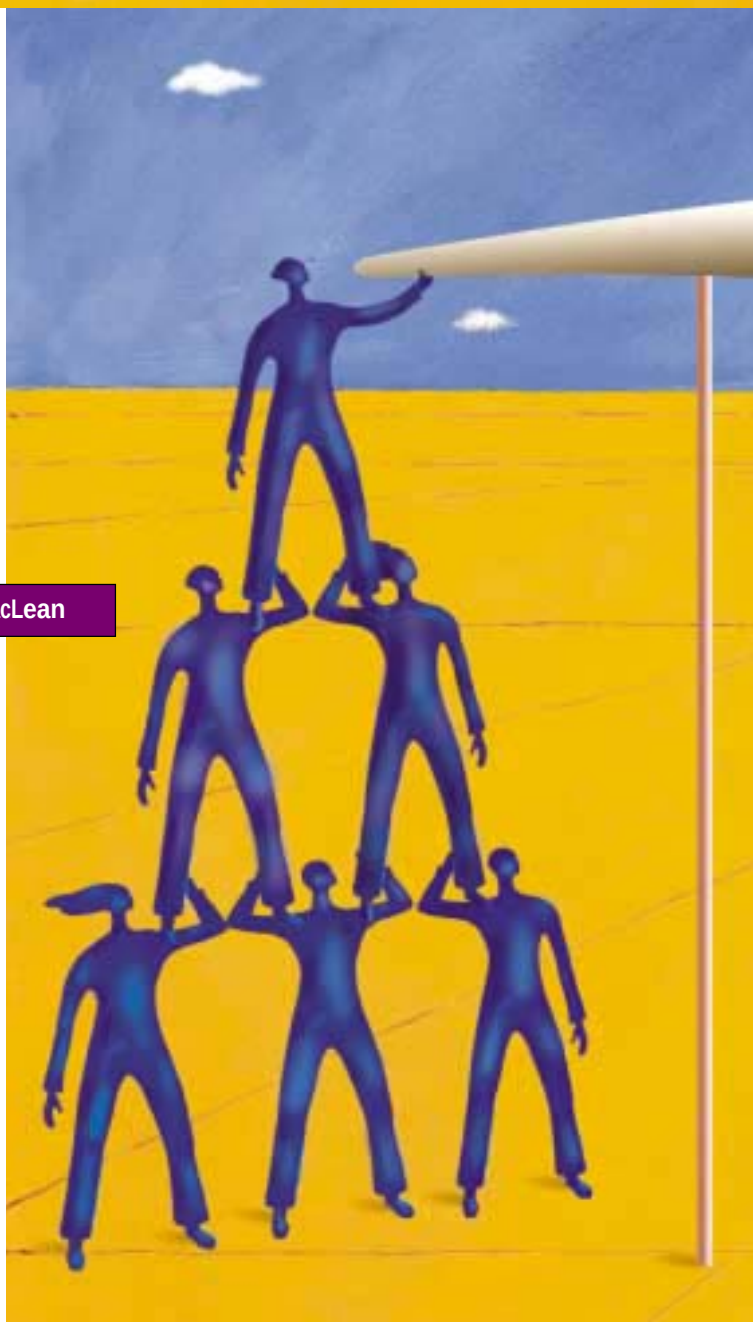
Reprinted with the permission of Chemistry Business, Journal of the American Chemistry Council, Vol. 31 No. 1., February, 2003, pp. 16-18.

Soft-ware[✓], Hardware[✓]... People-ware[?]



By Richard MacLean

Environmental technology has never been better: It's the environmental professionals that may be "endangered."

My parents had no money for a fancy bicycle for me to ride the two miles to school. I walked. My protests were met with comparisons with Depression-era hardships and stories of walking five miles to school through the snow uphill – both directions. I'm sure that every reader of *Chemistry Business* has endured similar tales of parental torment. But our parents had a point: There is nothing like a bit of historical perspective to highlight change, both positive and negative.

Viewed in the context of the progress made during the past month and where things may currently be relative to some ideal future state, environmental progress may seem motionless to some. Viewed in the context of a career spanning more than 30 years, the progress in environmental technology has been nothing short of phenomenal.

In the 1970s, computers occupied entire rooms, and interface was through punch cards without hanging chads (some technology areas have regressed). At the Shell Research Laboratory in Houston, we had a desktop mechanical calculator that would endlessly crank away. I saw a similar one in the Smithsonian recently. Today I bring my entire office with me to clients in a 4-pound laptop.

In the early 1970s there were few experienced environmental professionals. Schools were still graduating sanitary engineers (when was the last time you heard that term?). Things changed rapidly with increased public concern for the environment, the growth of regulations and a series of widely publicized environmental incidents. Industry was in trouble, and the chemical industry, more than any business sector, was being assailed.

During the 1980s companies responded by assigning the best and the brightest to "make this problem go away." Since most of the attention was focused on issues in the United States or with problems tied to companies headquartered in the United States, environmental technology flourished domestically. The fix was on. By the end of the 1980s, U.S.-based consultants and technologies were considered the best in the world.

By the mid-1990s the technologies and environmental management systems had reached a level of sophistication that a company no longer needed to build from scratch: The hardware and software were on the shelf ready to be adapted and modified to suit a company's need. ISO 14001 had arrived. Systems were becoming "proceduralized" and routine; the big problems – the ones in your face and in your backyard like Love Canal – were fewer in number and fading fast from memory.

And that's when a subtle change began.

Brain drain

The environmental issues that galvanized the American public (and therefore the politicians) into action are being replaced with global issues with time lines extending over generations. Problems such as diminishing topsoil and fresh water supplies are apparent in *developing* countries but seem oh-so-remote to a public that has been enjoying cleaner air and water, sans toxic waste dumps next door. By the environmental metrics that most business managers track, things have never been better.

During the 1970s through the mid-1990s when the capital infrastructure for command-and-control regulations was being built, companies needed senior environmental talent. One could argue today that with global environmental issues looming on the horizon, even more sophisticated talent will be needed to address a new generation of even more complex issues. Yes, the most obvious examples of today's environmental concerns exist outside the United States. But if anything, the past few years have taught Americans that problems on the other side of the world can have a direct impact on us all. Clearly, a new surge in talent must be on its way. Hoorah!

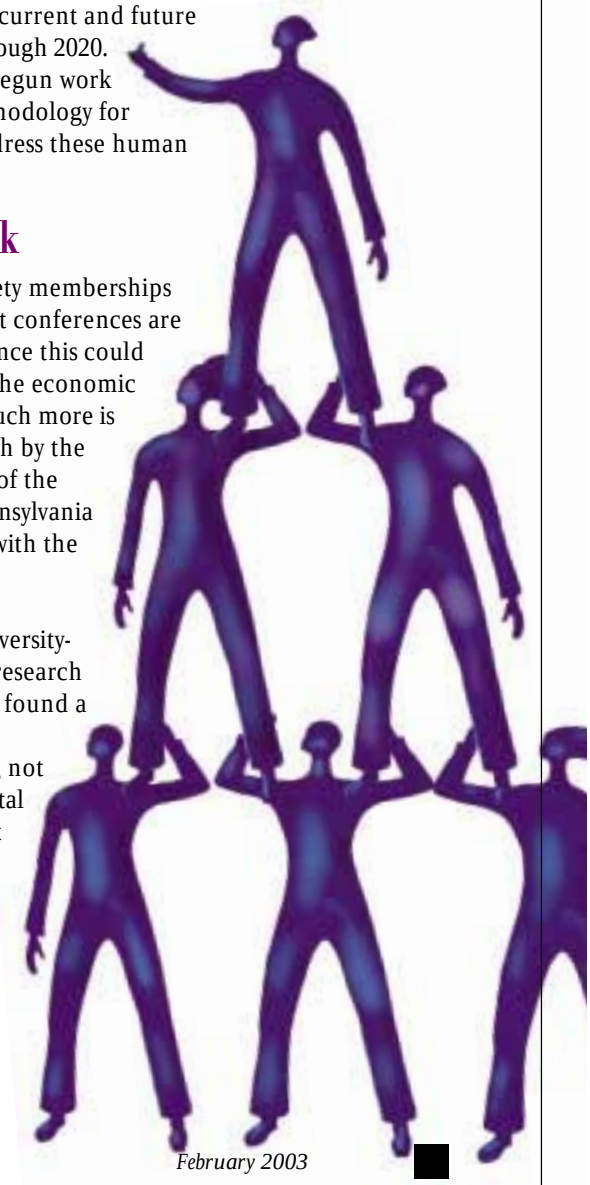
Now back to reality. During the past five years there has been a gradual erosion of this talent pool that arguably, the world needs more than ever. Yes, the economic downturn has been a factor, but much more is involved. Companies have "right-sized" and outsourced environmental staffs, no longer concerned by the "you'll go to jail" threat overused by environmental staffs to gain resources and cooperation. Fear has been replaced by complacency. In many respects, this is a result of the successes of the past and the growing sophistication of environmental technology. You do not need senior people to design, debug and implement systems; you need junior-level people to *use* the systems.

Executive environmental professionals are retiring or shifting into occupations where the career prospects look more promising. Carl Frankel, the noted environmental author, coined the phrase "twilight of the champions" to describe the loss of some of the most visionary senior environmental professionals. What is unique to the environmental arena is that an entire wave of talent is passing through to retirement at one time since the government, activists and businesses geared up around the same time – about 30 years ago.

At the most obvious level, there will be an imbalance in the supply and demand. EPA management has grown sufficiently concerned that they commissioned a study of the impact of this loss on the government's ability to regulate. Forty-seven percent of the EPA's workforce will be eligible to retire in 2005. Some might view this as an opportunity to bring in "fresh blood" and change the agency's reliance on command-and-control approaches. Maybe so, but the growing need for competent environment professionals is undeniable. Kirk Maconaughey with EPA headquarters' Office of Human Resources states, "EPA has identified the skill set gaps and needs in both its current and future workforce out through 2020. The agency has begun work to develop a methodology for the agency to address these human capitol needs."

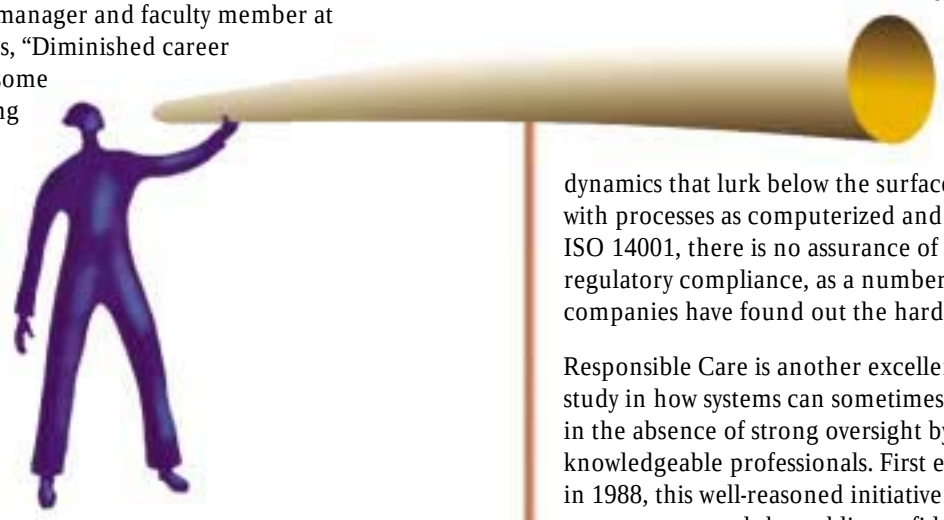
The Big Funk

Professional society memberships and attendance at conferences are down. At first glance this could be explained by the economic downturn, but much more is involved. Research by the Wharton School of the University of Pennsylvania in collaboration with the Center for Environmental Innovation, a university-based nonprofit research organization, has found a general malaise spreading among not only environmental professionals, but also those in the allied professions of occupational medicine, health, safety, law and risk management.



An even more dramatic indication of "something's up" is the fact that 12 of the country's largest professional societies along with EPA, Occupational Safety and Health Administration and others have joined forces to support this research program, entitled "Pulse of the Professions."

Jim Leemann, project manager and faculty member at Tulane University, states, "Diminished career prospects have forced some senior managers nearing retirement to hunker down and not aggressively push innovative programs. The more career-mobile individuals are looking for other opportunities. All this has sent a disparaging message to the universities where the future talent will come from to address sustainability issues."



Prospects with this next generation appear tenuous. Rick Bunch, director of World Resources Institute's Business Education, stated, "Students tend to take courses that maximize their career placement and advancement prospects: They know another finance elective will catch an employer's attention, but they have much less confidence in the value of a sustainability elective."

What Does This Mean to the Chemical Industry?

The socially responsible companies will be able to attract new talent, hold onto their best people and encourage this talent to push for innovation, not just cost-cutting. From my vantage point working with many corporations, environmental, health and safety (EHS) staffs have become disheartened by wave after wave of restructurings. Too often I see retiring leadership being replaced not by managers skilled in corporate governance and transformation, but by individuals with unflinching loyalty to management who know little of the EHS world but project political correctness and verbal prowess. No wonder the "troopers in the trenches" that I interview are demoralized.

The technologies and systems have become great – almost too good – because they have given management a false sense of confidence. Without the talent behind these systems, unskilled individuals "checking off the boxes" can never fully account for the underlying political, public relations, media and legal dynamics that lurk below the surface. Even with processes as computerized and mature as ISO 14001, there is no assurance of even basic regulatory compliance, as a number of companies have found out the hard way.

Responsible Care is another excellent case study in how systems can sometimes flounder in the absence of strong oversight by knowledgeable professionals. First established in 1988, this well-reasoned initiative gave management and the public confidence that employees and the community are safe. Only years later did it become apparent that merely having "the process" in place was not enough. To its credit, ACC has intervened and addressed the governance weaknesses.

For business managers in the chemical industry the message is clear: Obtain the latest technology, but do not overlook the "people-ware" that drives these systems. Having a process in place does not guarantee governance if the people running these systems are demoralized, worried about their career or too inexperienced to know when to raise the red flag. Sustainable development will require a new level of sophisticated talent that the chemical industry can only attract and hold onto if it creates a nurturing work environment. In spite of the positive spin put on progress in the environment, the chemical industry faces major hurdles resolving the next generation of global environmental issues. CB

Richard MacLean is president of Competitive Environment Inc., a management consulting firm, and the executive director of the Center for Environmental Innovation, a university-based nonprofit research organization. E-mail him at maclean@competitive-e.com.