MOTOROLA SEMICONDUCTOR

Hong Kong

- Tool — Entera
- Industry — Manufacture
- Application — Three-tier systems
- Database Server — Multiple

COMPANY BACKGROUND

The IS department for Motorola's Asia/Pacific semiconductor product group is headquartered in Hong Kong and serves a region that extends from Korea, Australia, and the Philippines to India. That team runs the full gamut of systems covering sales support, customer support, manufacturing, inventory management, logistics support, and shipments to customers. It also provides network infrastructure support for the entire region, and desktop support on manufacturing for professional and engineering staff throughout the region.

THREE-TIER COMPUTING

> Driven by the data-intensive nature of its business, Motorola Semiconductor Group has developed three-tier client/server applications for managing the complex process of semiconductor manufacturing in Asia. The group had typically built classic-design mainframe systems, but were opting to move to client/server architecture. The IS director became an advocate of the three-tier approach, rather than the standard two-tier, and the group initiated its first three-tier client/server development efforts. Finding that the number of tools that support three-tier development in a native mode were very few, managers conducted a search that led them to Borland's Entera toolset. They were particularly impressed with Entera's component management view of the application environment, which gives them extreme flexibility for deploying resources, then managing those resources in a dynamic environment.

Entera delivers robust performance with functions formerly the exclusive domain of mainframes: security and the ability to manage security down not only to the user level but even to the data level; scheduling and control of the environment; configuration management of the environment to keep synchronization between object code, source code, and documentation; the ability to have robust transactions with underlying relational database technology; and rollback and recovery capabilities in the event of a transaction failure or disaster.

APPLICATIONS BUILT

• An application for manufacturing and engineering that focuses on yield and cycle improvement by capturing data from diverse systems and bringing it all together for the first time under a GUI. Users are given the ability to drill down into the data to determine opportunities for cycle-time improvement on the manufacturing line.
• A manufacturing-scheduling tool that allows Motorola to capture information associated with customer demands, forecasts, and orders, and convert it to a form that can be automatically scheduled inside manufacturing systems, enabling accurate production-date commitments.
• A warehouse facility application using a combination of technologies, including RF-based, hand-held barcode readers that capture information on placement and location of products in the warehouse, allowing greater efficiency in retrieving products and shipping them to customers. Warehouse managers can adopt almost random product placement and still gain cycle-time and space efficiencies.
• An application focusing on supply management that takes information from diverse legacy systems and other sources and combines it to make supply management more efficient when working with outside suppliers.

TECHNOLOGY

Tools Used	Borland's Entera toolsets, Computer Systems Advisers Group's Silver Run RDM for data modeling, and Parc Place's Visual Works for GUI and application development
Legacy Systems	IBM mainframe systems, mostly IMS, hierarchical, or relational DB2-based

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CUSTOMER COMMENTS

"There was a fundamental flaw with two-tier computing in that it had a built-in bottleneck and it did not allow us the flexibility to be scalable. We were attracted to three-tier architecture, but once you make the architectural jump, the number of tools that actually support three-tier in a native mode are very few. That led us to Entera."

—Charles Ferrell, IS director, Semiconductor Products Group,

Motorola Asia/Pacific

This report is adapted from an article in Computerworld Hong Kong

by Veronica Trinkle.
