



IpsosCanadaNext

# TECH FOR GOOD: A Canadian Perspective

Surveys of n=2,000 Canadians May 2017 and May 2018  
Global Survey n=20,227 April 2018



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# Technology in Transition

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**There is no doubt among Canadians that the adoption of new technologies, the integration of artificial intelligence and the prolific growth and use of data are combining to rapidly change our economy, culture and society.**

There is some very real **technology fatigue** and some people (especially older Canadians) are **struggling to keep up with the pace** of change. Young Canadians are more accepting of change and view it more positively than their older counterparts.

In the longer-term **Canadians tend to feel that technology will “lift all boats”** as it gets easier for all to use and becomes more integrated into our day-to-day activities. In the meantime, most are bracing for a very disruptive transition.

**Job loss and difficult job transitions are expected** by most Canadians. As well there is concern that the **transition will create greater inequity** at a time when addressing past inequities are front and centre in our political, economic and social discussions. Until such time as there is a level playing field for all to access and use technology to its fullest, Canadians assume that the strongest (young people, high income Canadians, people living in big cities and big businesses) will get stronger and benefit more. Perhaps not surprisingly, they also feel that new immigrants, indigenous people, older Canadians, Canadians with low incomes and those living in rural areas and small towns will benefit the least.

We might all feel more confident about this transition period if we thought it was going to end – but we don't really see an end in sight. We also might feel more confident if we thought the public sector (laws, policies and support programs) were keeping up with the changes – but we do not.

## A Qualitative “yes” to AI but not if we lose the Human Element

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While elites in business & politics may have more definitive views re: the benefits of Artificial Intelligence, the public appears less sure. We admittedly **do not know a lot about AI but we see hope in its advancement**. We are all for it, if it can help us **make better choices, keep us safer, do our job better, vote more wisely and make our investments grow**. However, we are **hesitant to allow AI alone to decide** our health treatments, choose who gets a job, who gets a government support program or who gets admitted to Canada as an immigrant. These are **all very personal and we aren't ready to give them over to machines alone** to make the decision. In fact, **for every AI transaction we would like to have some kind of human recourse** – a higher power like the great and wonderful Oz – that we can go to if we disagree with our machines, feel that they have made an error or that their algorithms lack compassion when making a decision.

In terms of compassion, a majority of Canadians express **some worry** that as more day-to-day decisions are made by Artificial Intelligence programs people will start to act more like computers and **human empathy and consideration for others will decline**. Maybe that is why fewer than three in ten say they would vote for a political party that promised to openly use artificial intelligence and big data to guide its policy and program decisions. This is great news for today's politicians; the bad news for them is we still expect them to go door to door and demonstrate their human touch.

# Transparency and Trust

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We know that **data and information** are growing in exponential terms and we know that it is increasingly driving business and financial decisions and being used to decide what ads we see; what products and services we are offered; and how government programs are delivered. For the most part we are OK with this. But **we want it to be transparent**. We want to know how, where and when our data (be it personal information about us or user generated from our activities) is being used. We also **want to be able to choose** to let an organization use this data or not. In most cases, the efficiency and benefits of the service will trump our privacy/data ownership concerns, but don't assume it. Don't take us for granted (like many do now) and put an omnibus of conditions and an accept or refuse to all checkboxes in your privacy and data use agreements. **Others will eventually offer us more choice and more transparency and we choose them over you.**

Looking ahead, we don't see any malice or evil in technology or the increased digitization of our economy and society. We feel that technology like any tool is inherently neutral and that **it will be the people behind the technology who guide it for good or bad**, for greed or charity or to divide or unite us. Perhaps it is this people element that keeps us from being more optimistic with just over half of Canadians agreeing with the statement "I believe that through the careful adoption of technology and science we will have a more cohesive and happier society."

**Increasingly it will be our trust in the organizations that implement new technologies and those that want to use our data that will determine how comfortable we are, how fast we adopt and how much we share.**

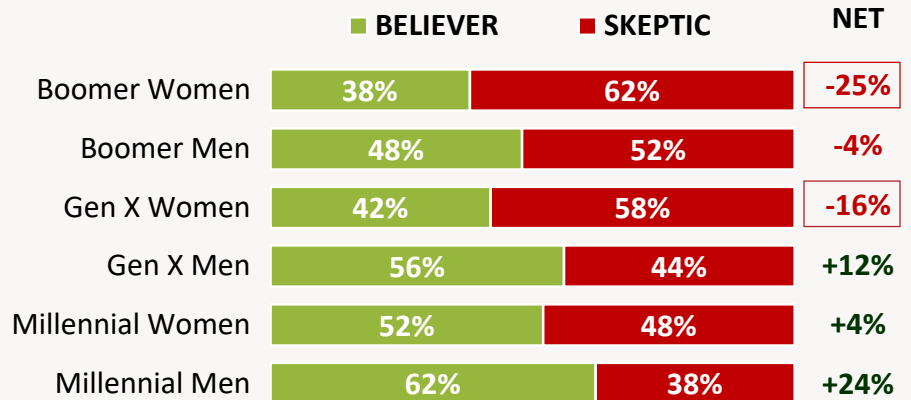
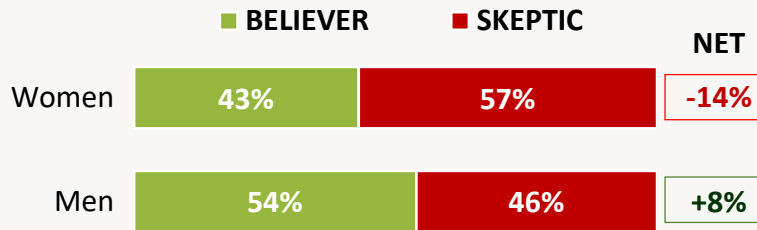
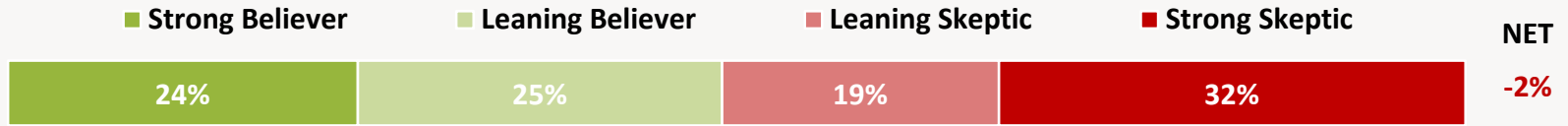


**TECH FOR GOOD**

# Canadians are Split on the Impact of New Technologies

Men, particularly Millennial Men, are much more receptive to new technology than women.

## ALL CANADIANS



# Gender & Jobs/the Pace of Change

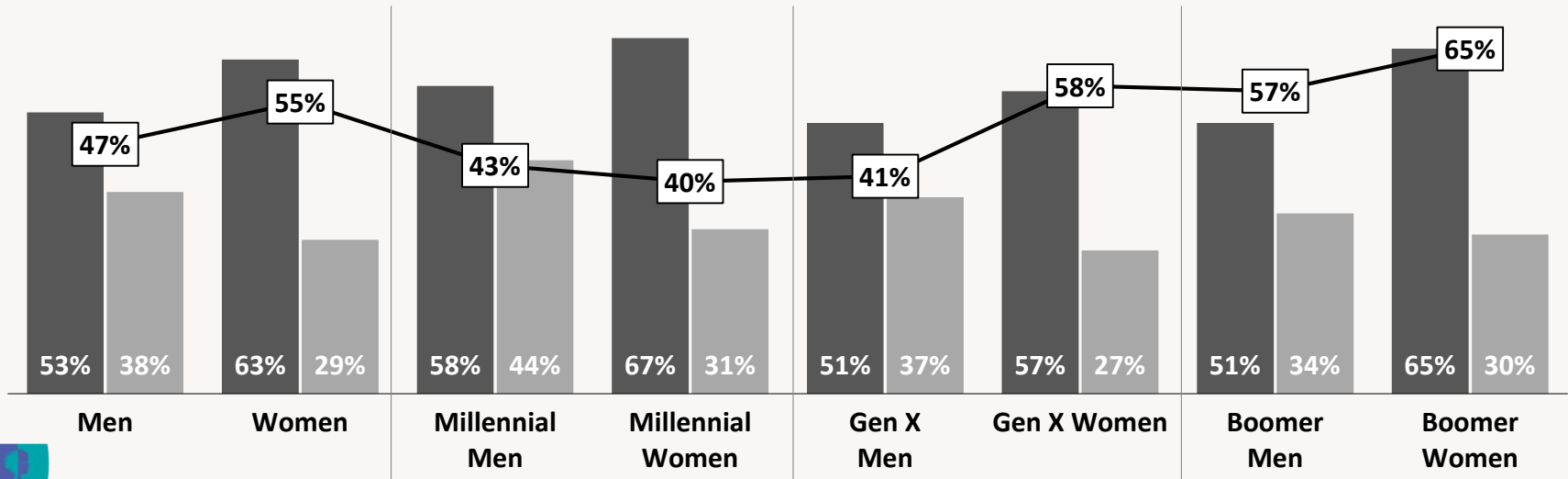
Women are more likely than men to see job loss and less likely to see job gains from new technology. Gen X and Boomer Women also report having a harder time keeping up with technology.

AGREE

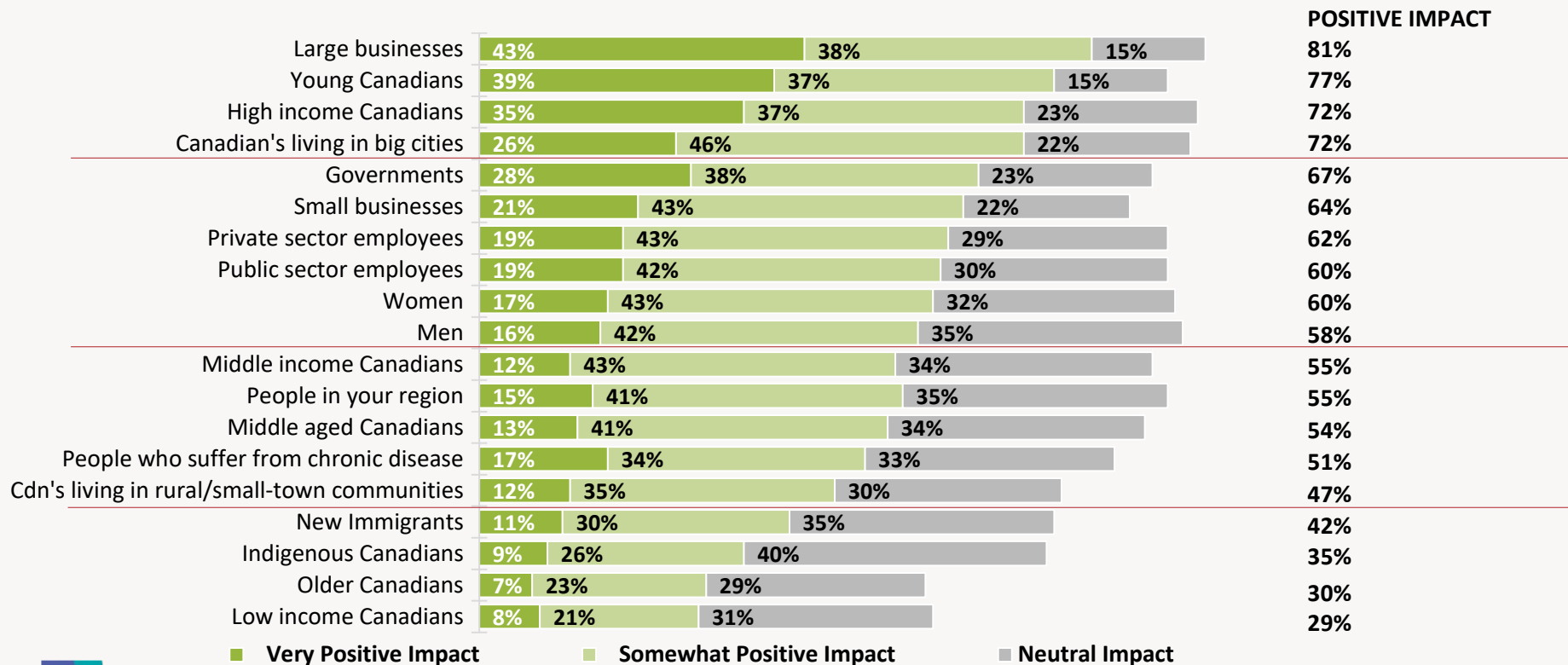
■ Advances in technology will create MASS UNEMPLOYMENT

■ All things considered advances in technology are going to lead to more and BETTER JOBS for Canadians

— Technology is changing so quickly I'm having a HARD TIME KEEPING UP



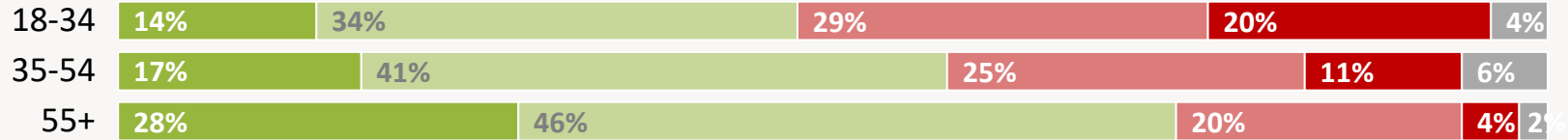
# Canadians Feel that the Benefits of Technology will be Uneven



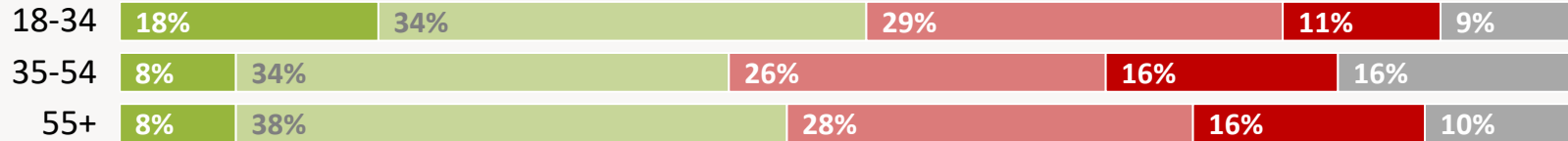


# Baby Boomers Having a Hard Time Keeping up to Technology

Technology is changing so quickly these days and I am having a hard time keeping up.



All things considered advances in technology are going to lead to more and better jobs.



New technologies will result in more good than harm.

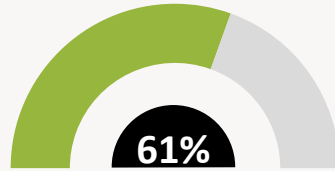


■ Strongly Agree   
 ■ Somewhat Agree   
 ■ Somewhat Disagree   
 ■ Strongly Disagree   
 ■ Don't Know

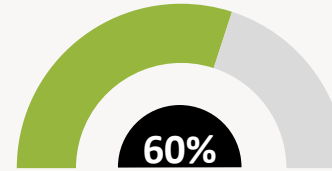


# Canadian Expect Businesses Keep Pace But Feel The Public Sector Is Falling Behind

AGREE



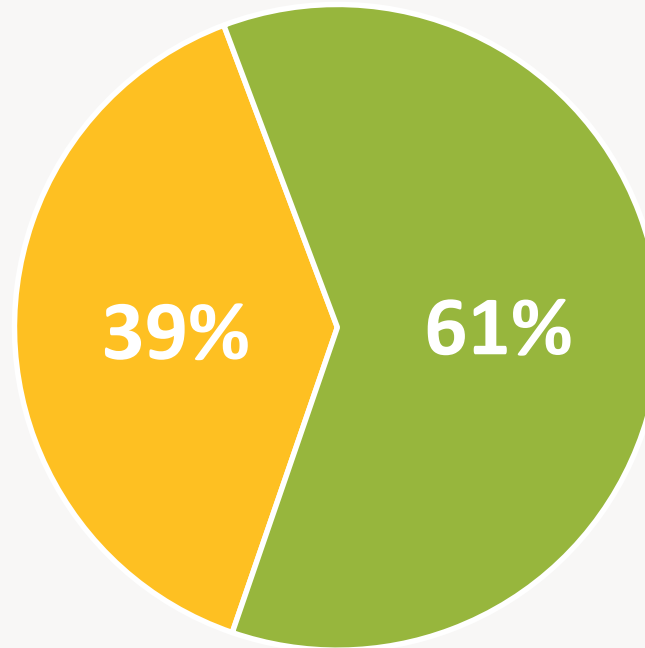
**Most Canadian companies** will take advantage of new technologies to improve the way they run their businesses



Law and **government policies are not keeping pace** with the changes in technology

## Majority Feel that Technology will Eventually Result in a Level Playing Field

● As we use more technology in our lives and our work a small number of people with technology skills and knowledge are going to benefit more than others.



● Technology is going to get easier to incorporate into our daily lives and work and we will increasingly see a level playing field where everyone benefits.

# Most Support Taxing Machines that Replace People

If robots and 3D printing are capable of completely replacing some people there should be a technology tax placed on these products to pay for income support and training for displaced workers.

■ STRONGLY AGREE ■ SOMEWHAT AGREE

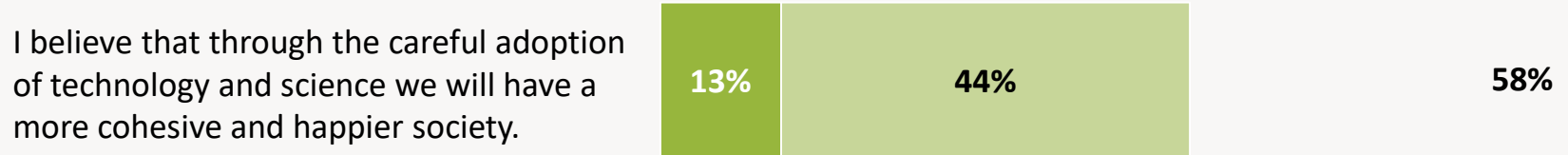
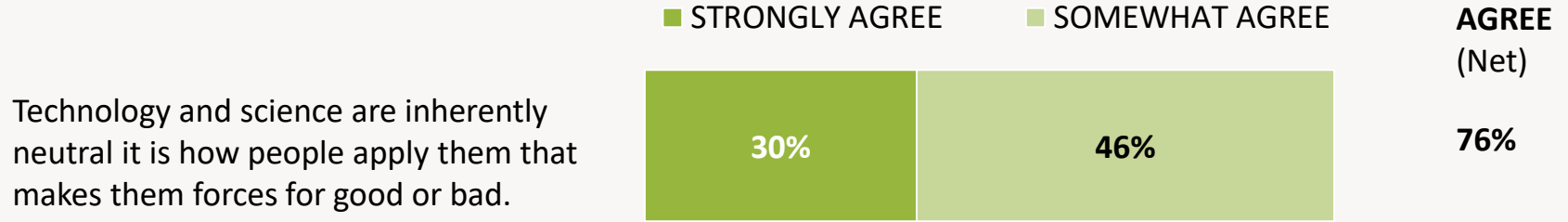


**AGREE  
(Net)**

**62%**



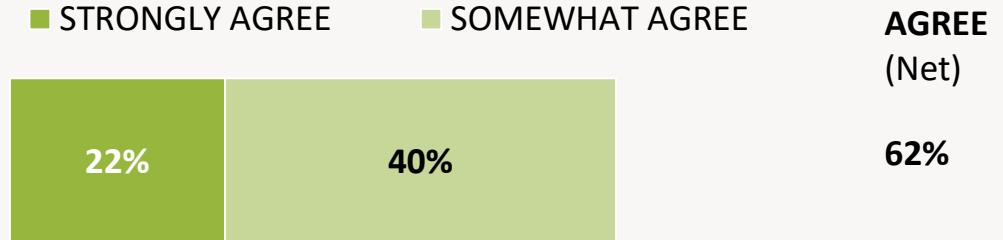
# Despite Job Disruption, Hope in the Future of Technology



## We Still want a Human Element (Even in Politics)

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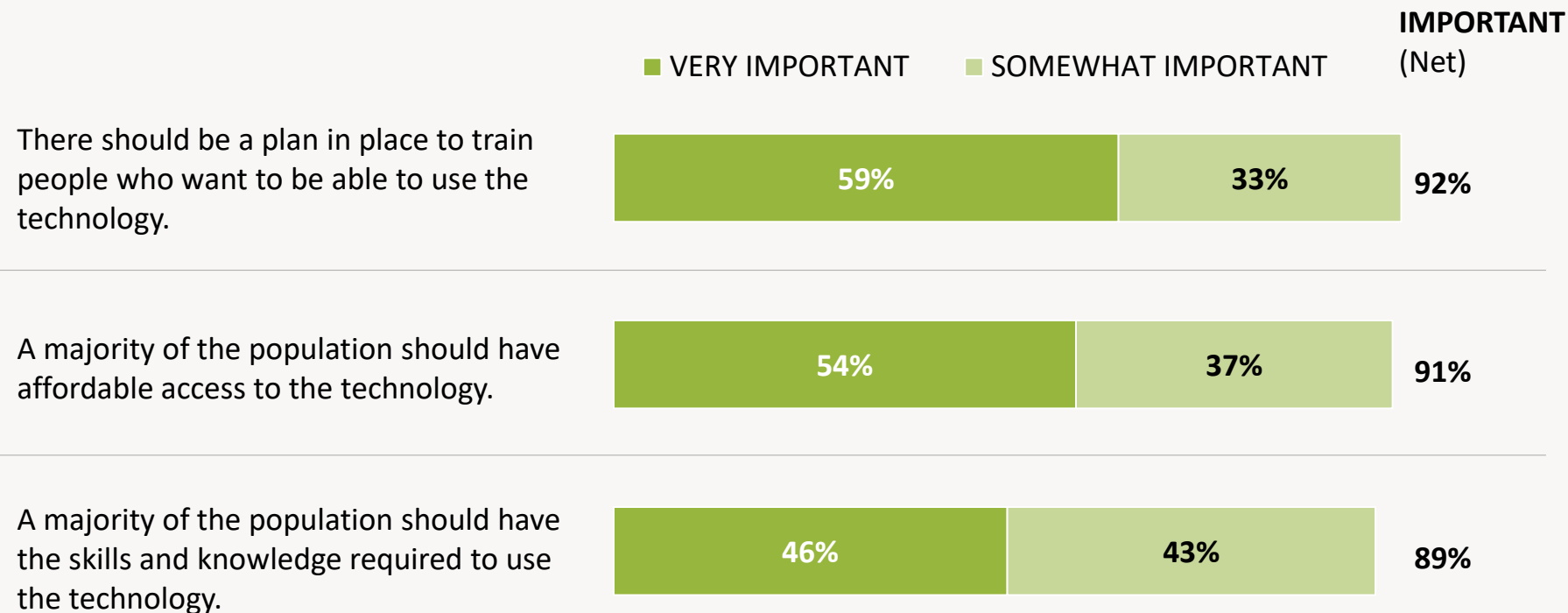
I am worried that as more day to day decisions are made by Artificial Intelligence programs people will start to act more like computers and human empathy and consideration for others will decline.



I would vote for a political party that promised to openly use Artificial Intelligence and big data to guide its policy and program decisions.



## Affordability, Skills & Knowledge and Training are Cost of Entry Issues





# TECH AND POP CULTURE



# Pop Culture is Not Accurate but also Not Negative when it comes to Tech

■ STRONGLY AGREE ■ SOMEWHAT AGREE

**AGREE  
(Net)**

I would like to see more positive stories in our popular culture and news about how technology and science will result in stronger communities.



**74%**

Most of today's popular culture (books, movies, television, etc.) provide a fairly accurate view of how technology will change our society.



**50%**

Most of today's popular culture (books, movies, television, etc.) portrays a negative view about the impacts of technology.



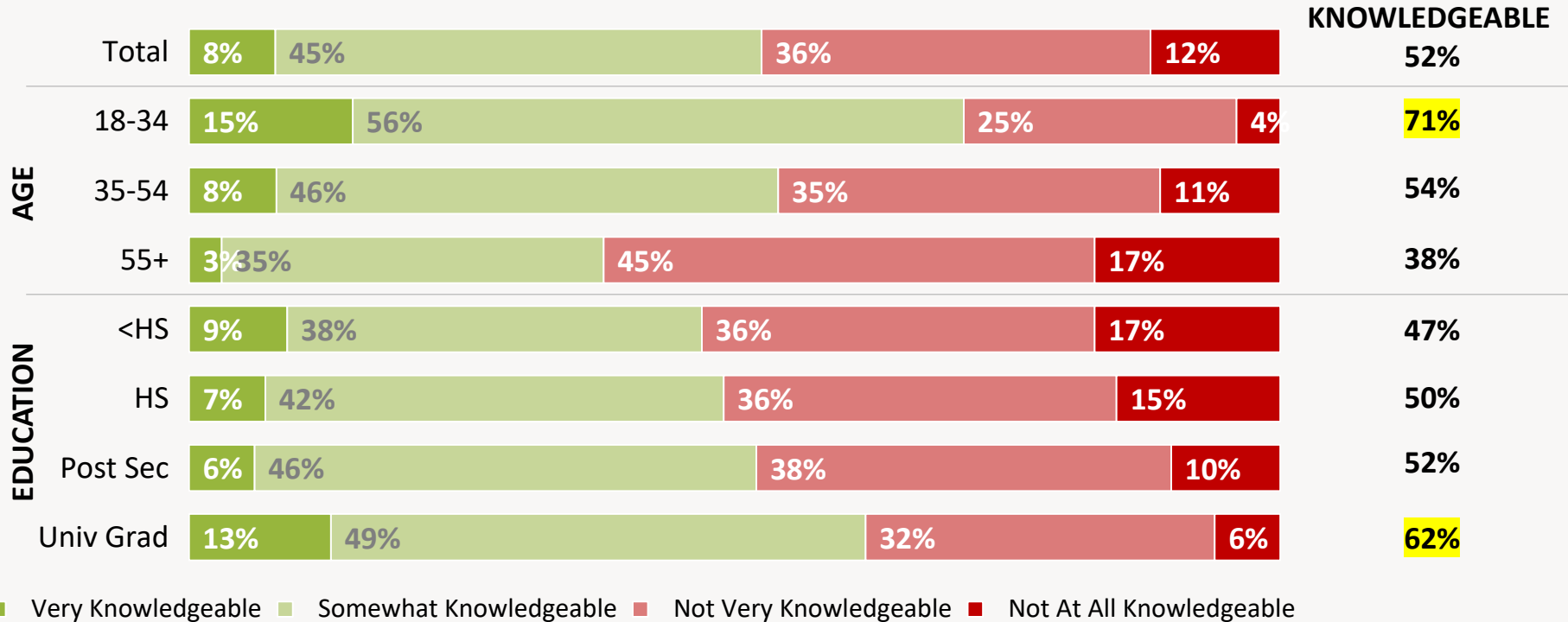
**35%**



A woman with dark hair, wearing a white lab coat, is smiling and looking down at a tablet computer she is holding in her hands. She is standing in a modern office or laboratory environment with large windows and glass partitions. The background is slightly blurred, showing office furniture and bright lighting. A yellow banner with black text is overlaid at the bottom of the image.

# THE FUTURE OF ARTIFICIAL INTELLIGENCE

# Self Rated Knowledge of AI is at Best Moderate



**Significantly Higher**



Artificial Intelligence is essentially computers, robots or other machines doing activities that typically required human intelligence. These machines do not require human direction to complete their tasks. How knowledgeable are you about Artificial Intelligence? Base: All Respondents (n=2,001)

# Artificial Intelligence in the Next 10 Years

## HIGHER PROBABILITY/LESS ACCEPTABLE

- Health and dental claims eligibility (58% likely/36% acceptable)
- Govt support program eligibility, employment insurance, etc. (52% likely/33% acceptable)

## LOWER PROBABILITY/LESS ACCEPTABLE

- Which medical interventions are best for you/your family (46% likely/32% acceptable)
- Deciding if a person gets a job (42% likely/22% acceptable)
- Refereeing sporting events (42% likely/42% acceptable)
- Replace your job entirely (42% likely/18% acceptable)
- Implement govt policies: who can immigrate to Canada (37% likely/28% acceptable)

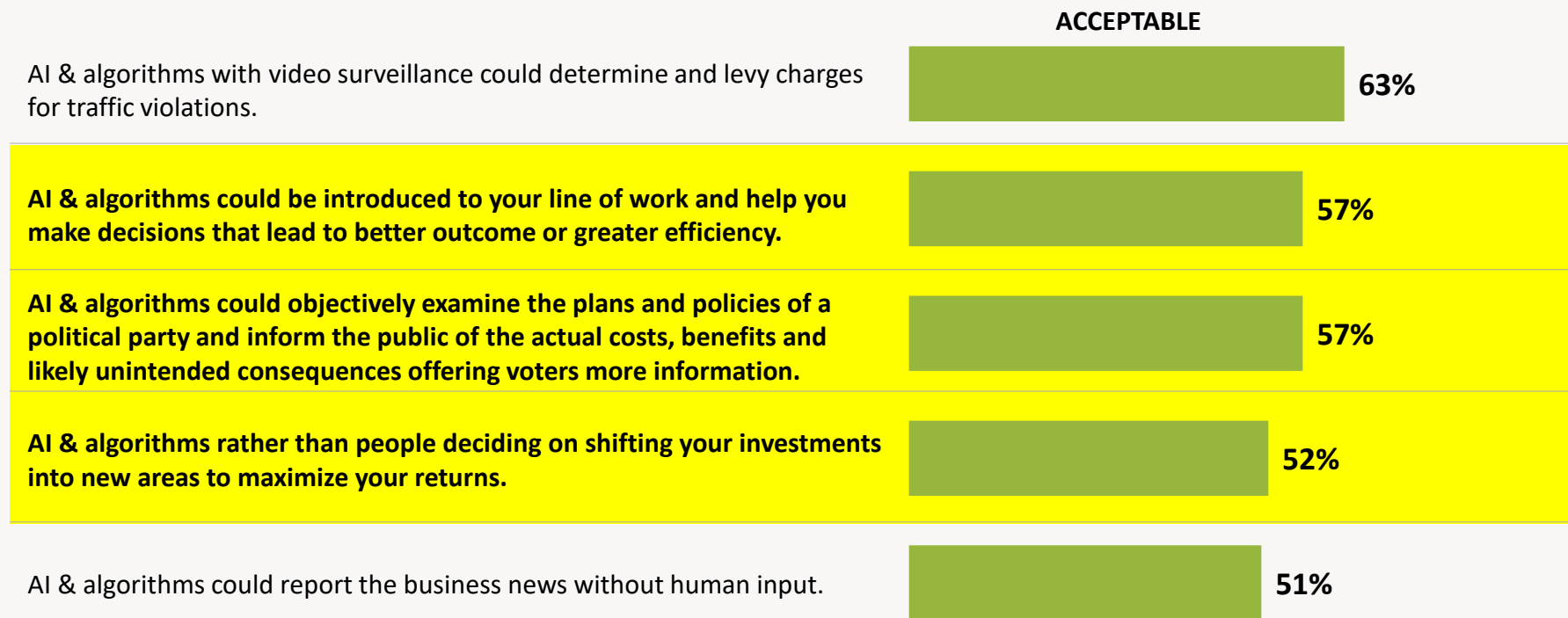
## HIGHER PROBABILITY/MORE ACCEPTABLE

- Traffic violations (78% likely/63% acceptable)
- Financial investments (63% likely/52% acceptable)
- Air traffic (61% likely/47% acceptable)
- Help you make decisions at work (57% likely/57% acceptable)
- Report business news (58% likely/51% acceptable)
- Examine the proposed policies of a political party and inform the public (53% likely/57% acceptable)

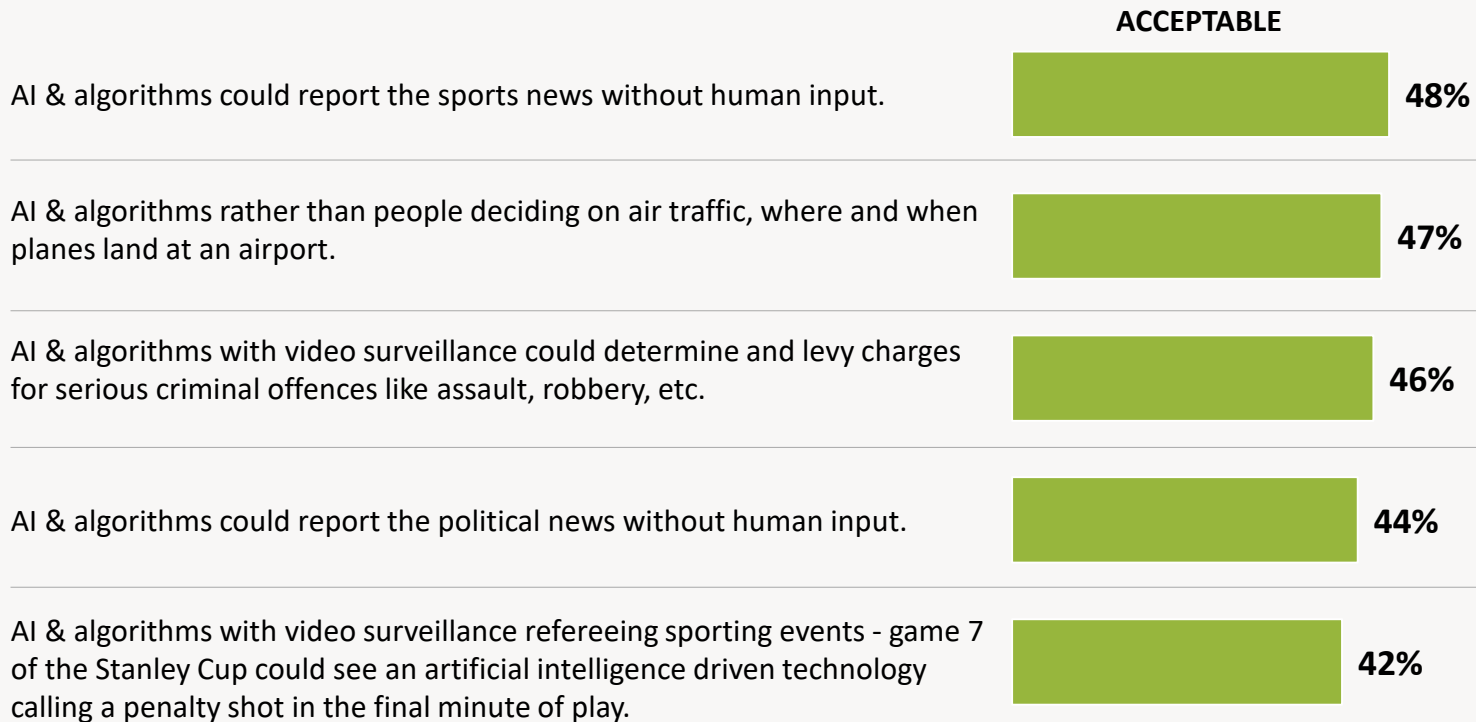
## LOWER PROBABILITY/MORE ACCEPTABLE

- Charges for serious criminal offences like assault, robbery, etc. (50% likely/46% acceptable)
- Report the sports news without human input (48% likely/48% acceptable)
- Report the political news without human input (45% likely/44% acceptable)

# Willing to Accept AI in Areas Where it Will Augment Their Decision Making



# Neutral on role of AI on Issues that Do Not Touch Most People or Have Lower Consequences



# The More it Matters the Lower the Support for AI



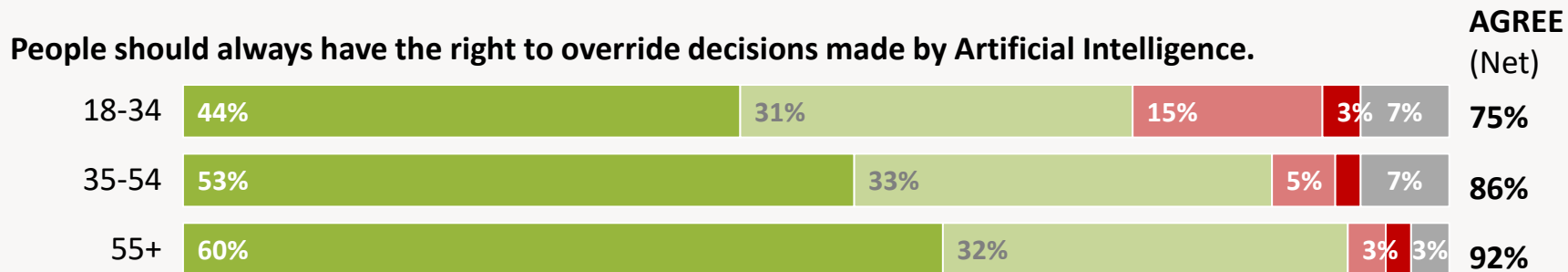
# Millennials Much More Accepting of a Life with Artificial Intelligence

<b>Very Acceptable/Somewhat Acceptable</b>	<b>18-34</b>	<b>35-54</b>	<b>55+</b>
AI & algorithms rather than people deciding on access to government support programs for such as employment insurance.	<b>39%</b>	<b>33%</b>	<b>30%</b>
AI & algorithms rather than people deciding on your health & dental insurance claims.	<b>43%</b>	<b>36%</b>	<b>30%</b>
AI & algorithms rather than people deciding on shifting your investments into new areas to maximize your returns.	<b>58%</b>	<b>55%</b>	<b>44%</b>
AI & algorithms rather than people deciding on which medical interventions are best for you & your family during an illness or after an accident.	<b>42%</b>	<b>30%</b>	<b>27%</b>
AI & algorithms rather than people deciding on whether a person gets a job.	<b>31%</b>	<b>22%</b>	<b>16%</b>
AI & algorithms could replace your job entirely.	<b>24%</b>	<b>19%</b>	<b>12%</b>

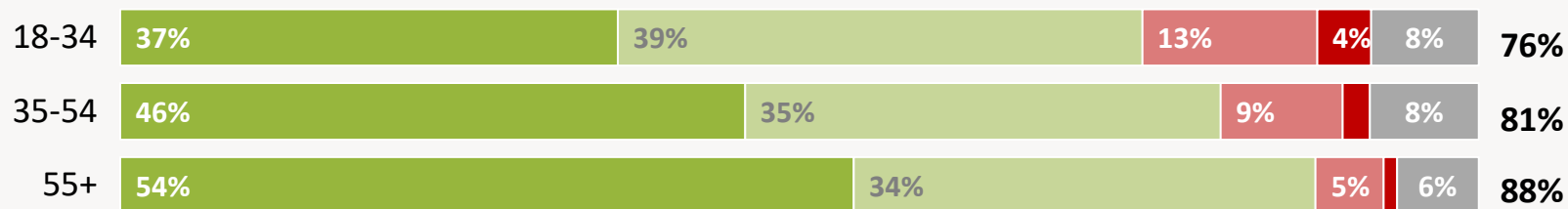




## Majority Want a Human Override on Artificial Intelligence



**If someone feels that an Artificial Intelligence generated decision is not appropriate they must have the ability to make their case for change with a person rather than just accept a machine's decision.**



■ Strongly Agree  
 ■ Somewhat Agree  
 ■ Somewhat Disagree  
 ■ Strongly Disagree  
 ■ Don't Know

*Data < 3% not labelled*





**THE WORLD RUNS ON DATA**

# The Internet of Things = More Data

GOVERNMENT  
BUSINESSES  
CITIZENS



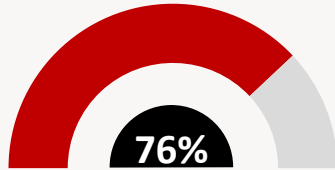
	LIKELY TO HAPPEN	CANADIAN IMPACT POSITIVE	PERSONAL IMPACT BETTER	WHO IS RESPONSIBLE
Over 50% internet traffic will be from household appliances, TVs, etc.	63%	+23%*	+1%*	
Half of Canadians will be wearing connected clothes and watches.	62%	+19%*	+2%*	
25% of reading glasses will be connected to the Internet	40%	+45%*	+25%*	

\* Net of Positive vs. Negative

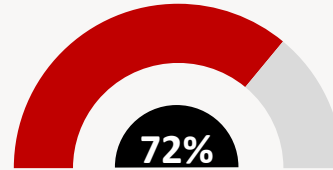


# The Downside of Big Data & Greater Connectivity

## LIKELY TO HAPPEN



There will be a massive personal data leak leading to the demise of a top ten company

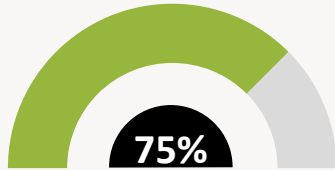


Canada will experience a major act of **cyber terrorism temporarily shutting down telecommunications, banking, electricity and transportation systems.**

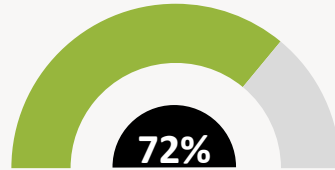
**69%** agree, that when they think about future advances in technology they are very worried about privacy and the security of their personal information.

# Government Data Belongs to Citizens

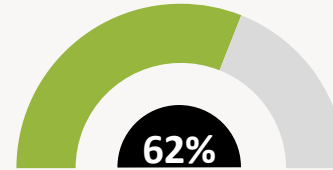
AGREE



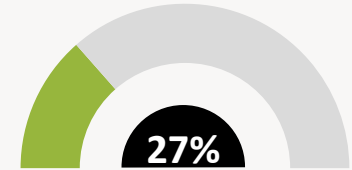
Data collected by governments should be owned by the citizens they collect it from.



Data generated by Canadians should be protected and regulated like a natural resource.



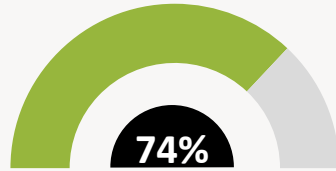
Private companies that use public data collected by governments should pay government a royalty fee.



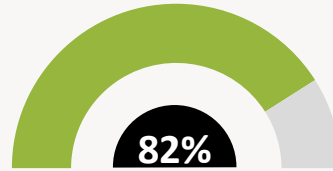
Data collected by government should be given freely to the private sector so that they can create products, services, jobs and economic growth.

# Business Data Belongs to Citizens

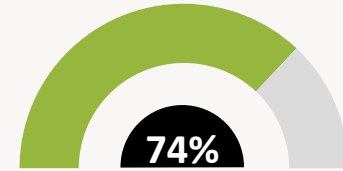
AGREE



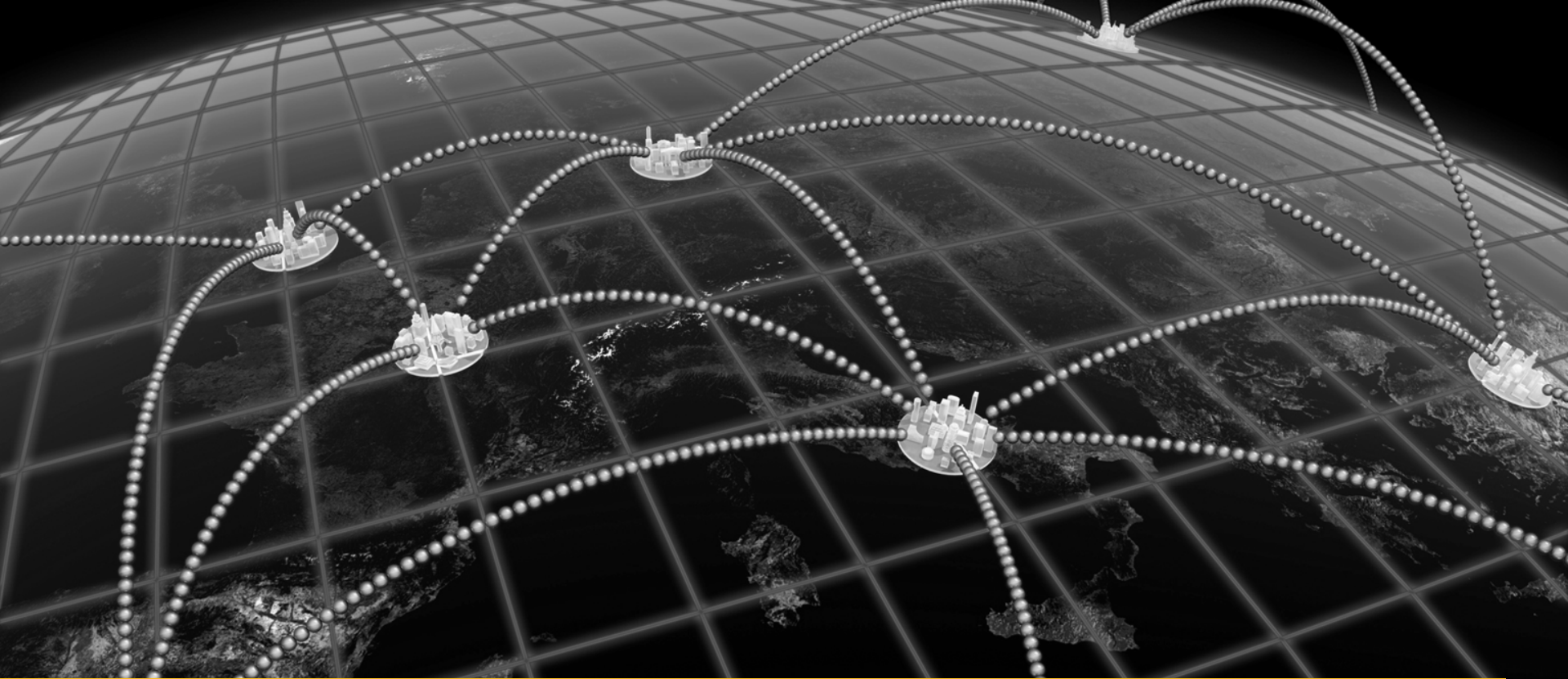
Data collected by private companies should be owned by the citizens they collect it from.



If manufacturers of products are selling data about my use of these products then **I should know in advance who they are selling it to and for what purposes**



If manufacturers of products are selling data about my use of these products then **I should get some of the money that they get for selling my data.**



# GLOBAL VIEWS OF TECHNOLOGY

Survey of 18 to 64 year olds in 26 countries, n=20,227 April 2018

# When Making Technology Use/Purchase Decisions: 7 in 10 rank Product Attributes as Important, Country Attributes not far behind at 6 in 10

## GLOBAL TOTAL IMPORTANT

### PRODUCT ATTRIBUTES

<b>Cost</b>	<b>71%</b>
<b>Convenience</b>	<b>73%</b>
<b>Function</b>	<b>74%</b>

### COUNTRY ATTRIBUTES

<b>Supporting Job Transition</b>	<b>58%</b>
<b>Protect Privacy</b>	<b>64%</b>
<b>Gender and Race Equity</b>	<b>57%</b>
<b>Protect Environment</b>	<b>59%</b>

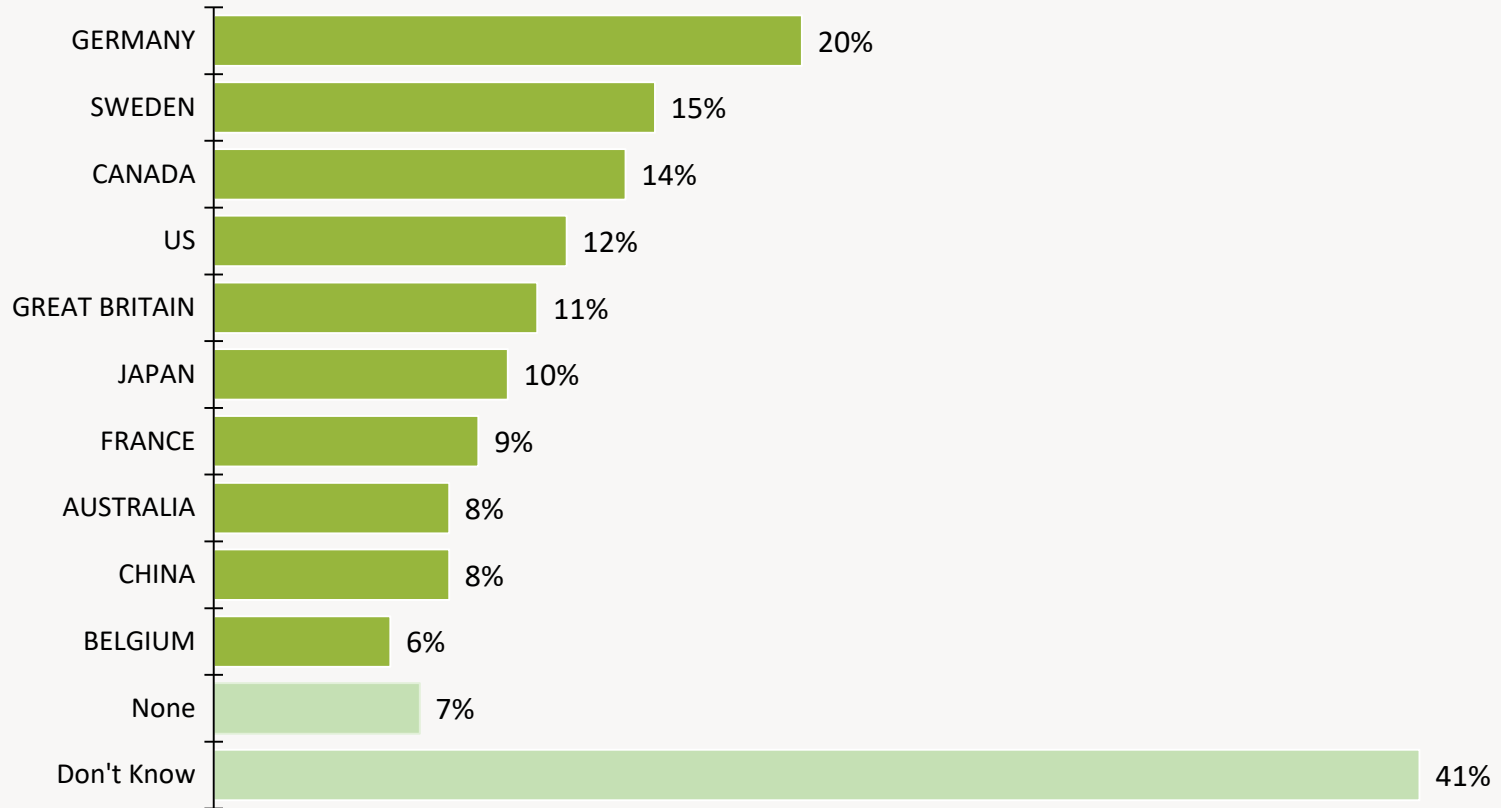
**72% Product Attributes**  
(Net of Cost, Convenience,  
Function)

**60% Country Attributes**  
(Net of Supporting Job  
Transition, Protect Privacy,  
Gender&Race Equity, Protect  
Environment)

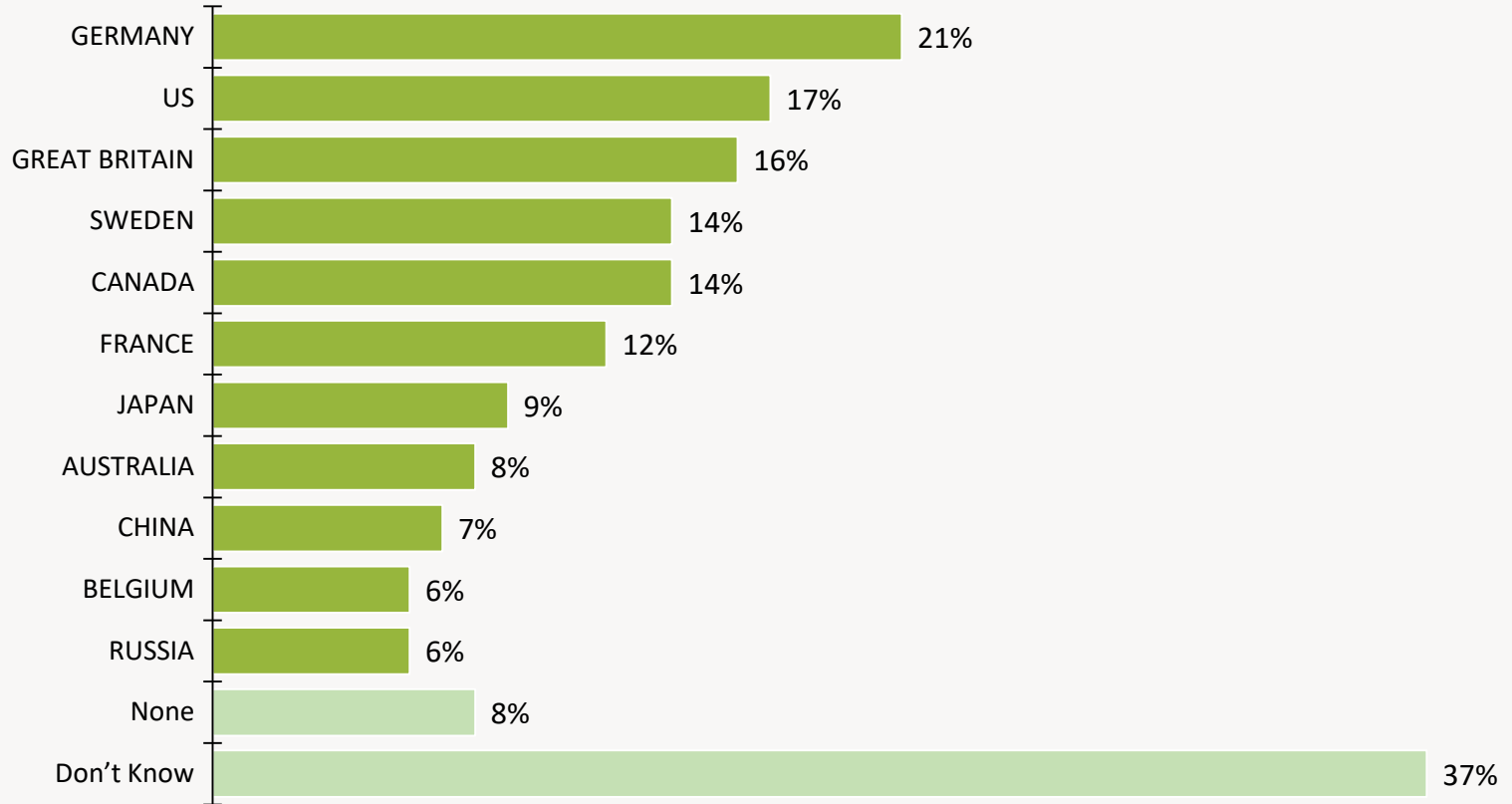




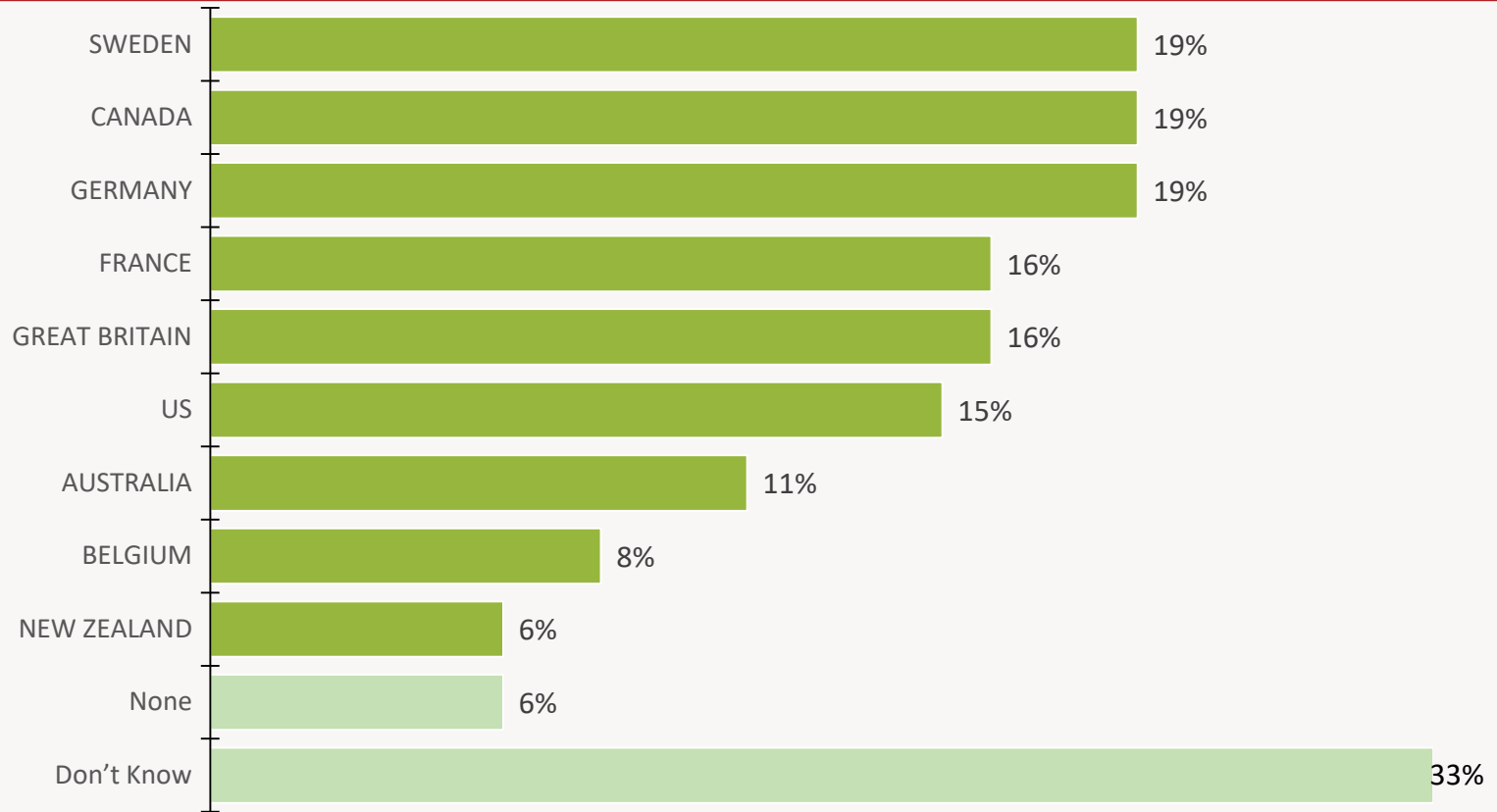
## Top Countries: Ensures workers who lose their jobs due to the latest technologies are offered re-skilling and financial support (showing only countries with more than 5%)



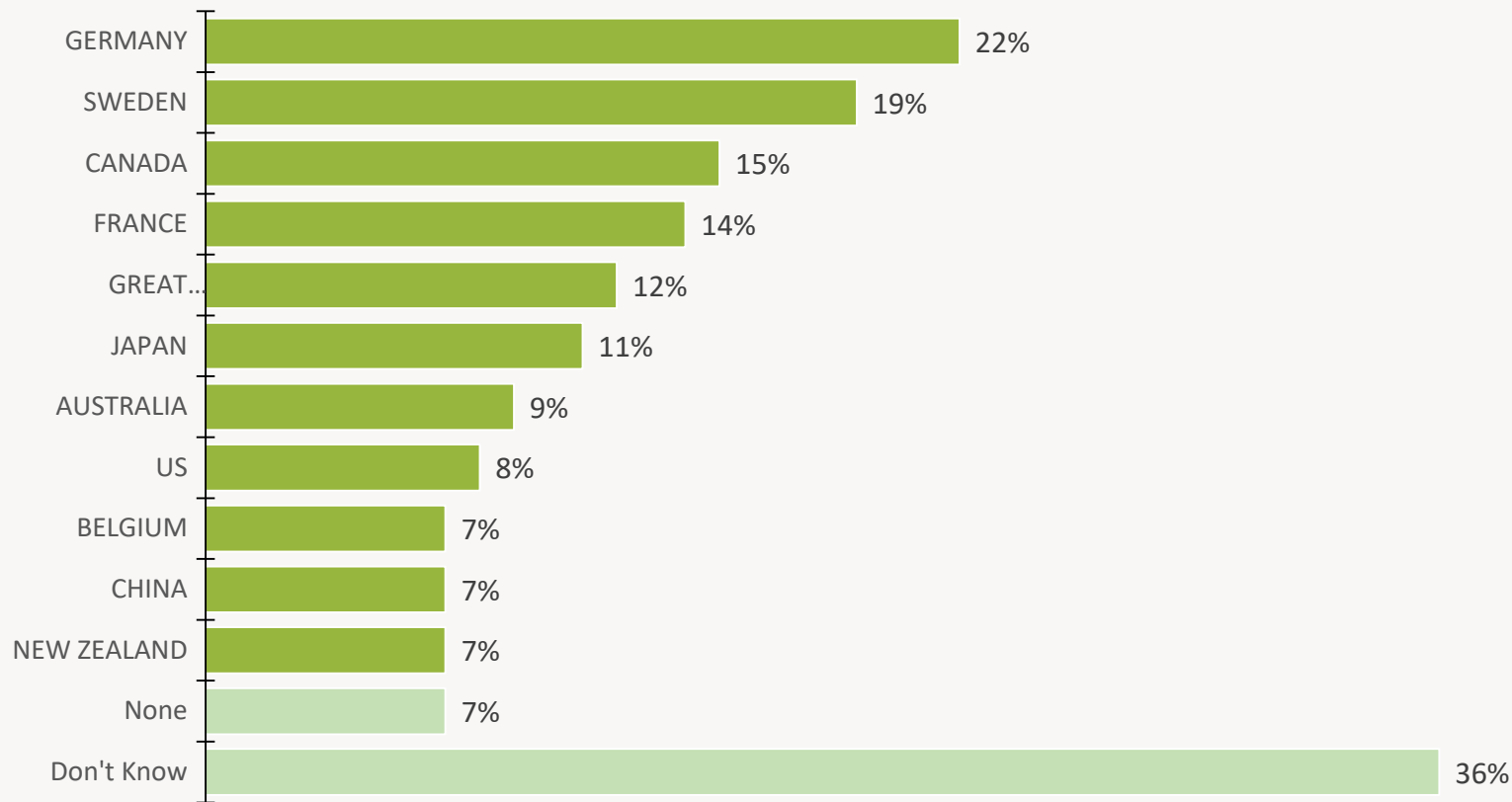
## Top Countries: Has strong regulations that protect an individual's privacy, personal information and data ownership (showing only countries with more than 5%)



## Top Countries: Emphasizes fairness such as gender and race equity in its laws and regulations (showing only countries with more than 5%)



## Top Countries: Has strong regulations to reduce carbon emissions and other negative impacts on the environment (showing only countries with more than 5%)



## FOR MORE INFORMATION CONTACT

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