OPERATIONAL PRODUCTIVITY ENABLED BY ALIGNING LEAN 6SIGMA WITH ADVANCED PLANNING AND SCHEDULING TECHNOLOGY AND HOW IT CAN TRANSFORM YOUR BUSINESS

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In today's challenging times, operational efficiency is no longer a luxury, it is a necessity. Increased competition and globalization have reduced margins. To survive the turmoil, organizations must be fit and agile.

Consultants have done much in recent years to "Lean-enable" organizations—with good results. The well-known concept of LEAN 6Sigma—identifying areas of "Waste" and gradually eliminating them, thereby increasing the percentage of "value-add" activities—has been at the forefront of operational efficiency initiatives in many industries, manufacturing as well as service. These LEAN 6Sigma approaches typically are based on manual methods and tools and work well in environments where some sort of repeatability in customer demand can be established. They do require regular maintenance to review pre-established parameters such as organization of work, split of work between resources and timing of activities—a challenge in environments with highly volatile customer demand and for which accurate forecasts are difficult to achieve.

Technology can help companies determine the best use of resources (manpower, equipment, materials, others) at the right time and the lowest cost to meet customer requirements. In fact, eliminating the limitations of manual methods can help an organization surpass its competitors by delighting its customers at the lowest possible cost.

What is Advanced Planning and Scheduling?

The APICS organization defines Advanced Planning and Scheduling as follows: "A computer program that uses advanced mathematical algorithms or logic to aid in decision-making, perform optimization or simulation based on finite capacity scheduling, resource planning and scheduling, material and constraints synchronization. These techniques simultaneously consider a range of constraints and business rules to provide real-time planning and scheduling, decision support, available-to-promise, and sometimes capable-to-promise capabilities. APS often generates and evaluates multiple scenarios. Management then selects one scenario to use as the 'official plan.' "

Any company, in any industry, with limited resources and complex rules and constraints for using those resources to meet customer demand can use APS systems, although the most typical applications are found in:

- Logistics and transportation, either complementing or replacing transportation management systems (TMS)
- Manpower planning, where complex rules and bargaining agreements exist, and where traditional time and attendance systems fall short
- Manufacturing, where they provide enterprise resource planning (ERP) systems with increased agility

Available since the 1980s, APS systems initially focused on manufacturing planning and scheduling. Early on, these were complex and expensive solutions to implement. Because they utilized pre-defined "black box" programs and algorithms to solve planning and scheduling puzzles, they had to be extended one customer at a time. Modern APS systems, on the other hand, are decision support tools designed to help planners and schedulers make better decisions rather than to completely automate those decisions. Today's systems provide visual cues in the form of Gantt Charts, KPIs and exception on-line reporting that facilitate manual adjustments to a plan. A successful APS implementation aims to automate 80 percent of the planning decisions, leaving 20 percent of the exceptions upon which planners must act.

What do APS solutions offer?

There are now many APS vendors and categories of software to solve unique business challenges. Generally speaking, today's APS applications fall into one of four categories:

- Manufacturing planning and scheduling applications
- Manpower planning and scheduling applications
- Logistics planning and scheduling applications
- Supply chain planning suite for various industries, encompassing all planning levels—strategic, tactical, operational, and revision control and focus on supply chain synchronization and supplier/demand collaboration

Some APS vendors focus on one or several categories.

In all categories, the leading vendors offer advanced configuration capabilities (compared to custom programming) and a development platform rather than fixed and rigid pre-defined software. Unlike ERP solutions, APS applications tend to be uniquely designed to fit customer requirements; flexibility and ease of configuration, therefore, are among the most desirable features. In addition, buyers often look for experience in their specific industry. Accordingly, many vendors have created vertical solutions or "templates" that can speed-up implementations and further reduce costs.

Can your organization benefit from APS aligned with Lean 6Sigma?
A successful APS implementation typically produces several benefits:

- Significant on-time delivery improvements.
- Increased agility in the company's ability to react to changes.
- Operational costs reductions; often the result of reduced hiring, less overtime required, better equipment utilization, fewer non-value add activities, reduced WIP and set-up in the manufacturing sector.

The potential for return on investment in less than one year makes APS solutions affordable, even for smaller organizations. Consequently, they have become a high priority for many chief information officers.

Could APS aligned with Lean 6Sigma transform your business?

West Monroe Partners has extensive APS expertise and credentials and works with organizations in a variety of industries to assess the applicability and feasibility of APS solutions in their environments. For more information, please contact Denis Ouellet, at douellet@westmonroepartners.com