Critical Chain Helps Keep Projects on Time and on Budget

By Herman Mehling
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If you're sick of repeatedly managing projects that run over budget and over time, you're probably ready to try something different, if not exactly new – critical chain project management (CCPM).

This method of planning and managing projects focuses on using the resources required to execute project tasks. Its emphasis is in contrast to the more traditional critical path and PERT methods, which emphasize task order and rigid scheduling.

A critical chain project tries to keep the resources levelly loaded, but will require them to be flexible in their start times and to quickly switch between tasks and task chains to keep the whole project on schedule.

"Projects run late and over-budget because irrespective of how well they are planned, uncertainties throw execution off-track," said Sanjeev Gupta, founder and CEO of Realization Technologies, a pioneer in project execution management.

Realization provides CCPM-based enterprise project management services and software. Its technology has enabled customers such as ABB, Boeing, and the U.S. Air Force to take their projects to completion in the face of uncertainties, thus saving time and money, said Gupta.

"There are many pieces to CCPM, but two that I have heard over and over again are some of the key elements of how Realization recommends implementing within organizations: Work in Progress (WIP) Control and Full Kit," said Jack Vinson, senior consultant, P3 Consulting.

The core idea is that the number of projects needs to be monitored so that it does not exceed the capacity of the business to run projects," he said.

Vinson said a key element of WIP control is Full Kit or full kitting, essentially having all the pieces in place before starting a project. Equally important to having all the piece in place is knowing what to do when uncertainties arise.

"As uncertainties unfold, various departments and resources start executing ad hoc local priorities instead of staying synchronized to a global plan," said Gupta.

"Unlike traditional planning and tracking, Realization's system keeps executions synchronized in the face of uncertainties," added Gupta. "Our customers typically achieve a 25 percent or more improvement in the rate of execution, translating into faster projects and higher throughput."

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Project based work is prone to disruption, so techniques that rely on a predictable process will not succeed, he said.

Traditional project management assumes a perfect world in which requirements never change and every task happens as planned. It focuses on detailed planning, control and reporting, but cannot cope with the inevitable uncertainties that spring up during execution.

"When plans are disrupted and there is no synchronization mechanism, individuals start to prioritize tasks based on what they think are the most pressing priorities or worse, they begin multi-tasking," said Gupta.

Unfortunately, individuals cannot see the entire picture, especially in complex, multi-project environments, he added.

"When the true priorities eventually become evident and suddenly quite urgent, chaos and firefighting break out which destroys productivity," said Gupta.

Project execution using critical chain synchronizes projects in complex environments, and provides early warnings about changes in the critical path, allowing managers to reallocate resources to keep things on track.

Gupta said Realization's patented software allows this concept to be implemented in multi-project environments and for large projects.

"Projects stay on track because work is dynamically synchronized even when uncertainties disrupt the flow," he said.

"Over the last ten years, more than 200 clients have realized billions of dollars in hard savings by accelerating their projects with our technology," Gupta noted.

Two of those organizations are Alcatel-Lucent and Hamilton Beach Brands.

Alcatel-Lucent, a leading equipment provider in the telecom industry, was completing 55 percent of its projects on time before using Realization's technology, said Gupta.

After implanting the technology, Alcatel-Lucent has been able to complete 90 percent of its projects on time, within budget, without compromising scope. Cycle times are 10 to 25 percent shorter while throughput per person is 45 percent higher.

Hamilton Beach Brands, the country's top distributor of small kitchen appliances, wanted to increase its timely roll-out of new products to improve competitiveness.

By managing execution, Hamilton Beach increased throughput from 34 to 52 new products in the first year and to 70-plus products in subsequent years, with no increase in headcount.

On-time projects increased from 74 to 88 percent, said Paul Blankenship, Director-Product Engineering for Hamilton Beach.

"We needed shorter development cycles," he said. "Within 60 days, we went live with 40 major projects."

Herman Mehling has written about IT for more than 25 years. He has worked for many leading computer publications and websites, including Computer Reseller News, eWeek, and InformationWeek. Currently, he contributes regularly to Devx.com and Enterprisestorageforum.comas well as ProjectManagerPlanet.com