The cause of engineering project delays – multitasking

Sanjeev Gupta, CEO of Realization

Engineers have come to expect that most projects will be delivered late, out of scope and over budget even though to all appearances everyone is working long hours and putting their noses to the grindstone. It’s just become an accepted fact of the industry, and it’s a shame, because it doesn’t have to be that way. Once the culprit causing delays has been identified, it can be eliminated, creating tremendous gains in efficiency. Fortunately, we already know the culprit’s name: organizational multitasking.

Though many engineers still tout their ability to multitask as a badge of honor, a mountain of academic studies has demonstrated that multitasking destroys efficiency. Making matters worse, engineering work requires judgment, thought and creativity, which is precisely the kind of work that requires highly focused effort for success and is most hurt by multitasking.

For example:

- A typical engineer has an average of 12 items open at any time.
- Sixty percent of tasks are significantly interrupted.
- It takes 40 percent longer to complete all the work in production when people shuttle back and forth between tasks.

Engineers don’t work in isolation. Developing a new component is almost always a collective effort rather than an individual endeavor, which makes matters much worse, because the losses caused by multitasking multiply and spread throughout the engineering organization:

- Multitasked workers keep others waiting for their output. When people do not have everything they need to take a task to completion, they either begin work with incomplete inputs – only to be interrupted later – or they start on new tasks, which reduces their focus and the quality of work.
- When managers multitask, even small decisions can take days. Instead of spending, say, a quality 15 minutes with people, they can afford only a rushed and ineffective two to three minutes.
- Finally, every task seems equally urgent. As a result, truly critical issues and genuine bottlenecks can't be identified, and the engineering group wastes its resources solving the wrong problems.

In organizations, the net loss to productivity can be 50 to 75 percent, compared with a 25 percent loss for individuals.

It is far easier to stop organizational multitasking than to change individual habits. Organizational multitasking occurs when the efforts of an organization are divided among many open streams of work. Day to day priorities are out of sync, people don't get the inputs and support they need from others in a timely manner, or are constantly pressured to do "more urgent" tasks first, so they stop what they're working on and start other tasks. Whereas changing individual habits is very difficult, all that is needed to stop organizational multitasking is a process for reducing work-in-process (WIP). With reduced WIP, priorities are synchronized and people can focus on one task at a time and take it to completion without interruption.

Engineering organizations can immediately start reducing organizational multitasking by implementing the following steps:

Step 1: Reduce the number of open projects or workstreams by 25 to 50 percent.

Working on fewer projects or workstreams is counterintuitive, but it works. Fewer projects/workstreams mean fewer tasks, and therefore, less confusion about task-level priorities. Moreover, managers and experts can also be more responsive because they have fewer issues and questions to deal with at a time. Simply reducing the number of open projects/workstreams by 25 to 50 percent can double task completion rates.

Step 2: Establish a clear rule for task-level priorities. For some projects, a simple rule (e.g., project priority equals task priority) is sufficient. Project priorities are clearly communicated to everyone in the organization and whenever there is a priority conflict, people work on the highest-priority project first. For complex projects, specialized software can help organizations properly prioritize tasks.

Step 3: Don’t start a project without adequate preparation. Well begun is half done. If engineering teams have everything (i.e., good design specifications, clear goals and the necessary inputs) in place before starting a project, they encounter fewer questions and issues in execution. The dependence on managers and experts is reduced and work gets done faster.

By implementing these three steps, engineering organizations can reclaim productivity that was previously wasted thanks to organizational multitasking. As a result, they will find that they’ll do much better than just finishing projects on time; they’ll finish ahead of schedule. And the best part about it? Because multitasking is a hidden problem in most engineering organizations (i.e. everyone seems to be working hard), competitors will likely have no idea how to replicate these results. Eliminating organizational multitasking is a huge opportunity for component makers to gain a significant competitive advantage.

Sanjeev Gupta is the CEO of Realization, a Silicon Valley firm that helps organizations reduce multitasking in engineering and projects. It has helped more than 200 companies produce a total of $3.5 billion in additional cash and profits by finishing projects 20-50 percent faster.

Source URL (retrieved on *04/25/2015 - 7:02pm*):
http://www.ecnmag.com/articles/2012/11/cause-engineering-project-delays-%E2%80%93-multitasking?qt-recent_content=0