

## ABB Xiamen Switchgear SMARTEAM integrates disparate databases, reducing errors and saving time



*"With SMARTEAM", the groups collaborate and work in a concurrent engineering approach. Change orders flow through the cycle much faster."  
– Andrew Xu, Engineering Manager, ABB Xiamen Switchgear*

### Highlights

- *Disconnected data negatively impacted quality control. With no link to the ERP system, plus separate mechanical computer-aided design (MCAD) and electronic computer aided design (ECAD) databases, data was manually re-keyed multiple times.*
- *SMARTEAM delivers multi-computer aided design (CAD) data management from a single repository, fast retrieval of data through powerful search capabilities and tight linkage to the SAP ERP system.*
- *SMARTEAM shortened product development time by 30 percent, improved bill of material (BOM) accuracy by 40 percent and improved mechanical design quality by 70 percent.*

### Manual process slows growing business

ABB is one of the world's leading manufacturers of electrical equipment. But as orders grew at the company switchgear plant in Xiamen, China, the challenge of hand-copying data among the site's disparate mechanical CAD, electronic computer aided design (ECAD) and ERP databases became overwhelming.

"Each group managed its own data on different systems," explains Engineering Manager Andrew Xu. "Information was passed around in serial fashion on paper documents. People would extract what they needed by hand and manually enter the data required for their part of the project."

### SMARTEAM pulls it all together

ABB Xiamen found its answer in the SMARTEAM family of product data management solutions. Groups use SMARTEAM to collaborate and work in a concurrent engineering approach. SMARTEAM Gateway now integrates the company's design databases with its ERP system, eliminating the manual copying and re-keying of data from one system to another, cutting product development schedules and reducing the rate of error.

The company also implemented SMARTEAM Workflow for revision control and ECOs, and Web Editor, which permits engineers to access the database from remote locations. ABB's site service engineers also have access to the central database, entering and retrieving information as needed for improved customer service. Using SMARTEAM, they access data quickly for maintenance, field service and other after-delivery PLM support activities.



Xu said Gateway has bridged the gap between engineering and manufacturing by passing design data, triggering the production system and synchronising engineering changes. "Before implementing Gateway, electrical engineers and mechanical engineers manually compiled separate lists of components that would then be combined into a bill-of-materials (BOM) and manually entered into ERP," Xu said.



### **Error-free BOMs in minutes**

Gateway eliminates these problems by automatically extracting the BOM structure from the CAD systems and transferring the data directly into SAP. An intuitive graphical mapping tool easily defines links between SMARTEAM, the CAD systems and ERP. Processing of ECOs is automatically synchronised.

"The SMARTEAM Gateway product significantly reduces the time to prepare and send information to manufacturing," Xu said. "The BOM used to take weeks to do and considerable time was spent correcting mistakes. Now the automatic process takes place in just minutes and is virtually error-free. This dramatically reduces lead times and improves design quality."

### **Impressive results**

Overall, product development time was reduced by one third and BOM accuracy improved 40 percent. The mechanical design error rate dropped from 9,446 defects per million opportunities (DPMO) to just 2,749, a quality improvement of more than 70 percent. As a result, ABB Xiamen Switchgear has been able to handle more work faster, accommodating a 30 percent increase in business volume since implementing SMARTEAM.

"We made this investment and it is paying off in significantly increased revenues for our company, which is the goal of any effort such as this," said Matti Meurman, Operations Manager at ABB Xiamen Switchgear. The improvement in design cycle time and reduction in errors "is the essential justification for this effort."

### **Easy to use, easy to learn**

Xu said the entire system was functional in only two months and that users were quickly able to work productively using the software on their routine projects. "We found SMARTEAM and all the related packages easy to learn," he said. "Training time was only a few hours for each individual, and our engineers were glad to have such powerful tools to automatically handle many of the tasks they used to do manually."

Xu said "SMARTEAM represents a powerful technology that met all our needs and was implemented quickly,".

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