Addressing ‘Priority Confusion’ to Speed New Product Development

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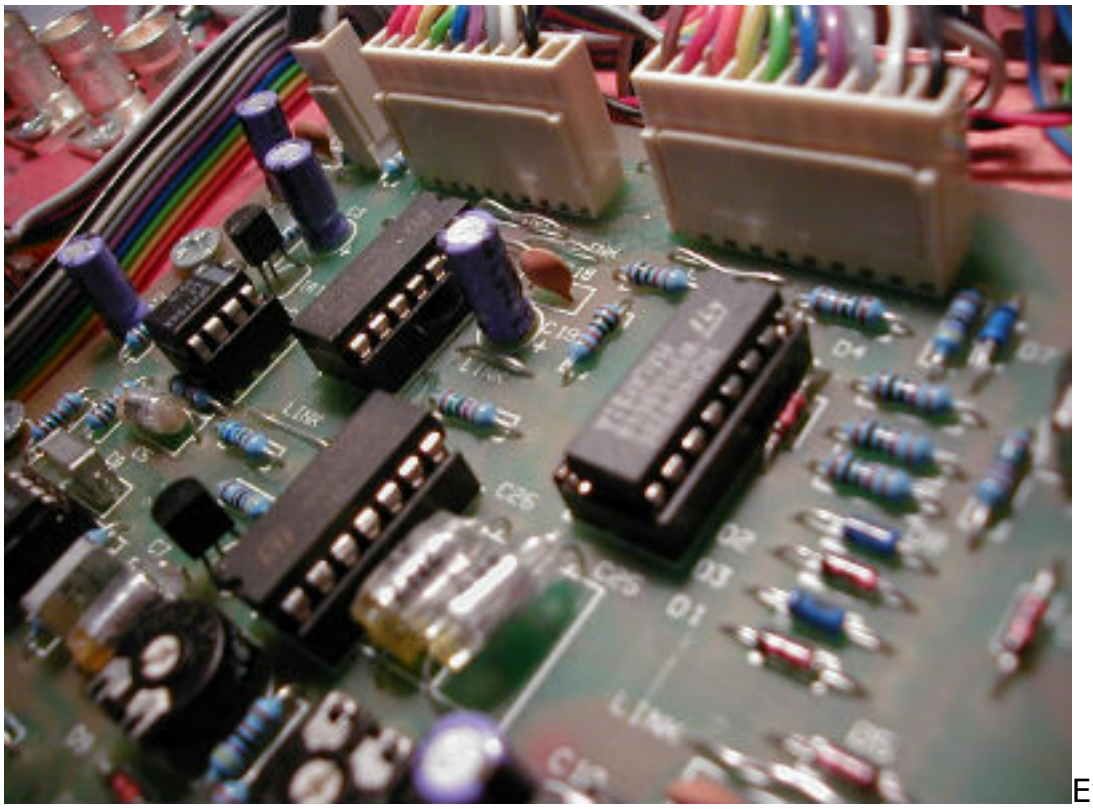
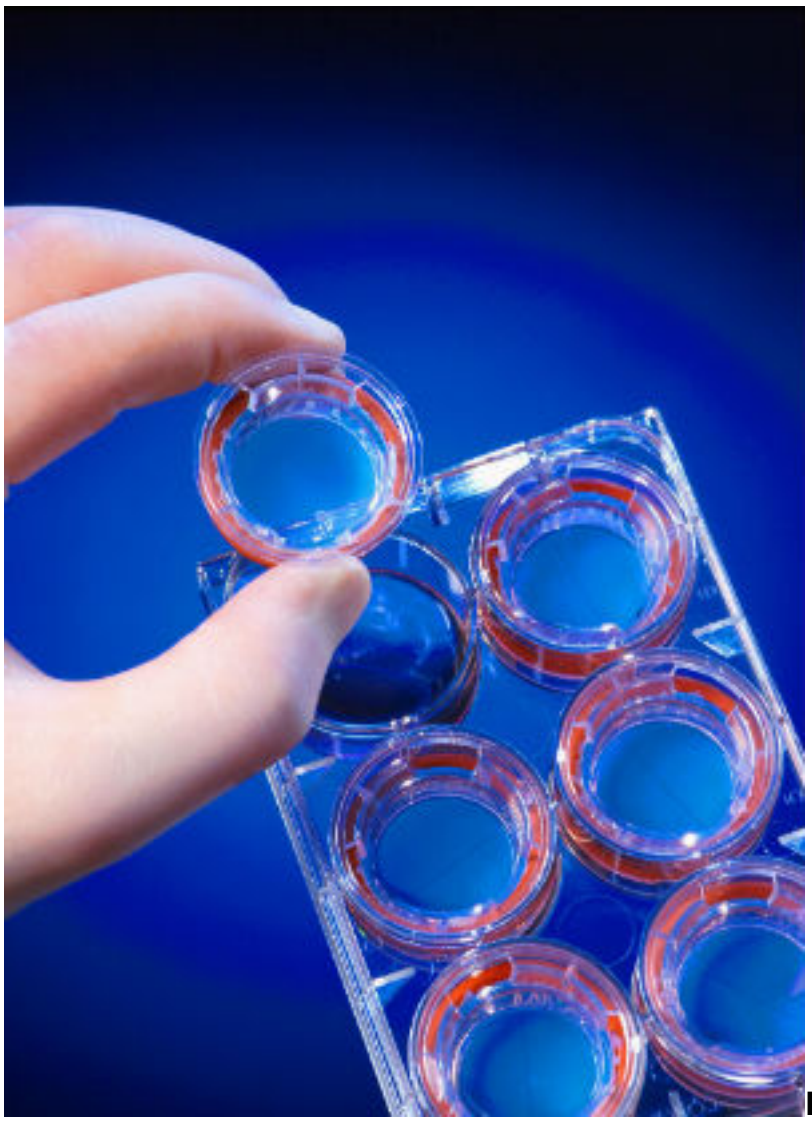


Even the most successful corporations in the world frequently miss new product development launch windows. The primary reason is confused, shifting and unclear priorities, resulting in inefficient multitasking between these priorities. The losses can measure millions of dollars per day that a project is extended, but the end result can be even more dire; losing out to the competition.

For many project-oriented corporations—whether medical device manufacturers seeking FDA approval, pharmaceutical companies bringing new drugs to market, or tech companies producing the next generation of semiconductor chips—coming in on time, maximizing the use of available resources, and orchestrating multiple concurrent projects are critical to success.

However, the reality is that few new product development projects are completed on time.

“For every day that our project was late, it literally was going to cost us a million dollars,” says Mike Moeller, describing a large project he worked on for a large medical device developer of stents. “With the amount of competition in the industry, if you are a month late you don’t push revenue back you lose it.”



Priority Confusion

On any given day, the average worker has dozens of “priority” tasks on his or her plate. Then reality hits: priorities shift, unexpected work shows up, there are frequent interruptions, and tasks don’t arrive when expected.

The issue may become exacerbated for employees asked to work on multiple projects at a time. Because priorities between multiple projects are rarely coordinated or communicated clearly, project personnel can’t determine what to work on first. So they end up switching madly between projects in a poor version of start-and-stop multitasking.

“Priorities among development projects are often unstated, uncommunicated, or constantly churning,” says the book *Developing Products in Half the Time* by Smith and Reinertsen. “What happens when management does not send clear, steady signals about its priorities is that individuals then establish their own, based on various individual objectives.”

At any given time an employee might be working on items that have very little value. This can include various non-project work, customer calls, certain types of meetings, and colleagues asking questions.

Frequent e-mail checking is another efficiency no-no. Although it may seem ideal for

an employee to respond to every e-mail within minutes, it instead serves as a constant distraction and an interruption of what are likely much higher priorities.

In Andy Crowe's book, *Alpha Project Managers: What the Top 2% Know That Everyone Else Does Not*, he writes: "Instead of responding to every e-mail as it flows into their inbox, the [top performers] typically respond in batches, one to three times per day."

Frequent interruptions and multitasking also wreak havoc on tasks that constitute "knowledge work," such as computer programming, design, and research. Such tasks require concentrated time and attention.

For some, simply finding a block of uninterrupted time can be a near-impossible task, causing them put off until a "better time" what may be the highest priority work. The problem is so prevalent, many employees come in to work on weekends or take work home at night to get more focused time.

Critical Chain Project Management

Fortunately, the management of priorities is a central pillar of Critical Chain Project Management.

Critical Chain Project Management (CCPM), a proven and tested paradigm for planning and managing product development, was invented and publicized in several books by Dr. Eliyahu M. Goldratt. It stands in contrast to traditional project management methods derived from critical path and PERT algorithms, which emphasize task commitments and rigid scheduling.

In critical chain project management, project teams assign an aggressive duration to each task. They also assign resources and resource-level the plan. They then add safety time, "buffers," to protect the project commitment dates. There are several methods for calculating buffer sizes. One popular method involves calculating the difference between aggressive "best case" task durations and more conservative estimates, then multiplying that difference by 50% to define each task's potential contribution to buffers.

During the course of a project, the resources are encouraged to focus on the task at hand to complete it and hand it off to the next person or group. Many CCPM experts use the analogy of a relay race, with the handing of the baton from one runner to the next. The objective is to eliminate inefficient multitasking by providing clear, stable priority information to all resources.

In using the CCPM methodology, a company can proceed with clear, stable priorities even amid a vast number of tasks, allowing employees to focus on and quickly complete the highest priority projects.

Mike Moeller initially became interested in the concept of CCPM in the late 90's, after reading Goldratt's management-oriented novel the Goal.

After learning more about the system, Moeller was determined to implement the

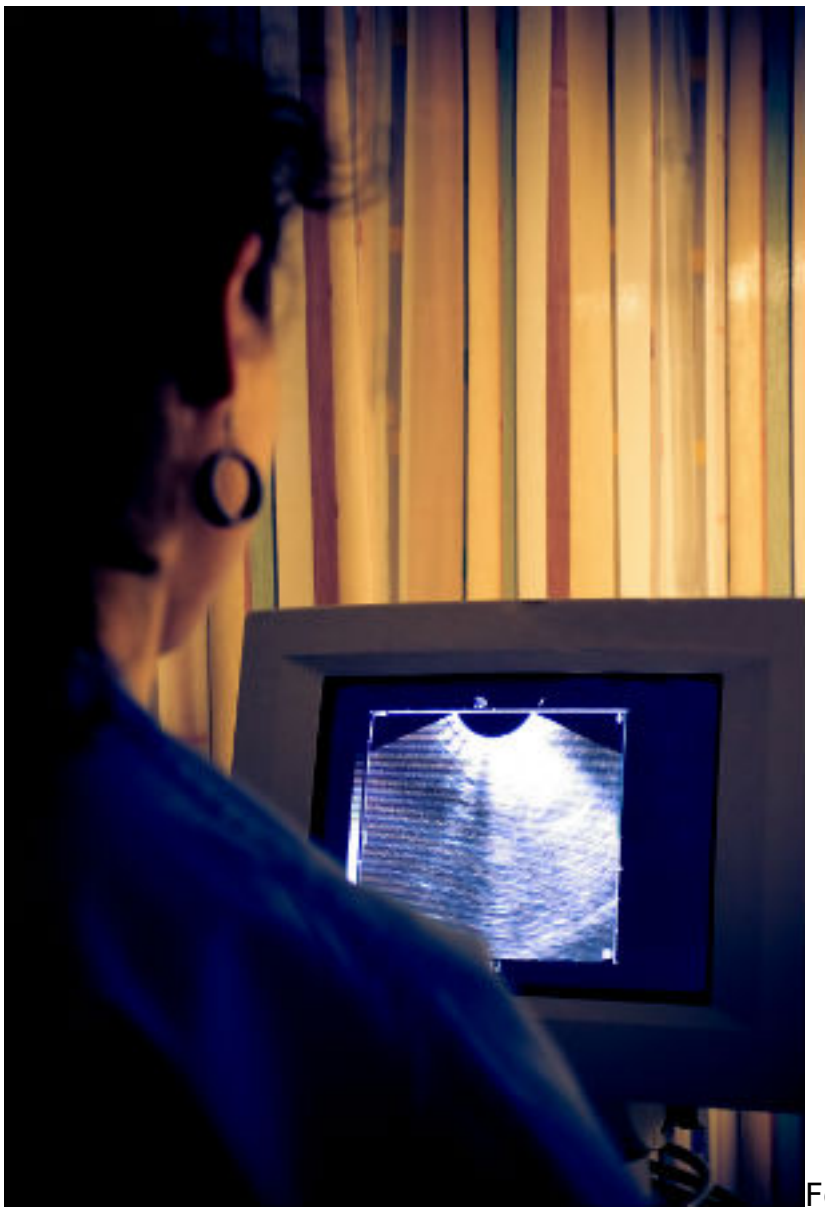
techniques at his employer at the time, Guidant Corporation, a major manufacturer of cardiovascular products including artificial pacemakers, implantable cardioverter-defibrillators, and stents.

“I simply did not think our projects were being executed well,” explains Moeller who estimates that approximately 20% of the company’s projects were completed on time.

“I went around and convinced all the Directors, R&D as well as senior staff at Guidant that we needed to do a better job at projects, which everyone agreed with, and that [Critical Chain Project Management] would be the way were going to do it,” adds Moeller.

According to Moeller, the easy part was getting agreement that the company needed to do better; the hard part was persuading them to utilize CCPM as the tool to accomplish the task.

To facilitate implementation of CCPM, software programs are often used to convert the concepts into a practical set of tools, processes and implementation strategies. Moeller selected ProChain [1] Project Management from ProChain Solutions, the first company to release CCPM software to the market.



Founded in 1997, ProChain Solutions had already sold its software to many well-known companies including big names like Abbott, Boeing, and Harris Semiconductor. In addition to the software, implementation typically involves a fairly significant mentoring component. Companies like ProChain Solutions dispatch consultants to conduct on-site training and ensure complete implementation.

Like many large corporations, Guidant embarked on a single pilot project to prove out the concept. After their pilot, Guidant quickly opted to implement the multi-project portion of the software for all projects in R&D.

In an example of how the software improved efficiency, Moeller discovered by examining the constrained resources that almost every project passed at some point through the company’s test lab. However, the lab manager had no way to know what to work on first, so it came down to who pleaded, yelled the loudest, or brought in bagels that day.

“With the software, we were able to show the lab manager the sequence and priority of what was coming in to the lab,” says Moeller. “If two tasks showed up on the same day, the manager needed to know which to work on first.”

Moeller adds that they were also able to provide the lab with a preview of what was coming over the next couple of weeks, allowing the lab to put in extra hours or otherwise adjust as needed.

The result was that "everything got through the lab much more quickly."

Using the software, Moeller says that Guidant was able to increase the percentage of on-time projects to 85%, despite that fact that CCPM projects typically have more aggressive projected end dates than other project management methodologies.

Moeller has since moved to several medical device start-ups. At each stop, he has brought in CCPM and ProChain software. He says that he still gets calls today from people that worked for Guidant asking about the software. He is currently the VP of Operations at Ellipse Technologies, a medical device company that creates non-invasively adjustable, remote-controlled implants for spinal and orthopedic applications. Once again, CCPM was just what his company needed.

By focusing on critical priorities, large corporations can maximize the speed with which they finish critical projects, completing them on time at a 90% rate and often—unthinkably—even finishing early.

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