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A Capacity for Action

Taking the right steps toward an optimal plan

Traditional enterprise resources planning (ERP) practice involves scheduling materials using material requirements planning (MRP). Interestingly, this practice does not take into consideration whether there is enough capacity to carry out the ultimate plan.

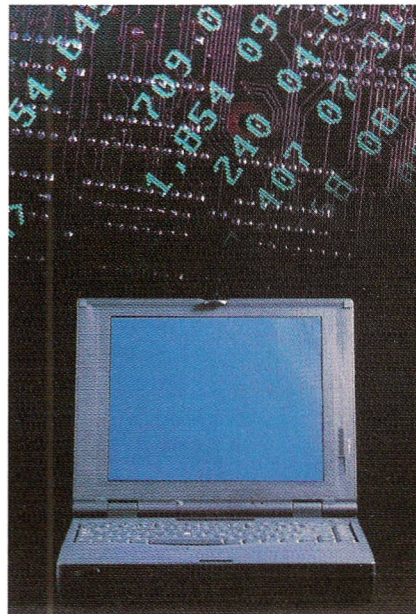
While this doesn't seem logical, the "plan materials first, then check capacity" process has been with us since the 1960s, when MRP first was defined and computer resources were scarce and expensive. Today, the computing power necessary to plan material and capacity simultaneously is readily available, as is the software to accomplish this feat in a relatively short period of time—mere seconds in many situations.

Operations management professionals who attempt simultaneous planning through finite planning, advanced planning, optimization, or even supply chain planning often are disappointed with the results. When a conflict is detected—such as insufficient capacity to complete the scheduled activity—the system makes changes based on rules that are provided by the user during setup, trading off inventory against schedule changes, late completions, overtime, and other factors to get the best plan.

There are several problems with this approach. First, this is sophisticated math that few people really understand, and setting up rules usually comes down to accepting vendor recommendations. The rules drive the process, and generic rules may not reflect a company's true values or situation. Realize, too, that software simply cannot make judgment calls the way a human can.

On a more practical level, gathering all the data necessary to get an optimized plan is not easy, and even the smallest change likely will result in a new plan. Professionals who try to update the plan as things change soon

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learn that a constantly changing plan scarcely is better than no plan at all. Plus, plant workers tend to get confused and frustrated when tasks are changing minute-by-minute. Some companies revert to running sophisticated and

expensive planning systems only once a day or once a week, just like old MRP.

I don't want to give the impression that I'm against advanced planners or that advanced planners are not worth their cost. But businesspeople pursuing advanced planning should be aware that these systems will not solve all their problems instantly. Advanced planning tools will generate benefits only to the extent that users understand the software's strengths and weaknesses—and take the time to really learn how to use the solutions in their particular environment.

Meanwhile, many organizations still plan using traditional MRP (material first, then capacity) and manage to deliver products on time and avoid unnecessary overtime, production disruptions, and capacity usage issues. When the traditional approach doesn't work for a company, this doesn't necessarily mean that advanced planning will. It is more likely that capacity requirements planning (CRP) is not effectively validating plans and balancing work to capacity. Very few ERP users really understand CRP, and few use it properly.

If, indeed, traditional MRP and CRP cannot be used effectively in a given situation, there are a number of other choices. A totally different set of controls is appropriate for continuous production, and there is software that is specially designed for these environments. In a traditional batch production environment, consider the theory of constraints, drum-buffer-rope, and other approaches such as constant work in progress. And, of course, assess other tools—including advanced planning. But keep in mind that the tool, whatever it may be, will work only if the users know how to employ it and build it into the daily routine.

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