

THE BACKGROUND

If you tote a pager, cellular telephone, laptop or PDA, there's a good chance that you're carrying around products from Xicor, Inc., a Milpitas, California manufacturer of mixed-signals circuits.

Xicor products are used by electronic product manufacturers throughout the world in a wide range of applications, including telecommunications, computer, industrial, automotive electronics, and military products. The products serve a variety of design needs:

- Memory products for handheld devices and communications infrastructure equipment, instrumentation, transportation and industrial applications
- Digital potentiometers for system tuning
- Supervisory chips for management and timekeeping
- Supervisory chips for system tuning, system management, and power management
- Battery management ICs that help to extend the time between charges for devices powered by Lithium Ion batteries

THE PROBLEM

To serve its widespread and diverse market, Xicor maintains a complex distribution system. Domestically, Xicor maintains a network of independent sales representatives, national and regional stocking distributors and OEM customers. Overseas, Xicor maintains an international network of independent stocking sales representatives who collectively account for well over half the company's sales. Further complicating business activities is the fact that Xicor defers recognition of sales and related costs until the products are actually sold by the distributors and stocking sales representatives.

Production levels and profitability compel prompt and accurate information flow -- such as data on sales, purchase orders, inventory levels, collections and more. Almost since the company's inception in 1978, this has meant communicating to and from the field by fax and email, with a few sales offices adopting freestanding Harbinger EDI systems in the late 1990s to accommodate orders from EDI-enabled specific major accounts, such as Hamilton Avnet.

The Harbinger systems were a good start and they provided a significant step forward, says Renato Siljeg, network administrator and manager of application services, but the Harbinger systems were insular, with limited capabilities: essentially, they functioned like elegant fax machines. Information arrived at the sales offices electronically but it then had to be printed and reentered into the corporate system for transmission to headquarters for processing, inventory and fulfillment.

Management had already concluded that the sales order process should operate through a centralized system, however, a new EDI initiative would need to be commenced, implemented from the ground up. The Harbinger EDI systems talked only to each other, and only spoke the language of X12, leaving out the possibility of automating communication with Europe or Asia (since they use EDIFACT), or with entities wishing to use the web (which requires XML).

Research began to identify a solution that could enable e-business -- a solution that could tie together disparate e-commerce universes that are separated by geographic, cultural and technological considerations. The search led to ACOM's solution: **EZConnect for EDI/XML** (formerly known as Paragon).

THE SOLUTION

EZConnect for EDI/XML is a complete SQL-based EDI system that connects applications in real time to build, import/export and print (if desired) trading partner data. EZConnect integrates directly with any ODBC-compliant database and is fully extendible, scaleable and flexible to fit most any EDI system need. It supports all EDI and EDIFACT standards and is compatible with all VPNs, VANS and proprietary networks. The solution includes:

- Translation and mapping software
- A trading partner management tool
- Security module
- A documentation tool
- It even includes a relational database for non-stored partner documents.

"Our discussions with ACOM confirmed that **EZConnect for EDI/XML** would support the company's decision to move from a decentralized to a centralized structure, handling purchase orders, confirmations, inventory information, sales orders, point-of-sale information and acknowledgments," Siljeg says.

IMPLEMENTATION

Senior Business Analysts, Tony Ferrigno and David Scott, worked with ACOM's implementation specialist, Victor Lam to integrate a solution.

Xicor's computing environment itself is diverse, but well integrated. Its primary Oracle database runs under the UNIX operating system, on an HP 9000 mainframe.

A DEC Alpha handles the manufacturing side, and a series of networked Sun Microsystems workstations are used for

development. Front-ending the infrastructure is a network of PCs, running under Microsoft.

The flow of outgoing information is minor. The company's main initial requirement was for electronic receipt of the product resale and inventory information used to manage commissions, discounts and inventory re-order levels. Bypassing the intermediate handling by sales offices and distributors would speed up the process, effect dramatic improvements in efficiency, and by eliminating manual intervention, assure greater accuracy.

Xicor's initial implementation of **EZConnect for EDI/XML** (consisting of purchase orders, finance and communications), took a little more than two months. The objective was to first enable the standalone back-end systems that are based on the Microsoft Access database. From the database, the documents are forwarded to the relevant application databases, where the required functions are executed.

The next documents to be dealt with were the inventory report and the sales report, each of which was implemented for three major Xicor customers -- Wyle, Pioneer and Hamilton Avnet. Each trading partner provided ACOM with its implementation guide, which specifies the standard X12 and EDIFACT formats that they use, along with a test file. Lam, Ferrigno, and Scott worked together to determine the mapping of the documents, organizing the positioning of such factors as the data, purchase order number and other specifics, as well as the various conditions that apply to the transactions. With that information, Lam created the flow of the data from the standards templates into the back-end systems.

Next came the process of integrating multiple activities directly with the Oracle database. For example, Lam and the Xicor team implemented a process through which purchase order data from distributors and customers is automatically and directly loaded into the Oracle-resident sales order system, with XML copies of the purchases order printed from an XSL style sheet and emailed to the responsible sales office. The PO looks like a printed document and is used by the local sales office for tracking the order and commissions. This implementation uses:

- EDI (X12 and EDIFACT)
- XML
- XSL Style Sheets
- Direct Database mapping
- Internal alert features
- Internal notification features

Next, ACOM implemented the EDI forms to XML for two additional trading partners -- Lucent Technologies, and Celestica (a global leader in the electronics manufacturing services

industry, based in Toronto). Following that activity, the company implemented the forms in EDIFACT for Hamilton Avnet-Europe, and Memec (a global group of technical manufacturers representatives, based in Oxfordshire, U.K.).

Altogether, the first round of implementations accrued to 12 documents for five different trading partners.

SUCCESS!

At the same time, Xicor was tending to internal business as well. Not only does **EZConnect for EDI/XML** enable the documents to be automatically converted to XML format for transmission using IP protocol, once in XML format, the documents can be formatted into readable documents using XSL style sheets. The style sheets are rendered as crisp reports (similar to those produced using Crystal Reports and other report-generation software), and they can be distributed by fax and e-mail.

Now, each time a purchase order, for example, is received, the system is prompted to create an XSL copy of the form and distribute it to the relevant sales unit for that unit's own tracking and record purposes.

With its centralized EDI order processing and tracking system in place, and running successfully with several of its key accounts, Xicor is now on the cusp of its next phase: implementing it directly into the highly integrated Oracle database. **EZConnect for EDI/XML** will link the trading partners directly into Oracle, which will not only perform the data manipulation and storage, but will also provide the application software that executes the orders and their related activities.

"Once we achieve this," Siljeg says, "the process will be totally automated, saving money, time, and effort, and eliminating virtually all possibilities for errors. As we progress further, we anticipate that just about any of our trading partners, EDI-enabled or not, will be able to do business with Xicor as long as they have a PC and Internet access."

###