

Changing our ways: Why and how Canadians use the Internet

By Heather Dryburgh

Introduction

Canadian households are increasingly buying home computers and connecting to the Internet (Dickinson & Ellison, 2000). The impact of computers and the Internet on business and e-commerce is beginning to be documented using household Internet use data and business statistics from Statistics Canada (Ellison, Earl, and Ogg, 2001; Bakker, 2000). What is lacking in our understanding of the Internet is its impact on our daily activities, communication, use of time, and work experiences. Using the 2000 General Social Survey data on individual Internet use, this article explores the use of the Internet and its social impact on Canadians.

The article begins with an overview of individual Internet use in Canada in 2000, exploring what motivates people to use the Internet, what concerns they have about security and privacy, and the current state of the digital divide in Canada. This section also discusses what is stopping non-users from using the Internet and who Canadians believe should take responsibility for removing barriers to the Internet. The focus of the second section is on how the Internet is changing the way people spend their time, and what they are doing with their time on the Internet. The third section examines the impact of computers or automated technology on work, looking at the effect of computers on job security and on job quality, including an assessment of how interesting workers feel their work is after the introduction of computers or automated technology.

1. Overview of individual Internet use in Canada in 2000

More than half of Canadians over age 15 are using the Internet

During the year 2000, an estimated 13 million, or 53% of Canadians over 15 years of age said they used the Internet at home, work or somewhere else in the last 12 months according to a new Statistics Canada survey on individual Internet use. Approximately 50% of women use the Internet, compared with 56% of men.

The age group with the most Internet users is 15- to 19-year-olds; 90% of teens report using the Internet. The percentages decline steadily for each subsequent older age group. For example, around 70% of 25- to 29-year-olds, 61% of 35- to 39-year-olds, and only 13% of those 65 to 69 years of age were Internet users in 2000.

In each age group, men are more likely to use the Internet than women, and that usage gap generally increases with age.

Household connections to the Internet increased 6% from January to December 2000, but the percentage of individuals saying they have used the Internet in the last 12 months did not significantly increase over this same period.

Internet use has increased dramatically since 1994

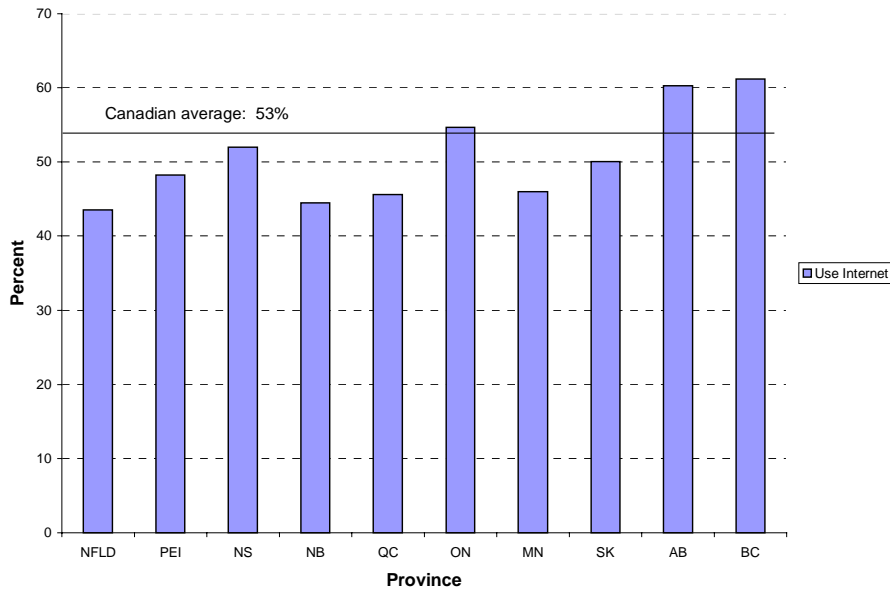
In 1994, approximately 18% of Canadians were using the Internet,¹ compared with 53% in 2000. The gender gap was larger in 1994 than in 2000, with 14% of women and 22% of men using the Internet in 1994 and 50% of women and 56% of men using the Internet in 2000.

The highest Internet use in Canada is in Alberta and British Columbia

The provinces with the highest Internet use are Alberta and British Columbia, where about 61% of the population use the Internet. Internet use is lowest in Newfoundland and New Brunswick (44%). Quebec and Manitoba (46%), as well as Prince Edward Island (48%), also have low levels of use.

Internet use in Canada is influenced by income and education, with wealthier, better educated individuals more likely to be using the Internet than their less wealthy, less educated counterparts. Those with university education are most likely to use the Internet (79%). The lowest users are those with less than a high school diploma (13%).²

Chart 1: Percentage of Canadians who used the Internet in the past 12 months, by province, 2000



Source: Statistics Canada, General Social Survey, 2000

¹ In the 1994 Cycle 9 General Social Survey, the question asked was: "In the last 12 months, have you used an on-line dataservice such as COMPUSERVE, INTERNET OR PRODIGY?" In 2000 the question asked was: "In the past 12 months, did you use the Internet?"

² This percentage excludes Canadians aged 15 to 19, who are most likely to still be in school. When they are included, the percentage of Canadians with less than high school education who are Internet users is 31%, still lower than any other education category.

Personal interest drives initial Internet use

Most Internet users reported first using the Internet for reasons related to personal interest (66%). The proportion of men citing personal interest was higher than women (68% versus 64% respectively), but women were more likely than men to cite school-related needs for first using the Internet (16% versus 12% respectively). About 19% of both men and women first used the Internet for work-related needs.

Personal interest motivated Internet users of all age groups with notable consistency and after age 64 was cited as the motivation by over 87% of users. Work-related needs motivated older Internet users to first use the Internet, whereas school-related needs motivated younger people to first learn to use the Internet. For example, 34% of 50- to 54-year-olds said work-related needs motivated them and 35% of 15- to 19-year-olds said they were motivated to learn the Internet for school.

Concerns about security and privacy on the Internet

Despite the growth in home Internet connections in 2000, Canadians report several concerns about the Internet. Whether currently using the Internet or not, 43% say they are greatly concerned about security in relation to making purchases or banking over the Internet, while 17% are not at all concerned about security. Slightly more women are concerned about security than men (45% of women versus 40% of men are greatly concerned).

Of those who have ever used the Internet, 5% report having experienced problems associated with security on the Internet.

Related to the issue of security is the concern about privacy on the Internet, such as people reading your e-mail or finding out what Web sites you visit. Canadians feel about privacy as they do about security on the Internet. About 40% are greatly concerned about privacy, while 19% are not at all concerned about privacy. Again, women are more concerned about privacy than men; 42% of women versus 37% of men are very concerned.

Table 1: Percentage of Internet users, non-users and all Canadians concerned about security and privacy

	Internet users		Internet non-users		All Canadians	
	Security	Privacy	Security	Privacy	Security	Privacy
Greatly concerned	44	37	41	43	43	40
Somewhat concerned	28	29	15	13	22	21
Hardly concerned	7	9	3	4	5	7
Not at all concerned	18	23	16	14	17	19
No opinion	3	2	25	26	13	13

Source: Statistics Canada, General Social Survey, 2000.

Internet users who are greatly concerned about privacy and security on the Internet are the least likely to purchase goods and services over the Internet, compared with those with fewer, or no concerns.

Summing up the digital divide

Internet users differ from non-users in average age, education, and income. Non-users of the Internet are more likely to be older individuals, and are more likely to have less education and lower household income than Internet users. Non-users are more likely to be women than men at every age group. Francophones are less likely to use the Internet than anglophones, and those living in rural Canada are less likely to use the Internet than urban dwellers. The following section provides some insight into why people are not using the Internet.

Non-users say cost and lack of access stopping them from using the Internet

When non-users were asked to identify the greatest barrier that keeps them from using the Internet, cost was cited by the largest percentage of people. Lack of access to computers or the Internet was the second most often cited barrier.

Non-users of the Internet who are struggling most with cost and access barriers are 15- to 34-year-olds. Non-users with the lowest incomes were most likely to report cost as a barrier to their Internet use. Of those with less than \$20,000 household income, 42% reported cost as a barrier to use, compared with the next income level of \$20,000 to \$29,999 at 35%.

Not having enough time is a major barrier to use for non-users earning over \$50,000, and is reported by a higher percentage of non-users earning \$80,000 or more than any other income group.

About one quarter of Canadians not currently using the Internet are interested in using it

About 27% of those who have not used the Internet in the last 12 months say they are interested in using the Internet. Analysis by age groups shows substantial differences by age in non-users' interest in using the Internet. Young non-users aged 15 to 24 are highly interested in using the Internet (49% are interested), whereas 65- to 74-year-old non-users show relatively little interest (8% are interested).

Canadians divided on who should take responsibility to ensure everyone has access to the Internet

An estimated 45% of Canadians feel it is very important that everyone have access to the Internet. Another 28% believe it is somewhat important, whereas approximately 23% do not believe Internet access for all Canadians is important at all.³ A much higher

³ Approximately 3% did not state an opinion.

percentage of Internet non-users (35%) than users (13%) think access for all Canadians is not at all important.

Most people agree that barriers to the Internet should be removed, but there is no consensus on who should be responsible for their removal. About 23% do not know who should be responsible for removing barriers to the Internet. Of those who do express a view, the largest percentage indicate that individuals should be responsible for removing barriers. A slightly smaller percentage believe that the federal government should remove barriers or believe it is the responsibility of private industry such as Internet providers.

Table 2: Who Canadians believe should remove barriers to the Internet

	Number (‘000)	Percent ^{4,5}
Individuals	8,109	45
Federal government	7,639	42
Private industry/Internet service providers	6,657	37
Other levels of government	4,889	27
International agencies	1,817	10
Other	351	2
Do not know	5,563	23

Source: Statistics Canada, General Social Survey, 2000.

Perceptions on who should take responsibility for removal of barriers to Internet access vary by province. Newfoundland residents who expressed a view are more likely than those from the other provinces to believe the federal government is responsible (52% agree), whereas those from Alberta and British Columbia are less likely than the others to hold this view (36% and 34% agree respectively).

Quebecers are more likely than other individuals to believe other levels of government should take responsibility for removing barriers (38%), while British Columbia residents are least likely to agree with this (18%).

Between 32% and 43% in each province agreed that private industry such as Internet providers should be responsible for removing barriers, with British Columbia residents least likely to agree and Nova Scotia residents most likely to agree.

Higher proportions of Alberta and British Columbia residents than any of the other provinces believe that individuals should take responsibility for removing barriers to the Internet (51% and 48% respectively). Canadians in the western provinces in general are more likely to believe individuals are responsible compared with Ontario and the Atlantic provinces. New Brunswick residents are least likely to agree (33%).

⁴ Numbers do not add to 100% as respondents could mark all that apply.

⁵ The denominator in calculating these percentages excludes “not applicable,” “do not know,” and “not stated” cases.

Francophones less satisfied than anglophones with the amount of Internet content in their official language of choice

Francophone Internet users—those who most often speak French at home—are less satisfied than anglophones that they have enough Internet content in their official language of choice: about 62% of francophones believe there is enough Internet content in their official language of choice, compared to 99% of anglophones.

About 44% of francophones in Canada use the Internet, compared with 58% of anglophones. Of those who have used the Internet in the last 12 months, 20% say they access the Internet in French, and 93% say they access Internet sites in English.⁶ Approximately 15% of Internet users say they would prefer to use French when accessing the Internet, and 83% say English is their preferred language for Internet use.

2. How Canadians are using the Internet

Most Canadians use the Internet from 1 to 7 hours a week

For those with Internet access, how is Internet use affecting the way they spend their time? Most people with Internet access at home use the Internet from 1 to 7 hours per week (61%). Of those who reported having used the Internet at work in the previous week, again most used it for 1 to 7 hours there (61%). A smaller percentage use the Internet for longer hours: 14% use the Internet at home for more than 14 hours per week, and the same percentage use it at work for more than 14 hours per week.

Table 3: Percentage of Internet users who say their time use for various activities has changed or stayed the same since they started using the Internet

Activity	Increased	Decreased	Stayed the same
Watching TV	1	27	72
Reading books, magazines, newspapers	4	15	81
Sleeping	1	11	88
Doing leisure activities at home	2	11	87
Doing household chores	1	10	89
Shopping	2	8	90
Doing leisure activities outside the home	2	7	91
Visiting and talking to family	3	7	90
Visiting and talking to friends	5	6	89
Spending time with children	3	4	93

Source: Statistics Canada, General Social Survey, 2000

⁶ Canadians were asked to indicate up to four languages they use when accessing Internet sites, therefore the percentages do not add up to 100.

Internet has influenced the way Canadians spend time on various activities.⁷ Over one quarter of Internet users say they spend less time watching TV, while 15% spend less time reading books, magazines and newspapers. Sleeping, leisure activities at home and household chores have also received less time for about 10% of Internet users.

For most Internet users, one activity not displaced by time spent using the Internet is working for pay. When asked whether being on the Internet had increased, decreased or not affected the time spent working for pay, 91% said there had been no effect, 7% said time spent in work for pay had increased, and only 2% said it had decreased because they preferred to spend time on the Internet. A small displacement of time spent on school work was found, however, as 7% of students said their school work time had decreased because they preferred to spend time on the Internet. Nevertheless, 11% said time spent on school work increased and 82% said there had been no change.

Parents supervise their children's time on the Internet

Over half of households with children in the home between ages 5 and 18 have purchased a computer specifically for their children. In 83% of those households with children, a computer, and an Internet connection, children use the Internet at home. The primary method of monitoring children's Internet use is supervising their time on the Internet: 64% of households with children supervise their time.⁸ Nevertheless, 33% of Canadians with home Internet access say they do nothing to monitor their children's Internet use. Methods such as locking the computer, using monitoring software or using an Internet provider who filters out unacceptable sites are each used by less than 10% of households.

About two thirds of the households with children who have not yet used the Internet say they would let their children use the Internet.

The Internet is used to search for information on goods or services, to access online news sites, and to search for health and medical information.

Three quarters of all Internet users said they used the Internet to search for information on goods or services. Nevertheless, only 24% of Internet users claim to have ever used the Internet to *purchase* goods or services. An estimated 79% of men and 70% of women use the Internet to search for information on goods or services and men Internet users are also more likely than women to purchase goods and services through the Internet (28% versus 19%).

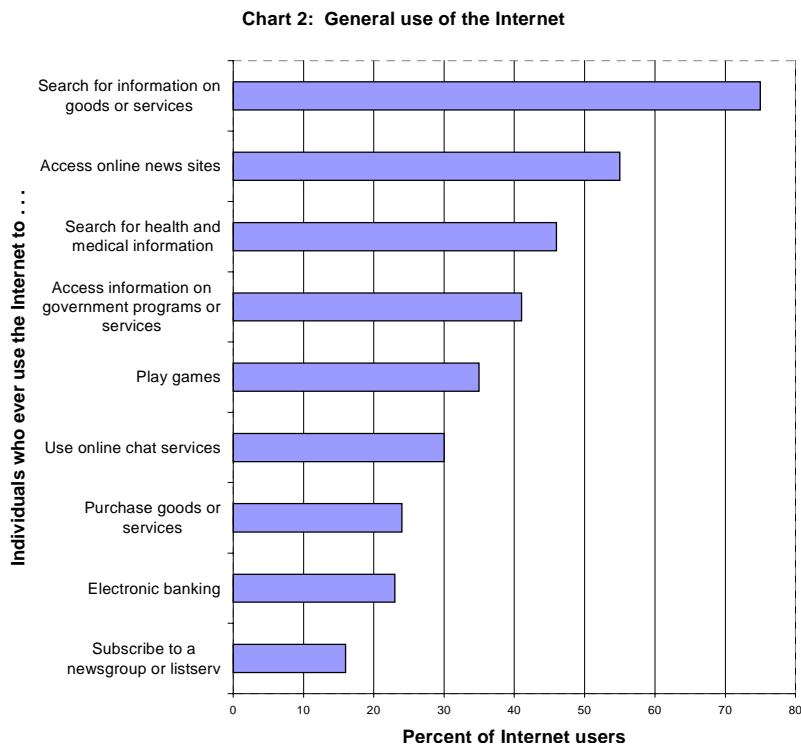
In the provinces where there is the highest use of the Internet, purchasing goods and services by Internet is also more prevalent than the other provinces: about 26% of Ontario, British Columbia and Alberta residents have purchased goods and services by Internet.

⁷ Respondents were asked, "Because of being on the Internet, has the time you spend on the following activities increased, or decreased or stayed the same? (This refers to time not spent on activities because you prefer to spend time on the Internet)."

⁸ The numbers do not add to 100% as they are "mark all that apply" items.

The percent of Canadians searching for goods and services increases with income. Where 64% of Canadian Internet users with under \$20,000 household income search for goods and services, 87% of those with \$80,000 and over do so. Of those Internet users with incomes of \$80,000 and over, 36% purchase goods and services on the Internet.

From January to December 2000 the percentage of Internet users who have ever used the Internet to purchase goods or services increased by more than 5%, to one quarter of Internet users. The growth occurred largely in the first half of the year. Most of those who purchased goods or services in the previous month had done so a few times that month, with December being the busiest month and January the least busy.



Source: Statistics Canada, General Social Survey, 2000

After searching for goods and services, the most common use of the Internet is to access an online news site such as those offered by newspapers or other news providers (55%). Men Internet users are much more likely to use the Internet for this purpose than women (62% versus 48%). On the other hand, women are more likely than men to search for health and medical information on the Internet (52% versus 41%). Close to one half of Internet users use it for this purpose.

Of those looking for health information on the Internet, the largest percentage say that they visit Health Canada's site (36%), and 16% visit other government sites for health information. Commercial sites are another commonly used source of health information

(32%). Professional health association sites, other non-profit health sites and universities are visited less often (around 25%).

Quebecers are least likely to use the Internet to search for health and medical information (40% of Internet users). The Atlantic provinces are the most likely to do so, with over 54% of Internet users in Newfoundland, Prince Edward Island and Nova Scotia searching for health and medical information on the Internet. The other provinces range from 44% (Alberta) to 49% (British Columbia).

Youth like playing games and using online chat services

More than one third of Internet-users use it to play games. Men play games on the Internet more than women. Using the Internet to play games is most common among 15- to 19-year-olds (63%), and second most common among 20- to 24-year-olds (50%). This activity is most prevalent among Internet users in New Brunswick (44%) and Nova Scotia (43%), and least prevalent in Quebec and Prince Edward Island (34%).

About 30% of Internet users access online chat services. Slightly more men than women use the Internet for this purpose (32% versus 28%), and much higher proportions of teens who use the Internet access online chat services (68%) than those in older age groups.

Internet use for this purpose was highest in Newfoundland (36%) and lowest in British Columbia (25%). Those with incomes \$50,000 and over are less likely to use the Internet to access online chat services than those with incomes below \$50,000.

Users in their thirties are the big e-bankers

Of those individuals who use the Internet, about 23% use it for electronic banking. Electronic banking is more common among Internet users from Ontario, Nova Scotia, Alberta, Quebec and British Columbia than the other provinces, and more so among those with household incomes \$80,000 and over. Approximately 31% of Internet users aged 30 to 39 use the Internet for electronic banking compared with smaller proportions of younger and older individuals.

Newsgroup or listserv use low for Canadians

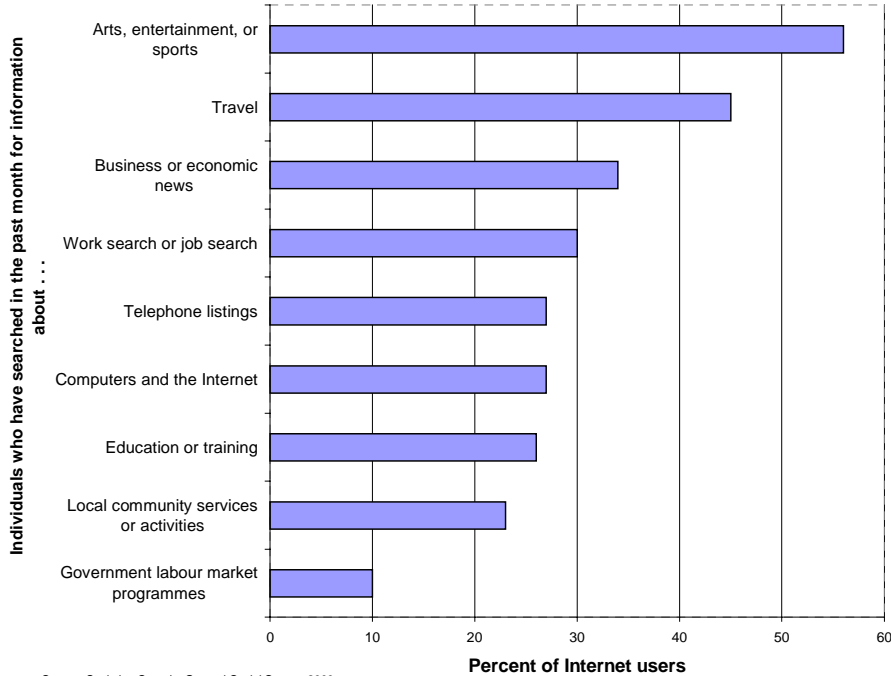
Only about 16% of Internet users in Canada said they subscribe to a newsgroup or listserv. A higher percentage of men than women use the Internet for this purpose (20% versus 11%). Internet users with an income of \$80,000 or more are most likely to use the Internet for this reason (21%).

Internet search for arts, entertainment, sports, or travel information also popular

When Internet users were asked whether they used the Internet in the past month to search for information, they said the most commonly sought information is about arts,

entertainment or sports (56%), and the least sought information is about government labour market programmes such as Employment Insurance or youth programmes (10%).⁹

Chart 3: Current use of the Internet to search for information



Source: Statistics Canada, General Social Survey, 2000.

"You have mail" an everyday experience for Internet users

Approximately 84% of Internet users connect to e-mail, and many use it as a daily communication tool; 39% of Internet users say they use e-mail every day, and another 25% use it several times a week. Men are more likely to use e-mail every day whereas women are more likely to use it several times a week. Internet users aged 25 to 44 are the highest everyday users of e-mail (44%). Family and relatives are most likely to e-mail each other a few times a month, whereas friends are most likely to e-mail several times a week.

A somewhat lower percentage of those born outside Canada use the Internet compared with those born in Canada (47% versus 55%). Nevertheless, foreign-born Internet users are more likely to use e-mail every day than those born in Canada (44% versus 38%), and are more likely than Canadian-born individuals to use it every day to communicate with family and relatives (12% versus 8%) and with friends (15% versus 12%). An estimated 71% of foreign-born Internet users communicated with persons outside Canada via e-mail in the previous month, whereas 43% of Canadian-born Internet users did so.

⁹ This question asked about behaviour in the previous month. When asked if they had ever used the Internet to access information on government programs, 41% of Internet-using Canadians agreed. Men were more likely than women to have ever accessed government programs on the Internet, and Internet users between the ages of 25 and 29 were most likely to do so (50%).

3. The impact of computers or automated technology on the work of Canadians

Less than half of Canadians feel there has been little or no effect of computers or automated technology on their work

Many workers feel their work has been affected greatly (36%) or somewhat (21%) by the introduction of computers or automated technology over the past five years. About 30% feel there has been no effect on their work and 13% feel there has hardly been any effect through this period. These estimates have changed very little since 1994 when Canadians were asked the same question (see Table 4), except that the effect of computers on jobs is slightly more pervasive. In 1994, 37% of Canadians said their job was not at all affected by computers and automated technology, about 7% more than in 2000.

The percentage reporting that computers and automated technology have had a great effect on their work in 2000 increases with age up to age 49 (44%) and declines for older workers. Workers who are better educated (with a university education), those with higher incomes, and those from Ontario, Alberta and Quebec are more likely to report computers or automated technology having had a great effect on their work over the last five years.

Of those who used a computer in their main job in the past 12 months, approximately 60% say new computer software has been introduced into their job in that period, and almost three quarters of those with new software had to learn new skills to keep up with this change (72%).

The introduction of new hardware had somewhat less of an impact than software: 51% of those who used a computer in their main job in the past 12 months reported having new hardware introduced, and 58% of those with new hardware had to learn new skills to handle the upgrade.

Analysis by age shows that the percentage having to learn new hardware skills increases with age up to age 64 where it levels off; a similar increase with age is true of those having to learn new software skills, but the increase levels off at age 54 in this case. Nevertheless, only 11% of Canadian workers say that having to learn new computer skills has caused them excess worry or stress in the past 12 months. Women are slightly more likely to report feeling stressed (12%) than men (10%) with having to learn new computer skills. Workers with university education and with high incomes report higher worry or stress from having to learn computer skills than those with lower education and incomes.

Workers do not view computers or automated technology as a threat to job security

Most workers who said their work has been affected by the introduction of computers or automated technology believe this event has not threatened their job security over the last five years (68%). Only about 9% of men and women in this situation believe their job security has decreased, much less than those who believe their job security has *increased*

(23%). Men are more likely to think their job security has increased compared with women (27% versus 19% respectively).

Compared to 1994 when workers were asked the same question, those in 2000 are more likely to report their job security has increased and are less likely to report a decrease. In both years approximately 67% of Canadians said their job security was not affected by the introduction of computers or automated technology.

In 2000, higher proportions of older workers than younger workers say their job security has decreased as a result of the introduction of computers or automated technology. The percentage of working Canadians reporting *increases* in job security is highest for 20- to 24-year-olds (31%) and lowest for 55- to 64-year-olds (14%). Nevertheless, over three quarters of 60 to 64-year-olds say technology has had no major impact on their job security.

Of those who think it is likely that they will be laid off in the next year, only 10% believe it would be because of the introduction of computers or automated technology.

Computers make work more interesting for the majority of Canadian workers

Over half of working Canadians who feel their work has been affected by the introduction of computers or automated technology believe it has made their work more interesting (58%). Only about 4% say it has made their work less interesting, whereas 38% say their work has stayed the same despite the introduction of new technology.

In 1994 these percentages were similar, but that year more Canadians felt their job had become more interesting after the introduction of computers or automated technology (63%) than in 2000, and a lower percentage felt there had been no change in how interesting their work was after the introduction of new technology (34%).

The highest positive impact of new technologies on workers in 2000 is among those with university degrees, where over 64% say their work is more interesting as a result of the introduction of computers or automated technology.

Table 4: Percentage of Canadians whose work has been affected by the introduction of computers or automated technology, 1994 and 2000

	1994	2000
Affected job	%	%
Greatly	35	36
Somewhat	17	21
Hardly	11	13
Not at all	37	30
Job security		
Increased	14	23
Decreased	19	9
Stayed the same	67	68
Job interest		
Increased	63	58
Decreased	4	4
Stayed the same	34	38

Source: Statistics Canada, General Social Survey.

Note to readers:

This article is based on Cycle 14 of the General Social Survey (GSS) "Access to and Use of Information Communication Technology". The GSS is an annual telephone sample survey covering the non-institutionalized population aged 15 and over in all provinces. The focus in 2000 was on the use and impact of computer and Internet technology on Canadians. Data were collected over a 12-month period from January to December 2000. The representative sample had 25,090 respondents, representing an 80.8% response rate.

This is the first time that Statistics Canada has collected detailed information on individual use of technology. Data from the 2000 GSS complements other Statistics Canada surveys on this topic, particularly the Household Internet Use Survey. The Household Internet Use Survey asks about Internet use by Canadian households and is administered to a subsample of households included in the Labour Force Survey. The GSS Cycle 14 surveyed Canadians about their personal use of computers and the Internet, the impact of technology on privacy, access to information and the social cohesion of families and communities.

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