

June 28, 2004

www.csae.com

How Science Will Change Careers – And Associations

Is it a good time to scare the heck out of your members? Maybe so - indeed, it might be a great time to shake them out of their complacency with respect to the future.

The rate of change that now envelopes our world is such that some of your members won't recognize their career in as little as ten years. Not only that, but some are likely faced with out and out career extinction. That's the gist of the message from study by City & Guilds, the leading vocational awarding body in the UK. Their recent report noted that workers of the future might have as many as 19 different jobs throughout their lifetime. That observation should come as no surprise, given that we've seen the concept of the "job for life" come to an end at the same time that the idea of "corporate loyalty" has become a joke.

But an even more profound and troubling observation was released in their study - people will often find themselves working in two jobs at the same time as they take the effort to extract themselves from a career that is becoming extinct.

Career extinction? Could such an idea be true? I certainly think so - and if so, association executives must begin thinking about the essence of how an association needs to evolve in such a world.

Observing the world around me

I spend a huge amount of my time thinking about the world around me. I look for signs of change everywhere, whether that involves observing trends within my local neighborhood, things I see during business travels, or with the research I undertake when preparing for a talk to an organization or association.

I'm fuelled by an intense curiosity as to what my observations tell me about where we are headed in the future. A recent book had one character observing, "I've learned that you never know what might be important down the road, so I ask questions and file away the answers."

That describes how I view the world - I ask questions and think about what I see occurring around me. I interpret that information to discover or assess an important trend. And one of my observations is certain - I see a many signs indicating that the pace of scientific evolution is speeding up tremendously.

That fact alone, I believe, will help fuel ongoing, regular career extinction.

China, science and our future

Why is this so? First and foremost, consider the role of China and the rest of Asia on the world of science. Yes, we've all heard this region will have a huge impact on the future of the world economy, but do we really know just how big an impact?

In a recent article, the Electronic Engineering Times noted that Chinese and Indian universities now award more science and technology degrees every year than America. From my perspective, this means we are seeing a huge influx of new talent into the global science innovation pool, with the result that the pace of new scientific discovery will only continue to speed up.

And indeed, as much of China goes from peasantry to middle-class in as little as 100 years, there is a huge, massive incentive for these scientific minds to take on an ever more aggressive role within the world in the discovery of everything that is new.

That's but one element of a world of rapid scientific evolution.

Furious growth in knowledge

But China is just one part of the equation - the other is we are now witnessing furious growth in the amount of available knowledge in all fields of science. With new knowledge comes new discoveries and innovation - and with this comes ever more rapid change.

I recently read an article called the Journal of Chemical Knowledge that I found to be mind-boggling. The article commented on the challenges faced by chemists and chemical engineers in simply keeping up to date with the "world of the new," noting that:

- to be up-to-date in all areas of chemistry you would currently have to read about 2,000 new publications every day
- if you prefer to screen only the short abstracts, you must read 200 pages per day or about 70,000 pages per year
- Furthermore, since the number of chemistry publications increases exponentially, you need to double your reading capacity within the next 15 years.
- You must read 20 publications every day to grasp only 1% of the overall chemical publications!

The article went on to note, "...the number of known chemical substances has been growing exponentially since 1800, from some hundreds then to about 19 million today." That's a pretty big leap - but is insignificant compared to what is coming.

With the knowledge explosion now occurring, the discovery of new chemical compounds is now growing faster than ever before - indeed, the rate of discovery of new chemical substances is now doubling every 13 years. That means that by 2025, chemists will be dealing with some 80 million substances and by 2050, 300 million. Watch the trend further, and it means that in less than 100 years, chemists will be dealing with 5 billion known substances.

My dad graduated back in the late-40's with a degree in chemical engineering. If he were alive today, he would be in the midst of a career and profession that is fragmenting into countless numbers of unique specialties. And the fact is, there is no such thing as a chemical engineer anymore - there are just thousands upon thousands of unique career paths within the vast world of chemical knowledge, with any particular individual working within but a small part of the overall complex scientific picture.

The impact of ever-growing sapiential circles

What's fuelling this rapid rate of scientific change? Ever-widening "sapiential circles" that now envelop every aspect of our world. The phrase comes from observations by anthropologist Margaret Mead as to how groups of primates generate knowledge within their community. I love the phrase - and based on observations on the concept within an by Dr. Warren Bennis (University of Southern California) ("The Secrets of Great Groups"), I've come to use the phrase to describe a group of people who share a common interest in a topic. And what I've learned is that the very essence of the sapiential circles that exist in our scientific communities has forever changed.

Prior to 1990, most sapiential circles were small, cumbersome, and rather slow to share information and generate knowledge. The medical community distributed information in peer reviewed journals, which provided for a rather slow, leisurely dispersion of new medical knowledge throughout the global community. Researchers into robotics and intelligent systems tended to do the same, enhanced by regular exchange of ideas and information at annual professional conferences. Chemists, too, had their own circles, as did every other profession and area of scientific endeavor.

Then something magical happened - fuelled by the connectivity of the Internet, we witnessed massive growth in the reach of the many existing sapiential circles, and the formation and birth of countless new circles.

Suddenly, we had a vehicle that supported and encouraged the direct distribution of knowledge and information on a scale never before witnessed in human history. The world of science was provided with the perfect fuel that provides for an era of knowledge dispersion on a scale never before seen. Our sapiential circles grew, and they keep on growing. As they grow, so too does science and innovation.

Scientific change fuels all change

Everything we do is touched by science. And if the essence of science is entering a period of hyper-change, then we too are entering that world. That's why when I see a statement on the idea of "career extinction" by a leading vocational organization, I believe the idea to be true. I dare not discount the idea - I think it would be too foolhardy.

Which begs the question - are association executives thinking about the idea of career extinction? Is it a possibility? What might it mean, in terms of what an association is and who it represents? What are we doing on a long term basis to transition our association to represent and assist our members through the transitory stage of extinction to rebirth? What role do we play in the new careers that will unfold? How will our membership base fragment, and how can we possibly play a role as that occurs?

I begin to think of all the issues, challenges and opportunities to such a degree that my brain begins to hurt. The change that surrounds us is stunning and remarkable, and I wonder if we are well prepared.

In some cases, I think not -- I've had a few talks as of late that seem to be to groups who are like "deer in the headlights." I've outlined the rapid rate of change coming to their career and profession, and have managed to quite effectively scare the hell out of them. But upon doing so, I've also offered some very practical advice and effective steps that they should begin taking to prepare for an era of career evolution and extinction. Scare them first, and then provide a pathway to discover opportunity - that's always been my philosophy.

Yet what is interesting is that with some crowds, they seem so shocked by the reality check of what is coming that they don't make it to the next step of wondering what to do about it! It seems I am regularly witnessing crowds that seem entirely focused on the threats to come, and not on the opportunities that will emerge.

Maybe that means that some good shock treatment is in order. Wake them up, shake them up, and hit them over the head with some cold hard facts. Let reality sink in, and then move to phase two -- start working on the practical steps that will help to prepare for the years yet to come.

Jim Carroll, a futurist, innovation and trends expert, provides his insight at countless numbers of meetings and events. Parts of this article were based on a recent keynote he provided for several hundred PhD's, scientists and researchers at a major conference focused on robotics and intelligent systems. He welcomes your comments at jcarroll@jimcarroll.com. His website can be found at www.jimcarroll.com



CANADIAN SOCIETY OF ASSOCIATION EXECUTIVES
SOCIÉTÉ CANADIENNE DES DIRECTEURS D'ASSOCIATION

© Copyright 2004 Canadian Society of Association Executives