Editorial

Technology: Panacea or Addiction Could we do without IT?

Steven John Simon

I for one have always been drawn to technology. I was fascinated when I saw my first laser in high school and had the chance to write my first computer program in college. Being born at the end of the "Baby Boom" generation I am old enough that I can remember a non-computerized, "pencil and paper" world. I often query my students asking them to envision what it would be like in their organization if we took all the computers away. The answers are almost always the same. Without the computers we would have to close our doors!

Consider the average library. Today, I have students who have never set foot inside the library yet have full access to its resources. In four years at my current institution, I have only been inside the library building twice but utilize the system resources on a weekly basis. I once even looked up an article at my school's library while on a ship in the middle of the Atlantic Ocean. Yet I can remember as recent as ten years ago having to flip through a card catalogue to locate books and bound journals.

Technology, information technology in particular, has provided our world with advantages to numerous to detail. IT is ubiquitous in our lives and for most it is nearly transparent. Circuits, switches, computers, and programs drive all aspects of our daily lives. They are credited by Alan Greenspan with vast productivity gains the United States' economy has enjoyed in the past decades. They provide and facilitate everything from the air traffic control system to our electrical power grid, phone calls to Internet transactions. Yet we seem to take this miracle for granted and assume that it will always be there, operating at peak performance.

Imagine, if you can, our major airports and airlines operating without their information technology systems. I remember as a youngster going to the airport with my parents. Of course, there was no security back then so you proceeded to the check-in counter with your multi-part, carbon paper ticket. The agent reviewed your ticket by hand and completed the baggage tags, also by hand. You would then proceed to the gate, where a different agent would assign your seat. Since there was no computer to keep track of seating, a schematic of the airplane with pull-off, sticky seats was tacked up to the gate counter. The agent asked if you preferred smoking or non-smoking (fortunately that has been fixed) and window or isle. Your seat/sticky was then removed from the diagram and stuck on your ticket. The paper tickets were collected as people boarded and a manual count was conducted and matched to passengers onboard the plane. Imagine this unbelievably slow process for airports that currently handle hundreds of thousands of passengers daily.

This past Christmas travel season gave us an inkling of what our airports would be like without the airlines computer systems. Comair, a regional carrier for Delta airline, suffered a major failure of their scheduling computer system. This system is responsible for assigning aircraft and crews to their specific routes. On Christmas day alone, Comair cancelled over 1,100 flights stranding tens of thousands of passengers for days. This was one system of one airline and a small airline at that. Similar stories abound! Banks that have closed because their system crashed and there is no means to access customer records. On-line merchants who suffer system failures or are attacked by hackers shutting down their sites until systems are restored. Cellular phone system outages as a result of system glitches leaving customers without service. Large organizations unable to perform routine functions as a result of software failures.

The examples above are restricted to single companies and free standing systems. Again imagine the impact of the failure of interconnected systems. In many cases we would see a domino effect, with interconnected systems crashing under the strain as systems around them crashed. An example of this is found in the power "black-out" that affected the mid-west and northeastern parts of the United States and Canada a few years ago. As part of the power grid became overloaded and crashed, other interconnected parts (including their information systems) also crashed creating a cascading effect throughout the region.

In today's global high speed environment, we find that more and more systems are becoming interconnected. In the US, the Check21 system is now linking the clearing of checks from all banks through the Federal Reserve Bank system. A failure of that system could in theory cause a crash of every bank connected to it and the result would be a financial crisis of unseen proportions. Failure of the telecommunications system, via whatever means, could have a variety of unexpected impacts. We would of course expect to lose phone and Internet service, but we might also see a failure of the air traffic control system, the banking system, stock markets, etc.

I am not preaching the end of the world as we know it. Nor would I advocate that we abandon information driven technology systems any more than I would the grocery store for a return to the farm. This is our way of life and these systems are integrated into it. You might even say that we are dependent or addicted to these systems. I do advocate being cognizant of this. These systems are our strength and strengths are also potential weaknesses. We have witnessed a rise of hacking, attacks for thrill and profit, and malicious marketing in the form of ad and spyware. Of greater concern is the targeting of our information systems by terrorists and enemies. This threat is considered very realistic by government and military planners. Organizations of all sizes and types should safeguard their systems as well as create contingency plans to insure continued, uninterrupted operation of the systems and their businesses. Individuals must also be responsible for safe operation and security of the systems they are entrusted.

In closing, I would like to welcome two new members to the JIST family. Narcyz Roztocki, who begins serving as Managing Editor, is Assistant Professor of Management Information Systems at the State University of New York at New Paltz. His research interests include IS/IT investment evaluation IS/IT productivity IS/IT investments in emerging economies, technology project management, and E-Commerce. Dr. Roztocki received a Ph.D. from the University of Pittsburgh and his MS degree from the Technische Universität Hamburg-Harburg, Germany. Jeff Ingalsbe is a Strategic Research Supervisor and Sr. Knowledge Specialist IT Strategy and Competency at Ford Motor. He has over 8 years with Ford Motor Company starting as a programmer and spent time in the software engineering process group leading efforts to manage software defects. He has developed java based enterprise workflow applications and is involved with strategic infrastructure engineering where he authored and led the process for aligning IT applications with a strategy for commonization, defragmentation, and simplification. He currently leads IT Competitive Intelligence efforts.