The 21st-Century Employee: The Innovation Worker

Ron Fulbright
University of South Carolina Upstate
800 University Way
Spartanburg, SC 29303
(864) 503-5683
rfulbright@uscupstate.edu

ABSTRACT

Human history teaches us how new types of workers are continually created to keep apace with technological advances. As an outgrowth of the information age, companies are spending increasing amounts on innovation in order to remain competitive in the globalized marketplace and this is leading us into a new era—the innovation age. In much the same way the infusion of information technology transformed employees into information workers, a new kind of worker, the innovation worker, will arise in the coming years.

1. INTRODUCTION

Human history teaches us that as technology and knowledge evolves, so does the nature of the *worker*. Thousands of years ago, the agrarian revolution not only enabled humans to live in one place, giving rise to cities instead of nomadic tribes, but produced a new kind of person, the agrarian worker, or *farmer*. The industrial revolution in 1800s and 1900s produced the *factory worker* and the *office worker*. The information revolution over the past few decades has produced the *information worker*. Today, thanks to the infusion of information technology, the average office worker's predominant effort is to process electronic information. In the last twenty years, the knowledge management domain produced the *knowledge worker*—one who exploits information—leading to disciplines like business intelligence and competitive intelligence. What is the next revolution? Extending the line of thought, the next revolution will involve the exploitation of knowledge and what happens when you exploit knowledge is that something *new* is created. Thus, *innovation* is the next revolution and the future will see the rise of the *innovation worker.*

2. RATE OF KNOWLEDGE PRODUCTION

Depending on the source and the domain, researchers report the amount of knowledge produced by humans as doubling every 5 to 20 years. This is the *current* rate of knowledge production. Until the industrial revolution, it took hundreds of years for the wealth of human knowledge to double whereas now doubling occurs in terms of a few years. In the future, the rate of knowledge production will continue its increase, reducing the doubling time to *months* instead of years. An interesting, but non-trivial, question is what will happen to education when what is taught at the beginning of a school year is obsolete by the end of the year? Another question, and the most pertinent one here, is how will companies remain competitive in a world that is in *constant* flux? This will characterize the *innovation age*, a time that will be seen by historians as the when the creation of new products, processes, and business practices became the fare of the average employee rather than being delegated to a chosen few hidden away in the R&D departments and universities. This new age has already begun.

3. SPENDING ON INNOVATION

In 2004, Alan Greenspan, observed that the new paradigm of *globalization and innovation* represented a "one-time shift" in national and international economics [GRE04]. Globalization is driving companies to be competitive in new ways and triggering an acceleration of the pace of innovation. Companies too slow to react to the changing marketplace are out-performed by more agile, often foreign, companies. As a result, chief executives are spending on innovation. According to the Boston Consulting Group (BCG), 74% of companies will increase spending on innovation in 2006, roughly the same as the 72% in 2005 and up from 64% in 2004 [BCG05], [BCG06]. Clearly, the domain of *innovation* is still in its infancy, but that it is a critical part of the future is of little doubt.

4. THE INNOSTRUCTURE

That companies must innovate to stay ahead of the competition is not a new or surprising idea. Leading companies already invest billions of dollars research and development departments. However, the traditional R&D cycle is measured in years and is much too slow for the coming world of continual change. How can the pace of innovation be increased to meet the new demand?

Again, history provides an answer. At the beginning of the 1980's, data processing was done by only a few people in a company, comfortably hidden away, in the "data processing department" using the single computer the

company owned. By the end of the 1980's, nearly every office worker had a computer on his or her desk, all were networked together, and a new profession had arisen—*information technology*. Using word processing, spreadsheet, and database software, the average employee had been transformed into processors of electronic information—*information workers*. This was made possible by the infusion of information technology (hardware, software, and re-engineered business practices) into the very fabric of the corporation—the information technology *infrastructure*.

We believe innovation must be infused throughout the organization as a strategic infrastructure component. Innovation is the emergent behavior of the complex adaptive system of humans, information, knowledge, wisdom, and market forces. A suitable infrastructure, able to support innovative efforts by any and all employees is needed. We call this the innovation innostructure or innostructure for short.

5. THE INNOVATION WORKER

The employee of the near future will be a manager of a set of relationships between customers, suppliers, and partners as predicted by the *relational enterprise* concept [Coo02]. This will demand the creation of open, collaborative communication facilities, a movement that is already underway. The ability to *continually* adapt will have to be built into and onto these employee-level communication channels. It has been suggested that the best topology for this is a scale-free, network of collaborators exhibiting emergent behavior—something called the *innovation metanetwork* [Ful07]. A new class of software tools will be developed, also underway, to assist employees in creative and innovative thinking. Existing applications will be fitted with interfaces newly capable of plugging and playing with collaborative, innovative dialogues. Also, business practices will be re-engineered to include the innovative dimension.

A company's innovation quotient will be built into the fabric of the company itself, touching every job, every employee, every department, and every business practice. The innostructure will empower employees to become *innovation workers.*

6. RESEARCH

Research in this field will be multidisciplinary in nature. Key topics include, but are not limited to:

- How is innovation measured?
- How are innovative business practices managed?
- How is corporate inertia and risk aversion overcome?
- How is the information in collaborative efforts secured?
- What new capabilities are required of existing software?
- What new software tools are needed?
- How is a collaborative network kept emergent?
- How do we build agile business methodologies?
- What new paradigms will the innovation age create?

7. CONCLUSION

History shows us how workers arise to function within the changing technological framework. Many indicators point to a coming revolution in *innovation*, one that promises to transform the way all business is done and once again transform the average employee into an *innovation worker*. To support the day-to-day activities of innovation workers, organizations will build a business infrastructure, called the *innostructure*, where innovation is something employees do as a routine business practice.

8. REFERENCES

[BCG05] Andrew, James, P., *Innovation 2005*, The Boston Consulting Group, Boston, MA, 2005. Internet site located at: http://www.bcg.com/publications/files/BCG_Innovation_2005_Survey_Report.pdf, last accessed July 2006.

[BCG06] Andrew, James, P. *Innovation 2006*, The Boston Consulting Group, Boston, MA, 2006. Internet site located at http://www.bcg.com/publications/files/2006_Innovation_Survey_report.pdf, last accessed July 2006.

[BCG06b] Andrew, James, P. *Measuring Innovation 2006*, The Boston Consulting Group, Boston, MA, 2006. Internet site located at: http://www.bcg.com/publications/files/2006_Innovation_Metrics_Survey.pdf, last accessed July 2006.

[Coo02] Cooper, K, *The Relational Enterprise: Moving Beyond CRM to Maximize All Your Business Relationships*, American Management Association, New York, 2002.

[Ful07] Fulbright, R. "Managing Innovation as a Business-Critical Resource," *Proceedings of the IRMA 2007 Conference*, IRMA 2007, Vancouver, BC, IGI Publishing, Hershey, PA, 2007.

[Gre04] Greenspan, Alan, Internet Site located at http://www.federalreserve.gov/BoardDocs/Speeches/2004/200405062/default.htm, last accessed July, 2006.