

Understanding the Power of Reflection

Patmore, JJ (BT), Goldhaber, T (Cambridge) and Hardy, B (Cambridge)

5th February 2011

By three methods we may learn wisdom: First, by reflection, which is noblest; second, by imitation, which is easiest; and third by experience, which is the bitterest.

Confucius (551 BC - 479 BC)

Introduction

This paper examines a crucial yet neglected area in our understanding of organisations: that of reflection. It is currently in vogue to optimize resource utilisation - to sweat our assets and maximize efficiency. This approach stems from engineering solutions to mass production, such as production lines, TQM, and process improvement, as well as the 'scientific management' approach adopted by FW Taylor, H Ford and others.

In this approach, the output of physical processes, such as manufactured products or software code, is optimised step-by-step to reduce lag, slack, lead times, and process redundancy. This is wholly appropriate when applied to physical processes and has been highly successful. This success has led the application of similar principles to knowledge work¹⁰, often with disastrous consequences.

Knowledge work requires creativity and problem solving. This may involve drawing on diverse cognitive resources and a process of trial and error to find out what doesn't work. Seldom does a solution leap, fully formed, into being. Time pressure, optimisation and efficiency are inimical to these processes. Indeed there are a number of good arguments that suggest that efficiency and pressure are actively damaging to both knowledge work and the firms that depend on it.

The need for reflection and thinking time

When we think of the efficient modern office, we think of workers dashing from meeting to meeting, collecting important messages en-route from their Blackberrys while desperately trying to compose a memo during a rare five-minute break. We associate this vision with productivity. The worker who sits stationary and contemplative is perceived as stagnant and unproductive. In short we naturally associate activity with productivity.

In our discussions with knowledge workers, such as innovators, researchers and designers, we found that unscheduled 'thinking time' was an essential to creativity. Perlow found, when working with software engineers, that scheduled quiet time was

effective in improving overall creativity and subsequently productivity. She also found that if the incentive structure was linked to productivity rather than creativity, the scheduled quiet time was quickly eroded. “Additional time gained through altering the work patterns was simply poured back into work on individual deliverables”. [Perlow, 1999 ¹]

Elsbach and Hargadon extend the idea of quiet time by talking about ‘mindless work’ that is low in both cognitive difficulty and performance pressure. They suggest that this enhances creativity, as the mind can wander while the mindless work is completed, and that mindless work should be scheduled around bouts of more intensive work. [Elsbach & Hargadon, 2006 ²]

Individuals who are working flat out with no time for pause or reflection are likely to have fewer opportunities for what Einstein called ‘combinatorial play’ with reduced creativity as the inevitable consequence. In addition to not being able to be creative, the chances of learning from experience are also reduced. If knowledge workers are unable to reflect on their experience by working out what went well, what went badly, and what could be improved, then they are unlikely to learn the lessons of their hard-won experience.

A further problem is that continuous, peak performance – which is unsustainable in any endeavour – may well produce mental fatigue and exhaustion. This, in turn, may affect mood and there is a significant body of evidence suggesting that positive mood is likely to promote creativity. [Amabile, Barsade, Mueller, & Staw, 2005 ³]

During a recent interview with Felicia Huppert, a professor at the University of Cambridge and an expert in well-being, we were provided with some valuable insight as into how taking some mental downtime a few times a day is actually essential for psychological well-being. With the workday getting busier and busier, people will actually be more productive and more efficient if they are not pressured to work every minute of the day and are given and encouraged to take time for their mind to wander. She explained that this promotes not only well-being but also creative thought. [Huppert, F.A. and Whittington, J.E, 2003 ⁴]

As the stories have it, Archimedes sat in a bath and Isaac Newton relaxed under an apple tree just before making some of their greatest discoveries. Likewise, very few researchers will tell you that their “Eureka” moment came after a day of intense monotonous toiling.

Discussions with Industry Leaders

When we discussed this with industry leaders we were surprised by the general lack of understanding we encountered. The problem seemed to be that there was no common frame of reference between industry leaders, whose main focus had always been on strategy and business efficiency, and the researchers, innovators and designers. The idea of people spending part of their time at work with no specific objective other than to reflect on previous work, to read, and to let the mind wander to new ideas, can be a perplexing idea if you are used to dealing with business systems rather than people. In

spite of this, some executives both consciously and unconsciously build into their schedules precisely the kinds of pause for reflection we are advocating.

Unconscious examples may be seen in routine activities such as running, dog walking or even protracted baths. Conscious examples would be Google explicitly encouraging their engineers to spend 20% of their time on 'Time Off' where they pursue their own research. 50% of Google's product launches in the second half of 2010 resulted from this 'Time Off' initiative ⁵.

Even so, this can appear eccentric to those unused to the research process. However, for those of us who have spent significant time either in research or in complex problem solving, the need to 'take time out' and to find ways of allowing the mind to wander is a key skill, and how we do this is often very much a personal strategy. Some find they do their most creative thinking while exercising outdoors or listening to music; others find that reading the work of leading thinkers energises and enhances their own thinking. Not giving researchers the time to read the work they find relevant and interesting can actually hamper their long-term productivity.

The human mind is still a mystery to us, but it is a well-known phenomenon that taking a break from a problem will facilitate finding the solution later, even while engaged in a seemingly unrelated task. Over-scheduling people's time only increases the probability that they won't recognize and back up from a cognitive dead-end. In starting mentally afresh, the path to the solution is often much more easily illuminated.

For managers, the necessity of time for creative thought and time for reflection is hard to deal with, primarily because it cannot be scheduled, and the process is unique to each individual. The most important thing for managers to remember in this situation is that their primary objective is the achievement of key goals, not the scheduling of time. If a worker is producing good work on time, the manager should give them the freedom to seek productivity through mental downtime, even if this happens at the office. As expressed by Felicia Huppert, even ten minutes of downtime once or twice a day can have startling effects.

The Business Impact

The Resource Based View (RBV) of organisations suggests that firms are bundles of resources. Penrose, the author of the RBV, argues that firms expand as a result of excess managerial capacity which is then available to pursue new projects and options. Clearly, if there is no excess capacity then there will be no expansion. [Penrose, 1955 ⁶]

Cast against this are views that slack resources are inefficient. Nohria, the Dean of Harvard Business School, has suggested that there is an inverted U relationship where no slack is bad, some slack is good, but lots of slack is also undesirable. [Nohria & Gulati, 1996 ⁷] What does seem likely is that if people are working flat out the whole time and don't have time to pause for thought, they won't think creatively and consequently their business will not develop and grow.

Conclusions

It is ironic that in a world where we can automate and semi-automate many tasks that, instead of reaping greater time for reflection, we are still highly pressured. This has concomitant effects on creativity as mature reflective thinking is a slow-time activity. [David M. Levy, 2007⁸] Reflection seems to be a key component of creative thinking, but it cannot be apportioned or measured like the component of a production process. Those undertaking reflection cannot do so simultaneously with any other highly demanding task. Moreover, time for reflection also allows experience to be evaluated and learned from. A workplace that encourages and facilitates reflection is one that will be more productive in the long-term, and companies that have embraced this way of working have seen astonishing success.

As the experience of companies such as Google has shown, embracing time-out and encouraging individual thinking and 'thinking time' can be hugely productive⁹. So the next time you see a researcher sitting and thinking, please remember that they are 'working.' Don't be afraid to ask them what they are thinking about, however, because explaining their thinking to someone else is often a key part of crystallising creative and innovative ideas.

References

1. Perlow, L. A. 1999. The Time Famine: Toward a Sociology of Work Time. *Administrative Science Quarterly*, 44(1): 57-81.
2. Elsbach, K. D. & Hargadon, A. B. 2006. Enhancing Creativity Through "Mindless" Work: A Framework of Workday Design. *Organization Science*, 17(4): 470-483.
3. Amabile, T. M., Barsade, S. G., Mueller, J. S., & Staw, B. M. 2005. Affect and Creativity at Work. *Administrative Science Quarterly*, 50(3): 367-403.
4. Huppert, F.A. and Whittington, J.E, 2003. Evidence for the independence of positive and negative well-being: implications for quality of life assessment. *British Journal of Health Psychology*, 2003, 8, 107-122.
5. Marissa Mayer at Stanford University, 2010. [Seminar]. Martin Lafrance. Event - June 20, 2010.
6. Penrose, E. 1955. Research on the Business Firm Limits to the Growth and Size of Firms. *American Economic Review*, 45(2): 531.
7. Nohria, N. & Gulati, R. 1996. Is Slack Good or Bad for Innovation? *The Academy of Management Journal*, 39(5): 1245-1264.
8. David M. Levy, 2007- No time to think: Reflections on information technology and contemplative scholarship - ETHICS AND INFORMATION TECHNOLOGY - Volume 9, Number 4, 237-249
9. David Levy – Lecture at Google, 2008 – No Time to Think - <http://www.youtube.com/watch?v=KHGcvj3JiGA>
10. Knowledge Worker - Definition - http://en.wikipedia.org/wiki/Knowledge_worker