

Scheduling Methods that Work

Production Improvement Trends

Federal Reserve Chairman Alan Greenspan, repeatedly points to production improvement in the manufacturing and service sectors as a major factor contributing to the improving US economy. Productivity is increasing in both the manufacturing and service sectors. Companies are benefiting by computer and internet technologies. However, most companies are not taking advantage of Finite Capacity Scheduling (FCS); an advanced computer based scheduling technology. FCS ability to reduce cycle time and efficiently manage the coordination of material and capacity could create yet another escalation in productivity.

The conventional scheduling method used by the manufacturing sector assumes that infinite resources are available to process work. This is equivalent to assuming that you're checking account contains infinite funds. *Companies cannot hope to achieve truly competitive levels of scheduling success as long as they rely upon outmoded infinite scheduling models.*

Why do manufacturing companies continue to use this antiquated infinite scheduling method that does not produce feasible schedules? There is no simple answer; the evolution of Material Requirements Planning (MRP) software, developed in the early 1970's, was originally created to manage material. Developers soon discovered that to determine when the material would be required, a production schedule would be necessary. Infinite Capacity Backward Pass (ICBP) scheduling methods were implemented in an attempt to solve the capacity management problem. ICBP has never reached this goal, yet continues to be the default scheduling solution for ERP systems, in spite of the fact that it fails to deliver feasible scheduling solutions.

FCS scheduling systems were inhibited by insufficient computer power when they emerged in the mid 1980's. FCS systems began to be commercially feasible in the 1990's as computers were able to rapidly process large amounts of data. FCS systems are now available from multiple vendors with installations throughout the world.

"Rough Cut Capacity" and "Master Production Schedule" are terms that have evolved with infinite scheduling to describe the scheduling process. The terms appropriately imply a lack of precision, however even today this inadequate forty year old scheduling method continues to be applied by ERP systems. The terms "Rough Cut Capacity" and "Master Production Schedule" remain accepted in the manufacturing industry.

Today, manufacturers are being pressed to deliver shorter cycle times and more predictable delivery dates. Accurate and detailed FCS scheduling methods are a prerequisite to accomplish these functions.

Supply Chain Management (SCM) and more recently B2B and eCommerce are being promoted as a solution to the manufacturer's short cycle time and predictable delivery date dilemma. While these technologies have much to offer, none adequately address the scheduling issue required to deliver these characteristics. The lack of detailed and accurate scheduling limits the potential of SCM, B2B and eCommerce just like it has limited MRPII and ERP systems for the past 30 plus years.