

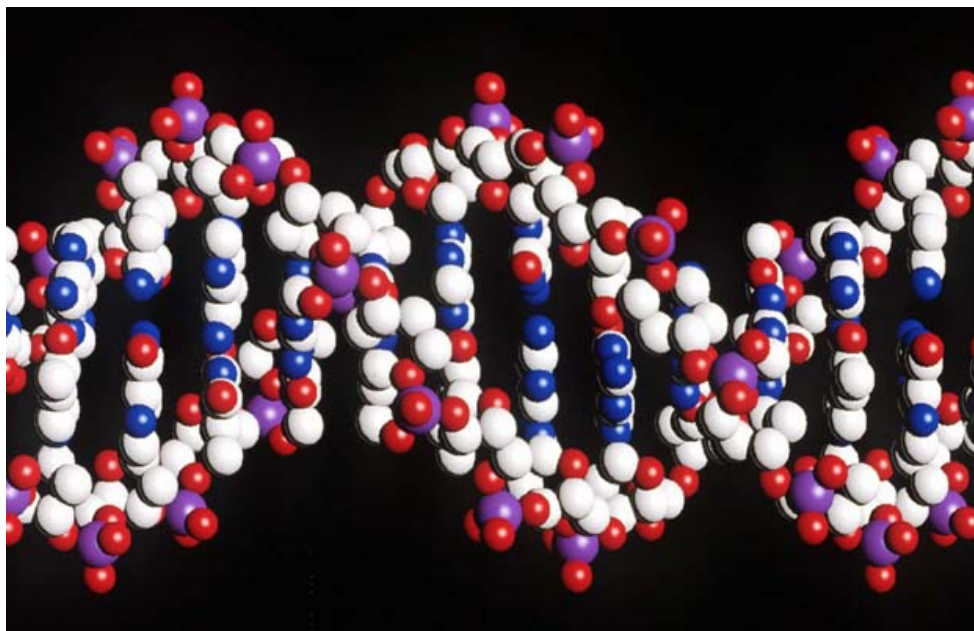
# Managing rapid change requires an understanding of how the digital revolution can reshape society

By Scott Simpson, Vancouver Sun March 19, 2013

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**Further exploration and refinement of our knowledge of the human genome will transform health care.**

**Photograph by: Handout , Files**

VANCOUVER — Is the Canadian economy ready for dynamic change?

What about individual workers, regulators, business operators and educators? Could they improve their understanding of the way technology is reshaping society?

Some economists and other future-looking academics think we need to take a more thoughtful approach to issues such as labour and health policy — and better prepare to manage disruptive change in fields such as health care and education.

Tim Caulfield, Canada Research Chair in health law and policy at the University of Alberta, spends a lot of time thinking about these issues in the context of stem cell research and genome-mapping technology.

Both raise an array of ethical and legal questions — and show how difficult it is for either consumers or governments to keep pace with technological change, regardless of whether it's coming from web activity tracker on Google or a breakthrough in a biotech research lab.

Universal health care is fundamental to Canadian culture, so biotechnological innovation is destined to remain a prominent public focus here, Caulfield said.

“It’s a fascinating time,” Caulfield said in an interview. “We’re pushing toward a time in the very near future where we are going to be able to get whole genome sequences — sequencing an individual’s entire genome — for under a thousand bucks.

“Just years ago we were talking about millions of dollars to do the very same thing. So we are going to have all this information about individuals and we are still grappling with what we are going to do with it.”

Even as opportunities to improve care open up, there’s no certainty that either the regulatory environment, or health care providers are prepared, Caulfield said.

“My wife is a family physician, what the heck does she know about the human genome?”

## Regulation challenges

Similar challenges are emerging around stem cell research which Caulfield describes as a “phenomenally exciting area” that’s already moving into clinical treatment including cell therapies and regenerative therapies.

“Is the regulatory framework we have in Canada around Health Canada, etc., prepared to allow a rapid, efficient and ethical translation of those technologies, the commercialization of those technologies? That’s an open question.”

Regulators can’t keep up with the science, and they lack the infrastructure and the framework available to regulate these technologies in a way that allows society to get the benefits and the risks in an efficient manner, Caulfield said.

Sometimes, he added, regulation gets ahead of technology — with the risk that researchers could be unduly constrained.

“You can argue that the laws may be doing more harm than good, given that they were based largely on speculation and fears around emerging technology. You have (both) the lagging of the laws and the leaping ahead of the laws.”

Outside of health care, one of Canada’s biggest technology challenges is helping workers and businesses contend with change in a way that bolsters gross domestic product, or GDP.

Canada’s present employment insurance system, according to University of B.C. economist Craig Riddell and others, is too tied up with politics to serve the economy in a competitive global market.

In 2011, Riddell wrote a paper for the Mowat Centre EI Task Force looking at problems experienced by displaced workers — those whose jobs were eliminated as a result of fundamental change in the economy or technology advance. They comprise about five per cent of those who lose their jobs in a given year, and they tend to be older workers with a single set of skills.

## EI changes needed

While the majority of laid off workers find new employment in a relatively short time at comparable pay, the existing EI support doesn’t necessarily work for those who need it most, Riddell said.

“Think of a worker who has been in a career for say 30 years but loses his or her job at age 50 or something like that,” Riddell said. “It takes them longer than average to find a new job but more importantly when they find a new job it’s at a wage well below what they earned before.

“Often they’re taking salary cuts in the order of 25 to 35 per cent so it’s non-trivial and often this is after an extended period of unemployment, say a year or more.

“Their skills aren’t valued in the labour market like they were. Trying to target them for more intensive retraining or mobility assistance or other support I think is quite important.”

Riddell thinks the Canadian EI program is “still far too focused” on short-term replacement of income during temporary bouts of unemployment and also on replacement income support during unemployment of people that are in seasonal work.

“The view that underlies that kind of thing is that people who face temporary loss of jobs will be recalled or they’ve lost a job because the season ended but they will come back to that job as soon as the new season starts.

“That’s what in the jargon they call passive income support. We’re still too focused on that and especially far too generous in the extent to which we support seasonal work.”

Simon Fraser University economist Rhys Kesselman, who holds the Canada Research Chair in public finance, has a similar perspective. He sees Canada’s federal EI system as subordinate to political interests rather than sound public policy.

## Politics trump reform

Reforms have been recommended to government since at least the 1970s, but no meaningful action has been taken, Kesselman said. For example, in the 1990s, the Chretien Liberals made it tougher for East Coast fishery workers to qualify for seasonal benefits, but “backtracked” after losing seats in the subsequent election.

In the U.S., EI systems are state-controlled and they charge employers according to the length and frequency of layoffs. If you regularly rely on the system a lot to support workers and keep them in town when your business is slow, your costs to participate in the system are higher.

“If you are a firm that has had a lot of layoffs, you, the employer, are going to be charged a higher premium rate,” Kesselman said. “So it’s putting economic incentives back into the program.

“That has been recommended repeatedly for Canada but the politics of it are difficult because it would affect particular industries in particular regions much more heavily than others.”

Kesselman said higher premiums would give incentives to employers to stabilize their employment.

“It would put the cost of high turnover back on the products that are generating them. The other side of the coin is that it would mean reduced premiums in stable industries like retailing, insurance, real estate, civil service, all of those.”

Canada's cyclical, resource-based economy makes it more likely that workers will face seasonal layoffs, for example when international demand for commodities such as wood or natural gas is low, noted Jack Mintz, director of the School of Public Policy at University of Calgary.

## Culture of learning

In spite of that, Mintz said, the absence of an experience rating premium has had a "limiting" effect on the economy.

"We've kind of shirked away from experience rating and I think that's been a mistake in Canada. We should put in policies that create good conditions in markets and let the markets work things out properly. So you've got to get the right pricing and things like that."

One way workers can protect their own interests is by keeping themselves open to change, particularly technological change.

Danielle van Jaarsveld, an associate professor in UBC's Sauder School of Business, said some companies elect to retrain workers while others — particularly in the rapidly changing digital tech sector where skills become obsolete in a few years — look for new ones.

"There are organizations who choose not to train," van Jaarsveld said. "They hire new people who have the skills they're looking for as opposed to upgrading the skills of the employees they currently have."

"I think for employers who are hiring they need to think about how to evaluate the comfort of job applicants with the necessity of learning new skills on a frequent basis."

"There needs to be leadership within companies to keep abreast of the skills your workforce has in making sure that if you're trying to build a culture of learning within your organization you can keep your employees motivated to continue developing and learning new skills."

Workers, meanwhile, need to recognize that technological disruption is widespread and relentless. But, van Jaarsveld added, it's possible to adapt.

"Look at the recording industry and you see how rock bands and musicians have had to adapt to iTunes making music available and how the public interacts and reaches their music," she said. "I think many different occupations are being affected by this."

UBC's Riddell notes that basic learning skills picked up in university have lifelong application. Students still need "good problem-solving skills, they need good teamwork skills to be able to work with other people."

"In many cases, they need good writing and presentation skills. They also need good analytics and good grasp of theory — whether they're going into medicine or biology, economics, business or whether it's anthropology — they need a good grasp of theory so that as new discoveries get made, as the work environment changes they have the core understanding to be able to adapt to that rather than just the narrow technical training that is more common in vocational areas."

## Mixing majors

Meanwhile, Riddell sees a growing number of students keeping their options open as they progress through school.

"In the past in my field, most students, would either do a majors degree in economics or an honours degree in economics. But now you see combined majors, some of them quite weird."

"Last year, I had a student doing an honours economics and music — two of what seemed like very different career paths. I've got a student this year who's doing a major in economics and a major in theatre," Riddell said.

"Most of them, you can see where there might be some synergies, statistics and economics or math and economics. There's a lot of course that do business as well as economics."

"But increasingly I see students doing majors where one is in science and one is in arts, say biology and economics or things like that."

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