

BART transit system embarks on a business improvement journey

HP solution delivers price/performance and lower TCO for business reengineering



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—Robin Cody, Department Manager of Information Technology,
San Francisco Bay Area Rapid Transit District

HP customer case study: HP Integrity servers, HP-UX 11i, and Oracle® PeopleSoft Enterprise applications

Industry:
Transportation/
Public Sector

Objective:

The San Francisco Bay Area Rapid Transit (BART) District needed to modernize its 35-year-old business processes and install new applications.

Approach:

BART launched a business transformation and is migrating its mainframe-based applications to HP Integrity servers running the HP-UX 11i operating system and Oracle PeopleSoft Enterprise applications.

IT improvements:

- Future redeployment of six staff positions from mainframe support to other areas
- \$1.5 million savings annually in mainframe license, lease, applications, and maintenance costs
- Disaster resilience and stable IT operations
- Reduced TCO, fewer servers, and lower maintenance costs
- Cost-effective, in-box processor upgrades

Business benefits:

- Projected savings of \$20 million over five years for Phase I (which includes payroll, timekeeping, and human resources)
- Conformity of time and labor rules to collective-bargaining agreements
- Automated contracts with five unions
- 50 percent decrease in paycheck errors
- More efficient payroll operations
- Improved information access
- Early successes, stimulating future workplace culture changes

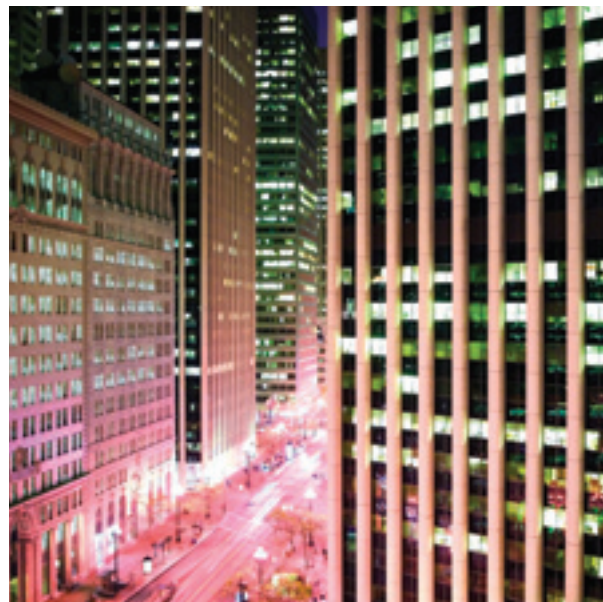


A straight course: tackling back-office applications

Created by the California State Legislature in 1957, the San Francisco Bay Area Rapid Transit (BART) District connects the San Francisco Peninsula with Oakland, Berkeley, Fremont, Walnut Creek, Dublin/Pleasanton, and other cities in the East Bay. An industry trendsetter, BART (www.bart.gov) has earned the devotion of more than 330,000 daily riders who depend on fast, reliable transportation to major commercial centers, entertainment venues, and other destinations. As further validation of its leadership, the American Public Transportation Association named BART America’s #1 Transit System in 2005.

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This public agency maintains a modern high-speed rail network, yet the mainframe-based applications assisting financial, human resource (HR), and supply-chain functions were antiquated. Some were home-grown and out of step with the times. Major applications—such as HR, payroll, maintenance, and a Geac Computer Corp. financial system—didn’t communicate with each other, which impeded information access.

BART’s IT staff, directed by Robin Cody, Department Manager of Information Technology, set out in 2003 to find contemporary products to automate workflows and modernize the organization. First, he hired a company to conduct a cultural readiness survey and analyze BART’s business practices in light of transit and transportation industry best practices. From the survey and six-month study came a solid case for a business transformation and IT upgrades.

Still, BART knew it was embarking on a difficult cultural change. Cody explains: “We had no choice but to move forward, especially when we calculated the projected return during the second year at 2-to-1: \$2 for every dollar invested. But we also realized the need to focus heavily on people and processes and less on technology. Therefore, we invested 60–70 percent of our budget and efforts on the cultural side.”

Another in-depth evaluation led the rail system to Oracle PeopleSoft Enterprise, mainly because the solution met most of BART’s 2,600 software requirements and worked right out of the box with minimal customization. Then, the IT team proceeded to create an entire new infrastructure to support the PeopleSoft solution. They had used HP products for years, so HP servers commanded a top spot on their evaluation list.

“We like the architecture and future roadmap of HP Integrity servers, Intel Itanium 2 processors, and the HP-UX 11i operating system,” says Cody. “They will provide us with more capacity, scalability, and unlimited growth potential. So far, they have allowed us to bring in applications that couldn’t run on a mainframe and rebuild BART’s business.”

Reengineering ushers in early success

Phase 1 of BART’s mainframe modernization strategy was completed in early August 2006 when PeopleSoft Enterprise on Integrity servers went live. The project consisted of migrating previous HR, payroll, time and labor applications, and a portion of the general ledger from the mainframe.

In just a little time, BART has seen improvements. One example Cody cites is the automation of the organization's collective-bargaining agreements with five unions. "There is no question that we are improving the business," he explains. "In the past, we had to prepare 400 to 500 manual checks a month due to errors, or we made a total of about 800 adjustments to payroll checks a month. These are high numbers based on 3,000+ employees. The first month on our new PeopleSoft payroll system, we only had 212 hand checks. Right out of the gate, we improved the payroll process."

Additionally, BART has streamlined the entire time-and-labor collection process. "We averaged 24 hours a week calculating time and labor. All of that is gone because our processes are automated now," Cody says, adding that his organization will easily realize at least a 50 percent improvement in the time-and-labor process. Plus, with the automated timekeeping system, BART aims to improve its \$370 million annual payroll by 1 percent.

A direct route to other benefits

Along with improved processes, BART enhanced disaster recovery and business continuity safeguards in its PeopleSoft environment. The IT staff took the opportunity to add failover, redundancy, load balancing, no single point of failure, and HP business continuity and availability consulting. Downtime would have grave consequences for the payroll and automated maintenance areas, and approximately 3,200 employees depend on the PeopleSoft Enterprise environment. Therefore, BART has two data centers—a production site and a failover site to facilitate data recovery.

"We told HP our requirements and they helped us design an environment that would meet our business continuity needs," says Cody. "We recently hired HP to conduct a complete analysis of our servers' performance and help us further fine-tune our infrastructure. HP personnel support their products with in-depth knowledge, which translates to fast turnaround in case a component fails."

Customer solution at a glance

Primary applications

Oracle PeopleSoft Enterprise application: PeopleTools 8.46, Human Resource Management System (HRMS 8.8), Portal 8.9, Financials 8.8, Tuxedo (64-bit) 8.1, WebLogic 8.1, Relational Database Management System (RDBMS 10.1.0.4), and Supply Chain Management

Primary hardware

- 5 HP Integrity rx7620 Servers
- HP BladeSystem: 26 ProLiant BL30p server blades (running Windows®, PeopleSoft Process Schedulers, and CMI Time Clock Interface)
- HP StorageWorks 6000 Enterprise Virtual Array storage area network
- HP StorageWorks MSL6060 Tape Library
- ProCurve Networking by HP switches

Primary software

- HP-UX 11i v2 operating system
- HP OpenView Storage Data Protector software
- Oracle 10.1.0.4 Database (200 GB)
- Oracle Real Application Clusters (RAC) (used to stack multiple PeopleSoft applications on Integrity servers)
- Microsoft® Windows Server 2003 operating system (supported by the HP BladeSystem)

HP Services

- Service/Maintenance agreement
- Infrastructure design and installation
- HP business continuity and availability consulting
- Analysis of Integrity platform installation and performance tuning

The two data centers combined house five Integrity rx7620 Servers, three for production and two for development activities, and each data center also houses an HP StorageWorks 6000 Enterprise Virtual Array-based storage area network (SAN). The staff use HP OpenView Storage Data Protector software to back up data to an HP StorageWorks MSL6060 Tape Library. HP BladeSystem servers also integrate with the Integrity platform. "We selected HP storage solutions and BladeSystem servers because they give us capacity for growth and integrate well with our Integrity servers and backup systems. We haven't had any performance issues with our HP hardware," Cody offers.

Other advantages of Integrity servers are their strong performance, the availability of HP nPars technology (hard partitions), and in-box processor upgradability. These qualities blend brilliantly, enabling the staff to stack and consolidate multiple PeopleSoft applications onto fewer servers compared to the mainframe. To upgrade the Integrity servers, the public agency need only change out the processors, which is a less-costly option than upgrading the mainframe.

"By using Integrity servers, we also expect a considerable reduction in our total cost of ownership and to lower our maintenance costs by \$1.5 million," Cody confirms. "Those savings will come from not having to pay for the mainframe's lease, applications, operating license, and maintenance fees, as well as from the reduction in support staff." The six full-time staff assigned as mainframe operators and process monitors will be redeployed to other areas after the IBM server zSeries and zOS mainframe operating system are retired in the next 18–24 months.

More enhancements down the road

Phase II of the reengineering initiative, which began in November 2006 and concludes in 2008, is moving the supply-chain systems from the mainframe to the PeopleSoft/Integrity platform. These systems include maintenance, inventory and purchasing, general ledger, accounts payable, and various budgeting modules. This migration alone could spell dramatic improvement in inventory turnover and additional savings of \$20 million over five years.

Cody concludes: "There is enormous potential in having an integrated maintenance and inventory system versus a 30-year-old, hand-coded application on the mainframe. The new systems running on Integrity servers will allow us to be more efficient and proactive than we ever could in the past."

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