LANSA Case Study

iPad solution for JCM service staff improves efficiency

(This case study is based on an article published by iMagazine Japan)

If all that IBM i users get to see are 5250 screens, it is not surprising that the platform is perceived to be legacy. The IT team at Japan Cash Machine (JCM), with the help of LANSA partner Neoaxis, took a pro-active approach to not wait for that perception to take hold. Looking at the pain-points in the company, they determined that JCM's maintenance and repair system was a prime candidate for improvement and transformation.

JCM's 150 repairmen now use iPads with integrated hand-writing, signature capture and camera features to create and submit their repair reports and to access maintenance data. Office staff have a productive rich-client interface to real-time and integrated maintenance, billing and customer information. The new solution, developed with LANSA and deployed on IBM i, has helped to improve the quality and speed of customer service and has drastically reduced the workload for JCM's staff.

The Challenge

Japan Cash Machine, under the brand name JCM Global, is the world's leading provider of money handling machines, such as bill validators that are used in casinos, ATMs, automatic ticketing machines, fare adjustment devices, vending machines and other kiosk terminals.

In Japan, JCM has over 200 service centers. To support its operations, JCM uses in-house developed applications for Manufacturing, Sales, Distribution and Accounting, which run on the IBM i operating system. These systems are RPG-based and have evolved since 1995.

JCM's maintenance division in Japan consists of 150 staff and contractors who visit on average around 100 customer sites each day. The high volume is not surprising, considering that Japan has the world's highest number of vending machines per capita (5.8 million vending machines, one for every 23 people). In addition, Japan has a large number of pachinko/slot machines in gaming parlors.

Before the implementation of JCM's new Maintenance & Repair system, details of the customers' locations, machines and service history were kept in a Microsoft Access database. When call center staff received a service request, they would search the MS Access database to confirm the customer's location and machine details.

After the call they would create a service/repair request form and fax it to the JCM support office or agency located nearest to the customer. The serviceman in charge would then visit the customer site with the request form. When the service work was completed, a repair report was filled out and signed by the customer, which was then sent by post to JCM's head office. Upon receipt of the repair report, head office staff would enter the details into the MS Access maintenance system, as well as into an IBM i-based billing system.

"Field staff needed real-time access to maintenance history and availability of spare parts."

The old way of doing things was inefficient

- Double data entry caused inaccuracies.
- Field staff didn't have access to data, causing mistakes and delays in spare parts delivery.

Snapshot

Customer: Japan Cash Machine (JCM) is the world's leading validating technologies supplier for the banking, retail, kiosk and gaming industries. www.jcm-hq.co.jp/english

Challenge: Transforming an inefficient system that included paper-based reports, character-based screens and double data entry, into an integrated modern solution with access for office and field staff.

Solution: Redevelop the system, using a single development tool for desktop and mobile access.

Key Benefits: The quality and speed of customer service has improved and staff workload has been drastically reduced.

Product Used: Visual LANSA

- Lack of real-time information caused inaccurate responses to the customer.
- Waiting for mailed reports delayed the billing and quality control processes.
- In order to still meet its SLAs (Service Level Agreements) both field staff and office staff regularly had to work overtime.

Evaluation of Technologies

Mr. Kenta Shintani, head of JCM's Information Systems Group, explained "We needed a solution that was truly integrated with our customer, inventory, billing and product information systems. Plus we wanted the information to be available across all divisions, with a productive Windows interface for office staff and a mobile web interface for field staff and contractors."

"We have an IT team of five, of which only three have development skills. It was obvious that we could not do this project with RPG, but we had no other development skills in our team. It was hard to determine which technology we should use, because there are so many technologies out there."

"After some research we chose the Visual LANSA development tool, which our IBM partner Neoaxis had introduced to us. The 4GL syntax was easy to understand and reminded us of Visual Basic. LANSA showed a strong affinity with IBM i and it could easily integrate with our existing RPG and CL programs. è

Another reason to choose LANSA was that we could use the same tools and skills for mobile and web development, as well as for rich-client applications. Last, but not least, from LANSA's case study examples it was clear that many other companies had successfully used the product for similar projects."

The Project and Solution

Mr. Shintani continues, "The new maintenance management system was created by consolidating the maintenance history, sales and inventory systems into an integrated solution with a rich Windows GUI. This system is now used by call center and admin staff. Simultaneously we developed a mobile web app for iPads, for use by maintenance staff and external contractors."

JCM's own three programmers developed the client/server system, which consists of about 70 Windows rich-client screens. It offers sophisticated search facilities on customers, machines, maintenance and spare parts and allows staff to open multiple tabs simultaneously.

Neoaxis developed the mobile web app consisting of 20 screens. Field staff use it to look-up customer, machine, maintenance history and spare part details and to enter maintenance reports. The app integrates with 7notes handwriting software (from MetaMoji), allowing field staff to use a stylus pen to enter data. The customer's signature is also captured using the stylus pen and handwriting software.

The new application offers sophisticated search facilities on and allows staff to open multiple tabs simultaneously.

"With LANSA we can use the same tools and skills for Mobile and web development."

Field staff can take before-and-after repair photos and attach them to their report. The photos and repair reports are stored in real-time in the IBM i database together with sales and maintenance history data.

JCM's three RPG developers received one month LANSA training and were given six months for development, testing and iPad field-trials (While also taking care of ongoing RPG maintenance work). After a three month trial period, the new maintenance application went live to call center and admin staff, plus to 150 repair and maintenance workers in the field.

The Benefits

The new system has helped to improve the quality and speed of customer service. Because field staff can check the maintenance history and availability of spare parts while on site, they can do their job better and faster. They can also respond quicker to customer enquiries.

Billing is triggered automatically upon receipt of the repair report, optimizing JCM's cash flow. Real-time availability of maintenance and billing data also allows call center staff to respond accurately to customers who ask about job progress or repair costs.

Maintenance information is now well structured and available to quality control for further analysis, assisting JCM to continuously improve its products and services.

Rekeying and filing of paper-based maintenance reports is no longer required. This has drastically reduced the workload of admin staff, reducing staff numbers from seven to four. According to JCM's impact analysis, the number of man hours related to the handling of maintenance reports is now 10% of what it used to be. Overtime has decreased by 30%.

These efficiencies allow JCM to handle more jobs with their own staff, reducing the number of contractors by three and be confident to meet their SLAs.

Conclusion

Mr. Koji Imanishi, manager of JCM's Information System Group, who led this project, commented, "Key to the project's success was the active involvement of the end users. We showed them how the design of the system evolved and they provided us with their feedback and additional suggestions. This helped us to better understand the business flow and visualize areas of improvement. Thanks to their feedback, we could offer a better solution. I was impressed that the graphical user interface made it so much easier to work closely with the end user."

"Another success factor was the versatility of LANSA. We made maximum use of its reusable component architecture with business rules and triggers and easy integration with third party technologies such as Microsoft Excel, PDF, email and workflow."

"Previously users had a poor perception of the IBM i, because all that our users got to see were its 5250 screens. Now they can see the platform supports web, mobile and rich-client applications. It can do anything if you use the right tools."

Following the success of the maintenance system project, JCM now plans to modernize and mobilize its sales system by adding workflow management and automated email functionality, replacing the 5250 screens with Windows clients and by providing sales representatives with mobile access.

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