

Automotive Industry Showcase

Streamlining the Technical Publications Business Process

Accelerating Delivery and Reducing Costs

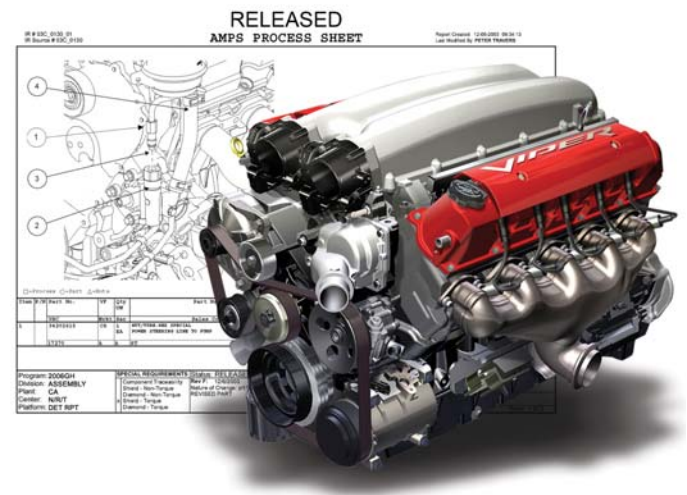
Automakers use product graphics in manufacturing process sheets, promotional materials, aftermarket accessory and part catalogs, and dealer service manuals. The on-time delivery & quality of these product support deliverables has a big impact on how well people perform within a company's established business processes and policies. Like many manufacturers today, automakers are under pressure to reduce costs, improve quality, and accelerate time to market. Right Hemisphere is the leading provider of enterprise Product Communication and Collaboration solutions that enable manufacturers to optimize their global product development launch and support processes. Automakers today are realizing substantial top-line and bottom-line results with Right Hemisphere solutions.

The Challenges Faced in the Automotive Industry

Every automaker produces hundreds of thousands of product graphics for a variety of publications and organizations. Product graphics are created based on 3D CAD models, authored using a variety of illustration tools, and output in several graphical formats for a variety of publications. Each organization has extensive and often manual processes for creating and maintaining product graphical assets. While many of these product graphics could be reused across organizations, today's automakers need a platform that eliminates manual creation steps and facilitates sharing by efficiently managing enterprise-wide illustration assets.

With Right Hemisphere's Technical Publications & Training solution, the automotive industry:

- ▶ Streamlines and automates graphics publishing processes.
- ▶ Automates updates of documentation when source 2D or 3D files change.
- ▶ Minimizes graphics creation costs by reusing more than 80% of graphics across multiple publications.
- ▶ Recovers IT costs by eliminating expensive CAD software licenses.
- ▶ Minimizes product defects by increasing the number and accuracy of illustrations within manufacturing process sheets.
- ▶ Accelerates delivery of illustrations for technical publications - minutes instead of days - by improving graphics searches, accessibility, and availability.



"Right Hemisphere software tools provide us with the opportunity to fortify our visual pipeline. They are quickly becoming one of the key components of a new process we are developing which enables us to better support all downstream consumers with up-to-date product geometry data."

Manager - John Borrowski
Engineering Graphics, Standards, and Information Security, DaimlerChrysler

Customer Spotlight: One Global Automaker's Transformation

The automaker's process for creating vector line-art graphics used in manufacturing process sheets was time consuming and inefficient (see Figure 1). Manufacturing process sheets require thousands of illustrations from tens of thousands of assemblies and parts. Each illustration was manually authored on a one-at-a-time basis. Finding the right CAD model, loading that model, and projecting it properly in 2D generally required several days when all went well.

Whenever illustrations were requested, an illustrator trained in the use of CATIA used a workstation to retrieve the 3D CAD model. This would require several hours. Retrieving the model was often problematic. If an assembly was too large to load into the CAD system, the illustrator would have to start over and load smaller subassemblies instead. The illustrator would then merge these back together in a later graphics-authoring step.

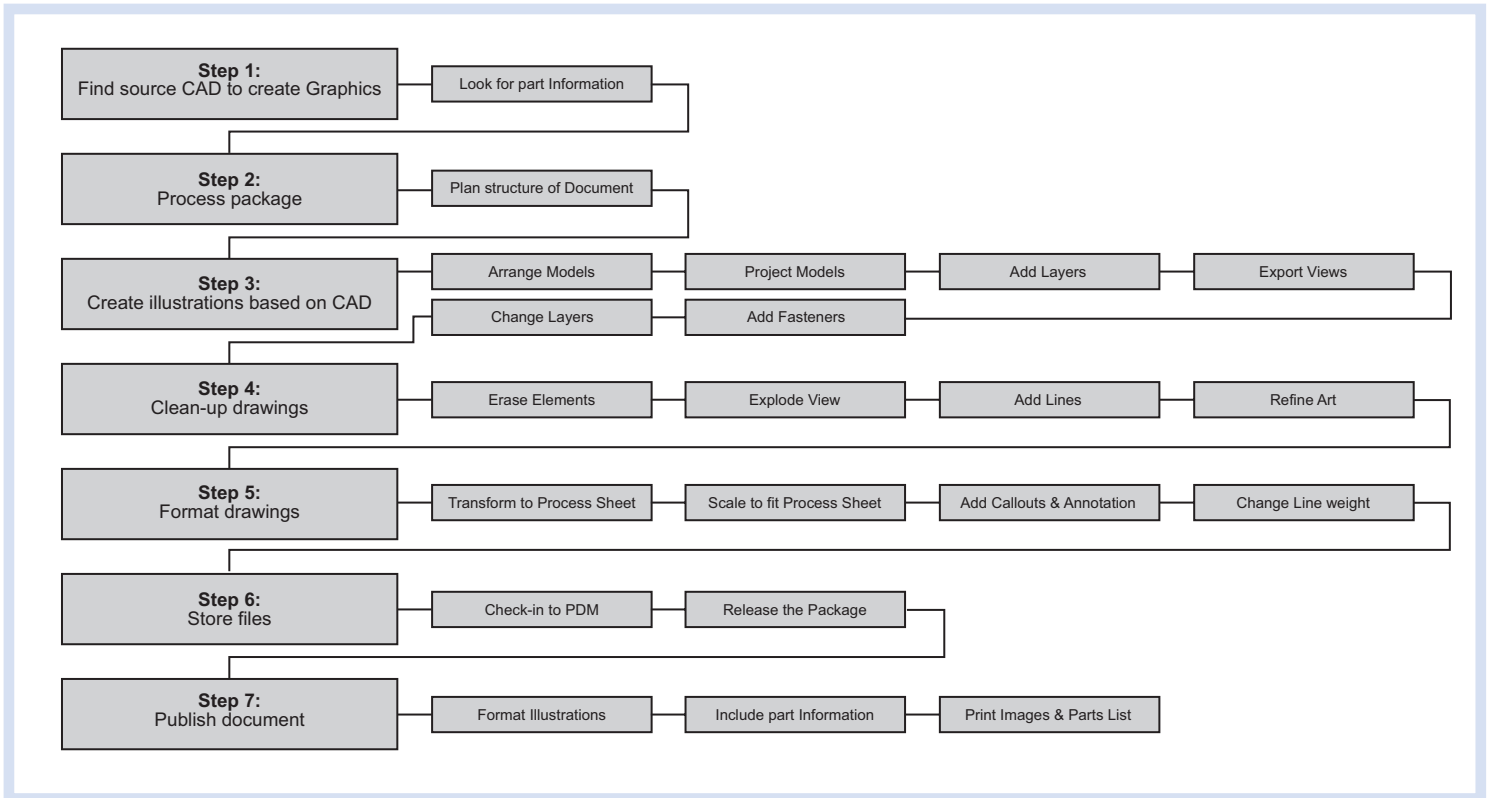


Figure 1. The automaker's original workflow, before Right Hemisphere solutions

Next the illustrator rotated the model to position it properly for projection onto a 2D plane. This projection formed the basis for a vector line-art graphic. Creating projections for 2D illustrations could take several hours or more. Once the illustration was created, the illustrator manually added callouts, cleaned up hidden lines, and carried out other housekeeping operations. If required, they also merged the smaller illustrations back together to represent the entire assembly. Finally the illustration was saved for use in manufacturing process sheets.

A New Optimized Graphics Publication Process

The Right Hemisphere Product Communications and Collaboration platform enabled this automaker to introduce a greatly streamlined process for the creation of vector line-art graphics. The direct transformation of 2D illustrations from large-scale 3D models is now handled in an automated fashion, giving the automaker a streamlined graphic publishing process. For example, because model size and processing time are no longer limiting factors, non-value-add steps have been eliminated during processes for breaking down, reloading, and merging large models. In addition, because the new approach can automatically orient projections and author initial callouts, these steps have been eliminated or reduced.

The new graphics publication process also provided an opportunity to move away from a one-illustration-at-a-time approach and move towards a graphics reuse approach. Graphics are used in manufacturing process sheets, assembly and part catalogs, service manuals, and more. However each publication requires specific graphical derivatives (e.g., technical illustrations, photorealistic images, interactive scenes). To manage this mix, the automaker defines a bill of graphics, which is a standard set of graphical derivatives needed to support all the various publications.

Graphics publishing processes now leverage Right Hemisphere's Deep Server to automate transformation of CAD models and illustration of line-art graphics. Deep Server automatically converts large and small CAD 3D models into lightweight graphical models with associated metadata. CAD conversion is extremely fast. Deep Server automatically processes all CAD files for an entire car (approximately 80,000 parts, equivalent to about 35GB of data) within two hours. With previous methods and tools, each assembly would require several hours to process.

- ▶ **A "Powertrain + Body in White" illustration requires multiple projections and an average of two days to produce. Using Deep Server, the equivalent process requires less than 30 minutes.**

Next Deep Server generates properly oriented 2D line-art graphics with callouts and then saves them directly in the company's authoring tool of choice, Adobe Illustrator. At this point, the illustrators can refine these graphics to create the final illustration used in the manufacturing process sheets.

Summary: A New Workflow

With the Right Hemisphere approach, graphic illustration development processes have changed in two significant ways (see Figure 2). First, whenever a line-art graphic is needed, illustrators simply search the graphics repository of lightweight graphical models and line-art graphics rather than use a CAD package like CATIA to access the CAD models. This improves graphics delivery from days to minutes and reduces costs in a similar fashion. Second, Deep Server automatically updates the lightweight graphical models and derivative 2D line-art graphics as CAD models change, further speeding delivery and reducing costs.

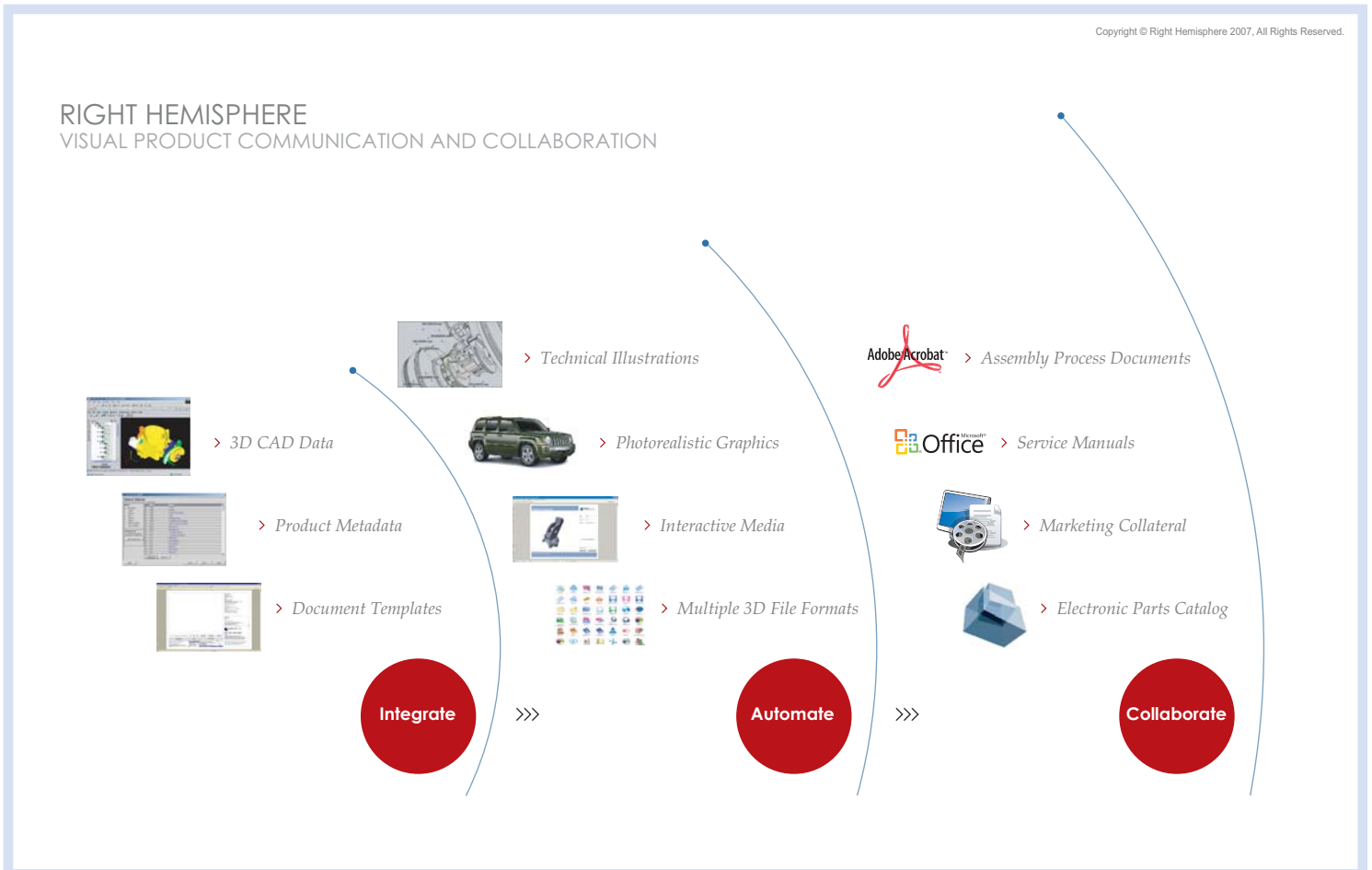


Figure 2. A new workflow with Right Hemisphere Product Communication and Collaboration solutions

After proving the Right Hemisphere Technical Publication solution for manufacturing process sheets, the automaker also optimized the graphics publishing process for accessory and parts catalogs and standardized on the .RH file format across all factory documentation groups. Similarly, dealer service manuals and other downstream publications will be optimized as groups migrate to the new platform. Other business teams - design and sourcing, sales and marketing, and service and support - can leverage Right Hemisphere Deep Server software as the automaker continues to migrate organizations to standard 3D graphics formats and platforms.

Other Right Hemisphere Solutions: Product Communication and Collaboration

To streamline graphics publishing processes and maximize the reuse of product graphics across organizations, automakers can also introduce additional Right Hemisphere Product Communication and Collaboration solutions. These solutions, like the Right Hemisphere Technical Publication and Training solution, represent a new category of enterprise software that automates product graphics publishing processes, manages product graphics, and accelerates product lifecycle management strategies. The Right Hemisphere solutions enable manufacturers to optimize their global product development launch and support processes (see Figure 3).

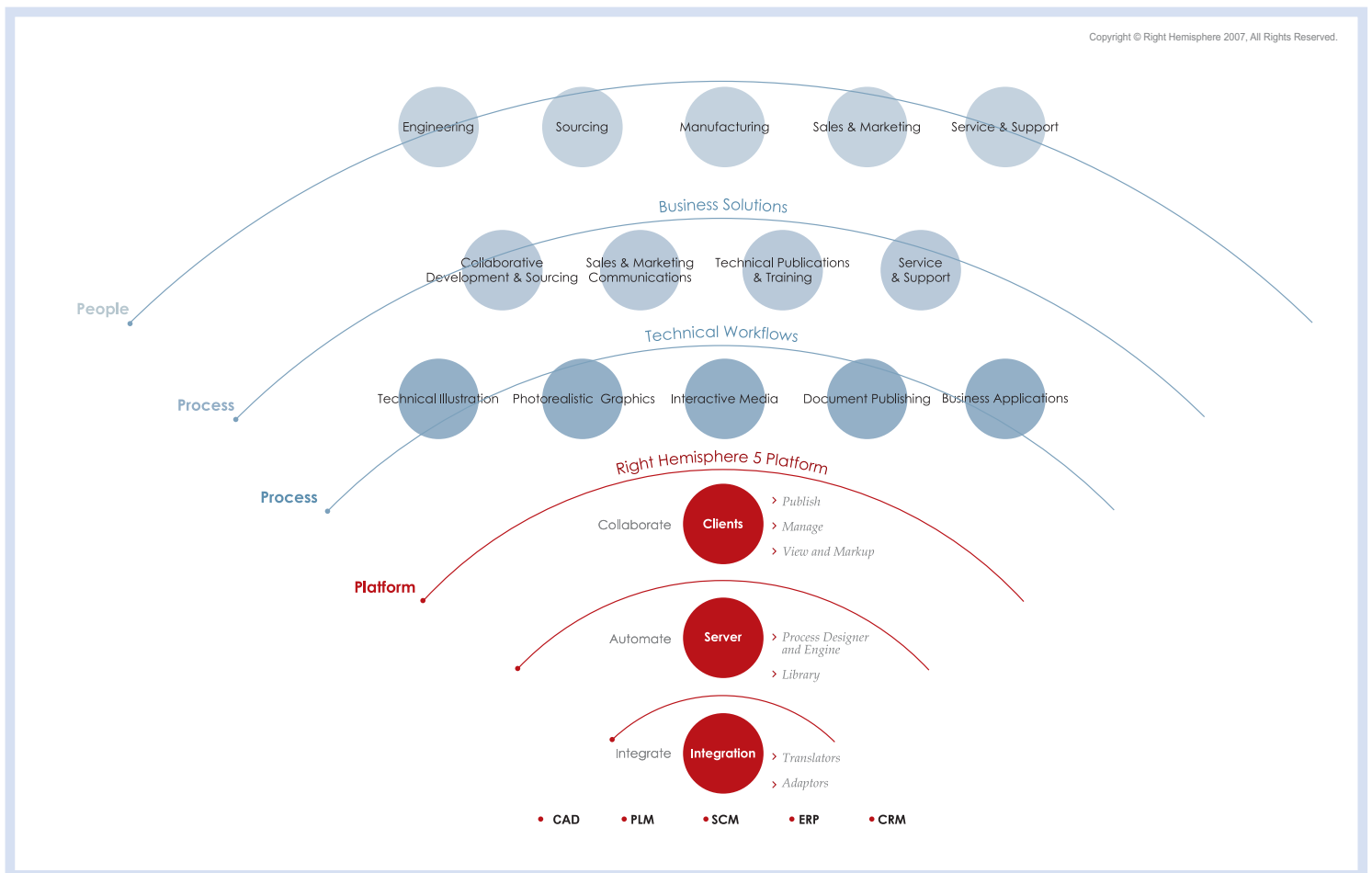


Figure 3. Right Hemisphere solutions are based on a process automation platform that optimizes business process efficiency.

Collaborative Development and Sourcing: Engineers are under constant pressure to speed up design iterations and reduce change order cycle time while keeping costs down. The key barrier is the ability to communicate & collaborate securely the most current product & process designs to all stakeholders. Right Hemisphere's Collaborative Development & Sourcing solution reduces the time to prepare design packages, supplier communications & other engineering deliverables. Product design information is automatically published into secure & common document formats such as MS Office & PDF based on current design data in your CAD & PDM systems.

Sales and Marketing Communications: Sales and marketing teams struggle to deliver consistent messaging and branding on limited budgets. Right Hemisphere's Sales and Marketing Communications solution enables the delivery of consistent digital product media and lets companies develop high-impact marketing communications and sales presentations using cost-effective Computer Graphic Imagery in lieu of costly prototypes and photo shoots.

Service and Support: Service and support organizations have become important revenue generators. Right Hemisphere's Aftermarket Service and Support solution enables the differentiation of product support offerings with more visual, interactive, and up-to-date service documentation, training, and part catalogs. Service procedures and illustrated part catalogs are always based on the most current engineering design. Digital images enable animation and interactivity-adding dimensions that appeal to today's generation of 3D proficient gamers that make up the labor force. Improving knowledge transfer, service documentation, and illustrated part catalogs translates to increased customer service levels and product uptimes.

About Right Hemisphere

Right Hemisphere is the leading provider of enterprise product communication and collaboration solutions enabling manufacturers to optimize their global product development launch and support processes.

Organizations have invested in operational processes and IT systems to improve product lifecycle efficiencies, yet delivery of precise and up-to-date product information to the extended enterprise in a timely, efficient and usable form is difficult today.

Right Hemisphere maximizes knowledge transfer efficiency of product information to downstream stakeholders by automatically publishing product information readily available in CAD, PLM, and ERP systems into common document formats and business applications.

Learn more about Right Hemisphere at www.righthemisphere.com



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