

# View Business Data in a New Way

SAP Visual Enterprise Solutions Transform the Value of Information

by Robert J. Merlo, SAP



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When thinking about the value of visualization in the enterprise, it is useful to look at history. But how far back should we go to assess the real value of visual information? Let's go way back — to ancient Egypt.

Ancient Egyptian cultures used pictographs, or hieroglyphs, to tell stories, provide guidance, or give warnings. Used as early as 3,300 B.C., hieroglyphs became the written language of a culture that previously had no written form of communication. Drawing pictures allowed people to communicate ideas in a way almost anyone could understand.

As different languages emerged over time, communication became stifled. If I did not know your language, or you mine, understanding each other would be challenging and perhaps very nearly impossible.

In some ways, 3D visualization in the enterprise is just an advanced language of images, brought to life through photo-realistic quality, sequenced animations, and image viewing controls. This advancement brings great value to the individual and to a broad range of functional areas in the enterprise. Let's explore some examples that highlight the power of SAP Visual Enterprise solutions.

## Unlocking the Engineering Vault

Visualization usually begins in engineering. The design of products, plants, and facilities has always required drawings, which have evolved from hand-drawn work on drafting boards to very sophisticated 3D CAD tools. The problem, however, is that this highly valuable visual information rarely, if ever, makes its way out of the engineering vault to the rest of the

enterprise. There are several reasons why this is the case:

- CAD files require CAD application knowledge and licensed access.
- CAD files can be very large and inefficient to distribute.
- CAD files are generally incompatible with applications found outside of the engineering organization.

Even though enterprise users outside of engineering would greatly benefit from these files, the barriers to use have been substantial enough to dissuade them. Until now.

SAP Visual Enterprise solutions provide the key to the engineering vault, transforming CAD files into a highly compressed, lightweight, and easily distributable format. This neutral format, derived from the CAD files directly by the SAP Visual Enterprise Generator application, enables the rest of the organization, and even the extended supply chain, to leverage CAD files using SAP Visual Enterprise Viewer. This results in improved time to market, efficiency gains in processes, better product quality, and higher productivity for downstream organizations.

## Seeing the Power of Visual Content in Manufacturing and Service

Let's take a look at manufacturing. To define and track their product assembly procedures and processes, companies are using many types of documents, including manuals fraught with text and 2D illustrations, Microsoft PowerPoint slides, and even Microsoft Excel spreadsheets. This cumbersome approach creates various problems, such as outdated and poorly illustrated documents, a lack

of dynamic, data-driven information, excessive rework of instructions, and, given the globally distributed manufacturing processes of most products today, massive document translation costs.

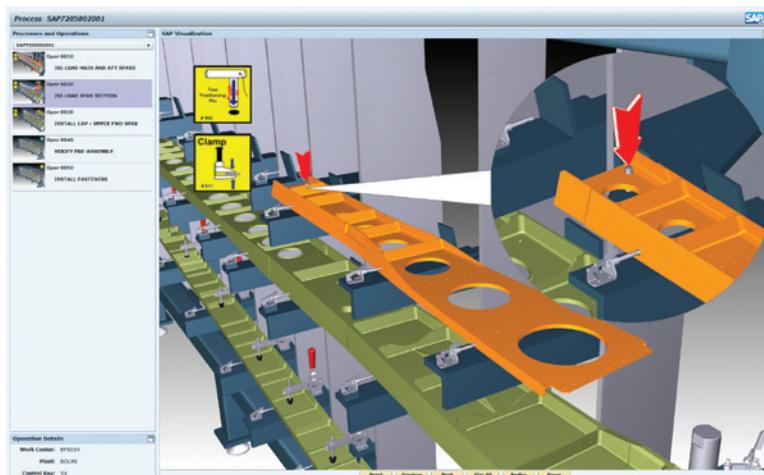
Instead, consider the delivery of 3D animated, step-by-step, visual work instructions that are derived directly from the CAD model and continuously updated. In **Figure 1**, you can see one scene from a visual work instruction created with SAP Visual Enterprise Author, illustrating an assembly procedure for a jet component. There are animation steps on the left and 2D symbols and tool references to complement the 3D animations — and very little text.

Using the 3D product model to illustrate step-by-step assembly procedures decreases the learning time for shop-floor personnel, facilitates proper task execution, and improves quality through clarity in the procedures. Employees learn more quickly, work more productively, and raise the bar on quality.

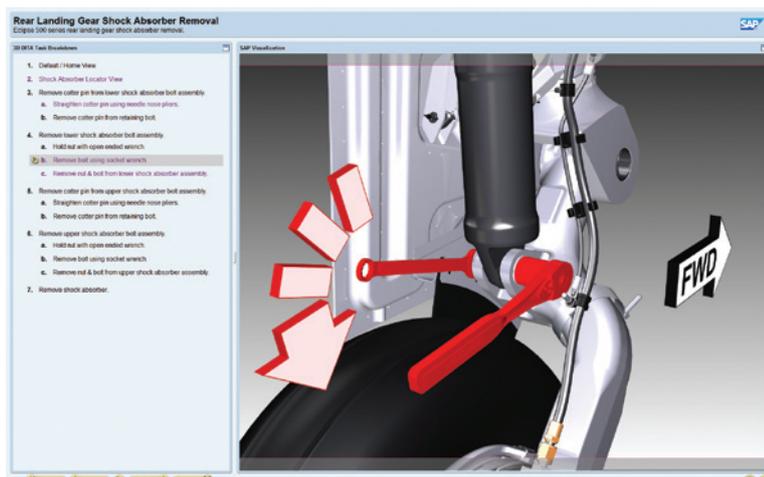
Now let's consider product service and maintenance. As you can imagine, assembly instructions are much like maintenance and repair procedures in reverse order. If you can leverage visual content to build something, you can also leverage that same model to develop maintenance and repair procedures in a similar manner. Whether you are servicing an airplane, an automobile, or a plant, you can use 3D content to better demonstrate the proper procedures.

For example, **Figure 2** shows part of a 3D visual maintenance instruction. As with the assembly guidance shown in Figure 1, the step-by-step instructions, including the required tools, are listed on the left and then animated in proper sequence, giving the repair technician a visual tour of the maintenance procedure. Similar to the assembly procedures, the maintenance instructions are based on the CAD model from engineering, ensuring that they reflect the most accurate, up-to-date product information.

**FIGURE 1** ▶ SAP Visual Enterprise Author displays the latest, most updated work instructions for an assembly procedure



**FIGURE 2** ▶ Service technicians can easily view step-by-step maintenance procedures



As mentioned, SAP Visual Enterprise Generator dramatically reduces the size of CAD files and enables them to be easily distributed throughout the enterprise. This file reduction, along with the use of SAP Visual Enterprise Viewer to play the animations, provides a multi-hardware publishing environment that includes support for mobile devices (see **Figure 3**). This mobile capability is particularly helpful for service technicians out in the field because they can quickly access and view the latest instructions at a job site.

### Accelerating Sales and Eliminating Costly Prototype Development

Our examples have been based on CAD models of components for a personal jet aircraft. Let's continue that theme and consider how sales and marketing teams can leverage this visual content. If, for example, you want to buy a personal, multi-million dollar jet, it's not as simple as going to a "Jet Lot" and picking out the one you want. In fact, the manufacturer won't build your jet until you order it. But working from the exact same model that the engineering department developed, sales and marketing teams can use SAP Visual Enterprise Author to create high-resolution, photo-realistic imagery to provide a prospective customer with insight into a desired product configuration — before a single part is produced or a bolt is tightened. They can use the visuals to promote the product in brochures, presentations, documents, on websites, and in customer engagements.

**Figure 4** shows a realistic image that can be created using SAP Visual Enterprise Author. This capability enables product promotion to raise market awareness much earlier in the product life cycle. Sales and marketing teams no longer need to wait until a product prototype is built to start developing a media campaign.

### Coming Full Circle

SAP Visual Enterprise solutions simplify complex information models and processes by combining 3D visual information with associated business data. As a result, time to market is compressed because of more efficient design review, more effective communication throughout the enterprise, and better collaboration with suppliers and customers. What's more, product and work quality is improved with the delivery of animated,



**FIGURE 3** ▲ Technicians can access visual maintenance instructions on a mobile device



**FIGURE 4** ▲ Sales and marketing teams can create realistic visuals for their campaigns

step-by-step work instructions, and productivity increases as users become more efficient at completing tasks and making informed decisions.

SAP Visual Enterprise solutions enable one product model to be used throughout many functional areas of the enterprise. Procedures and processes are animated so clearly that even the ancient Egyptians would have been able to specify, build, and maintain their own jets — if only they had them.

As I hope you now understand, the SAP Visual Enterprise will change the way people “see” SAP solutions. Learn more at [www.sap.com/solutions/business-suite/plm/visual-enterprise](http://www.sap.com/solutions/business-suite/plm/visual-enterprise). ■