and delivery. Partners now report production on the day goods are produced and enter shipment details when material ships. Billing is triggered automatically and finalized within 15 minutes of the shipment. The whole delivery and invoice cycle went from 7 days, to one day, to 15 minutes."

General Electric Appliances Canada (Camco), part of the 6 billion dollar General Electric Appliances group, is Canada's largest manufacturer and marketer of major home appliances. Camco uses LANSA Integrator for Application-to-Application integration with kiosks at stores of Home Depot, the world's largest home improvement retailer. Transactions include stock availability inquiries and requests to accept and process orders, to which Camco's system responds with the requested inventory information or order confirmation.

The manager of Camco's eBusiness technology group, said, "This all happens in real time while the customer is at a Home Depot kiosk. Home Depot orders can be fulfilled and delivered from our warehouse directly to the home address of the customer in a completely automated process. Home Depot stores don't have to stock GE products and they don't have to phone or fax orders. The end result is savings on both sides and a quicker service to the customer."

Chunghwa Picture Tubes (CPT), in Taiwan, has automated its procurement procedures using LANSA. CPT is one of the world's largest manufacturers of computer displays for Dell, HP, IBM and other leading computer companies. CPT's display components are used in LCD, plasma and cathode ray tube applications. CPT has factories in Taiwan, China and Malaysia, sales offices worldwide and revenue of over US$3 billion annually. ➔

CPT uses a LANSA Web-based B2B procurement solution developed with the help of Innatech Co. Ltd, a LANSA business partner in Taiwan. Over 1,000 suppliers now have self-service access to purchase orders, order replies, material acceptance status and payment information. This has dramatically streamlined communication and reduced the printing and mailing of order sheets and other paperwork.

Workfloor and Warehouse Automation

Integrating the manufacturing, warehouse or workshop floor with the core ERP system removes the barriers between front office operations and the back office shipping and accounting operations.

More importantly, by providing a real-time view of workshop floors and warehouse operations, managers can take immediate action when progress seems too slow (maybe a sign that more education is needed), or too fast (maybe a sign that someone is cutting corners and sacrificing quality).

PGI Nonwovens B.V. in the Netherlands is part of Polymer Group Inc., a global supplier of engineered materials and one of the world's leading producers of nonwoven materials for medical, hygiene, wiping, industrial and specialty uses. PGI Nonwovens used Visual LANSA to automate over 30 production lines in its converting and manufacturing plants in Cuijk in the Netherlands. The applications integrate in real time with PGI's PRMS ERP system and drive barcode scanners, label printers and robotic devices for counting and packing products and applying labels.

Fred Rambow, IT manager at PGI Nonwovens B.V., says, "With the LANSA applications and related process changes, we have increased throughput without adding any production lines and achieved a 15 percent reduction in labor in both our converting and manufacturing divisions. We have done this with our own small team at a fraction of the cost of a packaged solution. Plus we have a 100 percent fit."

Brewers' Distributor Ltd (BDL) is Western Canada's leading distribution and container return service for the brewing industry, moving nearly a billion dollars worth of beer per year. After successfully extending its JD Edwards system with LANSA-based Web self-service and M2M integration for its wholesale customers, BDL used Visual LANSA Framework and LANSA Integrator as part of a dispatch and warehouse automation system that is saving them nearly $500,000 per year.

Andrew Hobbs, manager of IT applications at BDL, says, "We should see payback in less than three years. The total capital required to complete this project was $1.3 million and the annual savings are projected at over $450,000, not yet including the soft benefits of effective performance measurement and reduced error rates. Without LANSA, we could not have achieved the look and feel necessary for this application, nor could we have implemented it in the short development window available to us on this project."

Enns Brothers, based in Manitoba, Canada, has been selling and servicing John Deere equipment for over 50 years and now also supports ATVs and Ski-Doo's from Bombardier. To streamline its business and improve service, Enns Bros uses an integrated solution for heavy equipment dealerships from LANSA partner PFW Systems Corporation.

Since implementing the solution, Enns Bros' technicians, including those in the field, can access and update equipment information from the same wireless laptops that also have the John Deere and Bombardier diagnostic software. Technicians can see on their own laptop which work orders are waiting for them, what exactly needs to be done and how much time is budgeted for the job. They can drill down into the machine's service history, add their notes and accurately record job start and end times directly into the system.

Bert Gregoire, aftermarket manager at Enns Bros, explains "Because the information is now updated in real time at the source, supervisors have an accurate up-to-the-minute overview of what is happening on the floor. They can see which technicians are on duty, which work orders are going over budget, which bays are overbooked and take immediate action. The new system gives total visibility and eliminates many wasted man-hours in the workshop."

New Revenue Streams and Growing the Business

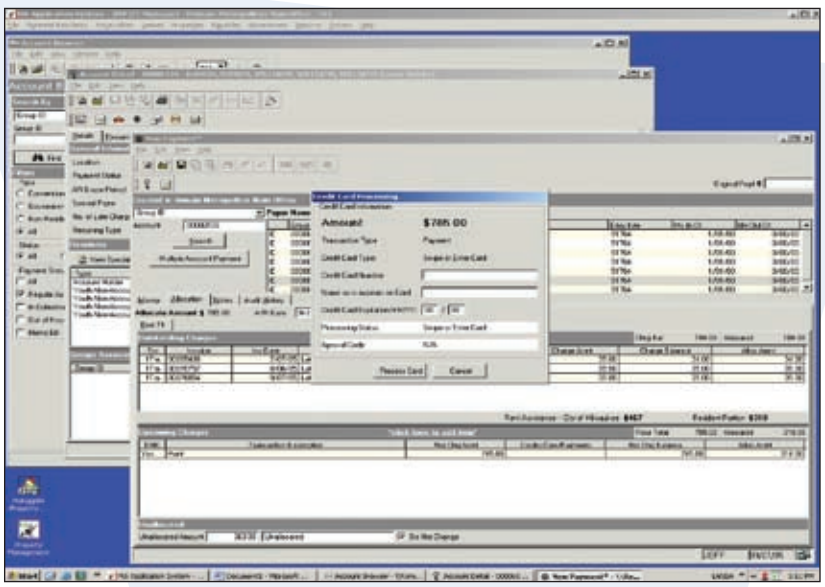
The cost justification for chasing new revenue streams is not always easy to calculate or justify. One should rather ask, "What is the cost of not doing this?"

Metropolitan Associates is a residential real estate firm managing over 4,500 apartment homes in Southeast Wisconsin, USA. Metropolitan has redeveloped its 20-year old property management system with Visual LANSA.

The new system offers far more functionality, integration with Windows applications and a more productive GUI for the business users. Staff at the apartment communities can now take a prospective resident from the beginning to the end, including property search, application, certification, payment and the move-in with associated services.

VP technology at Metropolitan Associates, Jeff Dremel, said, "We also have the ability to offer additional services, opening up an exiting new business area. For example, our residents can indicate which newspapers they want to have delivered and on which days of the week. We also plan to extend our services to cable TV and broadband. With our new system it's easy to integrate and communicate these services to third parties. "

Neller has been a leading provider of Payroll, Human Resources and Labor Management systems for the Australian and New Zealand marketplace since 1976. Neller's Preceda application is used by over 350 blue chip organizations. ➔



Metropolitan Associates redeveloped their property management system with Visual LANSA. The system now gives them the ability to offer additional services, opening up new business areas.

Several years ago Neller was in danger of stagnant growth, simply because the Preceda offering already dominated its segment of the Australian HR/payroll market. 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 used LANSA to provide a Web front-end to its installed base, Neller decided to also use LANSA for the hosted environment.

Neller's new offering, Preceda Hosted, exceeded its revenue projections for each of its first four years of availability and continues to grow. Today, Preceda Hosted is used by more than 70 percent of Neller's clients.

"As an ISV, we rely on technology that can quickly help us meet our business and profit goals and LANSA has certainly helped us achieve them," said Neller managing director David Page.

Walon created a new revenue stream by extending its RPG-based Vehicle Tracking Management System (VTMS) with an online configuration facility.

Walon is the leading supplier of finished vehicle logistic services to the U.K. automotive industry. Walon takes responsibility for a vehicle from the point it arrives in the U.K. and then delivers the vehicle to the manufacturers' dealers. Customers include most major vehicle manufacturers. Walon handles over 1.2 million vehicle movements annually and also takes care of technical enhancements and late configuration of vehicles.

One of Walon's customers, a manufacturer of vans, wanted to offer its customers an online configuration facility for accessories like extra racks and shelves. Walon met this request by developing a Web site, using Visual LANSA WAMs that allow for the specification of these alterations. First, the dealer places the order for a standard vehicle on the manufacturer's Web site and when modifications are needed, the dealer is redirected to Walon's site.

"In effect the dealer is registering a work order directly in our VTMS, so we can let the dealer instantly know how configuration options affect the price and delivery date," explains Colin Williams, Head of IT at Walon. "Using LANSA, we created a totally new revenue stream. Without a Web solution, the costs could have been prohibitive. Even though this was our first Web application and also our first LANSA project, two members of our existing VTMS team delivered it in just three months."

Agile Infrastructure

Both Terminix and Truvo illustrate that an agile IT infrastructure is vital in supporting efficient procedures and company growth.

LANSA provides practical tools and solutions that allow our customers to focus on the business issues and opportunities, rather than technology.

Truvo Belgium has shaved several days off the lead-time it previously took to get an advertisement published by integrating its packaged and in-house developed systems across several platforms.

Truvo Belgium, the market leader in local search and advertising, publishes the printed and online Golden and White Pages phone directories. Truvo has implemented a .NET application, used by over 400 sales representatives, that integrates with the core LANSA system and with its publication systems using LANSA Integrator and Web services.

The solution allows sales reps to download customer portfolios and upload contracts and advertisement specifications, taking several days off the lead-time it previously took to get an advertisement published. Directories and guides are prepared on the System i and delivered for overnight Web publication in XML format, also using LANSA Integrator.

Gunter Gheysens, IT development manager at Truvo Belgium, says, "If you want to stay in the game in this industry, you have to be able to adapt quickly and use every window of opportunity. That is not always easy when you use packaged solutions. Using LANSA Integrator and Web services we can use best-of-breed systems in the back office, in the graphics department and on the sales rep's laptop and integrate them all seamlessly. "

Terminix, is a good example of how a new central LANSA-based system supports the company's growth and competitive position.

Terminix in the USA, is the largest termite and pest control company in the world, safeguarding over three million homes and businesses. Several years ago, Terminix replaced a COBOL mainframe system and hundreds of standalone UNIX systems at its branches with a central LANSA-based application on a single iSeries.

Today over 12,000 employees at over 400 locations, plus 5,500 service specialists with wireless hand-held devices, use the system that also interacts with an increasing number of third-party systems using LANSA Integrator and Web services.

Lee Crump, Terminix vice president and CIO, said, "The old distributed IT system hampered our growth and did not let us get a competitive advantage for a company our size. One of the reasons we have been able to grow annual revenue over the past six years from 600 million dollars to over a billion dollars, is our iSeries and LANSA-based system. The cost of opening new branches is much less than it was with the old distributed model. We have the flexibility of hand-held devices, thin clients or fat clients for users and Web services with other parties, while all the data and LANSA computing power is back here at the head office."

Conclusion

LANSA provides practical tools and solutions that allow our customers to focus on the business issues and opportunities, rather than technology, and deliver cost effective solutions. Because LANSA developers don't have to code at 'the plumbing level', our customers can deliver solutions with their own, often very small, development teams. LANSA customers are well equipped to do more with less. ■

ARCHITECTS CORNER

Leveraging IBM i resources with LANSA Open for .NET

ARCHITECTS CORNER
by Richard Lancaster

Once upon a time there was the IBM AS/400 and there was Microsoft Windows – two worlds and worlds apart. Combining data from these two worlds was a difficult undertaking, as it required knowledge of both. The situation gave rise to dual development teams, each team with different skills and priorities.

The world has moved on and today there are a number of products available that claim to narrow the gap between the IBM i and Windows platforms, such as 5250 emulators, screen scrapers and ODBC/JDBC data access tools.

Platform Divide Still a Challenge

The problem is that these products only narrow parts of the gap. After having the two platforms running side-by-side for over two decades, many IT managers are still challenged managing the platform divide. For example, how can you be assured that the same rules apply when a .NET program and an RPG program both update a database?

What we need is an effective mechanism for mixed development environments to share resources. We need a tool that bridges the gap completely.

Companies that need to develop with .NET tools and incorporate resources from the IBM i can do so with LANSA Open for .NET.

What is LANSA Open for .NET?

LANSA Open for .NET is a class library. The class library exposes services (including data and programs) that .NET developers can incorporate into Windows rich client and Web applications. The class library DLL is deployed with the .NET application.

Since 1992, LANSA has supplied 'LANSA Server' (a.k.a LANSA Open), a tool for building Windows applications that can access data and programs on the IBM i server. With LANSA Server, you installed components on the server and on the client where the application executed. LANSA Open for .NET extends this capability with Web services. Using LANSA Open for .NET and C#.NET, you can write a Web service to act as a gateway to RPG, COBOL, Java and LANSA applications on the IBM i and the DB2 database. With this architecture, any application that can consume the Web service has access to resources on an IBM i server.

Using LANSA Open for .NET, a .NET programmer can:

- **Write C# or VB.NET programs that access data and programs on the IBM i server from Visual Studio without having to know there is another server involved.**
- **Create and publish Web services from the IBM i server.**

LANSA Open for .NET overcomes the challenge of bridging different architectures and simplifies the management of siloed development teams. Windows developers can write .NET applications and take advantage of resources on the IBM i server without leaving Visual Studio. The .NET applications do not need to implement a duplicate set of business rules. The rules are defined in the central LANSA Repository and deployed via Object Access Modules. Defining and applying business rules from a central point is particularly advantageous for Windows rich-client applications, as the rules can change without the need to recompile or redeploy the client components of the application.

This article provides a few scenarios where LANSA Open for .NET could bridge the platform gap. You can:

- Retrieve data from DB2 databases on the IBM i server.
- Perform create, update, insert, delete operations against DB2 databases, applying the same business rules as your IBM i applications would apply, without having to duplicate the rules in your .NET environment and without having to recompile .NET programs when the rules change.
- Invoke programs on the IBM i server, including LANSA functions and programs written in RPG, COBOL or Java.
- Access information in the LANSA Repository, such as formula fields, multilingual definitions, help text, file definitions and field definitions.

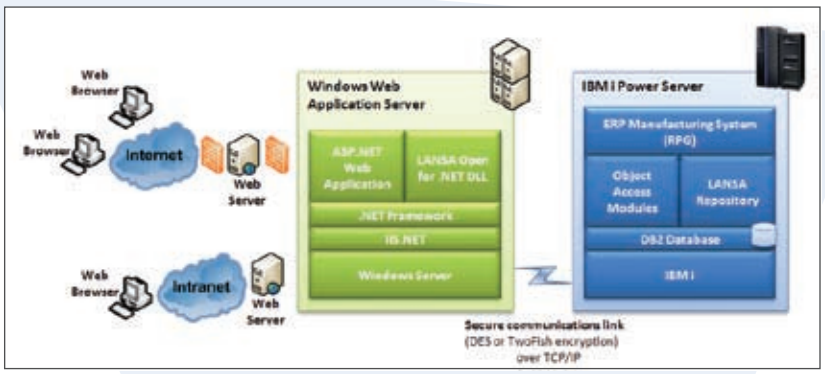
.NET Applications and LANSA Open for .NET

Scenario #1 Browser-based ASP.NET Web application on one side, RPG application on an IBM i server on the other side

Suppose a company wants to improve customer service and reduce the volume of inquiry calls by providing customers with Web self-service access to their orders. The manufacturer's ERP package on the IBM i provides a 5250 screen for order enquiry that is inappropriate for the Web context.

As the company's policy is to deliver their Web sites via Windows servers, they decide to build an ASP.NET Web application that will extract information from the ERP system on the IBM i, using LANSA Open for .NET.

Because the ERP system is not a LANSA application, the database definitions associated with orders have to be 'made known' to the LANSA Repository. This process is automated. In addition, formula fields, validations and other business rules can be added to the LANSA Repository without affecting the ERP



Scenario #1 — Browser-based ASP.NET Web application on one side, RPG ERP application on an IBM i server on the other side.

system itself. The LANSA Open for .NET DLL will publish the table definitions for use by the ASP.NET Web application.

The .NET developer only has to build the ASP.NET Web application and pass calls to the LANSA Open for .NET DLL. The .NET developer does not need to know that the ERP system resides on the IBM i server

Suppose the company wants to give customers the option to update their ship-to details. The optimum approach is to define the validation rules in the LANSA Repository. LANSA's Object Access Modules (OAMs) apply the validation rules and return any error messages, which LANSA Open for .NET passes back to the ASP.NET application. The ASP.NET Web application only needs minor change and an exception handler to display possible error messages. When the update request passes all validations, the OAMs will update the database.

The validation rules may be changed without having to recompile or redeploy the ASP.NET Web application.

Scenario #2 Rich-client .NET application on one side, LANSA-based application and IBM i database server on the other side

Suppose a company wants to grant its sales people update access to the customer details. The Customer Management System (CMS) resides on the IBM i and is written in LANSA, so the business rules governing the CMS already reside in the LANSA Repository.

The company decides to build a rich-client .NET application written in C# to deploy to the sales people's laptops and notebooks. Through LANSA Open for .NET, the .NET developer will see the CMS as if it were another .NET application. LANSA OAMs will enforce the business rules and any errors will be returned to the .NET application via LANSA Open for .NET.

This solution reuses the existing CMS, hides the architecture differences and ensures data integrity.

Web Services and LANSA Open for .NET

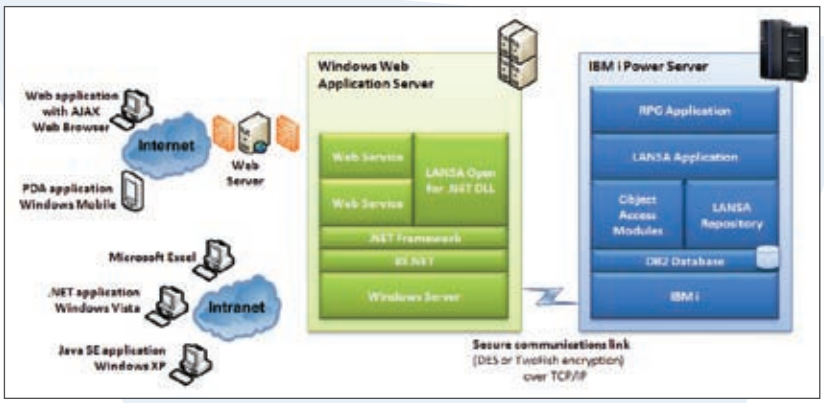
The Web services scenario is a bit more complex than the previous scenarios, but it is flexible and wide ranging in its application potential.

The Web service is a C#.NET program which uses LANSA Open for .NET to access data and programs on the IBM i server. For example, the Web service can provide customer data from a DB2 database to a Windows-based Web application. The Web application will call the Web service to request customer details. The Web service will invoke LANSA Open for.NET to retrieve the data and then return the customer details to the Web application.

The Web service will be a simple program that acts as a mediator to manage the requests and responses. LANSA Open for .NET, the OAMs and the LANSA application do the real work by applying the business rules and retrieving (or updating) the DB2 data.

This architecture applies to situations where you need to incorporate data or other IBM i resources into an application. Typically, the application consuming the Web service will manage the user interface and will use the Web services to supply data or to initiate an activity on a remote system.

LANSA Open for .NET simplifies the transformation of resources on an IBM i server into Web services.



Scenario #3 and Scenario #4 — Web services published from LANSA and RPG applications on an IBM i server.

Scenario #3 Microsoft CRM needs to publish customer address changes to multiple line-of-business systems on the IBM i

The company in this example uses a CRM system to provide a consolidated view and central entry point for customer information. The information is distributed and stored across several IBM i applications that support various business functions. Updating the customer address in the central CRM makes sense. The problem is how to publish the new address to each of the applications.

One approach is to create an address management function with LANSA to validate address information and update the systems where the addresses are used. The Web services are built as .NET components. LANSA Open for .NET will provide the interface to the address management function for the Web services and hide the complexity of address validation and address distribution from the .NET developer.

Scenario #4 Microsoft Excel spreadsheet populates itself with data from an IBM i-based financial system

Suppose the accountants of a financial management group want to analyze the debtors' ledger, residing on the IBM i. Being accountants they prefer Microsoft Excel as their working environment. The accountants need to be able to retrieve debtors' data.

One approach is to build a Web service to retrieve the debtors' data and an Excel application that will manage the selection criteria and load the data into a worksheet. The Web service will be a .NET application that accepts query parameters, interacts with LANSA Open for .NET to access the debtors' data and returns a set of data to the Excel application.

The work for the .NET programmer is to build the Web service and the Excel application. LANSA Open for .NET hides the source of the data from the .NET developer.

How Does LANSA Open for .NET Help Manage Your Architecture Challenges?

LANSA Open for .NET hides the gap between the .NET and IBM i platforms. The .NET developer sees only a set of classes in Visual Studio and does not need to know the nature of the server. From the developer's perspective, the gap is hidden completely.

LANSA Open for .NET insulates the .NET developer from having to understand the IBM i. The developer builds the .NET application in Visual Studio and sees the data and processes from the IBM i server as resources in the .NET environment.

The scenarios described in this article provide only a glimpse of the possibilities for publishing data and processes from the IBM i world to the .NET world with LANSA Open for .NET. ■

More reasons you should be using the Visual LANSA Framework (VLF)

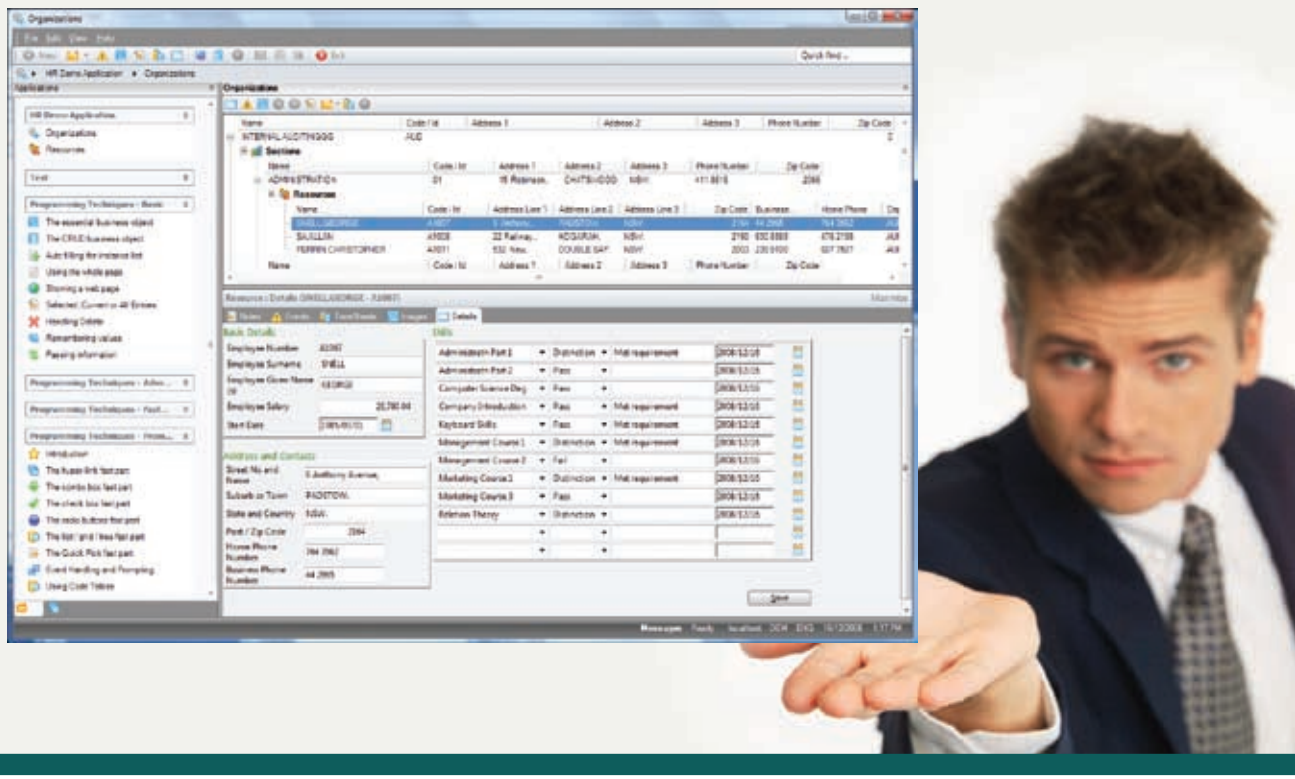
Here's the magic that you already have...

- Rapid prototyping of applications without a single line of code
- Significant end-user involvement during design to swiftly deliver an approved solution
- High quality Web and Windows applications generated with a consistent look and behavior
- Familiar MS-Outlook style user interface
- A single application model for Windows and Web
- Support for multiple application servers, including IBM i
- Incorporates existing 5250 IBM i applications via LANSA's RAMP solution
- Program Coding Assistants automatically create filters, command handlers and snap-in instance lists

Here's what we have added with the brand new Visual LANSA Framework for .Net...

- Faster response times — the VLF.NET is a compiled C# application that executes in the .NET CLR
- Enhanced security — the digital signature ensures the safety of the application
- Near zero deployment overhead for both Windows rich-client and Web applications
- Support for Firefox in addition to Internet Explorer
- Improved visual aspects of applications via the use of Microsoft Themes
- Support for snap-in of .Net (C#) components as well as LANSA RDML

VLF.Net... Software Made (even) Simple(r)



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