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Staying ahead of the curve
The right project management software can put you on the fast track

Not long ago, the Naval Air Depot at Cherry Point, N.C., struggled to meet deadlines for getting aircraft repaired and back in service. When the depot's managers analyzed the situation, they found that the facility's overall business philosophy—which emphasized keeping a lid on costs—was at the root the problem.

Now the depot's most important business metric is throughput—or the number of aircraft it can get repaired and returned to service over a given time period. That number has doubled over the past year, which makes the depot's customers happy. The depot's managers are pleased as well because they haven't had to bust their budget to improve customer service. And they give much of the credit for that development to the adoption of a new project management software package.

"The project management software has been an integral part of a process that is allowing us to see significant reductions in turnaround time," says Cornel Conti, the commanding officer at the aviation depot. "That is very important because it speaks to our ability to have assets available for our customers."

The aviation depot purchased the software from Realization Technologies, San Jose, Calif. The application, called Concerto, worked for the aviation depot because it does more than simply track the dates by which individual project tasks must be completed, which is what most desktop project management tools do. And like the Naval aviation depot, manufacturers realize now that they need more sophisticated project management tools.

What-ifs: optimize projects, portfolios, and resources

Project what-ifs
• Scope versus cycle time
• Cycle time versus resources
• Scope versus resources
• Unplanned slack versus scheduled buffer
Portfolio/pipeline what-ifs
• Resource costs versus portfolio benefits
• Project selection to satisfy competing business objectives
• Inter-project priorities versus project due dates
Resource what-ifs
• Capacity versus project due dates
• Cross-training versus adding capacity
• Pooling of resources across product lines/divisions
• Outsourcing versus increasing capacity in-house

Realization Technologies built Concerto, a project management system, around a supply chain management concept known as the Theory of Constraints. Concerto pinpoints the constraints that stop a company from achieving more (shorter cycle times/ earlier delivery dates, more projects in the portfolio, cutting costs), and suggests options to remove those constraints, or make tradeoffs around those constraints.
Source: Realization Technologies

A major shortcoming of desktop project management applications, like the popular Microsoft

Project, is that they don't allow users to track multiple projects simultaneously, which is a basic requirement in an operation like an aircraft repair shop or a manufacturing company that builds large, complex products. "People understand that if you want multiproject management, you need to go from desktop management tools to a solution with a central database where you can input all the projects and give everyone access to common data that will allow many people to make project-related decisions," says Sanjeev Gupta, CEO of Realization Technologies.

Specialized solutions

Even if they grasp the idea that they need better project management tools, many manufacturers still wrestling with the question of exactly what type of project management application would work best for their organization. To a large extent, this question raises the age-old best-of-breed versus single-vendor argument. In other words, is it better to buy a stand-alone system from a vendor that specializes in project management, or one that is part of an integrated enterprise software suite?

Mike Burkett, an analyst with Boston-based AMR Research, offers some advice on the topic. "If making sure that each project is completed as quickly and efficiently as possible is the key your business's success, then you want the deep functionality that a stand-alone package offers," he says.

The integrated project management module of an enterprise software suite works best, according to Burkett, for companies that build large, complex products to exact customer specifications. The building of such a product often becomes a project because it can require special engineering work and the acquisition of unique components that may have long lead times.

"In this case, you would take a customer order number and assign a project number to it," Burkett explains. Then the project would go to engineering, where a product design is created and things like a bill of material containing the parts required to build the product and specifications for manufacturing tooling are generated.

The advantage of having this functionality integrated within an enterprise suite then becomes apparent, as the bill of material is passed to the purchasing and inventory modules so that the proper parts can be acquired and tracked through the duration of the manufacturing process. This connection also allows for passing information to the costing modules of the enterprise suite so the project's budget can be tracked as well.

The integrated approach

The need to connect project-status tracking with its back-end business systems led Daktronics, a Brookings, S.D.-based manufacturer of computer display systems such as scoreboards and large screen video systems, to adopt the Glovia.com enterprise software suite from Glovia International, El Segundo, Calif.

"We wanted a system that would support both project accounting and project management in the design, manufacturing, and field-support aspects of our businesses," says Carla Gatzke, IT manager at Daktronics. "This integration is critical because we need visibility into the supply chain to complete our projects. A connection to the [financial systems] also is important because we aren't just consuming and managing time in our project planning—we are actually charging our time to the project."

"The minute a business's project planning needs wander into supply chain areas like procurement, financials, or customer support, they need an enterprise system that is married to a project planning engine," says Dennis Michalis, Glovia's president and CEO. "If the manufacturer is just managing a simple project and only needs to track schedules—and occasionally run billing—then they don't the enterprisewide connection."

Realization Technologies applied supply chain planning philosophies to the development of its software package, which is why AMR's Burkett says it is a good choice for companies whose survival depends on optimizing their project management process.

"Realization technologies allows you to identify the constraints that are slowing up the project management process," Burkett says. "That allows you to alleviate bottlenecks. You can then

review your project schedules from time to time to make sure they're running as smoothly as possible."

Old concept, new application

Gupta, the CEO of Realization Technologies, built the Concerto application around a supply chain management concept known as Theory of Constraints. He used the same concept to design a supply chain planning application at a previous company he founded known as Thru-Put Technologies.

The Theory of Constraints holds that there is one critical operation in every organization that would cause massive bottlenecks if it were to go down. Therefore, the entire organization should focus on feeding that constrained operation. One way of feeding that critical operation is to build buffers—either of time or materials—in front of it so that it never is forced to stop working.

Buffer management, as this method is called, is a principal component of Realization Technologies' Concerto package. This application seeks to identify what Gupta refers to as the "critical path," or the task within a project that will consume the largest amount of time. It then employs a safety engine—a computer program that uses special mathematical algorithms—to calculate the appropriate amount of time to use as buffer for activities that must be performed after the critical path task.

"We build in this extra time so that the project will not be delayed if the critical path activity takes longer than expected to complete," Gupta explains. Users can rerun the safety engine at regular intervals to generate new schedules that reflect any used or unused buffer time.

"The buffering aspect of this tool has been extremely helpful," says Leanna Radford, industrial business process division director with the Naval Air Depot in Cherry Point. "It is a far more robust tool that allows us to execute our plans with some degree of certainty. Historically, classic project management tools have been used to explain why you got behind, but we are using this tool very much in the execution phase on a day-to-day basis to keep us from getting behind in the first place."

That's the way all businesses want to manage their projects; the only question is which type of system they use to make it happen.

—Joy LePree, contributing editor