Global retailer gets future-ready with open systems

After decades with mainframe operations, Gap Inc. moved to an open system, saving millions a year and boosting speed and agility — thereby enabling faster response times to market trends.

Gap Inc.

Industry: Retail
Country: United States
Employees: 141,000
Website: gapinc.com

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Benita Bankson, Senior Director of Information Technology, Gap Inc.

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| To save costs, boost performance and gain scalability, Gap Inc. sought to migrate a large part of its business from its legacy mainframe platform. | More than 50 applications and databases were moved to distributed, open systems. | • Saves annual operating costs  
• Boosts system and data processing performance  
• Gains scalability for future growth |
As a global retailer, Gap Inc. has a presence in more than 90 countries with about 3,300 company-operated stores, more than 400 franchise stores, and e-commerce sites. Across many brands — Gap, Banana Republic, Old Navy, Athleta and Intermix — it sells billions of dollars in fashion apparel each year.

Gap Inc.'s internal technology organization is responsible for keeping the company's IT infrastructure and applications running at peak performance. The organization has to ensure that it delivers business value at all times — not just today but also far into the future.

Recently, Gap Inc. completed a two-year move of the company's many business-critical applications and databases, including point-of-sale, inventory management, supply chain and revenue accounting, off its legacy IBM mainframes. These were re-hosted on a distributed Intel® x86 open systems architecture. During this project, the group engaged the NTT DATA Services, formerly Dell Services Application Modernization Services team to help.

**Seeking cost savings and better performance**

According to Benita Bankson, senior director of Information Technology for Gap Inc., this mainframe re-hosting project was one of the company's biggest, most complex IT projects in the past decade. In terms of scale, it involved re-hosting approximately 3,100 MIPS (millions of instructions per second) of processing power.

"The main drivers were annual cost savings plus a major performance boost," she says, adding that the flexibility and scalability of the clientserver architecture were appealing, too. “Our goal was to move to the Intel x86 platform with our core business logic intact and then have a platform that is more accessible to new technologies. We also wanted to bring support in-house.”

NTT DATA Services helped Gap Inc. eventually move more than 50 production applications. Supporting these on the mainframe were a Customer Information Control System (CICS) and an Information Management System, with batch, transactional and interactive processing capabilities. Over the years, products from many vendors as well as homegrown systems had been added as enhancements, which complicated the move.

**Aligning solutions with Gap Inc. standards**

The NTT DATA Services team started by reviewing all the operational challenges in moving the system. It then proposed solutions in line with the company’s open system standards. Next, NTT DATA Services had to ensure that security on the new system was comparable to that of the mainframe. By using the Transaction Security Facility (TSF) for online processing and open system LDAP for batch processing, they matched the mainframe’s security levels.

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Another critical challenge was to ensure that the batch environment was able to run jobs and distribute reports in the same time and with the same function as on the mainframe. Many of the batch jobs take a long time to run, while accessing millions of rows of data.
These jobs also needed very specific restart capabilities in the event of failure, if Gap Inc. wanted to maintain its batch window. NTT DATA Services spent time understanding the company’s requirements and enhanced the batch processing environment to provide the same level of restart as the mainframe. NTT DATA Services also provided an add-on tool that would enable the distribution of reports to prevent disruptions in day-to-day operations. Users of the batch system saw little or no changes during the transition.

**Forté-CICS coding issues resolved, impasse averted**

A suite of Gap Inc.’s legacy systems leveraged Forté, which communicated to the mainframe CICS system through Tuxedo software. Investment was necessary to develop a customized interface between Forté/Tuxedo and TPE. This interface required the writing of middleware to interconnect with the transaction processing environment in the same way it had interfaced with CICS on the mainframe.

“Our mainframe re-hosting project was at risk until we solved these extremely complex Forté-CICS coding issues,” Bankson says.

Resources from NTT DATA Services, formerly Dell Services along with Gap Inc.’s third-party systems integrator were required to develop, test and, after many months of troubleshooting, provide a solution that would work in the Gap Inc. environment.

**Successful cutover and deployment**

One huge risk that Gap Inc. also had to manage was the planned five-day cutover migration of operations from the mainframe to the new distributed server platform. This required shutting the mainframe down completely, affecting the majority of the company’s business applications (as batch processing was shut down along with the mainframe outage). Applications for stores, distribution centers and offices remained available.

“Communications and near-instant responsiveness were critical from everyone involved, requiring them to be onsite, and the team did their part,” Bankson says. “We were able to avoid large upgrades during the course of the project, thanks to their flexibility to provide us fixes and emergency releases for specific issues as quickly as they emerged.”

After seven mock cutovers, Bankson and the project team were ready for the real one. “The cutover from our mainframe to our distributed open systems architecture was enormously successful, thanks to our preparations and help from our vendors, including the Application Modernization Services team,” she says. “Although we still had some stabilization issues after our go-live, requiring daily stand-up meetings with vendor partners responsible for the fixes, we achieved stability by the third month.”