

Commencement Speech

by John Seely Brown

at Claremont Graduate University

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Thank you and good morning. It is a great pleasure to be here. I want to start by asking a question. Has technological progress, vast as it has been, actually improved the quality of our lives in the last ten years? Or are we more stressed out, more anxious, always feeling totally overwhelmed and out of control, and never having the time to stop, step back, reflect, meditate, and take stock of our well-being?

Now, this is a heavy topic – a topic I was recently asked to address at a conference (actually a town hall meeting) in Seattle last week titled, “Information, Silence, and Sanctuary.” I eagerly agreed to attend, but then found that the organizers had twisted my arm into giving one of the public open talks. After saying yes, I began to get increasingly nervous. The first speaker was an environmentalist, Bill McKibben, who has been writing about information pollution for more than ten years. The second speaker was an Episcopal priest who spoke on the importance of the sabbath in our information age. And then there was me – a geek. A guy who spends at least ten hours a day in front of his wireless laptop, who is never too far away from his Treo and who habitually surfs the web for entertainment, rather than watching television.

In fact, when I was asked to speak here today, I was gently but firmly told, “No laptop.” That caused me a bit of a panic, I must admit. Yes, I’m somewhat of an unusual geek, one who started out life as a hard-core computer scientist who believed that if an idea couldn’t be expressed as an equation, then it wasn’t really an idea. But now I find myself spending much of my time with social scientists, digital storytellers, illuminists, movie makers, and so on. For through the years I have come to realize that, although technology is important, so is the human touch, and although the individual mind is important, the social mind is as well. And although information is important, perhaps *meaning* is even more so – but how is meaning created? Although our entire economy makes things more efficient, perhaps we have lost sight of what makes us more effective and our work – more meaningful?

So what caused my transformation from the standard computer scientist? The simple answer is learning – learning to see the world more as an artist does and holding in awe the amazing amount of improvisation that happens in even the most routine work. My start down this path happened quite innocently. I had just come to Xerox and the management asked me to see if I could use artificial intelligence, something I had studied a great deal, to generate some smart job performance aids to help our tech reps (tech reps are the people who repair our copiers and printers) so that the company would not have to spend \$200 million a year on training them.

Fortuitously, before setting out to design a solution to this problem, several of us had a bizarre idea: let’s hire some anthropologists and have them live, work, and learn with our tech reps for at least six months. From their observations we would then be able to see how our tech reps really work. Sure, we knew what they were supposed to do, but what were

they actually doing that they themselves might not be aware of?

Well, to begin with, these tech reps never bothered to look at the five-inch-thick manual designed to guide them through the trouble-shooting process. Why? It made them look stupid in front of their customers and thus damaged the customers' confidence in them—not a good way to start out to build customer relationships.

So what did they do when they encountered a nasty problem? They called in a buddy and together they started to construct a partial story about the machine's faulty behavior.. As soon as they created one fragment of the story, that reminded them of a fragment of a past story they had heard, and that suggested new tests to run and new data to explain that then evoked another fragment of another story and so on. Finally, when their evolving story had accounted for all the data, they had the faulty machine figured out. Very interesting! Trouble shooting turned out to be story telling, pure and simple.

Then guess what those tech reps did. The next morning they sat around the table, drinking coffee, relating, listening to, and critiquing each other's stories. They were in fact engaged in active learning, day in and day out.

But this was the era of business process re-engineering, and our goal was *efficiency*. Think of all the time those guys were wasting socializing over the coffee pot or around the water cooler. Then signs went up in the work place: "Do not tell stories." The results were immediate. The tech reps stopped learning from each other and indeed needed more training. Then they started telling stories behind our backs about how stupid the training was. Under the guise of efficiency, we had eliminated a highly cost-effective but subtle form of social learning. So what did we do with our research group? Did we use fancy, high-powered computers to solve the problem? No, we gave each tech rep a two-way radio that was always on, so that each individual was in earshot each other.

As soon as one of them ran into a problem, the others could sense it and without having to get in their cars and travel over there they could offer a suggestion. They were seamlessly moving from the periphery to the center and back again. We had found a way to tap the social, distributed mind of these tech reps by using the world's simplest tool – an inexpensive, two way radio much like Nextel now sells.

The ability to have these tech reps always in two-way communication with each other also provided a neat tool to help new recruits learn their craft: a newbie could always link up and listen in on the periphery and learn new tricks by picking up new stories. A very interesting way to enable *learning-in-situ*.

After a year the experiment came to an end and we started to take back this rather expensive two-way radio system. The tech reps were so upset that they stepped forward and offered to use their own goal sharing money to buy the entire system! We asked them, "You want to spend your money for this new type of 'communication?'" Their answer was, "Yes." And the turning point in our recognition of the power of honoring and supporting the distributed intelligence of the social mind.

Hmmm, we thought to ourselves. This system works beautifully for the 100 or so tech reps in Denver district—but what about the 22,000 other tech reps spread around the world? And, we pondered, could this system be scaled so that all these great learning stories wouldn't just disappear into the (radio) ether but could be captured and built upon? This led us to the second phase of learning how to capture and socially vet these stories in a distributed way over the internet. This led to the system we called Eureka where any of the tech reps could create a story from their own immediate experience and put their name on it

and sending it out over the net for peer review. Very quickly, the story would be vetted, and if the vetting itself created a new insight then the vetter's name would also go on it. This was the beginning of our experience in the capturing and sharing of knowledge through story telling thereby forming a knowledge network around the world.

The amazing interplay of social capital and intellectual, generated from the source minted a new coin with social capital on one side and intellectual capital on the other. These tech reps were becoming global heroes minting a coin—a coin of *meaning*. Their identities started to take shape according to their roles within the process of creating knowledge and sharing it in this vast network of communities of practice. Then we had an idea. We said, "These ideas are really saving us money. Maybe the tech reps with the best ideas should be recognized with a financial reward." But guess what? They were horrified with this idea. That would take away the meaning and social capital that they were crafting for themselves. They wanted to keep their network for themselves, as a way to create meaning for themselves, free from the corporate game playing that nearly always emerges around any kind of formal reward system.

This all happened some time ago, and was an embryonic example of several interesting movements: one having to do with social software and the other having to do with open source. The world's most complicated, beautiful, and robust operating system, Linux, was built by a similar notion of constructing meaning and intrinsic motivation, as thousands of people contributed to its amazing construction. If you use the web today, you are accessing it using another piece of open source software called Apache. Almost every website in the world today runs on an Apache server, built in this exact same way by an open source community. Think about the new social software you hear about. Think about instant messaging. Think about blogs. Think about wikis. Blogs are personal types of journals that allow you to link to others, almost the foundation of the social mind. A wiki is a form of collaborative software that allows users to create and edit web page content using any web browser. This communication software supports hyperlinks and allows documents to be authored collectively in simple syntax. For example, Wikipedia, perhaps the largest wiki in the world, has at the moment 6,000 people constructing an open source encyclopedia with more than 250,000 articles—all current and all peer reviewed.

My last example is Massachusetts Institute of Technology's OpenCourseWare, developed out of that school's mission to "advance knowledge and education." OCW provides free, searchable access for educators, students, and self-learners to MIT's course materials, including the syllabi, lecture notes, problem sets and solutions, exams, reading lists, and even video lectures from more than 700 MIT courses in more than 33 academic disciplines.

I suggest that as we march forward into the twenty-first century, we are seeing a rise of many different kinds of community-based IT tools, or as I said earlier, what may be more popularly called social software tools. But I hope we can transform the internet into the platform of life-long learning and social construction, so that we can understand story telling and knowledge sharing. It is my hope that these tools will help us develop the ability to listen, to listen across cultures, to listen with humility, and to move across cultures. I hope these tools will help us to move between the rigid walls of traditional disciplines and to engage in deep collaborative and transdisciplinary endeavors—the hallmark of this great university. It is also my hope that these tools will provide each of us with the means to follow problems to their roots, and in so doing invent comprehensive solutions to the systemic, global challenges that no one group or one discipline could ever solve by themselves.

You have all been well provided here at Claremont Graduate University to solve

problems. The tools you have been given at your disposal have amazing powers. But please leave here today and questioning whether you are working on the problems that make a significant difference to society. We need all of you here to help us to think differently, to listen with humility, and to proceed from here with openness and thought.

www.johnseelybrown.com