



Google Enterprise for Manufacturing: Become a Connected Manufacturer

By Doug Bartholomew

Over the past two decades, manufacturing enterprises have installed numerous types of systems to help run their businesses. These include enterprise resource planning, customer relationship management, manufacturing execution systems, Web portals, groupware, email, search, mapping software, and on and on.

Yet, some of the most basic functions—such as enabling employees around the globe to communicate and collaborate securely and reliably from any location—continue to pose challenges for manufacturers. Similarly, the ability to search an ERP system for sales leads, or to create a geographic view of customer concentration in a specific region, should be easy for most business users, but often requires an IT specialist.

For manufacturers struggling with the complexity and cost of these systems, Google Enterprise offers a simple, yet elegant, suite of applications and tools designed to make technology more accessible, user-friendly and affordable.

The Google suite of technologies for manufacturers includes applications for worker

productivity and email; mapping software for visualizing geographic business data; a cloud-based infrastructure for software development, computing, data storage and query; and a comprehensive search capability that leads the industry.

Google Enterprise enables manufacturers to work together more easily; visualize their business data; build, store, and scale applications and websites on Google's cloud; and find the information they need when they need it.

WORK BETTER TOGETHER

More than 5 million businesses depend on Google Apps for Business to help employees collaborate and be more productive, wherever and whenever they work. With hosted documents including text, spreadsheets and presentations, Web-based video access and easy site-building tools, Google Apps makes information accessible from just about any browser or smartphone.

By using Google Drive—including documents, spreadsheets and presentations—multiple users can work together, editing online at the same time. Employees can

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collaborate in real time within the enterprise, or they can choose to allow edits by external business partners or clients.

Google Docs eliminates the need for file attachments, and version control is easy because workers share the same online copy of each doc. Documents, spreadsheets and presentations can be displayed on Google Sites with just a few clicks. Presentations can easily be embedded onto a website, existing intranet or blog using the HTML code provided.

All Google Docs files are available and searchable online. Authorized users can access their files from anywhere, even via mobile devices such as the iPhone and BlackBerry.

Google Hangouts allows manufacturers to make content such as product-service training sessions and executive communication more personal, visual and engaging. Google Drive provides secure hosting and streaming of videos, eliminating the need to email or store large video files. Employees can upload or view internal videos without the need for any special software—only a standard browser.

Google Apps also allows manufacturers to tap hundreds of third-party applications in the Google Apps Marketplace, including CRM, project management, accounting and finance, and sales and marketing tools. All work seamlessly with Google Apps, and offer the ease of single sign-on (SSO) access. Because Google Apps is 100 percent Web-based, software updates are as easy as refreshing one’s Web browser.

WORK FROM ANYWHERE

With Google Enterprise, employees can connect, communicate and collaborate in real time with cloud-based technology that is designed for teams.

Google Cloud Platform, the same infrastructure on which Google runs its popular search-engine technology, can be securely accessed by any employee working from any location with a Web-enabled device. This means industrial designers can work from home—or while traveling—on complex engineering drawings, including those requiring real-time collaboration with design-team members.

Manufacturing software architects can take advantage of Google Cloud Platform’s powerful App Engine to build, deploy and scale applications. The Google cloud infrastructure also features Compute Engine, which makes available massive computational power; Cloud

Storage, capable of meeting manufacturers’ needs for large databases; and Big Query, an interactive query and analysis tool for sifting through massive datasets in seconds.

“Being able to work together easily across offices not only brings the team closer together, it also saves significant time and costs,” says Jim Nielsen, manager of enterprise technology architecture and planning, Shaw Industries.

WORK WITH TOOLS YOU CAN TRUST

Google’s Enterprise solution is a set of technologies designed to reduce complexity and maximize ease of use, enabling manufacturers to focus on what matters most—making parts, components and finished products.

Users benefit from the simplicity of connecting via the familiar experiences of Gmail, Google Calendar, Google Docs and other popular tools, effectively minimizing the need for training and support.

With Google’s unparalleled search technology, employees can find business content by using the familiar Google search box. Google Enterprise Solutions includes Google Search Appliance, which incorporates the same algorithms that have been tuned with the billions of daily queries on google.com.

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Manufacturers also can benefit from the business-visualization capabilities of Google Enterprise. Google Maps Engine is a secure, scalable mapping platform for building and publishing maps. Manufacturing firms can share geospatial business data within the company or with business partners on various devices.

Of special interest to manufacturers is Google Maps Coordinate, a workforce-management tool designed to improve the efficiency of mobile teams. By showing the location of employees on a Google Map, managers can assign tasks to the nearest available team member. And by providing real-time visibility into team members’ whereabouts and activities, managers can optimize work scheduling.

HOW GOOGLE CAN HELP

Quickly generate ideas and launch products. The ability to develop new products and quickly introduce them into the market is a critical differentiator for manufacturers. Google Enterprise tools help manufacturers:

- **Collaborate on product designs.** Google Apps enables secure, real-time collaboration among workgroups of all sizes, making it easy for teams to share and access information from any browser or smartphone.
- **Analyze data to make better decisions.** Google Enterprise can help capture, manage and create insight on heterogeneous data culled from customer surveys, social networks, warranty cases and other sources.
- **Find people and knowledge faster.** Google Enterprise Solutions help employees and customers quickly track down the most relevant, up-to-date content and information they need by searching across numerous repositories, including social media, support cases, defect-tracking mechanisms and CRM systems.

Better serve customers. In today’s hyper-competitive global marketplace, it’s more important than ever for businesses to ensure that their products and services meet—and even exceed—customer expectations. With Google Enterprise, manufacturers can:

- **Quickly react to customer feedback.** Centralized Google sites enable businesses to quickly gather feedback from the sales-force and customers, while Google Apps helps enterprises overcome language barriers by translating this information, as necessary, for the user.
- **Improve first-call-resolution rates.** Google Search Appliance gathers customer-support information from disparate applications and puts it at the fingertips of customer-service reps, resulting in a richer experience for the user, shorter call times and higher first-call-resolution rates.
- **Efficiently manage product recalls.** Manufacturers can use Google Sheets with Forms to quickly capture and track product-recall information from any device. Utilizing Maps API/Google Maps Engine and Google Coordinate, enterprises can locate and deploy the field-service personnel who are closest to customers who are experiencing issues.

Drive efficiencies in their operations. By utilizing Google Enterprise, manufacturers can leverage lean strategies and other best

practices across geographically dispersed facilities and processes, reducing costs, improving quality and increasing their agility—thus enabling them to respond quickly to new challenges and opportunities. Specifically, Google Enterprise helps manufacturers:

- **Collaborate on unstructured data from disparate sources.** Manufacturers can share and collaborate on data within Google Docs and Sheets—worldwide—from just about any device, while Google Drive enables them to share data and files up to 10 GB, internally and externally.
- **Maximize the value of ERP systems.** For users who do not have direct access to ERP systems (such as SAP), Google Search Appliance can search across log outputs, unstructured process documents and more structured data tables, from just about any device.
- **Comply with global quality and safety standards.** GAE, Cloud Storage and BigQuery enable organizations with comprehensive global compliance systems to capture and report on data at various points in the process, from mobile devices and by using different applications.
- **Optimize supply chain processes.** Suppliers are playing an increasingly key role in manufacturers’ ability to innovate, control costs and drive process efficiencies. Google Enterprise helps manufacturers maximize supply chain relationships by:
- **Optimizing the product and material bid process.** Google Forms enables manufacturers to publish requests for bids and makes it easy for suppliers to submit bids. Detailed bid requirements can be made available via Google Sites and/or shared Google Drive folders with video and other document types, resulting in faster time to market and reduced costs.
- **Improving production planning and scheduling.** Google Maps can visually depict critical fleet-management data, such as the location of key resources (vendors, facilities, distribution) and how they are connected.
- **Improving forecasting accuracy.** By using Google Forms/Sheets and Sites, stakeholders can stay on top of demand changes and customer-order anomalies, from just about any device.

Manage human capital. The ability to recruit, retain and engage talented employees is critical to manufacturers’ success. To get

SHAW INDUSTRIES

Managing different versions of the same document is a frequent problem for many large manufacturers. “We’d end up with 15 different versions of a document attached to who knows how many different emails,” says Jim Nielsen, manager of enterprise technology architecture and planning for Shaw Industries, the world’s largest carpet manufacturer, with 200 locations worldwide and 23,000 employees.

“Our collaboration capabilities began to lag behind the needs of our global manufacturing company,” Nielsen says. “We found challenges in scalability and stability in our previous email solution. Support resources were also an issue, as we required a team of three full-time employees just to keep our email up and running.”

In 2012, Shaw made the move to Google Apps for Business. “The marketing team wanted a way to easily share files and work together on copy for our website and ads with our agencies,” Nielsen explains. “With Google Drive and Google Docs, multiple team members could work on content, and you could actually see it evolve in a very short period of time—from a concept to a script for a TV commercial—all in the same shared document.”

Shaw also utilizes the Google Cloud Platform, which provides scalability and cost savings. “When I did a cost and benefit analysis, it was clear we needed to move to the cloud,” Nielsen says. “We discovered that Microsoft Office 365 would cost about 13 times more for us than Google Apps. In March 2012, we implemented Google Apps for more than 10,000 of our associates who use email.”

“Now, team members across Shaw are better connected as a result of enhanced collaboration and efficiency. We have an elaborate budget process inside IT that we were able to move to Google Sheets,” Nielsen adds. “Now our master spreadsheet can be instantly updated in real time, shaving about two months, or 50 percent of time spent, off the budgeting process.”

the most out of manufacturers' most valuable asset—their people—Google Enterprise tools help companies:

- **Improve the recruiting process.** To avoid the unnecessary cost of employee-position mismatches, Google Search Appliance can search talent-management applications, internal profiling applications, and internal social media and HR systems, providing a holistic view of expertise both internally and externally.
- **Optimize compliance/benefits training.** Manufacturers can avoid the cost of relying on third-party solutions by using Google Drive with Sites and Forms to stream training videos from training portals hosted on Sites. Companies can track compliance and feedback using Google Forms.

Efficiently manage sales. Manufacturers continually need to find ways to optimize the processes executed by the sales team to support revenue generation. Google Enterprise gives manufacturers the tools to reduce sales-cycle times, improve customer satisfaction and improve response times by enabling them to:

- **Collaborate on RFPs.** RFPs typically require input from various people within an organization. Google Docs allows one version of the RFP to be edited simultaneously with input from all relevant parties.
- **Understand customers better.** Google Enterprise tools enable sales personnel to capture opportunity details using mobile and voice while on the road. GCE/Predictive APIs and BigQuery enable lead scoring and opportunity scoring, while improving forecasting accuracy.
- **Improve territory planning.** Mapping visualization enables dynamic queries and ad hoc analysis for territory planning. Maps API and Maps Engine can add similar functionality to business-intelligence tools, enabling users to view revenues for selected regions and assess how various regions could be combined to define a territory for a sales rep.

HOW MANUFACTURERS LEVERAGE GOOGLE ENTERPRISE

Manufacturers in various industries are leveraging the Google Enterprise suite of applications and tools to help them work more efficiently, effectively and just plain smarter. At some

companies, for instance, design and marketing teams are able to collaborate more easily through Google, enabling them to work across time zones and quickly get answers from co-workers. Others are using Google Enterprise to enable sales staff to visualize key business data with Google Maps. Still other companies' software developers are tapping Google's cloud-based App Engine to build new apps easier and faster.

Regardless of the business problem they face, all manufacturers have one thing in common—they can harness the power of Google Enterprise for manufacturing, enabling them to work well together from anywhere with tools they can trust.

GOOGLE ENTERPRISE SOLUTIONS: AN EASY UPSHIFT FOR MANUFACTURERS

By tapping into the power of the Google Enterprise suite of tools—Apps, Maps, Cloud and Search—manufacturers are achieving productivity gains and cost savings through better collaboration, faster visualization capabilities, more scalable application development and unparalleled search functionality. By taking advantage of Google Enterprise solutions, manufacturers can foster greater innovation through more effective collaboration. At the same time, they can depend on the Google solutions and infrastructure for secure, reliable and affordable access from anywhere at anytime.

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When Volkswagen first launched a Web portal to support its network of 1,000 dealerships and 1,200 technical help-line specialists, the portal tapped into various back-end sources, resulting in fragmented search results for users. The portal's lack of an effective search mechanism led to higher call volumes for technical support, slower repair times and, ultimately, higher costs.

By leveraging the powerful Google Search Appliance, Volkswagen was able to create a custom search function that culls content from multiple repositories, simplifying the user experience and avoiding redundancy.

With relevant, universal search capabilities at the fingertips of thousands of users, the custom solution powered by Google Search Appliance has reduced the need for IT maintenance, improved service levels through speedier repairs and reduced the number of calls to Volkswagen's help line.

"With the GSA, we've maintained information security while extending a large body of information to repair experts in the field as well as internal employees," says Vinay Gowda, Volkswagen's senior applications manager.