

## Toshiba reengineers business processes for maximum productivity

Product knowledge management and collaboration multiply the productivity gains made possible by 3D design

Siemens PLM Software

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### ► Issues:

Goal of cutting development lead time in half

Optimize the collaboration among multiple design centers

Quickly communicate design changes between design (in Japan) and production (in China)

### ► Approach:

Teamcenter® software manages product lifecycle information

Design leaders use Teamcenter to track progress and approve designs

Outside divisions access information in standard JT™ visualization format using Teamcenter via web browser

### ► Results:

Production site in China has continual access to design information

Dramatic reduction in design time through improved domestic design collaboration

Manufacturing-driven design change down from one month to instant notification

Significant decrease in man-hours needed to produce drawings

## TOSHIBA TEC CORPORATION DOCUMENT PROCESSING AND TELECOMMUNICATIONS SYSTEMS COMPANY

- After completing the transition to 3D, management realized that further productivity gains would come from enhanced information management and collaboration, both in-house and with Chinese manufacturing centers.

### The next important step after 3D

Toshiba TEC Corporation is a solution provider with abundant technology, sales and system integration power in the fields of retail information systems, document processing, telecommunication systems and home electric appliances. Toshiba TEC Corporation Document Processing and Telecommunication Systems Company (Toshiba TEC DPTS) is the division in charge of the manufacturing and sales of digital and full color multifunction peripherals (MFPs), which are capable of copying, printing, faxing and scanning. Its product line includes digital e-STUDIO series and full-color FANTASIA series.



Design work is done in Mishima and Osaki sites while manufacturing is performed at Toshiba Copying Machine Shenzhen (TCOS) in Shenzhen, China. In the past, having multiple design centers in Japan added a layer of complexity to the new product development process, making it problematic for the different sites to collaborate effectively. Challenges also arose in the collaboration between design and production. Relaying design information accurately to the remote production site was arduous. And when repeated design changes were made, the sites were hard pressed to communicate those changes in a timely manner. After completing the transition to 3D design (using NX I-deas® software) in 1999, Toshiba TEC DPTS realized that future productivity gains would come from improvements to collaboration among design centers in Japan as well as between designers and the Chinese manufacturing center. “We

**“We can’t avoid the issue of completely internationalizing our production operations. The key to achieving that is IT. There is no alternative.”**

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started looking into a solution back in 2000 with the focus on implementing product lifecycle management (PLM) for our 3D design operations,” says Takuro Ito, group leader of the Digital Solutions Technology Center, Toshiba TEC DPTS. Ito explains that the focus turned to PLM when the company realized that it would be a key to the business process reengineering they were hoping to achieve. “We realized that PLM would cut our development time in half,” recalls Ito.

#### **Teamcenter foundation for advanced collaboration**

Toshiba TEC DPTS selected Teamcenter, which provides an open, standards-based, scalable PLM architecture, as its PLM platform. Using Teamcenter as the foundation, it built the Advanced Development Assistance system for Mechanical design (ADAM) that has enabled the company to completely reengineer its approach to design collaboration and handling drawings. ADAM operates from the Mishima office. A Java interface allows users to register design data into Teamcenter as well as view and manage various design information using a web browser. This same Java interface makes it possible for design leaders to check design progress and approve designs. In addition, participants from other divisions can access design information in JT format via a web browser. A dedicated line connects the Chinese manufacturing center to the Mishima office, giving the production site continual access to the latest design information.

Along with the implementation of ADAM, Toshiba Tec DPTS has been reengineering its business processes using Teamcenter as the enabling technology. There are two major goals: reengineering design collaboration, and reengineering the approach to drawings. “There were four initiatives in our approach to reengineering design collaboration,” explains Ito. “Collaboration between the design and manufacturing engineering operations, collaboration between the Mishima and Osaki offices, submission of JT formatted data to the people in charge of product manuals and collaboration with TCOS (the manufacturing center in China).” The main focus in reengineering collaboration with TCOS was to get designs corrected faster at the production site. In the past, when the production site noticed that a design change was necessary, the design would have to first be sent back to Japan, which resulted in a correction lead time of about one week to a whole month. Now, data is shared through ADAM, which enables the designers to make corrections on the spot.

#### **Teamcenter reduces time for drawing production**

The reengineering of the approach to drawings included three key steps. The first one was to implement critical to function (CTF) drawings, abridged drawings that contain only the dimensions of critical functions, to dramatically reduce drawing-related man-hours. The second was to automate the process of creating production drawings from outline drawing information. The third was to divide assembly drawings into two



**Solutions/Services**

NX I-deas  
Teamcenter

**Client's primary business**

Toshiba TEC Corporation  
Document Processing and  
Telecommunication Systems  
Company is the division in charge  
of the manufacturing and sales of  
digital and full-color MFPs  
(multifunction peripherals that  
are capable of copying, printing,  
faxing and scanning).  
[www.toshibatec.co.jp](http://www.toshibatec.co.jp)

**Client location**

Tokyo  
Japan

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pages; the drawing portion and the configuration portion, and then to automate the creation of the configuration drawing (configuration list). “In order to fill in the non-dimensional gaps of the drawings, automatic generation of reference data is critical to making the transition to the CTF approach,” Ito explains. “If we hadn’t adopted Teamcenter as our PLM foundation first, we probably would never have been able to achieve this.”

Toshiba Tec DPTS has other applications built on Teamcenter as well. One is the Electronic Development Assistance (ELDA) system, which added electronic features to complement the capabilities of ADAM. This new system went live in April, 2004 and is currently being used with ADAM to manage the complete configuration of Toshiba TEC DPTS’ products. Another is the Design Issue Assistance System (DIAS) that extracts only the official drawings from ADAM/ELDA, where both work-in-progress drawings and official drawings reside. It enables a quicker and more simplified process of releasing drawings and more accurate communication of drawing changes. DIAS went live in September 2004 and has made a huge contribution to reengineering design notifications.

In the future, Toshiba TEC DPTS plans on building a comprehensive database for drawing releases and design changes with an eye toward achieving a one-stop shopping system for dealing with design changes. “We realized that we can’t ignore the issue of complete internationalization of our production operations,” says Ito. “We need to establish a meaningful operational diversification in order to operate efficiently. The key to that is IT. There is no alternative.” Teamcenter continues to play a critical role in achieving Toshiba TEC DPTS’ goals.

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