FUJITSU

Case Study
The Daiei, Inc.

Using a cost-efficient KVM (Kernel-based Virtual Machine) solution, The Daiei, Inc. has deployed a virtualized IT infrastructure and consolidated its physical servers at each retail store. A single x86 server can now run their new Daiei Gift Ordering System, plus three other in-store systems.   Floor space and total cost of IT ownership savings from the new compact solution, trialed at selected stores, has led the company to a full solution rollout to 310 stores across Japan.

The customer and partner

<The Daiei, Inc.>

Headquarters: 2-2-20, Toyo, Koto-ku, Tokyo 135-0016 JAPAN
Establishment: April 10, 1957
Capital: 56.5 billion Japanese yen
Number of stores: 211 (as of February 2011)
Nature of business: Retail (Supermarket chains)
Website: http://www.daiei.co.jp/

<VIXUS INCORPORATED>

Headquarters: NK Bldg. 2-7 Kanda-Suda-cho, Chiyoda-ku, Tokyo 101-0041 JAPAN
Establishment: March 02, 1985
Capital: 93 million Japanese yen
Business areas: Data processing services; Software development outsourcing; Design and development of computer networks; Sales of computer hardware & software; Consulting services to the retail industry; and creation and sales of retail information solutions
Website: http://www.vixus.co.jp/

Overview

The Daiei, Inc. (Daiei) is Japan's large supermarket chain. Its mission statement is to be a 'Life Solutions Partner' with customers and the local communities it serves.   The big retailer recently developed and implemented a new Gift Ordering System, with the aims of replacing the old paper-based order forms, reducing waiting times, and delivering a better shopping experience for customers.   Daiei has been pleased with the improved customer satisfaction from the enhanced ordering system, even during the busiest gift-giving seasons, when the retailer experiences large spikes in demand. When Daiei thought about adopting the new system, one of the biggest challenges was providing a reasonable ROI. Deploying expensive dedicated infrastructure with proprietary operating systems, for an application only used during seasonal peak periods, was not a reasonable option. Daiei looked for cost-effective alternatives, and chose the KVM (Kernel-based Virtual Machine) virtualization platform from Red Hat Enterprise Linux (RHEL).   Using KVM, a new environment was constructed integrating Daiei's existing store applications with the new Gift Ordering System.   Plus, for the heart of the new infrastructure, Fujitsu's PRIMERGY x86 servers were selected. During the initial phase of the solution rollout, Daiei completed deployments at 23 selected stores.   The next step was a full rollout, to deploy the same infrastructure at a total of 310 retail stores operated by either Daiei or Gourmet City, one of their retail subsidiaries.   The newly-deployed compact solution will be a key enabler in achieving Daiei's objectives of reducing floor space, power requirements and overall TCO.

Customer background
Improved customer satisfaction by use of a new Gift Ordering System, but ROI issues remained.

The Daiei, Inc. (Daiei) is a large Japanese supermarket chain with a strong commitment to its corporate mission of being the 'Life Solutions Partner' for its customers and the local communities it serves. Dedication to continuous improvements in customer service and satisfaction levels, product lineup enhancements, and creation of better shopping experiences through IT, are a large part of Daiei's focus.   Improving its supermarket product selection range is also a high priority.   In response to the recent trend of 'Eating at home'.

The challenge

- Implementation of a new Gift Ordering System to handle workload spikes during gift-giving seasons, with best possible ROI.
- Reduce the total cost of IT ownership by leveraging virtualization technologies.
- Need for a vendor with comprehensive skills to support Daiei's virtual infrastructure creation, using KVM; a totally new concept for Daiei and its current IT partner.

The benefit

- Use of RHEL-KVM virtualization on Fujitsu hardware enabled inexpensive deployment of the Gift Ordering System.   The new virtualized infrastructure is helping Daiei free up precious floor space, reduce administrative expenses and achieve an IT power consumption reduction of 55% per store.
- KVM as an open-source project carries no costs for host operating systems. Daiei needed only to think about guest licenses.   This made the solution cost efficient and delivered targeted ROI improvements.
- Fujitsu's wealth of experience provided Daiei with end-to-end Linux technical support services. This ensured system design and accelerated solution deployment.   With Fujitsu's support Daiei achieved its initial goal of KVM solutions at 23 stores within the targeted timeframe.

rather than going out for dinner, Daiei has been very active. Matching its corporate slogan of "Your everyday delicious meals start here", it has been enhancing its product lineup to offer a wide range of quality daily necessities, capable of producing a vibrant and exciting home dining experience.   Daiei is also focused on maintaining and improving customer satisfaction during busy shopping periods.   Like many other merchandisers in Japan, Daiei seeks to attract high volumes of customers during the two traditional gift-giving seasons in midsummer and December.   These twice-yearly events are meaningful occasions where Japanese express their thanks to others. However the ordering of gifts makes for very crowded Daiei stores during those seasons.

About a year ago, as part of Daiei's efforts to be better prepared for the gift season rush, the company began to review its gift order transaction process.   It considered a shift from conventional paper-based order forms to electronic order processing. This would help by eliminating the need for customers to fill out gift order forms and thereby reduce waiting times.   Daiei set out a strategy of deploying a new Gift Ordering System. This would ease the queues and inconvenience previously experienced by both new and the 400,000 existing customers currently in Daiei's customer base.   The new system would enable customers, once registered, to simply select gifts and place gift purchase orders through POS terminals at any Daiei outlet across Japan.   The new system was also expected to shorten product delivery lead times by about two days.

However, before proceeding with the new system adoption, Daiei needed to resolve one big challenge: Proving return on investment (ROI).   With the aim of gaining a competitive edge, Daiei focuses on continuous improvement of its assortment of goods, quality and customer service, at all existing retail store. It is also expanding the

business into new fields such as urban grocery stores targeting singles and professional couples, and online supermarkets; to meet the diversified customer needs in today's dynamically-changing environment.   It is therefore important that every action Daiei takes with its IT strategies ensures targeted benefits are delivered. It's

(Store staff taking a customer's gift orders through the new ordering system)

however difficult and always a challenge to select technologies that will support continuing business growth while helping the company slash costs.   In considering ROI, "It was not a reasonable option for Daiei to deploy an expensive dedicated infrastructure with proprietary operating systems for the new application, if that was only used to accommodate seasonal workload increases," comments Mr. Yoshiro Sakurada, Department Manager, System & Distribution Division in the System Planning Department at Daiei.   "That said, at Daiei, there was an urgent need to refurbish our older paper-based transaction system and move to a more efficient infrastructure. That way we could improve business efficiency and better serve our customers," continues Sakurada.

Virtualization solutions were considered the best option to meet Daiei's objectives
Daiei deployed a new virtualized infrastructure for new Gift Ordering System to integrate it with existing store applications.

Daiei looked for ways to achieve implementation of the planned new system in a cost-efficient manner, finally realizing that server virtualization would be the solution.
"With our aging store hardware infrastructure approached replacement time, it was the right time for a new approach.   So we decided to build a new virtualized environment where we could successfully run the new ordering system, and then integrate it with existing applications at the retail stores," explains Sakurada.   Prior to the virtualization project, each of the existing Daiei stores had six servers. Three servers were configured to run important store applications with disparate operating systems – the order entry and inventory management systems ran on Linux, and mobile POS solution was based on Windows.   The remaining three physical servers were used to duplicate identical configurations for full redundancy.   Daiei's plan was to add the RHEL-based Gift Ordering System and integrate it with the existing store systems.   To make this happen, Daiei decided to consolidate the new and three existing applications onto one new x86 machine. This would allow them to retire the aging server hardware at each store.   With the new virtualized and consolidated infrastructure, Daiei also sought to reduce floor space, power requirements and operational costs.

In November 2010, Daiei issued a request for proposal (RFP) to several ICT organizations to move ahead with the planned project.   "We solicited and incorporated quite a lot in our RFP.   Costs were of course one dimension, but more importantly we really wanted a partner fully capable of providing one-stop support across hardware, virtualization software and mobile terminal solutions. Also we needed a committed vendor that would allow us to fully rollout

Mr. Yoshiro Sakurada
Department Manager
System & Distribution Div.
System Planning Dept
Daiei

- Fujitsu PRIMERGY TX150 S7 x86 servers
- Fujitsu SPARC Enterprise M3000 Unix servers
- Fujitsu ETERNUS storage system

- KVM (Kernel-based Virtual Machine) integrated software in Red Hat Enterprise Linux

the new system to a total of 310 stores nationwide, in a very short lead time," Sakurada recalls.

Daiei undertook a comprehensive vendor selection process, and in January 2011 turned to Fujitsu for help. According to VIXUS INCORPORATED, an outsourcing partner with Daiei who provided development, deployment and maintenance services, Fujitsu suggested leveraging the cost-effective KVM virtualization for RHEL, which was outstanding and very distinctive from other competitors' proposals.
"Fujitsu's proposal caught our eye for sure," comments Mr. Shinichi Ogawa, Manager, Solution Division at VIXUS INCORPORATED.
"Virtualization using KVM provided us with multiple choices in how to purchase guest licenses.   The option we chose allowed us to run up to four guest operating systems at no additional cost.   Compared to other virtualization solutions, the cost efficiency was compelling and we could see how we could adopt virtualization technologies without encountering any barriers.   As Daiei's existing major systems were based on RHEL, we could also expect the same high level benefits of maintainability and compatibility," continues Ogawa.

Mr. Shinichi Ogawa
Manager
Solution Division
VIXUS INCORPORATED

The new solution deployment at the Daiei, Inc.
Fujitsu's Linux technical support services were key to successful completion of the new virtual environment deployment in the targeted timeframe.

The new virtualized infrastructure at each Daiei store comprised two Fujitsu PRIMERGY TX150 S7 servers with RHEL-KVM virtualization. One was designed to house a total of four store applications including the new Gift Ordering System.   The second was implemented to function as a standby node, creating a fully redundant configuration. Although the KVM solution was a new concept for Daiei, the project went well, thanks to full support from Fujitsu.   "Honestly speaking, I hadn't had KVM experience prior to the Daiei project, but VIXUS, teamed with knowledgeable and experienced Fujitsu staff, could deploy the KVM virtualization environment in the way Daiei had targeted.   The comprehensive Linux technical support services from Fujitsu really did provide high value.   Without them, we would not have achieved such a short turnaround time," says Ogawa.

The design phase started in January 2011, with the new Gift Ordering System going live at three initial target stores in late May, 2011. "Looking back, I can easily imagine how difficult it was for us to move forward after Japan was devastated by the historically powerful earthquake and tsunami that occurred on March 11, 2011.   Even the simple process of procuring necessary devices could have caused long delays, but Fujitsu really came through for us, putting 100% effort into meeting our strict time constrains," recalls Mr. Yutaka Yoshida, a staff member in the System Planning Department at Daiei.
By carefully reviewing output from the three pilot stores, existing issues

and concerns with the new gift order system were resolved, and in June 2011, Daiei began rolling out the solution to the remaining 20 target stores. Since then, the company has seen vast improvements in development work productivity. "By effectively taking advantage of the four guest operating systems, we can now create separate test beds that allow us to carry out different tests - Unit testing, integration testing, system testing and migration testing, in parallel.   The new environment has also enabled us to obtain and build valuable know-how and expertise in KVM, which we appreciate a lot," Ogawa comments.   The solution rollout tasks were carried out by Fujitsu teamed with VIXUS.   To get the job done effectively and efficiently, Fujitsu completed initial configuration and setup at its own fit-out center, prior to delivering the PRIMERGY servers to Daiei's stores. This successfully slashing the time required for on-site work.   This way it took just four hours to complete solution deployment at each store. This meant that Fujitsu with VIXUS were able to implement eight stores, on average, in a single working day.

Mr. Yutaka Yoshida
System Planning Dept.
Daiei

(Figure 1) System Configuration at Daiei
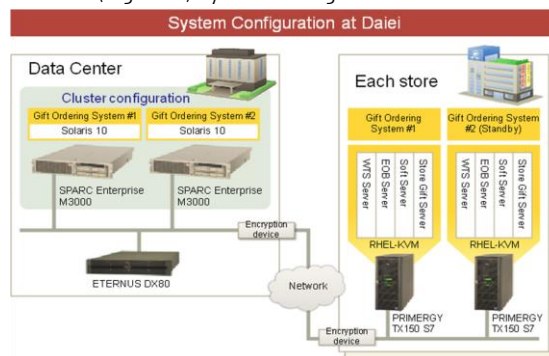
Business benefits and future scenarios
Server virtualization and consolidation helped Daiei achieve 55 percent power reductions per store.

As at November 2011, the Gift Ordering System had been successfully deployed at 157 major Daiei stores nationwide. By the end of May 2012, it will complete the full rollout to the entire 310 stores, including both Daiei's and Gourmet City's retail outlets across Japan.

"We are now accelerating the migration effort to finalize the full rollout by end of fiscal 2012, which is our target timeframe.   After that, during 2012 to early 2013, Daiei will be retiring the old server hardware from all 310 stores," Yoshida explains.   KVM virtualization and server consolidation have enabled Daiei to reduce the number of physical servers from six to two at each store. This has delivered significant savings in server administration costs, floor space, and overall TCO.   Fewer physical servers have also enabled dramatic reductions in power consumption, of around 55 percent per store. As a responsible member of society, this has meant a lot to Daiei.

With the reduced power consumption and the consequent reduction in environmental footprint, Daiei is thrilled to boost its contribution to a sustainable society.

Looking forward, Daiei is mapping out the future of its IT infrastructures. "Business Continuity planning, security and TCO reductions are our three important themes. Use of cloud computing is of course one of our options, but we must carefully consider potential security risks before making such decisions. As our staff resources are limited (a mere 20+ members in the system department at Daiei), strategic approaches need to be taken to get the most from what we have. We rely on our partners to outsource such tasks as development and deployment, so we can allocate our precious internal resources to more strategic areas like planning and IT requirements definition. Daiei has confidence in Fujitsu's capabilities to provide the full support we need as well as create dynamic proposals that will support our business growth. We greatly look forward to continued work with Fujitsu," Sakurada concludes

With a strong commitment to the company's mission of offering a lifeline to local communities, Daiei is now providing aid to help Japan's recovery from the devastating earthquake. As a trusted ICT partner of Daiei, Fujitsu is, with its industry-leading portfolio of technologies and comprehensive capabilities, devoted to continued support of Daiei's untiring efforts in developing and growing its business in line with local community needs and wants.

Project members from the Daiei, Inc. and VIXUS INCORPORATED