Scheduling -Technology 3 – Automated Scheduling

Automated Scheduling refers to the use of software or systems to automatically create and manage schedules for various tasks, activities, or resources. This technology is commonly used in business, education, healthcare, and other industries to streamline the process of planning and organizing time. In the DMC use case, Automated Scheduling is being used to automatically determine the most efficient order of production, cleaning and maintenance to meet key business objectives within the constraints of resources, throughput and plant availability.

Pros	Cons
• Automated schedule built around standardised rules	• Success is dependent on good quality data inputs in terms of available machines and people

Technology Cost range: $50,000 - $150,000, depending on the complexity of the use case, number of systems being integrated to and manual processes being automated.

DMC Technology Cost: $100,000

DMC Cost Assumptions:
- Limited to 1 Filling line.
- Simple and well-known manufacturing process.
- Internal costs for end user staff involvement have not been included.
- Single design and build iteration.

What situation would this technology usually be adopted in? Advanced Planning and Scheduling (APS) systems are typically adopted in manufacturing environments where complex production planning and scheduling are required to optimize resource utilization, minimize lead times, and meet customer demands efficiently. Industries such as discrete manufacturing, job shops, and mixed-mode manufacturing often implement APS systems to improve production efficiency and responsiveness to market demands.

RoI Considerations: Implementing Advanced Planning and Scheduling (APS) systems can lead to significant returns on investment by reducing inventory levels, minimizing production lead times, improving on-time delivery performance, optimizing resource utilization, and enhancing overall operational efficiency. The ability

to generate optimized production schedules considering various constraints and factors helps manufacturers increase productivity and profitability.

What skills are required to implement & run this tech? Implementing and running Advanced Planning and Scheduling (APS) systems in manufacturing requires expertise in production planning, scheduling algorithms, operations research, supply chain management, and software implementation. Additionally, proficiency in data analysis, understanding of manufacturing processes, and knowledge of optimization techniques are essential for successful implementation and utilization of APS systems.

Pre-requisites for successful adoption: Successful adoption of Advanced Planning and Scheduling (APS) systems in manufacturing requires a clear understanding of production constraints, identification of key performance indicators (KPIs) for planning optimization, integration with existing enterprise systems, training for personnel on system operation and utilization of planning tools, and continuous monitoring of planning performance to ensure alignment with business objectives and customer demands. Additionally, collaboration between various departments such as sales, production, procurement, and logistics is crucial for effective utilization of APS systems.

Typical Tech Stack
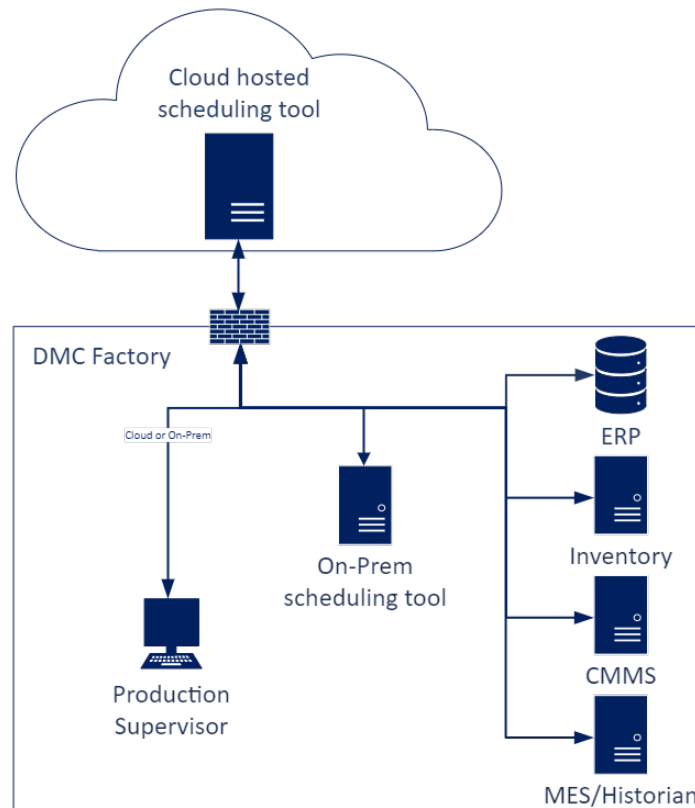
Who can help with this technology? Various entities can assist with the implementation and optimization of Advanced Planning and Scheduling (APS) systems in manufacturing, including APS software vendors, supply chain consultants, operations research experts, system integrators specializing in production planning, and manufacturing engineering firms.

What to google when researching this technology? When researching Advanced Planning and Scheduling (APS) systems for manufacturing, key terms to search for include "APS software," "production scheduling optimization," "demand-driven planning," "constraint-based scheduling," "finite capacity scheduling," and "production planning and control."