

## The High Cost of Context Switching

By Maureen Adamson May 14, 2019

[As published in blog [www.bellwetherspotlight.com](http://www.bellwetherspotlight.com)]

*A study by Strayer & Watson of the University of Utah suggested only 2% of the population can multitask successfully (2010). Everyone else is going through the toll lane and paying the costs of context switching. A study by Realization, a project management software company, estimated this cost to global business at \$450 Billion / year (2013). This means there are hidden competitive advantages for people and organizations who adopt strategies to minimize this.*

Number of Simultaneous Projects	Percent of Time Available Per Project	Loss to Context Switching
1	100%	0%
2	40%	20%
3	20%	40%
4	10%	60%
5	5%	75%

Weinberg: Quality Software Management, 1991

This is a standalone image from my recent NISO Webinar, “[Managing Change with Project Management Skills](#).” Notice the dates. The cost of context switching is not news, but there is increasing awareness of how this manifests.

Since Weinberg wrote his book, there have been many additional studies exploring multitasking concluding it is largely a myth. What appears to be multitasking is simply switching between two or more tasks, not giving full attention to any. We now know more about how apparent multitasking negatively affects IQ, brain development, and creative thinking. There are distinctions between three major types:

- 1) Low level tasks (we can walk and chew gum at the same time).
- 2) Media multitasking (it's not working).
- 3) Higher level conceptual work (slows time to completion; impairs creative problem solving and quality).

A study by Strayer & Watson of the University of Utah suggested only 2% of the population can multitask successfully ([Supertaskers](#), 2010). Everyone else is going through the toll lane and paying the costs of context switching. A study by Realization, a project management software company, estimated this cost to global business at \$450 Billion / year ([Effects of Multitasking on Organizations](#), 2013). This means there are hidden competitive advantages for people and organizations who adopt strategies to minimize this.

### **Personal Behaviors**

The media is full of time management solutions to deal with media multitasking distractions at a personal level. Best practices can include things like limiting checking email to three times a day, turning off telephones or putting them in “Do Not Disturb” (emergency access only), and turning off notifications for personal reasons or because we are concentrating on writing a blog post. Since we all have multiple competing priorities, results improve when we work on one thing at a time with minimal distractions, leave notes of where we left off and what to do next. When we pick it up again, it will take less time to continue.

### **Organizational Level**

Project management skills also offer practical and pragmatic ways to implement changes across an organization to minimize the costs of context-switching. Awareness of the cost makes it even more important for management to prioritize and clearly define high-value opportunities. “Less is more” with impact on staff performance and the desire to maximize successful development and time to market.

The first step, and the one where our consulting services often come into play, is using internal and external information to evaluate options and opportunities for decision-makers. Once projects are selected for further review and potential implementation, clearly defining objectives and scope and engaging in a disciplined breakdown of features and/or tasks to

accomplish objectives is necessary to establish priorities, estimate time and required resources, and coordinate how team members work together.

This same project planning also makes it easier to reduce context switching costs. As just one example, when complex tasks are broken down, it's easier for team members to focus on the highest value priorities and complete them within manageable time frames before picking up the next task or module.

The Agile approach takes this a few steps further by recognizing the benefits of assigning team members to one project at a time. There are other reasons for this approach but reducing need for employees to have to choose between multiple competing priorities is baked into this style. The principles are also active within projects, prioritizing high-value features to work on sequentially with incremental deliverables.

Managers have the same challenges they have always had to prioritize work. Context switching costs add reasons to either engage in projects sequentially or assign resources differently. Whether personal or organizational, one of the best ways to get more done in less time is to recognize the myth of multitasking, the true costs of context switching, and adopt work habits to counteract both.

#### **Related studies:**

- 2005. University of London study. Email & phone call distractions drop in IQ.
- 2006. Russell Poldrack, UCLA. Multitasking adversely affects learning, especially tasks requiring more attention.
- 2009 Stanford University. Heavy multitaskers mentally less organized, hard time differentiating relevant from irrelevant details.
- 2013. Realization study: Organizational multitasking costs global businesses \$450 Billion each year. <https://www.prnewswire.com/news-releases/study-organizational-multitasking-costs-global-businesses-450-billion-each-year-221154011.html>
- 2014 Kep Kee Loh, University of Sussex, high multitaskers may have less brain density.
- 2017 Strayer [The Myth of Multitasking](#). Easy reading recap.
- 2018 Uncapher & Wagner, Stanford University, [Minds and brains of media multitaskers: Current findings and future directions](#). PNAS. Scholarly research review.