

Electronic distribution system is Wiring's blueprint for success

Sending blueprints to plants by fax or mail is rapidly becoming obsolete at UTA. In its place is a distribution system that transmits the same information via electronic networks.

The change signals a dramatic turn in the way Wiring Systems will conduct business in the future.

"The electronic blueprint distribution system (EBDS) lays the groundwork for a companywide product data management (PDM) system," said Rick Calligaris, supervisor, engineering data systems.

"PDM will let associates manage data they need in their jobs. Electronic blueprints certainly move us closer in that direction," he said.

The shift from paper to an electronic distribution system began in spring 1994 with the formation of an electronic blueprint distribution team. Niles Redden, director, systems & process management, was executive sponsor of the team, and Calligaris was chairman. Core team members included Al Adesso, Wiring Systems quality assurance; Paul Bialczyk, Wiring Systems operations; Zenon Hotra, connectors; Bob Matesic, Information and Network Resources (INR); Sergio Molina, tooling engineering; Brian Murphy, Wiring Systems process management systems; Haisen Quan, Wiring Systems industrial engineering; and Sesha Ramenaden, connectors PDM administrator.

The team went beyond its original task to improve print-to-plant distribution and also looked at ways to make this information more accessible to associates.

The electronic distribution system the team designed was tested in August 1994 at five pilot sites: Livonia sample shop, Juarez plant 137, Traverse City plant 134, Philippines engineering center in Cebu, and Juarez plant 195.

The results of the pilot tests were encouraging. Advantages to the system included:

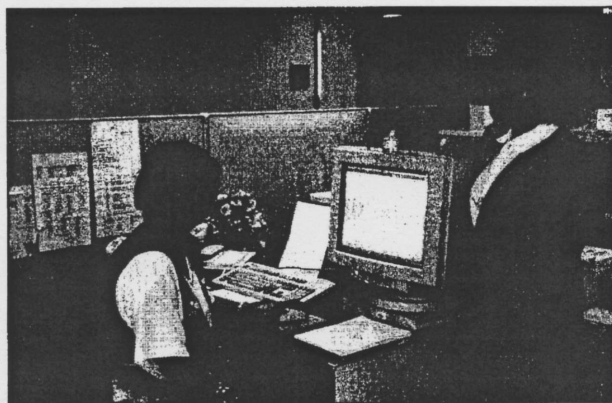
- Improved legibility — In the past, sending a copy of a copy of a copy made prints difficult to view. Electronic blueprints provide a clean print every time.
- Better access to prints — The old file cabinet system sometimes resulted in misplaced blueprints. An electronic distribution system allows access to all designs, all the time, including the most recent revisions.
- Shortened lead time — Associates no longer have to wait for prints to pass from one department to another. Once a design is approved, every one is in the first round of distribution.
- Reduced costs — Associates no longer waste time standing in front of a copy machine. Air freight expenses are reduced and space where file cabinets once stood can be used for other activities.
- Two-way communication — In the near future, associates will be able to mark up prints with suggestions and ideas for improving quality. These markups then would be sent electronically to the designer for consideration.

One of the groups that stands to benefit most from the new system is the engineering center in the Philippines.

"The lengthy process of estimating costs was saddled with the additional burden of waiting five to eight days for prints to arrive in the mail," Calligaris said. "The new procedure will reduce turnaround time on quoting from the Philippines by allowing Philippines engineering center associates immediate access to the prints."

Converting from a paper to an electronic distribution system involved a significant investment in new equipment at plants and at Dearborn.

Plants received new computers with print/view/markup capabilities, high resolution monitors, laser printers, and 36-inch plotters to print



Product data management coordinators Donna Carloy (standing) and Mary Borg are working with the new electronic blueprint server to provide fast, reliable service to Wiring Systems plants.

full-sized prints.

Dearborn had special equipment requirements.

"Connectors and Wire Systems departments are the only locations where data is entered," said Sesha Ramenaden, connectors PDM administrator. "For this reason they require additional equipment, including a scanner to reproduce large designs, and a vault that stores the images."

The entire process begins the moment a blueprint is approved.

"Designers create a plot file for their drawings," Ramenaden said. "The PDM coordinator stores it to the EBDS vault. All of the basic drawing attributes are then entered into a proprietary database, which users can query."

The vault, which functions as a big electronic file cabinet, stores the images or plot files and allows plants to electronically call up a blueprint.

"The turnaround time — from the moment a PDM

coordinator receives a plot file to the time it becomes available to the plants on the vault — is just 24 hours," Calligaris said. "Currently there are more than 5,000 drawings in the vault."

The success of the pilot project resulted in the implementation of an EBDS within each manufacturing facility, with a July 10 target completion date for the production plant rollout.

Organizational changes were made to accommodate the new distribution procedures. Bob Jensen, Wiring Systems vice president, product engineering, was appointed PDM process owner. Reporting to Jensen is Rick Calligaris, who was named PDM process manager.

Calligaris oversees the work of the PDM administrators, Sesha Ramenaden (connectors) and one to be named for Wiring Systems; and PDM coordinators Mary Borg and Donna Carloy (Wiring Systems) and Sheila Cobb (connectors).

"PDM coordinator positions also will be established at each plant," Calligaris said.

The scope of the project requires cross-functional support. INR is responsible for keeping the system up and running 24 hours a day. If a problem is detected, INR notifies the team and together a solution is worked out. INR associates Jon Lebsack and Dave Schubring joined the EBD team after the pilot project and have played an instrumental role during the companywide launch.

Also lending support is Dan Young, computer aided design (CAD) system administrator, who has worked with team members to develop electronic file access capabilities from customer CAD systems.

The success of the EBDS bodes well for the business environment of tomorrow.

"Electronic blueprints will have a major impact on every aspect of the business, from design and engineering to manufacturing and sales," Calligaris said. "In this case the quality of the print can translate into the quality of the product."

PDM to change information flow

UTA President Norm Bodine frequently reminds associates "information is free." Yet in order to use information, associates must first have access to information.

"In the past, access to information not only was limited by the technology available, but by the information flow itself," said Brian Murphy, senior business analyst. "Information passed from one associate to the next, often preventing timely access to critical information. By controlling the information flow, associates were in effect controlling the information."

The product data management (PDM) way of doing business changes all that.

"Associates will have immediate access to all the information they require to do their jobs effectively," Murphy said.

The new electronic blueprints distribution system (EBDS) paves the way for a future PDM environment at UTA.

"We got our feet wet with EBDS," Murphy said. "We discovered numerous processes that need to change. We think it's a good first step down a long road."

Wiring Systems recently formed a team to create a PDM solution for the company. The team is comprised of Rick Calligaris, Roger Fraser (Wiring Systems manager, business process improvements), Murphy and Sesha Ramenaden.

Associates can expect PDM principles to change the way they use their computers. A future scenario could allow computers to systematically manage an entire business process. Software could be programmed to list a series of to-do's. Each time

a task is completed, an associate clicks a checkmark in the appropriate box. Once all the boxes are filled, the computer forwards the work to the next person on the routing list.

"This moves business in a new direction," Murphy said. "Associates will be able to define the work process and the computer will be able to handle the distribution."

A PDM system also identifies bottlenecks in the work flow. Associates could go right to their computers and at the glance of a screen see where information has stalled.

"Project management and time management become critical," Murphy said. "PDM empowers people, but it also holds them accountable to the work they do."

However, PDM is not an open invitation to view every company document. Security measures will be put in place to restrict access to personal documents. Still, PDM will create a very different work environment. Instead of a job controlling an associate, PDM allows the associate to master the job. "People like the fact that they have more options to search for information," Calligaris said. "Fewer phone calls will be required and there will be no need to delegate another associate to dig up information."

A conversion to PDM will not happen overnight. Receiving assistance from various process areas, the PDM team will be dedicated to the task 40 hours per week for about two years.

"A PDM system breaks down the barriers," Calligaris said. "And the implementation of a PDM solution will change our corporate culture."