

# TVS Motor Company

Leading Indian two-wheeler manufacturer enhances employee collaboration and business productivity

## TVS Motor Company

[www.tvsmotor.in](http://www.tvsmotor.in)



### Industry

Manufacturing

### Challenges

- Enable faster access to mission-critical drawings and designs
- Streamline collaboration among cross-functional teams
- Enhance workflow management and improve productivity to address competitive business requirements

### Solution

- Document collaboration  
TVS Motor relies on Adobe Acrobat 3D software and Adobe PDF to enable faster and more reliable access to mission-critical engineering drawings, 3D illustrations, and designs.

### Results

- Faster access to mission-critical engineering diagrams, drawings, and 3D illustrations
- Improved collaboration among cross-functional teams and external suppliers
- Enhanced workflow management and business productivity
- Achieved significant savings in printing and shipping costs

### Systems At A Glance

- Adobe Acrobat 3D Version 8
- Adobe Reader
- PTC Pro/ENGINEER, AutoCAD
- Platform: HP desktops and HP, Toshiba, and Dell laptops running Microsoft® Windows® XP Professional and Windows Vista®

## Overview

TVS Motor Company is the third largest two-wheeler manufacturer in India and among the top ten in the world, with annual revenue of more than \$1 billion in 2006-2007. It is the flagship company of the \$4 billion TVS Group.

TVS Motor strives for manufacturing excellence and innovation in research and development (R&D). With the company's emphasis on new and domestic product development, its New Products Introduction (NPI) team, comprised of approximately 300 engineers, must stay at the forefront of executing R&D roadmaps and strategic organizational visions for new products. These products are developed domestically via technical collaboration with globally renowned partners. Regardless of market conditions and business environment dynamics, TVS Motor releases six to ten new products annually to address the broad-based requirements of the Indian market.

### Faster technical document creation and access

“With the highly competitive nature and rapid growth of the two-wheeler industry in India, we need to develop products much faster than ever before,” says Richard Gomez, general manager, NPI/PLM, TVS Motor Company. “Keeping our engineers up to speed to spur faster product development has become imperative.”

Manufacturing excellence calls for sustained innovative efforts and investment in relevant technologies and tools. Adobe® Acrobat® 3D software has enhanced collaboration on many levels for TVS Motor, and reduced the lead time required for sharing engineering drawings and designs among cross-functional teams. With Acrobat 3D, TVS Motor can integrate AutoCAD®, 3D CAD, ProE designs, and other format design source materials into an integrated Adobe Portable Document Format (PDF) file. “3D Adobe PDF files make it fast and easy to access and share technical documents and other work-related design materials,” says Gomez.

### Streamlining cross-functional collaboration

Prior to using Adobe solutions, TVS Motor engaged in a complex process of sharing engineering drawings and designs. In a predominantly paper-based environment, production engineers had to wait for complex hard-copy drawings before commenting on them and sending them to suppliers across the country or abroad via courier. The new product team is comprised of R&D, production engineering, purchase engineers, and quality professionals. Integrating communication across the different functions involved in the new product development process was challenging.

According to Gomez, information sharing was of the essence, and that prompted evaluation of Adobe solutions, including Adobe Acrobat 3D and Adobe PDF. Says Gomez, “Adobe Acrobat and Adobe PDF provided robust viewing functionality, more economically than other solutions, without having to install software at the client end.” Any employee with a desktop or laptop PC can now view high-end CAD and other complex engineering drawings using the free Adobe Reader® software.

*“The inherent 3D design viewing capabilities of Acrobat 3D software have enhanced the quality of engineering designs and information sharing among production and R&D team members. Collaboration among cross-functional teams across the country has improved immensely, resulting in greater efficiencies in workflow processes and document management, and enhanced business productivity.”*

Richard Gomez,  
General Manager, NPI/PLM,  
TVS Motor Company

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In addition, suppliers throughout India needed a way to view and comment on CAD drawings. With Acrobat 3D, TVS Motor can integrate complex engineering designs into everyday business processes and convert ProE, 3D, and AutoCAD designs to Adobe PDF with ease. Anybody in the extended teams across the country can view the Adobe PDF files using Adobe Reader software, eliminating the need to invest in standalone 3D viewing software. The commenting and editing features available in Acrobat 3D also enable production engineers to share feedback quickly with other team members down the line.

Previously, sharing and mailing designs was a cumbersome process that took 18 to 30 days, substantially lengthening collaboration, feedback loops, and turnaround times. Today, this process takes only 2 to 7 days. This significant time savings is due to the ability to digitally share information and a concerted move toward a paperless environment. Collaboration is more streamlined with better, faster, and more timely information sharing. TVS designed workflows in its Product Lifecycle Management (PLM) system that automatically trigger collaboration. Once documents are distributed for review or approval, engineers and other professionals simply click on them and view them on demand using Adobe Reader.

“With Adobe Acrobat and Adobe Reader, no one needs any special application installed on the PLM system,” says Gomez. “Viewing documents for approval has become infinitely easier.” The Adobe solution has worked wonders for workflow management processes and sharing of information at all levels. Teamwork is more cohesive and collaboration at all levels has improved immensely. “We are now 100% convinced about moving totally to a paperless environment and Adobe solutions will help facilitate that,” Gomez adds.

#### **Reducing printing and shipping costs**

Previously, the complex chain of activities involved in the design and production process entailed printing and sharing of a large volume of paper-based documents. These materials had to be shared among teams throughout the country. Suppliers also took time to give feedback and resend the material back to design engineers. With Adobe solutions, sharing information and critical documents is now much more streamlined and there is a drastic drop in the consumption of printed documents and paper.

“The shift to the electronic document sharing and review has resulted in efficient management and distributing of documents, while also reducing storage of paper-based inventory,” says Gomez. “While we have not quantified the actual cost savings, we know there has been substantial savings in printing and shipping costs.” Document delivery time has accelerated tremendously, even for professionals needing to check printed documents and paper-based material. When hard-copy documents are required, Adobe PDF enables high-quality printing necessary for viewing highly technical and elaborate engineering diagrams.

“The inherent 3D design viewing capabilities of Acrobat 3D software have enhanced the quality of engineering designs and information sharing among production and R&D team members,” says Gomez. “Collaboration among cross-functional teams across the country has improved immensely, resulting in greater efficiencies in workflow processes and document management, and enhanced business productivity.”



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