

Technology replacing workers: Is the worst over? Or yet to come?

Most Canadians say technology killing more jobs than it creates is a serious concern

August 17, 2016 – Nearly two-in-three Canadians [believe](#) new and developing technologies will eliminate more jobs than they'll create, but have these predictions already begun to reach fruition?

New public opinion polling data from the Angus Reid Institute finds that when it comes to the impact of technology on the workplace, the future is certainly a source of concern for many. One-in-five (19%) Canadian workers report their job security has *already* been negatively affected by technological changes in the workplace. Another three-in-ten (28%) say they anticipate this will happen in the next decade.

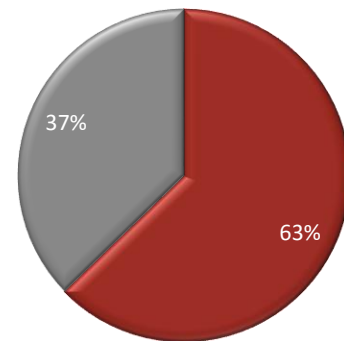
That said, Canadians say their interactions with technology are not a net negative. Improvements in technology have been overwhelmingly positive for their job satisfaction.

Key Findings:

- Those who say technology replacing jobs is a serious concern (63% of Canadians) are more likely to express fears about their own job security in the coming decade, while the one-third (37%) who say this isn't a serious concern express very little personal anxiety
- More than half of working Canadians (51%) say improvements in technology have had a positive effect on their job satisfaction over the last 10 years, and almost as many (44%) expect technology to continue to be a positive factor in their working lives over the next decade
- While job satisfaction has been largely bolstered by technology, most Canadians (47%) say they haven't seen an impact either way when looking at the pay and benefits

In recent years, people have speculated that new technologies will eliminate more jobs than they create. Which is closer to your opinion?

- This is a serious concern - new technology is **LIKELY** to eliminate more jobs than it creates
- This is **NOT** a serious concern - new technology is **UNLIKELY** to eliminate more jobs than it creates



METHODOLOGY:

The Angus Reid Institute conducted an online survey from July 26 – 29, 2016, among a representative randomized sample of 1,516 Canadian adults who are members of the [Angus Reid Forum](#). For comparison purposes only, a probability sample of this size would carry a margin of error of +/- 2.5 percentage points, 19 times out of 20. Discrepancies in or between totals are due to rounding. The survey was self-commissioned and paid for by ARI. Detailed tables are found at the end of this release.

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A brief note on terminology

There are two broad types of technological change that Canadians were asked to consider for this survey – *digital* and *physical*. The Angus Reid Institute introduced the distinction between these technologies in this way:

In recent years, advancements in technology have led some people to speculate that human workers – even in “white collar” jobs traditionally thought of as “safe” – may be at risk of being replaced.

Some of these changes involve the internet and computer programs, and are taking place in the digital world (e.g. computer software and algorithms capable of performing ever-more-complex tasks with minimal human input).

Other changes involve robotics and automation, and are taking place in the physical world (e.g. the use of drones, self-driving cars, or self-service machines, to perform specific jobs with minimal human input).

Canadians were asked to describe the impact of each technology, both digitally based and physically based, on a number of aspects of working life.

Technology and job security

As noted in [an Angus Reid Institute poll released last week](#), more than six-in-ten Canadians (63%) believe continued technological advancement is likely to eliminate more jobs than it creates.

The people who believe this come from all walks of life, and they're slightly more likely to come from historically manufacturing-centric Ontario.

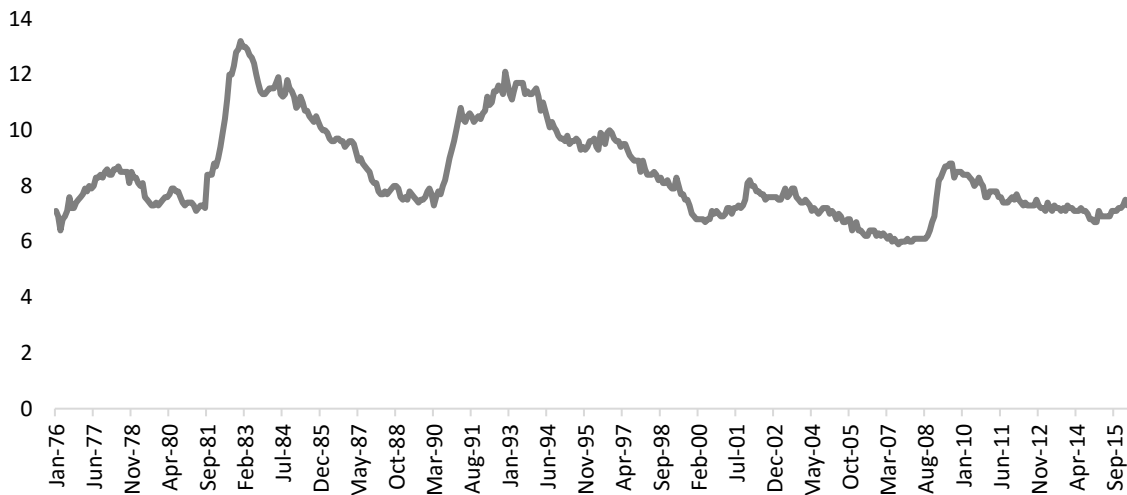
Recent history suggests their concerns may be warranted. Technology has certainly had a negative impact on a number of traditional industries – look no further than the automotive industry, which bled workers to automation throughout the late 20th century.

That said, the expansion of the knowledge economy – and a robust resource sector have buffered lost manufacturing jobs, leaving unemployment levels steady, though cyclical, in Canada. Indeed, the country's unemployment rate in 2016 is roughly where it was 40 years ago:

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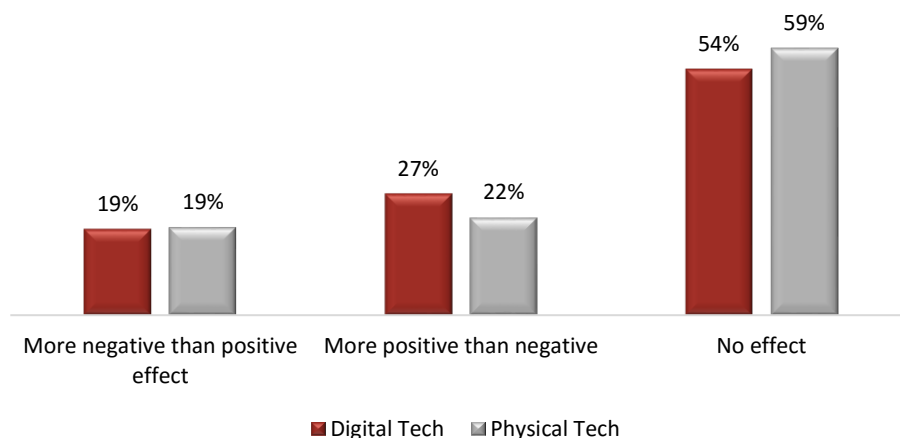
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Unemployment rate Canada - in percentage
Source: CanSim Table 282-0087



Steadiness continues to be the story when looking at the past decade. Most Canadians who have worked in the last 10 years say neither digital technologies (54%) nor physical technologies (59%) had any effect on their job security. The rest are largely split over whether they have seen their situation improved or worsened. In both instances, it should be noted, a slightly higher number say their job security has actually been enhanced, as seen in the following graph:

Over the last 10 years, what effect would you say technological changes in the digital and physical world have had on your job security?



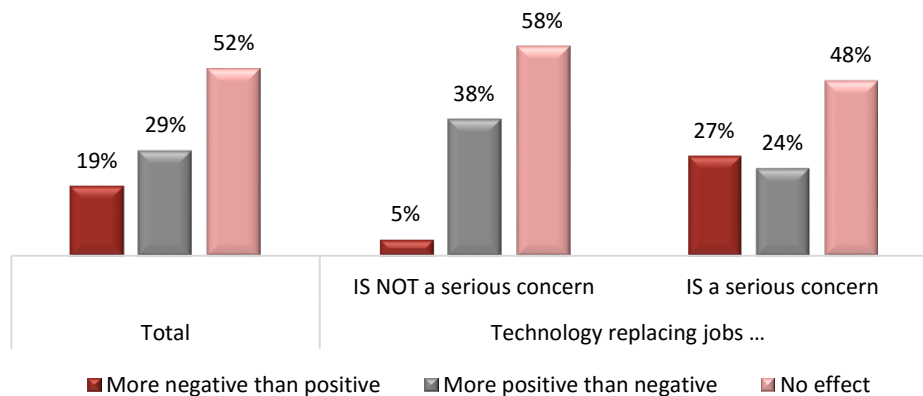
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Among those who say technology replacing jobs in the future is a serious concern, however, a different narrative emerges. While roughly half say each type of technological change has had no effect on their job security over the last 10 years, this group is significantly more likely to report a negative effect from changes in both the digital (27%) and physical (28%) worlds.

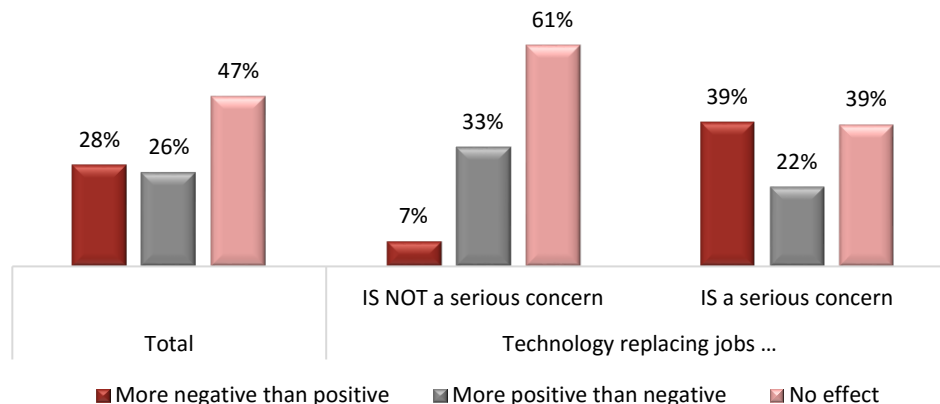
Indeed, looking at the two types of technology in combination, it becomes clear that these Canadians are more likely to say technology's impact on their job security in the last 10 years has been negative than to say it has been positive:

Effect of digital and physical technology on job security over the LAST 10 years:



In a similar vein, when asked about the next 10 years, the “technology replacing jobs is a serious concern” group becomes even more negative in its outlook:

Expected effect of digital and physical technology on job security over the NEXT 10 years:



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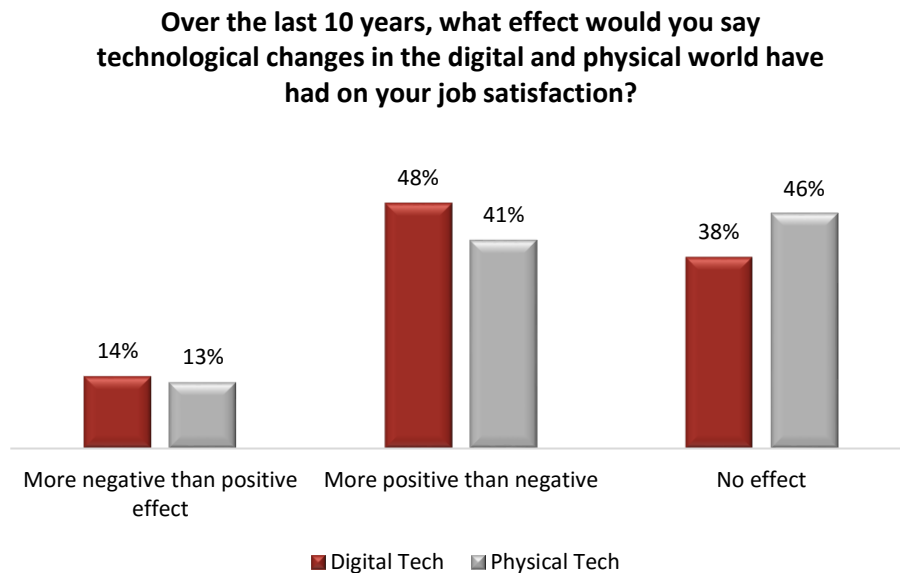
As the preceding graph illustrates, those Canadians who will still be in the working world over the next decade are slightly more likely, overall, to say the net effect of the two kinds of technology canvassed will be negative – rather than positive – over that time.

Technology and job satisfaction

The main benefit Canadian workers report when thinking about technology in their workplaces is in terms of their job satisfaction. As [ARI found in February 2015](#), smartphones may mean working longer hours, but they also mean increased flexibility and connectivity, and faster and easier business communication.

Half (48%) of working Canadians say digital technology has had a positive effect on their job satisfaction. This, compared to just one-in-seven (14%) who say they've been negatively affected.

The story is similar, though not quite as dramatic, when working Canadians consider advances in technology in the physical world. Here, the largest number say their professional lives have been unchanged (46%) by advances in fields like robotics and automation, though a similar ratio (41% to 13%) say the impact has been positive versus negative:

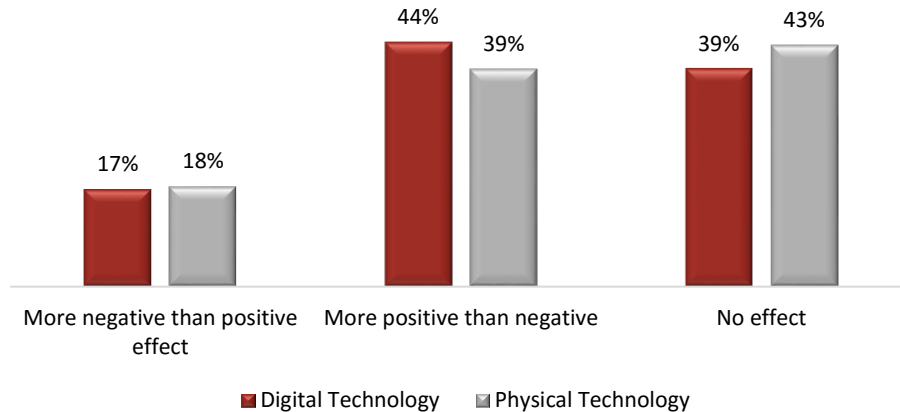


Technological improvements appear to have enhanced satisfaction in the Canadian workplace to a great extent, and many expect this to continue. Asked again to consider the next decade of their professional lives, most non-retired Canadians either expect their experiences to stay about the same or to continue improving:

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Thinking about the next 10 years, what sort of effect would you say you expect technological changes in the digital world and physical world to have on your job satisfaction?



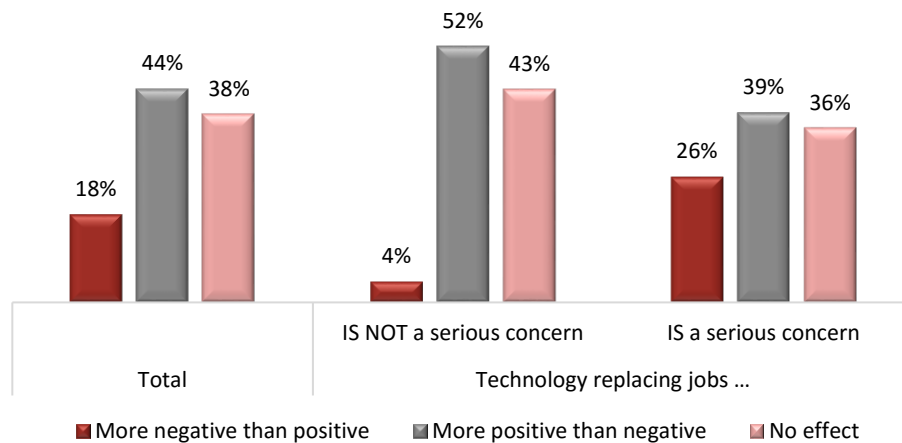
Again, the narrative changes slightly for those Canadians who express concern about technology eliminating more jobs than it creates.

This group, too, is generally looking forward to positive technological changes in the coming 10 years, but a sizeable minority – some one-in-four (26%) across the two types of technology canvassed – fears their job satisfaction will be negatively affected. This compares to just 4 per cent of those unconcerned about technology replacing jobs who are anticipating a negative effect on their satisfaction, as seen in the following graph:

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Expected effect of digital and physical technology on job satisfaction over the NEXT 10 years:

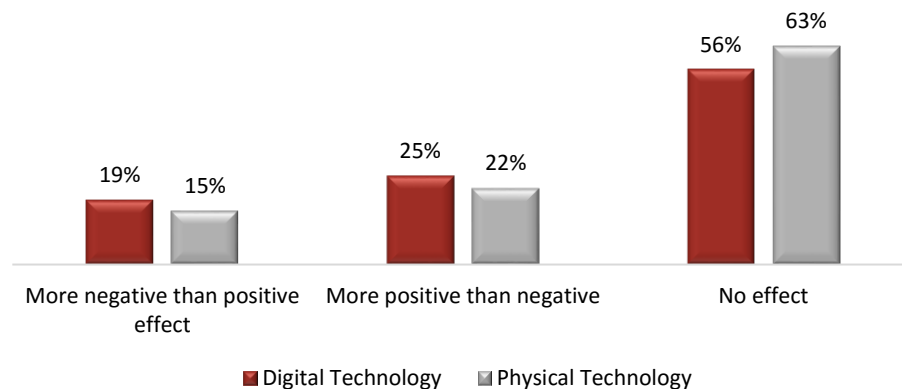


What of wages?

Given that many Canadians who have worked in the past 10 years say technology has made them more satisfied at work, one might anticipate a similar account in terms of their pay and benefits. This, however, does not appear to be the case. While day-to-day work may have become more comfortable, Canadians aren't seeing a huge improvement in the amount they take home at the end of their pay-cycle.

A greater number of Canadians say the effects of both digital and physical technology at work have been more positive than negative, but the advantage is slight. The majority say they haven't seen any impact, as seen in the following graph:

Over the last 10 years, what effect would you say technological changes in the digital and physical world have had on your pay and benefits?

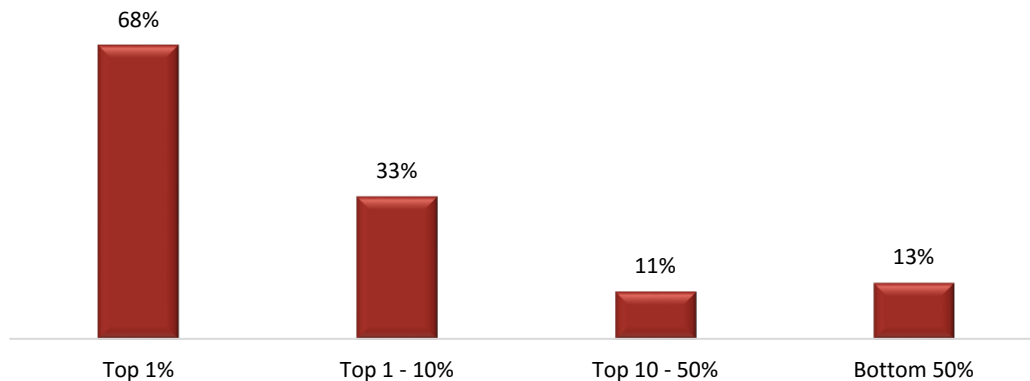


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There are a number of possible explanations for this relatively tepid enthusiasm. While median income per individual in Canada [has been rising](#) in recent decades, so too has inequality. Income earners across all brackets have been buoyed by growth, but high income earners have garnered [most of the benefit](#). As the following graph shows, the highest amount of growth has been seen in the top tiers of income earners, suggesting many Canadians in the lower and middle income brackets would not see as much benefit.

Percentage growth among income earners from 1982-2012
(Average after-tax income in constant 2012 dollars)
Source: StatsCan - Ottawa Citizen



*The **Angus Reid Institute (ARI)** was founded in October 2014 by pollster and sociologist, Dr. Angus Reid. ARI is a national, not-for-profit, non-partisan public opinion research organization established to advance education by commissioning, conducting and disseminating to the public accessible and impartial statistical data, research and policy analysis on economics, political science, philanthropy, public administration, domestic and international affairs and other socio-economic issues of importance to Canada and its world.*

Summary tables follow. For detailed results by age, gender, region, education, and other demographics, [click here](#).

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Effect of digital and physical technology on job security over the LAST 10 years:			
	Total (886)	Tech replacing jobs	
		NOT a serious concern (318)	Is a serious concern (568)
More negative than positive	19%	5%	27%
Neutral	52%	58%	48%
More positive than negative	29%	38%	24%

Expected effect of digital and physical technology on job security over the NEXT 10 years:			
	Total (886)	Tech replacing jobs	
		NOT a serious concern (318)	Is a serious concern (568)
More negative than positive	28%	7%	39%
Neutral	47%	61%	39%
More positive than negative	26%	33%	22%

Expected effect of digital and physical technology on job satisfaction over the NEXT 10 years:			
	Total (886)	Tech replacing jobs	
		NOT a serious concern (318)	Is a serious concern (568)
More negative than positive	18%	4%	26%
Neutral	38%	43%	36%
More positive than negative	44%	52%	39%

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