



Key Indicators on ICT Infrastructure, Use and Content

July 2002

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This publication provides information on the latest trends in the information and communications technologies (ICT) sector, in Internet access and use, and in new applications and content including electronic commerce, online courses, telehealth and e-government.

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The data in this statistical compendium were current as of July 2002. Readers are encouraged to check throughout the year for more up-to-date information at <http://strategis.ic.gc.ca>

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The following have kindly provided pictures for the cover:

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United States Office for the Advancement of Telehealth

Center for Health and Technology, UC Davis Health System

<http://www.globallearningsystems.com>

<http://telehealth.hrsa.gov/>

<http://www-informatics.ucdmc.ucdavis.edu/>

Contents

ICT Sector Characteristics...

1. Information and Communications Technologies (ICT) Sector Definition
2. Despite the Recent Economic Downturn, the ICT Sector Has Grown Faster Than the Canadian Economy
3. ICT is Canada's Largest R&D Performer
4. The ICT Sector's Capital Expenditures are Dominated by the Broadcasting and Telecommunication Services Industry
5. Despite a Decline in Exports in 2001, The Trade Deficit in ICT Goods Remained Relatively Stable
6. Growing Use of New Wireless Communications Devices and Services
7. Canadian Mobile Telephone – A Key Industry

Access and Use is Growing...

8. Canada Ranks Second in Connectedness Index
9. Canada is Well Connected to the Internet
10. Significant Growth in Internet Penetration in All Regions of Canada
11. What are Canadians Doing Online?
12. Canadians' Use of Computer Peripherals is Boosting the Need For Broadband

Requiring Broadband...

13. Canada is Second in the OECD in Terms of Broadband Penetration
14. Household Internet Access is Moving From Dial-Up to Broadband
15. Availability of Broadband Access Varies by Province
16. Approximately Four out of Ten Canadian Businesses with Internet Access Have a Broadband Connection

Contents (cont'd)

E-Business Continues to Climb...

17. Small Firms Lagging Larger Firms in Internet Connectivity
18. Internet Usage by Canadian Businesses Varies by Industry
19. Estimates of Worldwide E-Commerce Growth Vary Greatly
20. Canada is a World Leader in E-Commerce
21. Canadian E-Commerce Growth Concentrated in a Few Key Sectors
22. Over 50% of Large Canadian Firms Purchase Goods or Services Online
23. E-Commerce Use Varies By Sector
24. Reasons Canadian Companies Do Not Buy or Sell Online
25. Canadians Are Purchasing Over the Internet

While Other Areas Are Just Starting

26. Canada Leads in Government Online Services For The Second Year in a Row
27. Canadians are Receptive to Government Online Services
28. Canadian Medical Specialists are Making Use of Electronic Systems
29. Canada is a World Leader in E-Learning
30. Online Courses Help Develop Highly Qualified People
31. Telework Increasingly Attractive to Canadian Workers

Information and Communications Technologies (ICT) Sector Definition

North American Industry Classification System (NAICS)

Manufacturing

- Commercial and Service Industry Machinery Mfg – NAICS 33331 (or 3333)
- Computer and Peripheral Equipment Mfg – NAICS 33411 (or 3341)
- Communications Equipment Mfg – NAICS 33421 and 33422
- Audio and Video Equipment Mfg – NAICS 33431 (or 3343)
- Semiconductor and Other Electronic Component Mfg – NAICS 33441 (or 3344)
- Navigational, Measuring, Medical Component Mfg – NAICS 33451 (or 3345)
- Communication and Energy Wire and Cable Mfg – NAICS 33592

Intangible Services

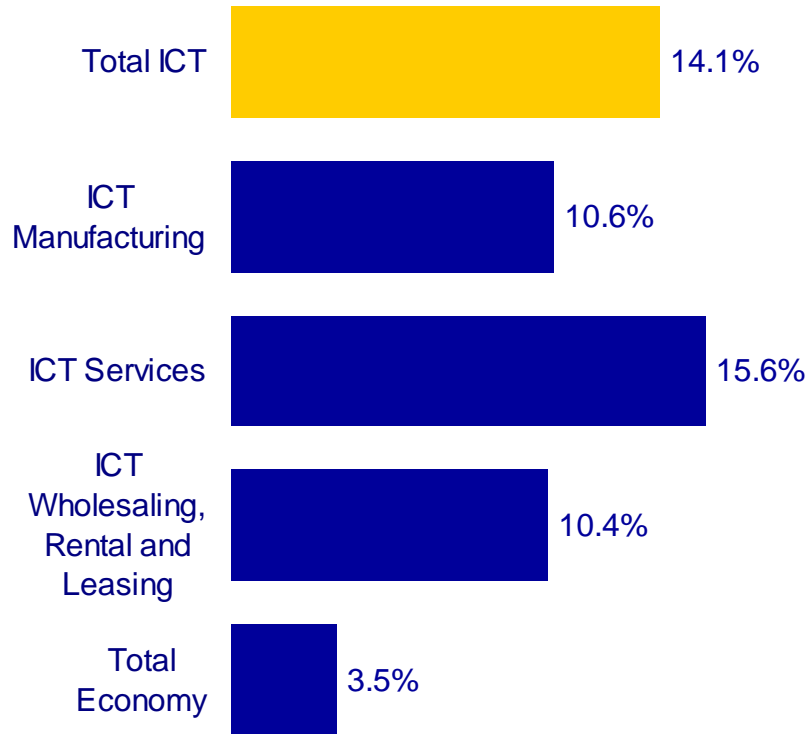
- Software Publishers – NAICS 51121 (or 5112)
- Cable and Other Program Distribution – NAICS 51322
- Telecommunications – NAICS 5133
- Other Information Services – NAICS 51419
- Data Processing Services – NAICS 51421 (or 5142)
- Computer Systems Design and Related Services – NAICS 54151 (or 5415)
- Electronic and Precision Equipment Repair and Maintenance – NAICS 81121 (or 8112)

Goods Related Services

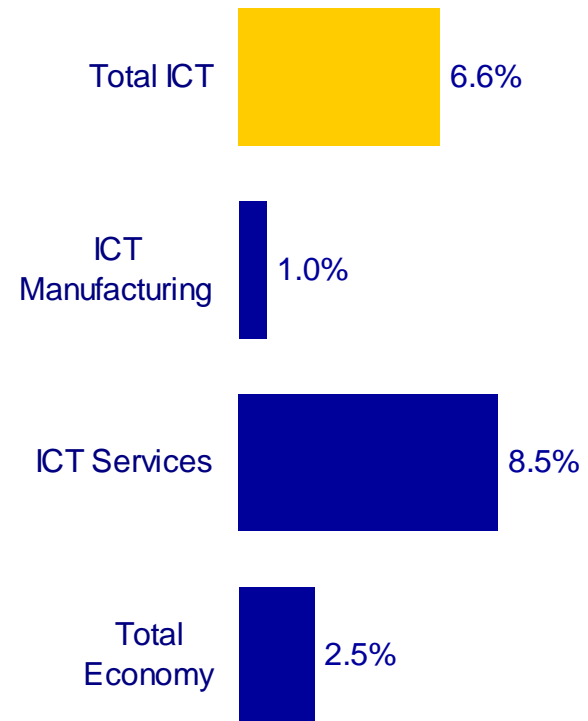
- Computer and Communications Equipment and Supplies Wholesaler-Distributors – NAICS 4173
- Office and Store Machinery and Equipment Wholesaler-Distributors – NAICS 41791 (or 4179)
- Office Machinery and Equipment Rental and Leasing – NAICS 53242

Despite the Recent Economic Downturn, The ICT Sector Has Grown Faster Than the Canadian Economy

Growth of Real GDP, 1997-2001 Compound Annual Growth Rate



Employment Growth, 1997-2002* Compound Annual Growth Rate



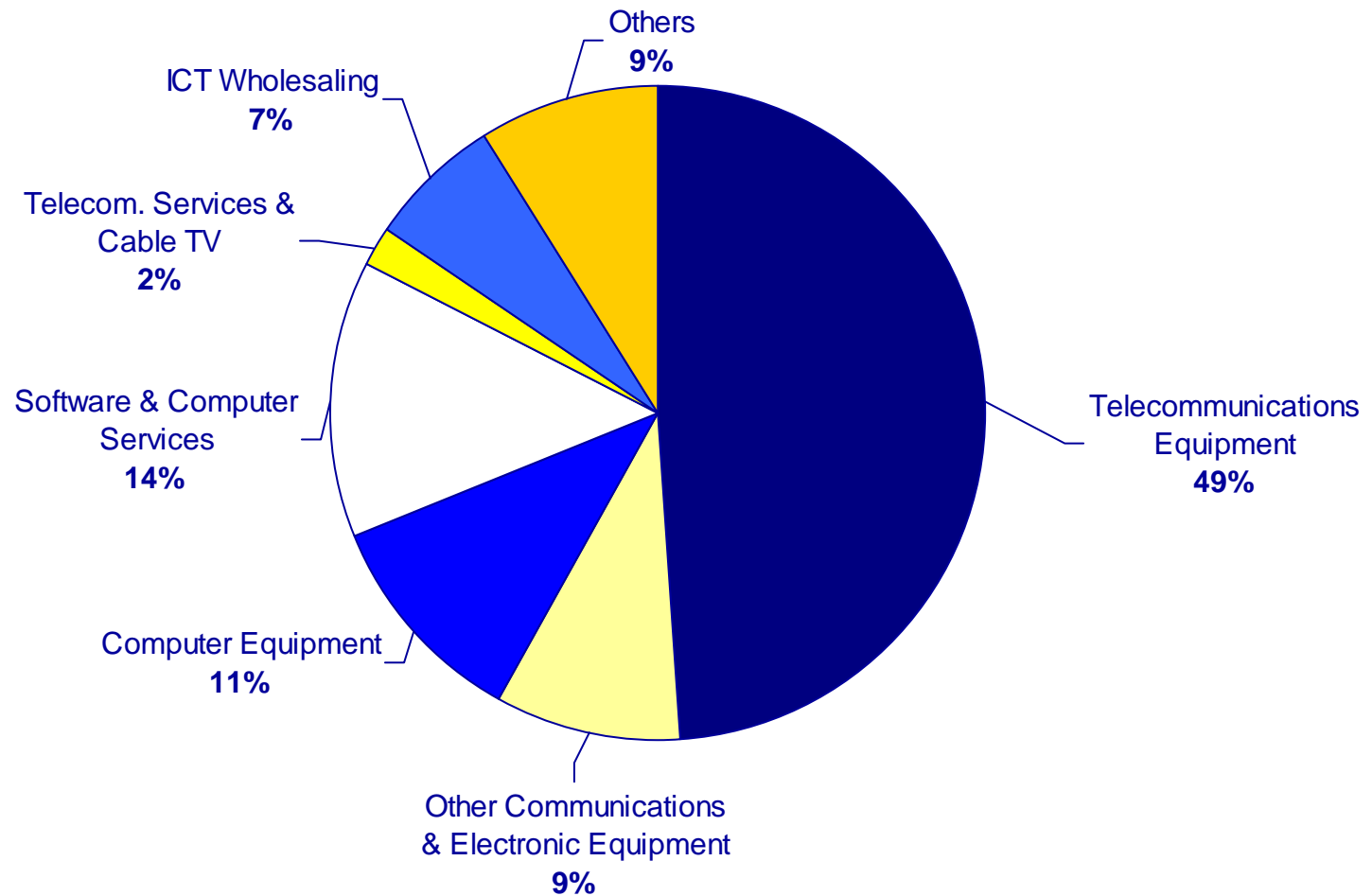
*Data up to first quarter of 2002.

Source: ICT Quarterly Monitor 1Q2002 & ICT Statistical Overview; Industry Canada, 2002.

ICT is Canada's Largest R&D Performer

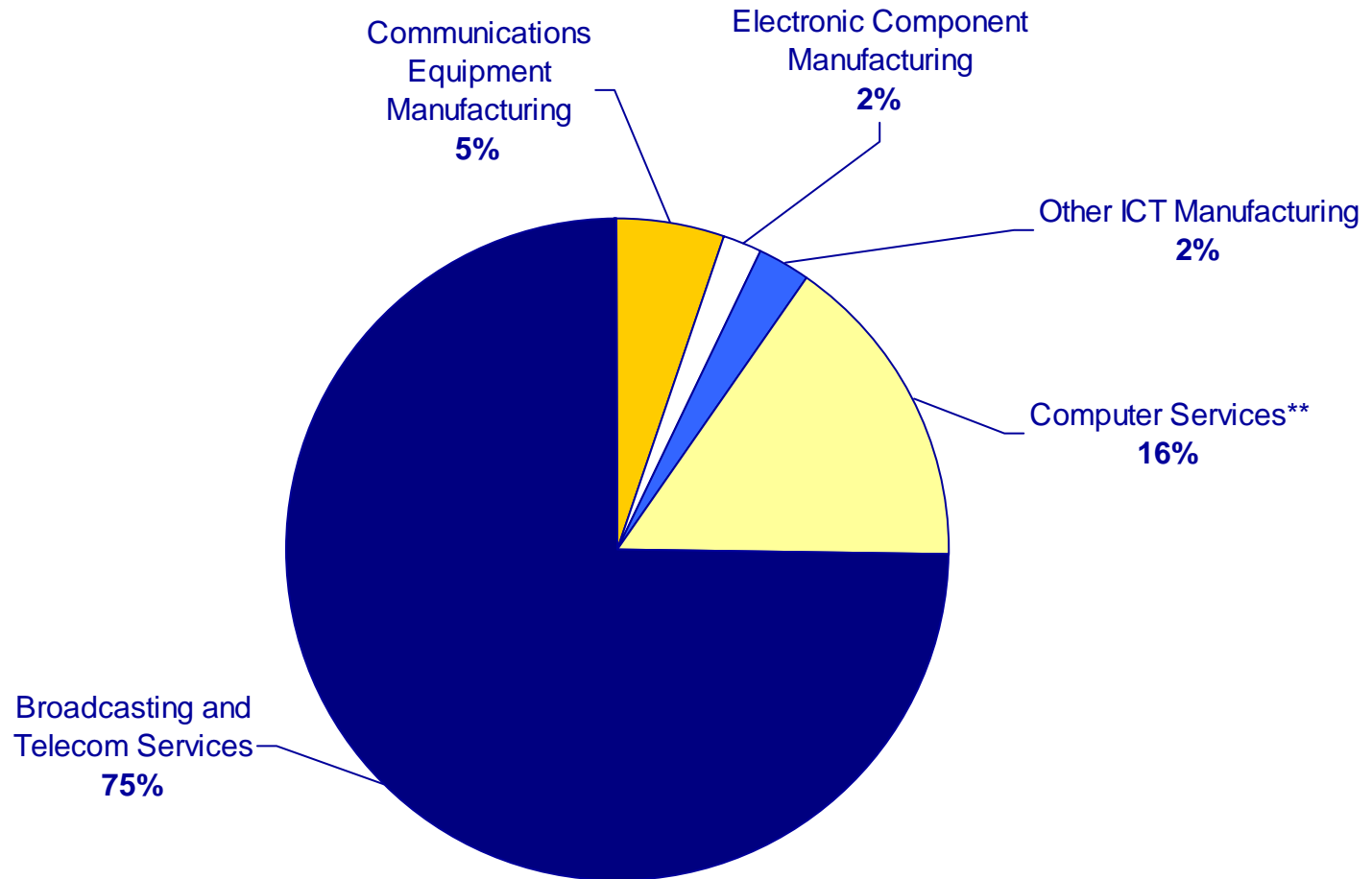
R&D Expenditures by ICT Segment

2001 Intentions \$5.3 Billion Total - 2000 Planned \$5.0 Billion Total



The ICT Sector's Capital Expenditures are Dominated by the Broadcasting and Telecommunication Services Industry

Distribution of Capital Expenditures by ICT Industry,
2002 Intentions (\$14.1 Billion Total)*



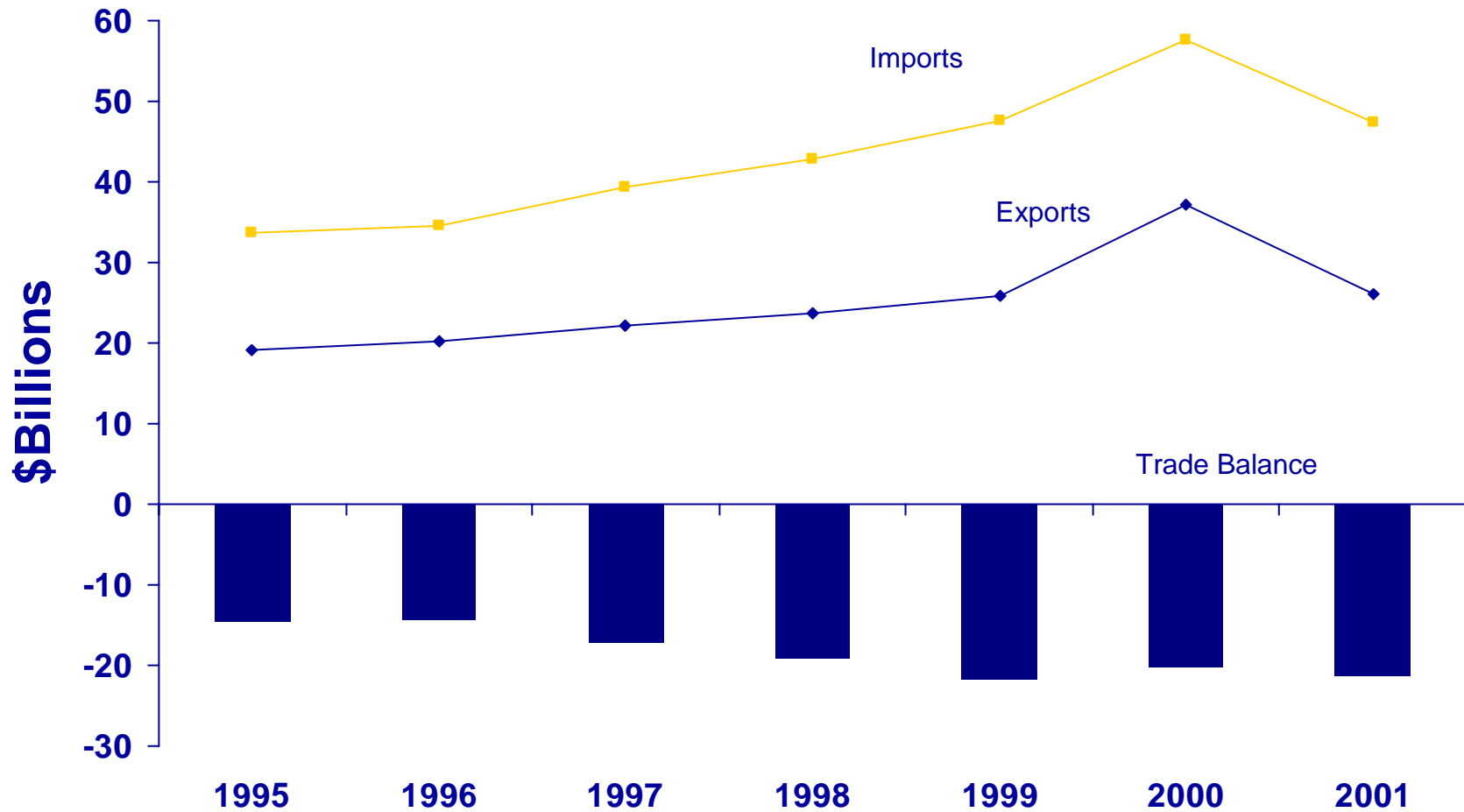
*Excluding ICT Wholesaling and NAICS 33592 and 51121. For comparison purposes, total ICT capital expenditures were \$13.4 Billion in 2000 and \$14.7 Billion in 2001 (estimated).

**Aggregation of NAICS 514 and 51451.

Source: ICT Statistical Overview (ICTSO); Industry Canada, April 2002.

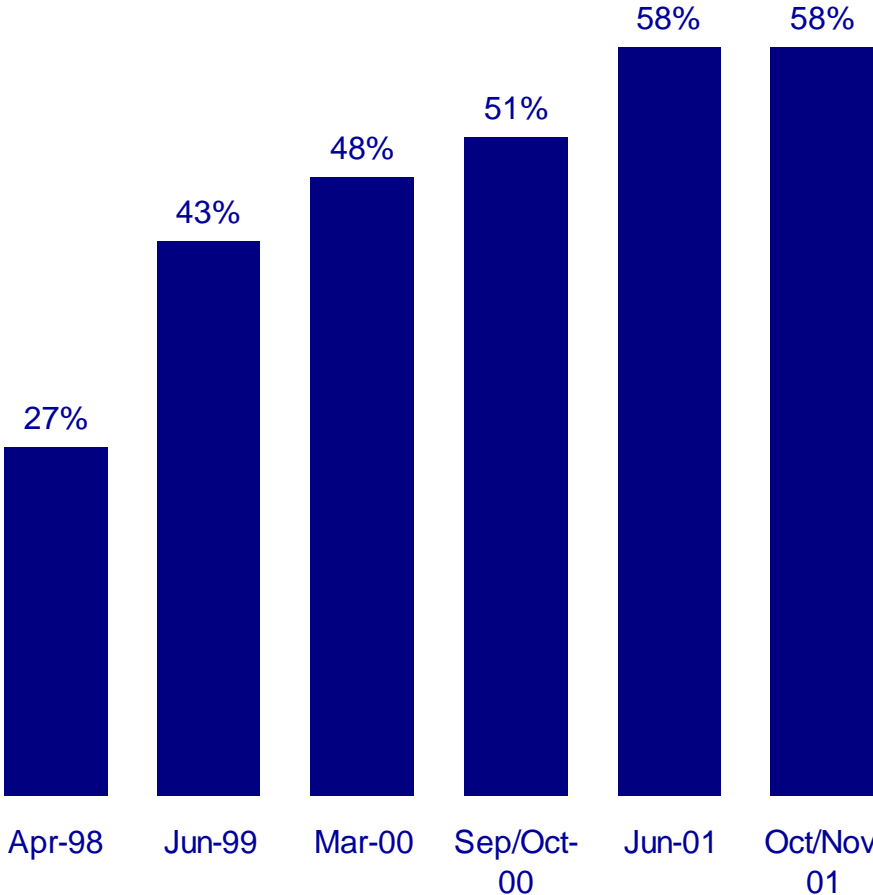
Despite a Decline in Exports in 2001, The Trade Deficit in ICT Goods Remained Relatively Stable

Exports, Imports and Trade Balance of ICT Goods, 1995-2001

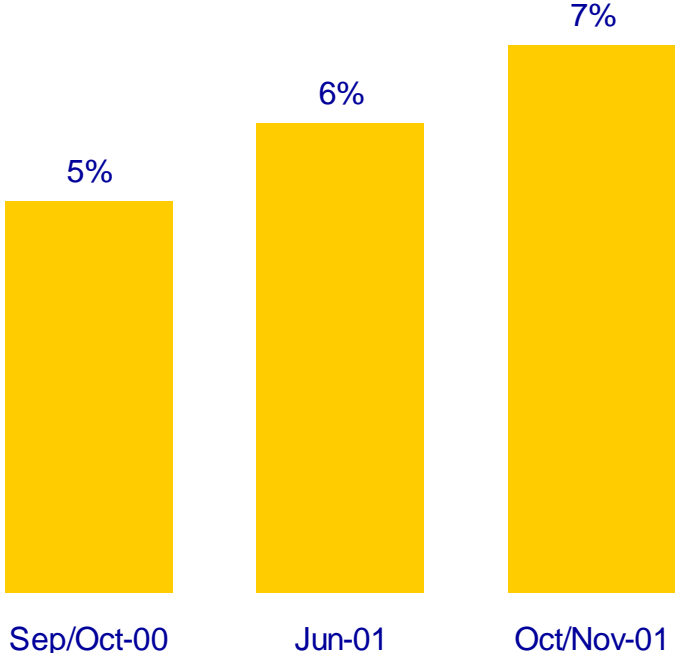


Growing Use of New Wireless Communications Devices and Services

Percentage of Canadians Who Own a Cellular or PCS Phone



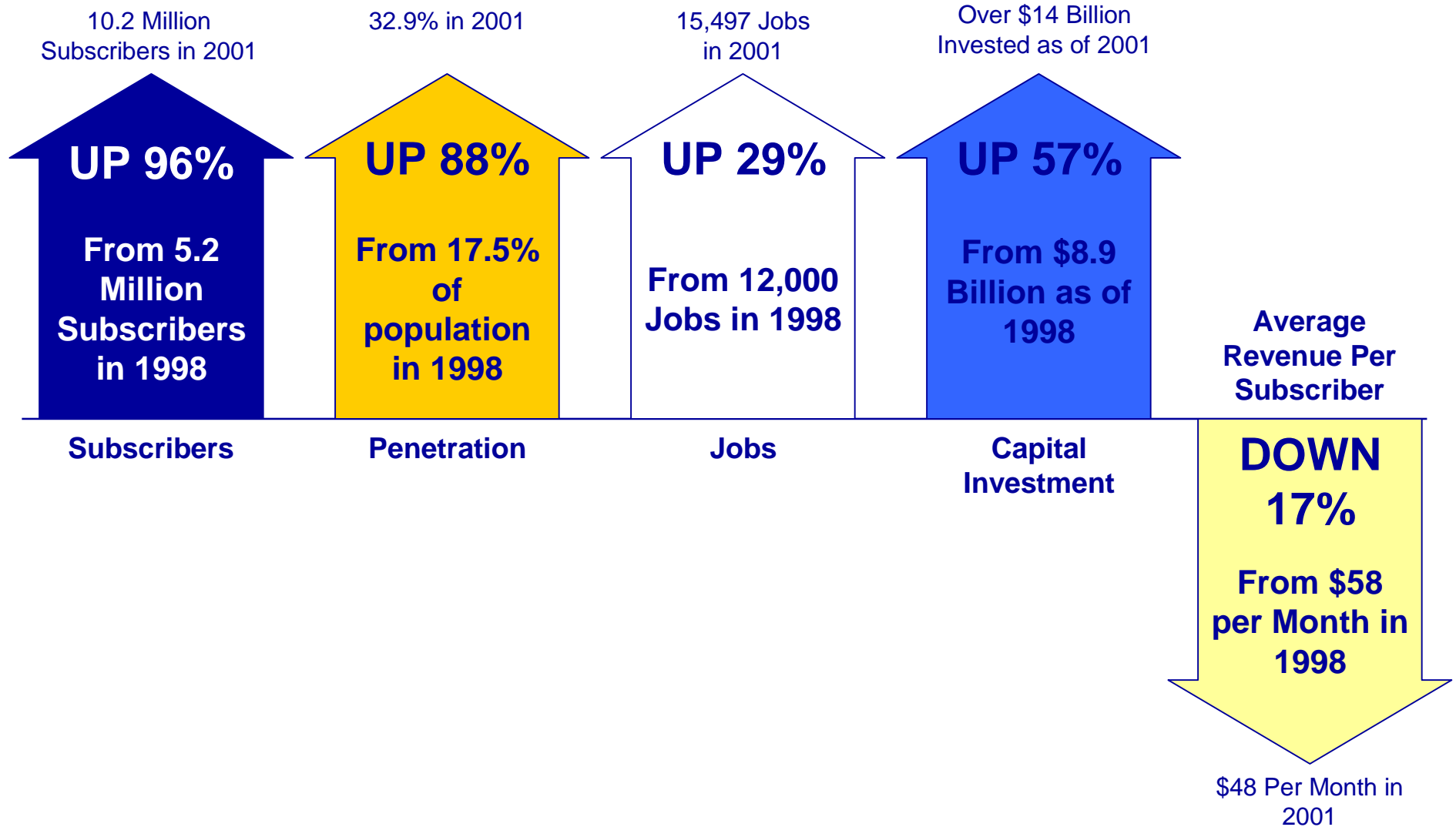
Percentage of Canadians With a Cellular or PCS Phone Who Have Wireless Internet Access



• 8% of Canadians owned a PDA (personal digital assistant) in Oct/Nov-01.

Source: EKOS Research Associates, *Rethinking the Information Highway*, Spring 2002.

Canadian Mobile Telephone – A Key Industry



Source: Statistics Canada and Industry Canada compilations based on company reports.

Canada Ranks Second in Connectedness Index*

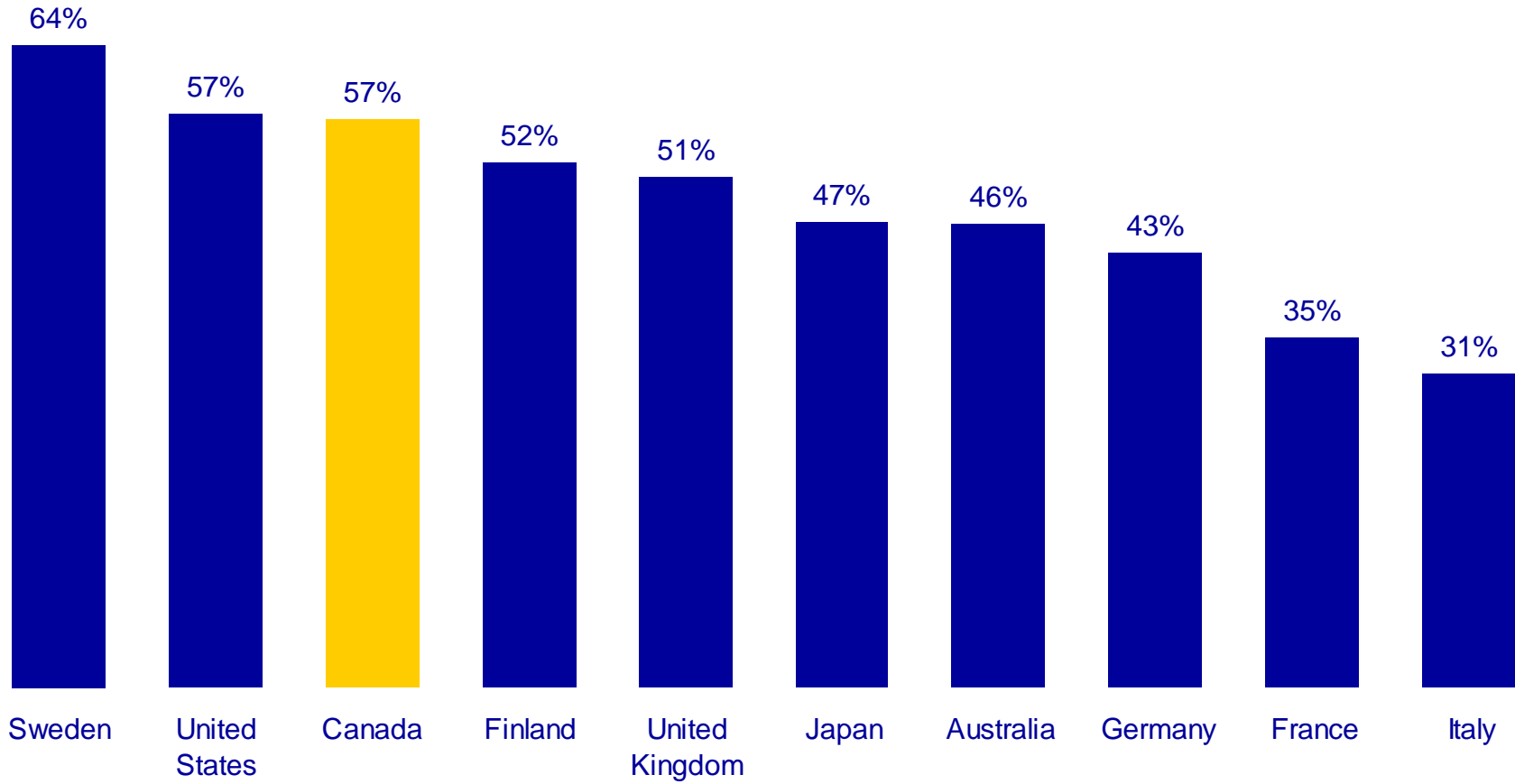
Country	OVERALL		AVAILABILITY		PRICE		REACH		USE	
	Rank	Index	Rank	Index	Rank	Index	Rank	Index	Rank	Index
United States	1	109	1	113	1	107	2	108	3	107
Canada	2	108	2	107	3	104	1	109	1	111
Sweden	3	106	3	105	3	104	2	108	2	109
Finland	4	102	5	101	1	107	4	100	5	101
United Kingdom	5	99	5	101	7	98	5	98	6	99
Australia	5	99	4	102	9	94	5	98	4	102
Germany	7	97	7	99	5	100	8	95	7	97
Japan	8	94	8	91	10	92	7	99	8	95
France	9	93	8	91	5	100	10	92	9	90
Italy	10	92	10	90	8	95	9	94	9	90

*The rankings are based on selected indicators and are subject to the availability of credible, comparable international data. They are based on source data from six to 18 months old.

Source: Conference Board of Canada, 2002.

Canada is Well Connected To The Internet

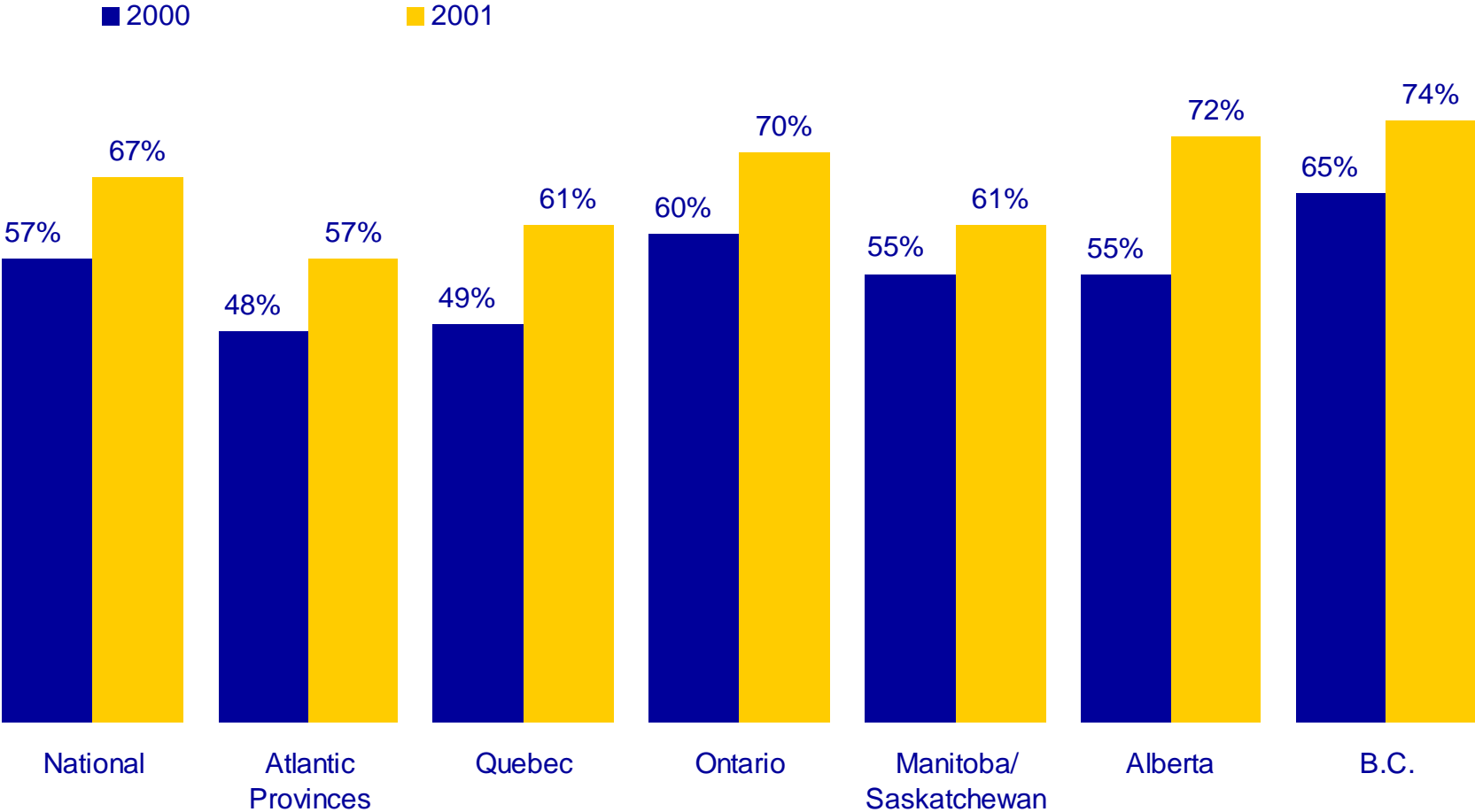
% of Population Online 2001



Source: World Information Technology and Services Alliance, *Digital Planet 2002*, February 2002.

Significant Growth in Internet Penetration in All Regions of Canada

Internet Penetration by Region*, 2000 and 2001

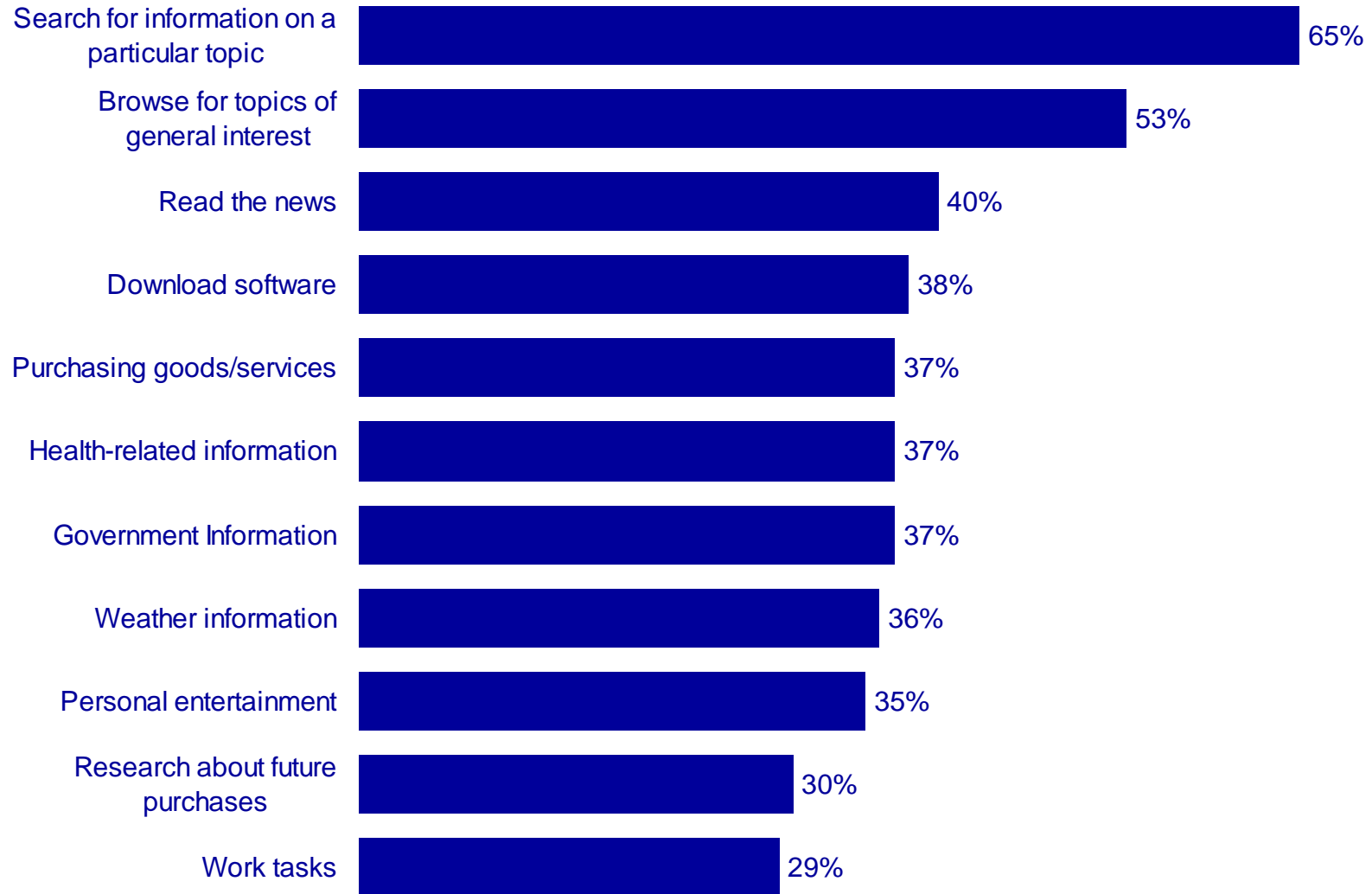


* Excludes the territories.

Source: 2002 Internet Planner by ACNielsen Company of Canada.

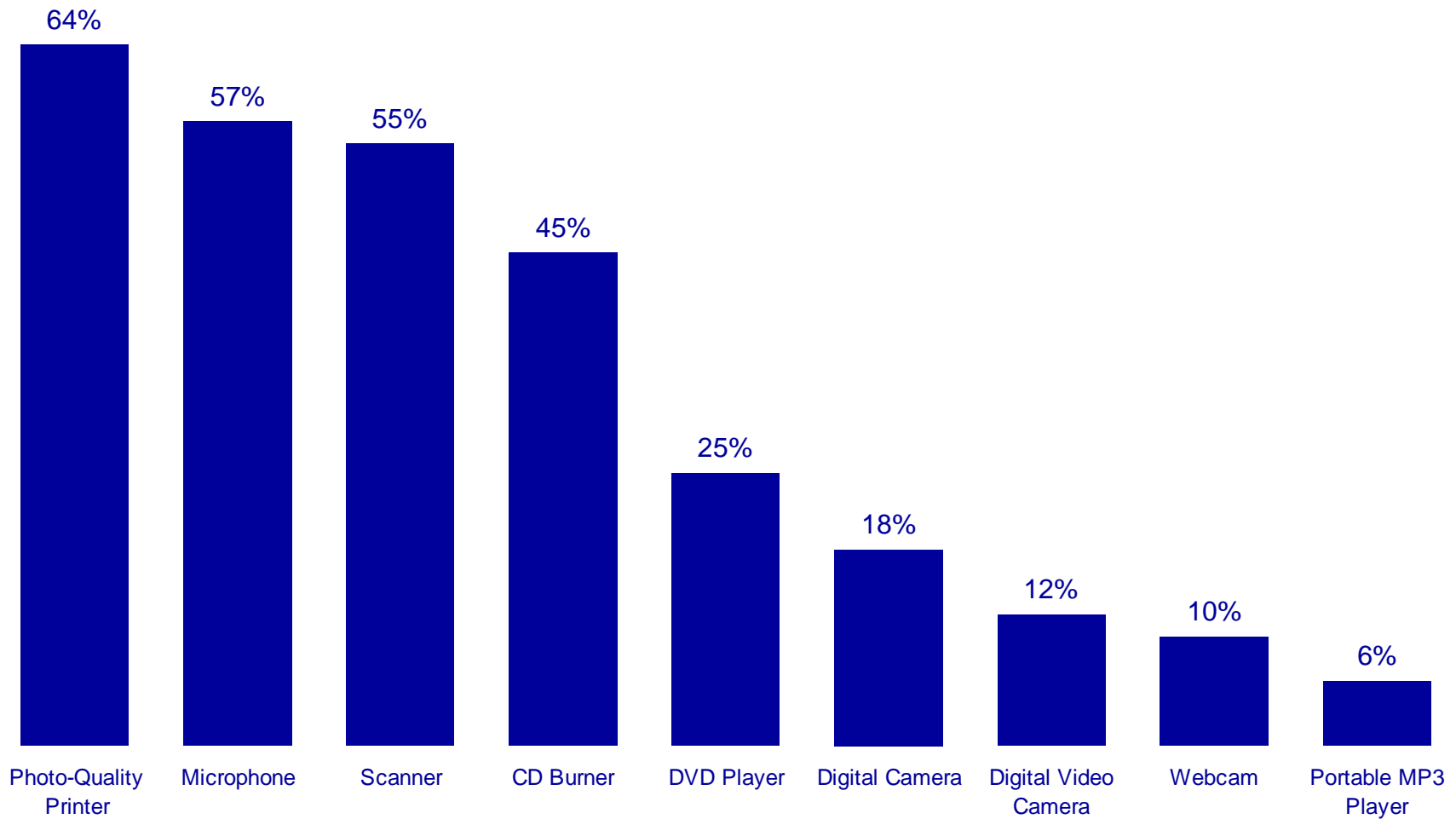
What are Canadians Doing Online?

Percentage of Online Canadians Performing Each Activity, 2001



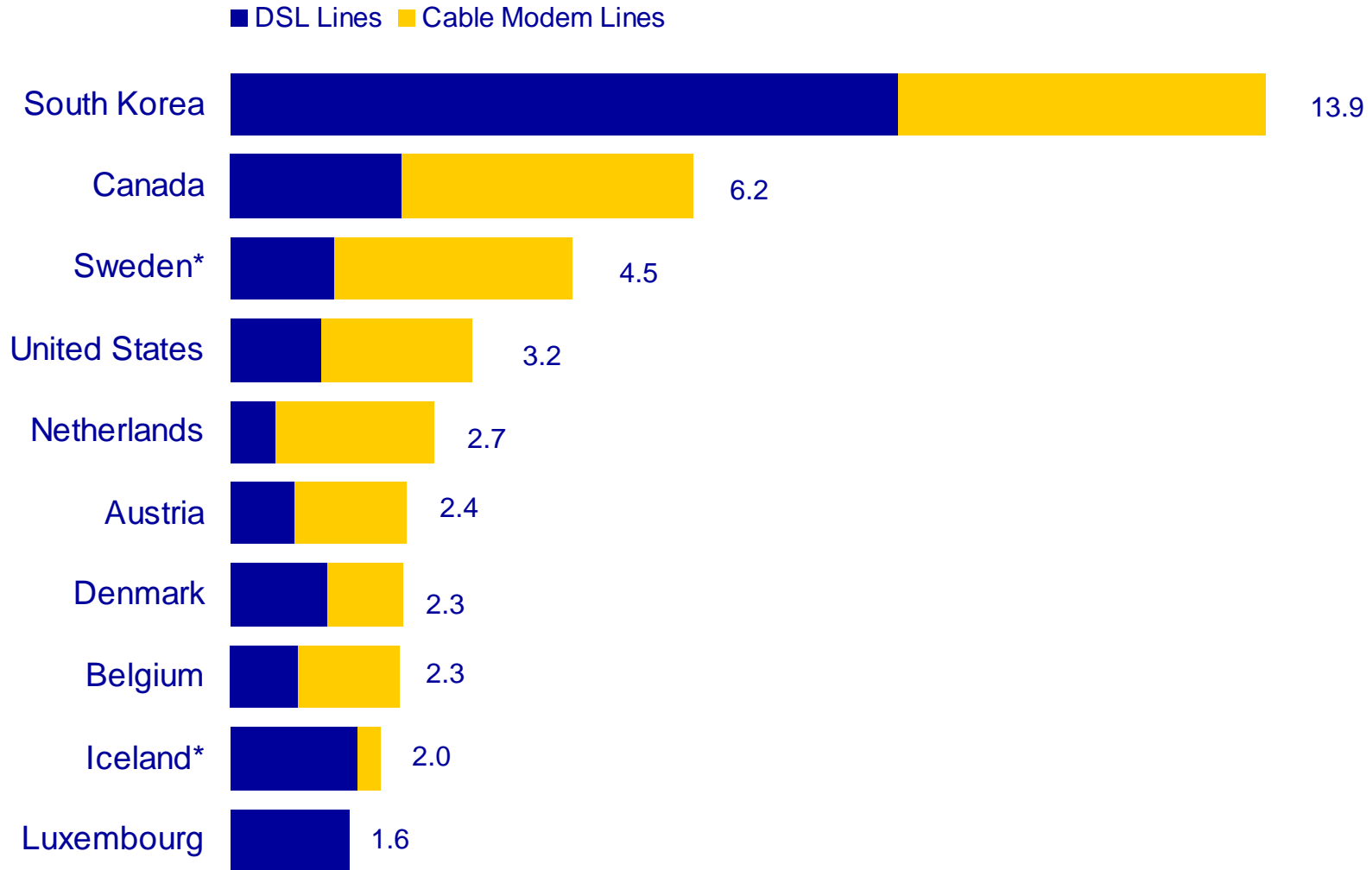
Canadians' Use of Computer Peripherals Is Boosting the Need For Broadband

Percentage of Canadian Households With Computers Who Also Have...



Canada is Second in the OECD in Terms of Broadband Penetration

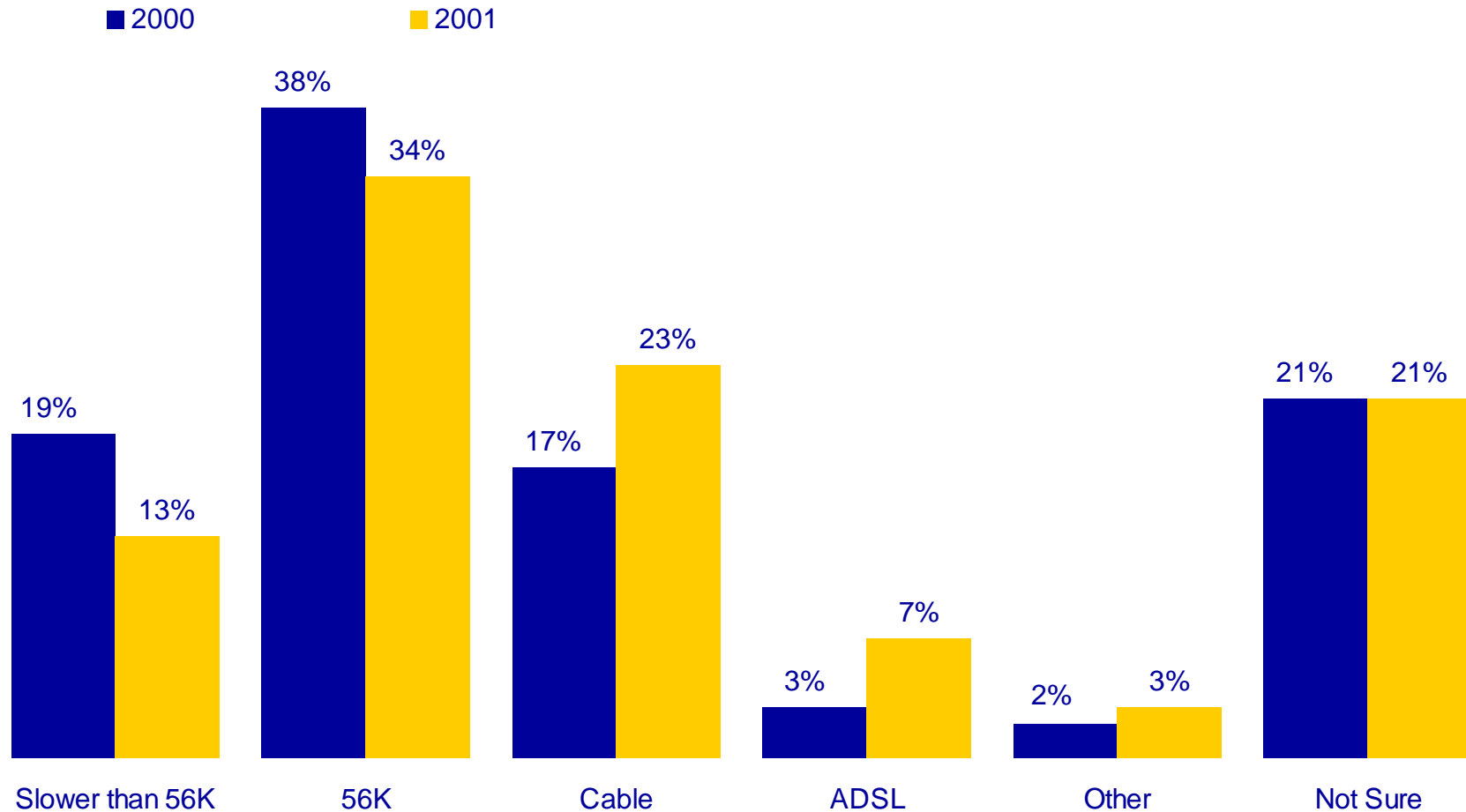
Broadband Users per 100 Inhabitants, June 2001



*Data from Sweden and Iceland includes subscribers to high-speed fibre LAN services

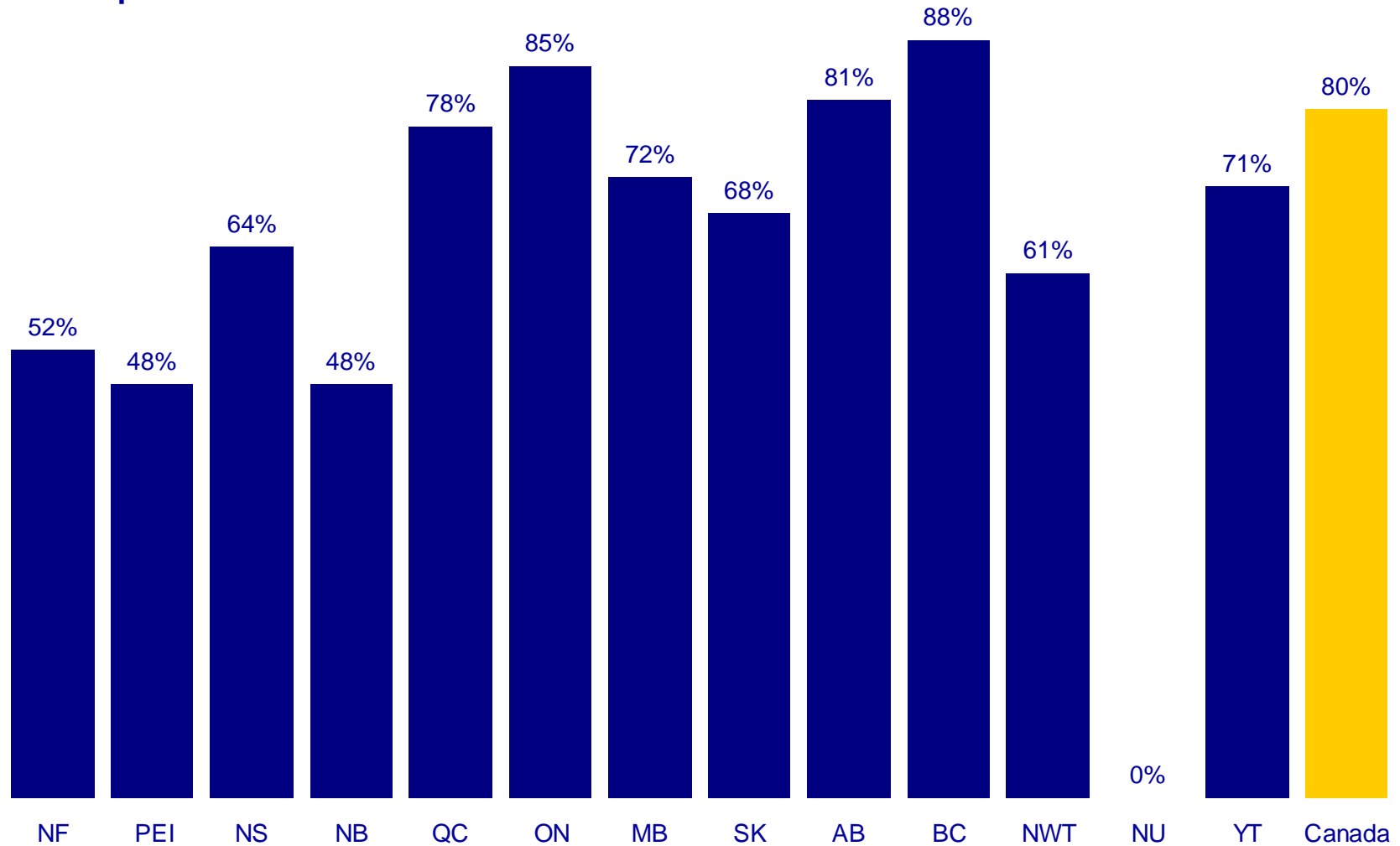
Home Internet Access is Moving From Dial-up to Broadband: One Third of Home Internet Users Have Broadband Access

Percentage of Home Internet Users By Type of Internet Access, 2000 and 2001



Availability of Broadband Access Varies by Province

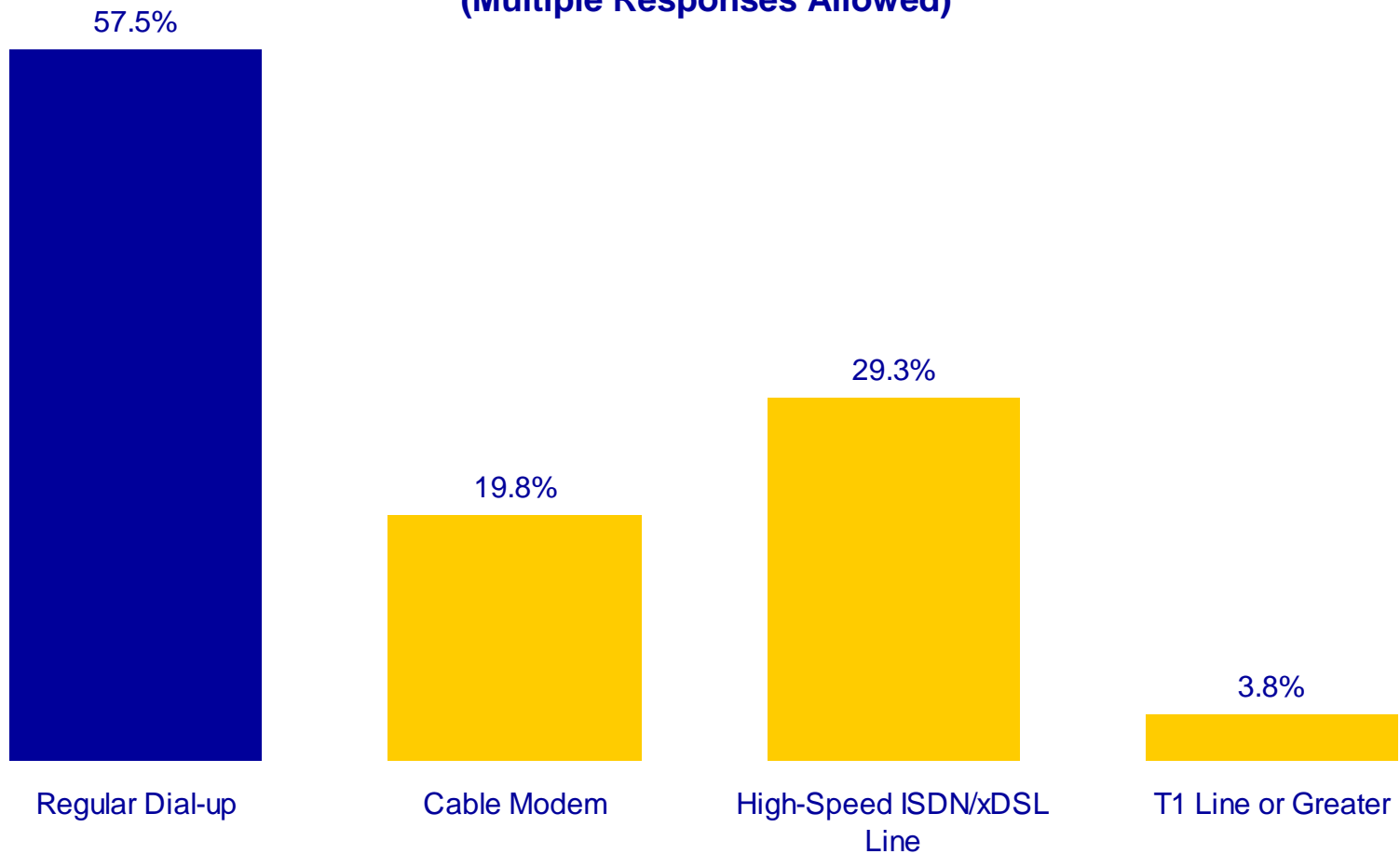
% of Population With Access to Broadband Services



Source: Industry Canada compilations based on Statistics Canada, Canada Post and broadband service provider company data, April 2002.

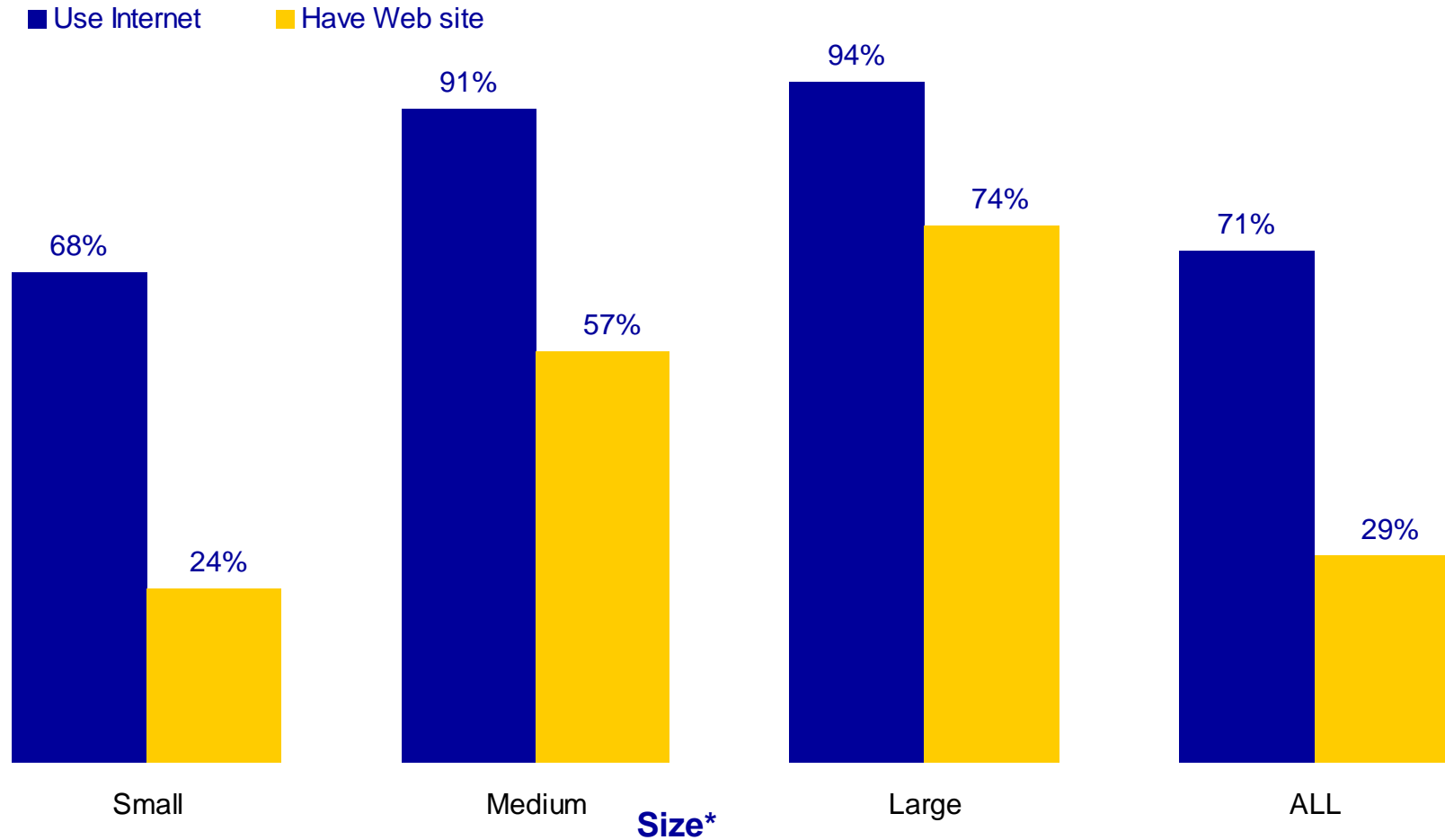
Approximately Four out of Ten Canadian Businesses with Internet Access Have a Broadband Connection

Canadian Businesses With Internet Access By Type of Connection, 2001
(Multiple Responses Allowed)



Small Firms Lagging Larger Firms in Internet Connectivity

Business Technology Use In The Canadian Private Sector by Size of Firm, 2001

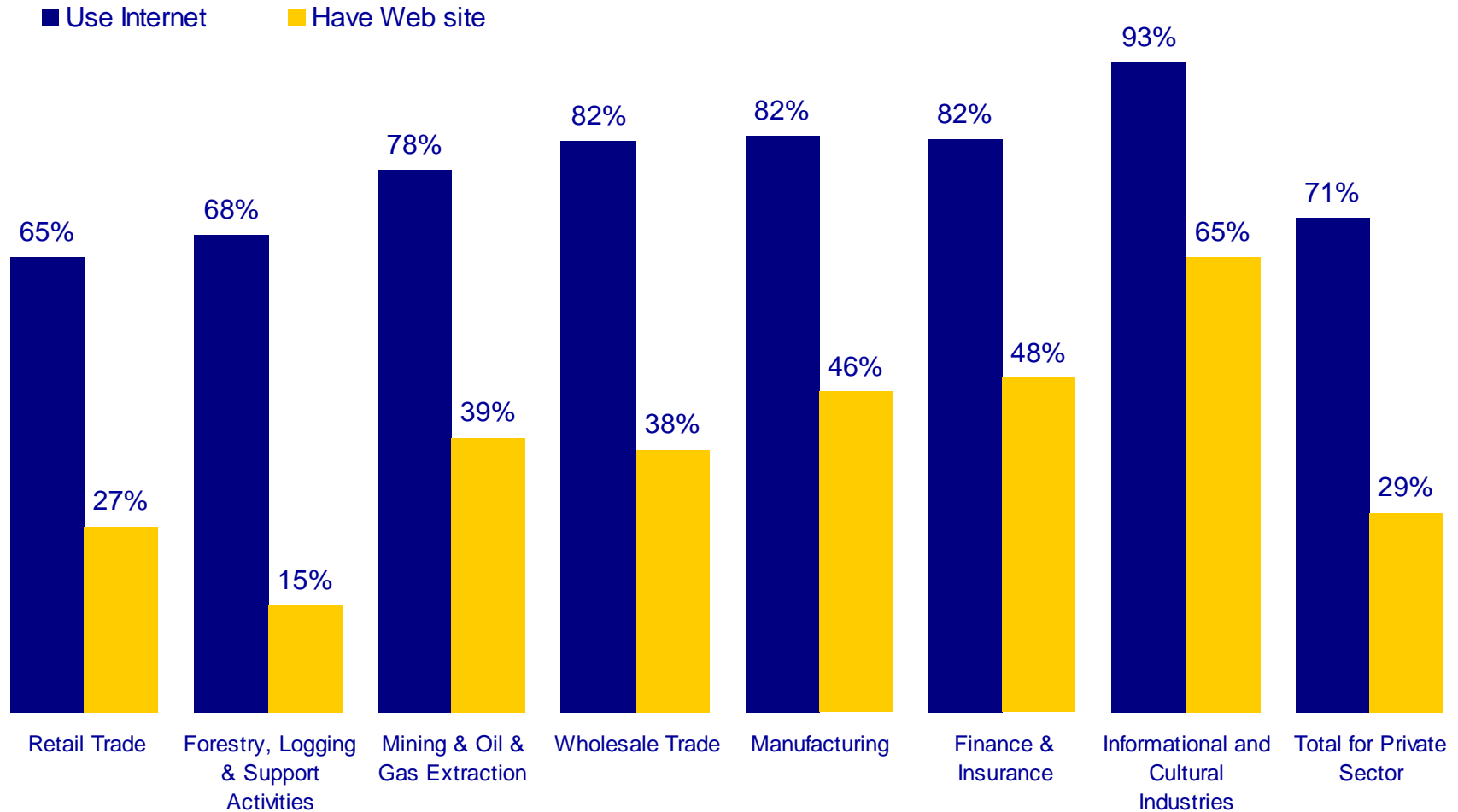


• Internet access among Canadian businesses was 53% in 1999.
• Only 22% of Canadian businesses had Web sites in 1999.

* Small:0-19 full-time employees, Medium: 20-99 (20-499 in Manufacturing), Large: 100+ (500+ in Manufacturing)
Source: Electronic Commerce and Technology Survey; Statistics Canada, April 2002.

Internet Usage by Canadian Businesses Varies by Industry

Business Technology Use In The Canadian Private Sector by Industry, 2001



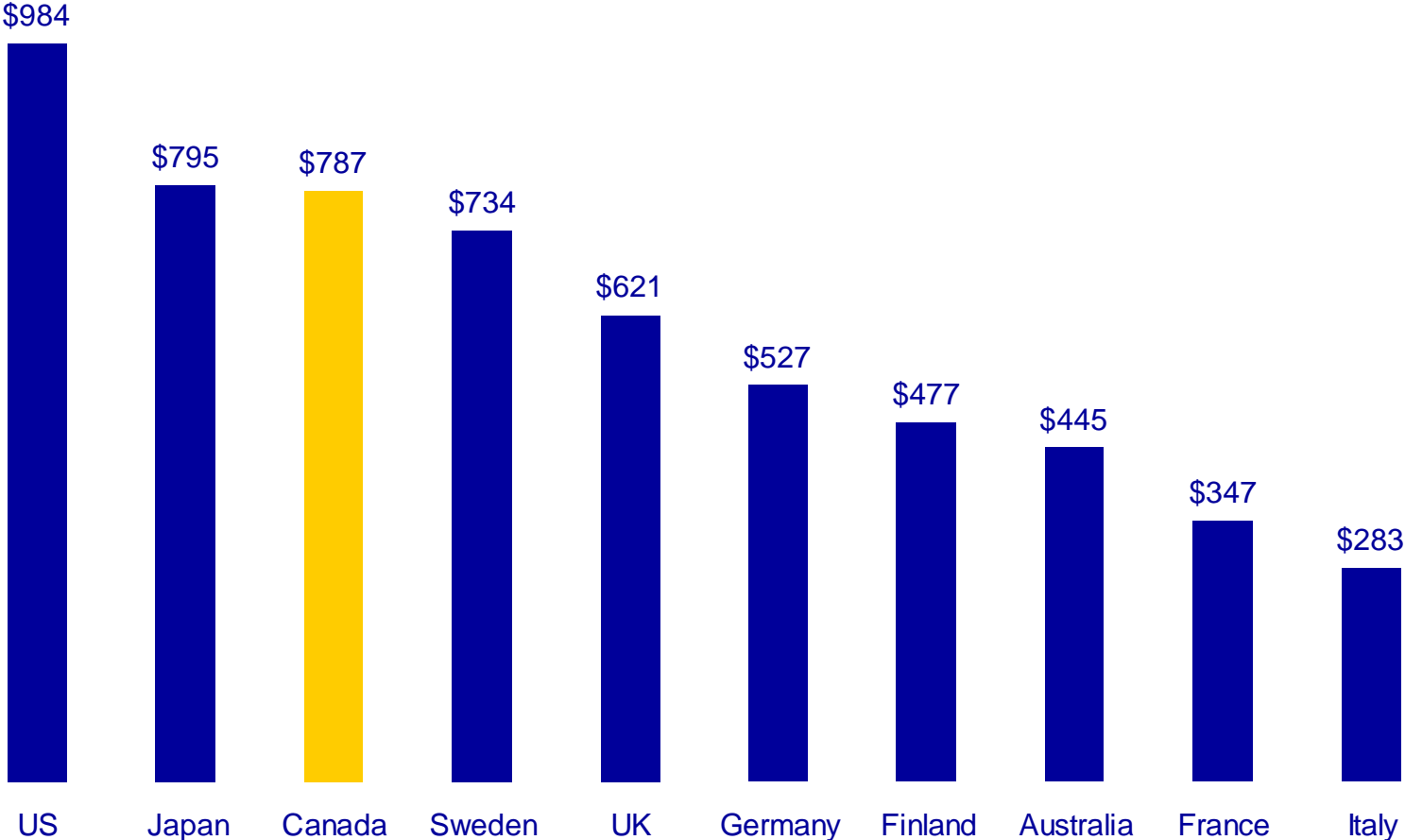
Estimates of Worldwide E-Commerce Growth Vary Greatly

Total Estimated Worldwide E-Commerce in US \$Billions

Source	2000	2001	2002	2003	2004
eMarketer	\$226	\$449	\$841	\$1542	\$2775
Forrester Research	\$604	\$1138	\$2061	\$3694	\$6335
Gartner Group	\$403	\$953	\$2180	\$3950	\$5950
IDC	\$354	\$634	\$1153	\$1871	\$3144
Goldman Sachs	\$357	\$740	\$1304	\$2088	\$3201
Ovum	\$218	\$345	\$543	\$858	\$1400

Canada is a World Leader in E-Commerce

Internet Commerce Per Capita, 2001 (in US\$)



Source: World Information Technology and Services Alliance, *Digital Planet 2002*, February 2002.

Canadian E-Commerce Growth Concentrated in a Few Key Sectors

Value of E-Commerce* Sales, B2B & B2C (private sector only)
(CDN \$ Millions)

	2000	2001
All private sector	7,245.6	10,388.9
Wholesale trade	1041.2	1914.7
Manufacturing	1304.8	1680.3
Retail trade	889.9	1485.1
Transportation and warehousing	990.2	937.4
Finance and insurance	634.5	623.7
Professional, scientific and technical services	334.6	423.5
Information and cultural industries	273.9	388.5
Accommodation and food services	175.3	259.4
Real estate, rental and leasing	137.0	X
Educational services (private sector)	71.4	80.6
Administration and support, waste management and remediation services	63.5	...
Arts, entertainment and recreation	10.5	...
Management of companies and enterprises	7.2	...
Health care and social assistance (private sector)	3.1	...

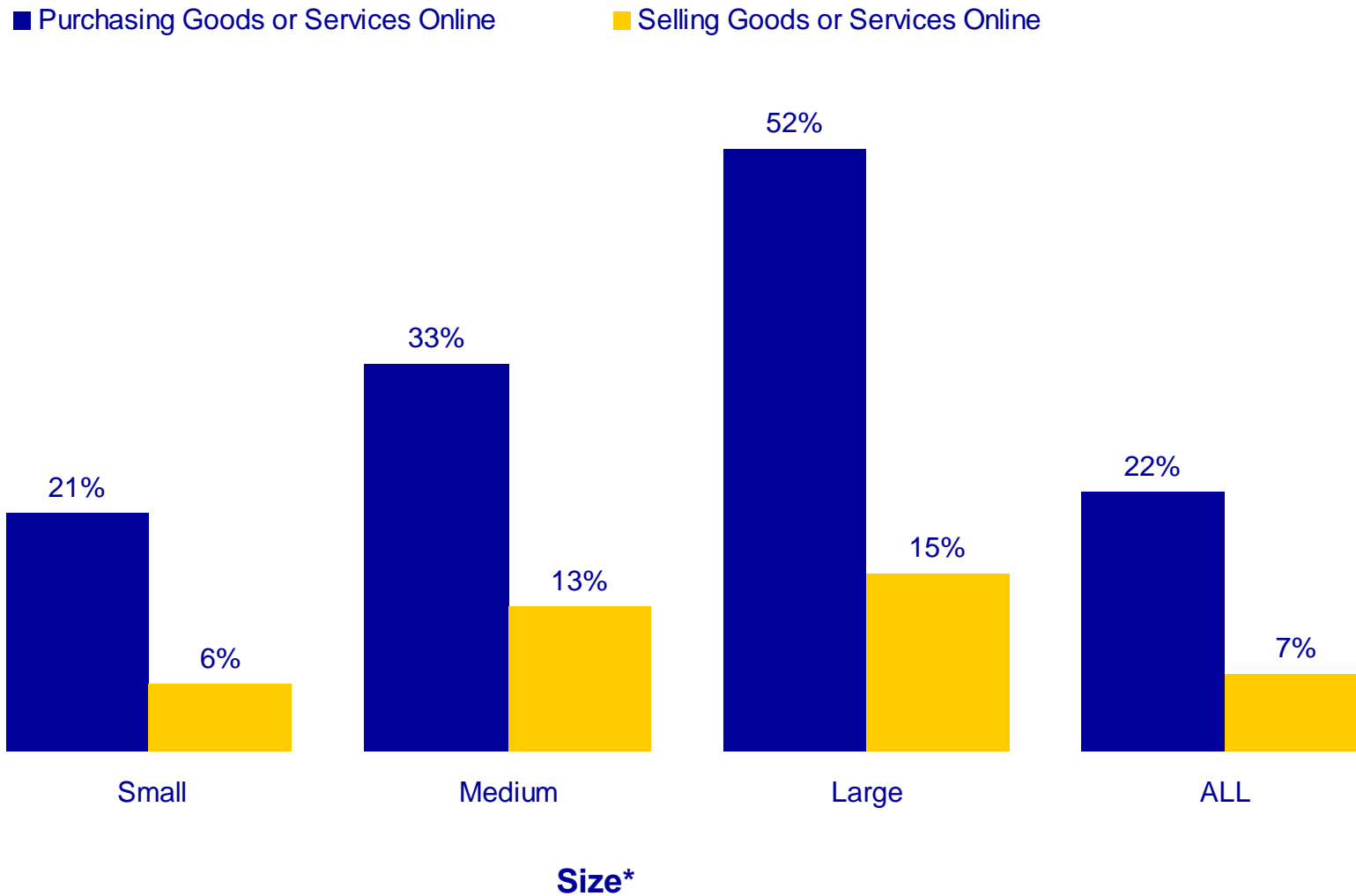
- 78% of sales B2B - 22% B2C -26% of sales exported

Note: ... Figures not available X Confidential Data

*Total gross sales conducted over the Internet with or without online payment.
Source: Electronic Commerce and Technology Survey; Statistics Canada, April 2002.

Over 50% of Large Canadian Firms Purchase Goods or Services Online

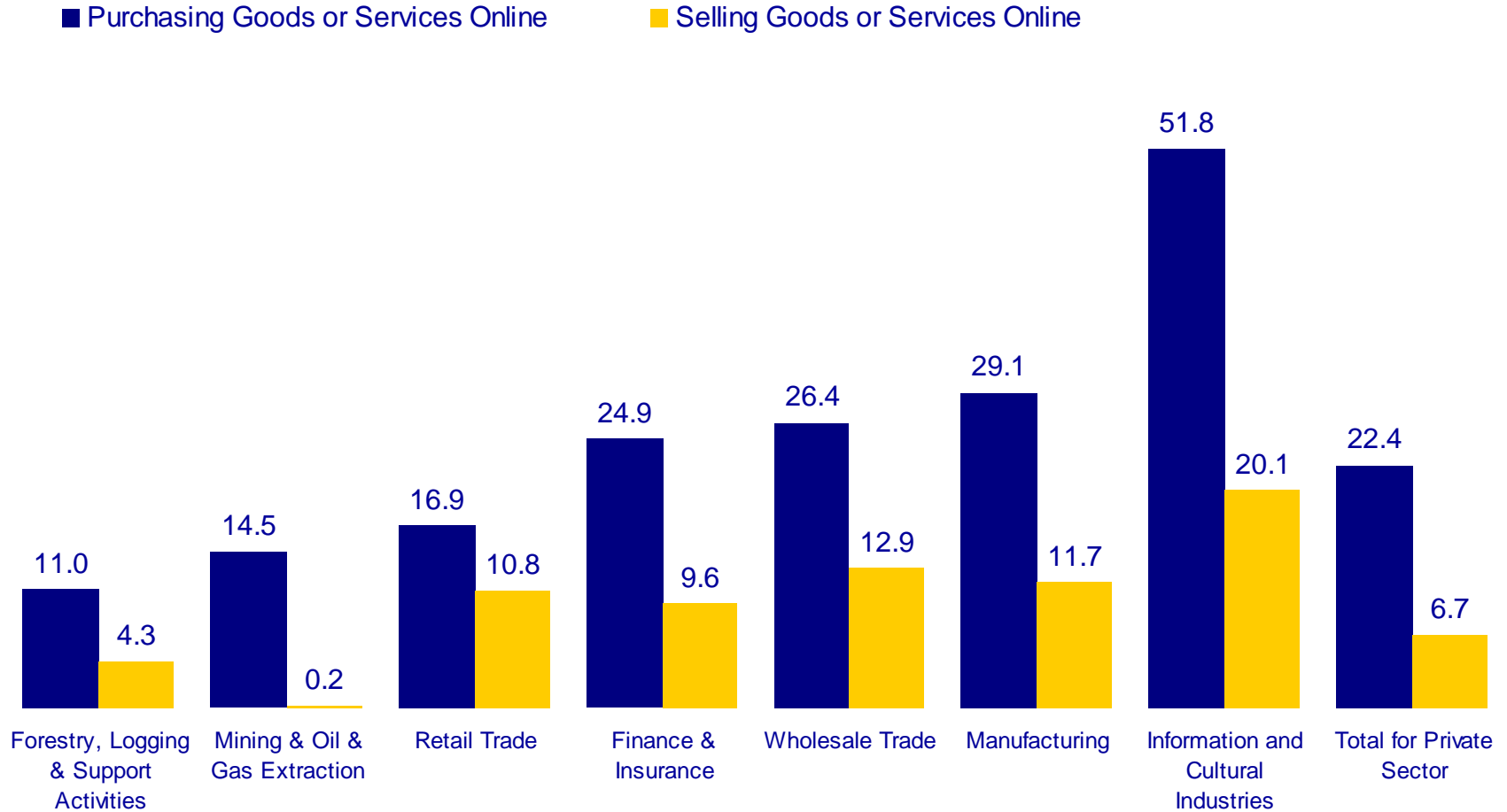
Buying and Selling Online by Size of Firm, 2001



* Small: 0-19 full-time employees, Medium: 20-99 (20-499 in Manufacturing), Large: 100+ (500+ in Manufacturing)
Source: Electronic Commerce and Technology Survey; Statistics Canada, April 2002.

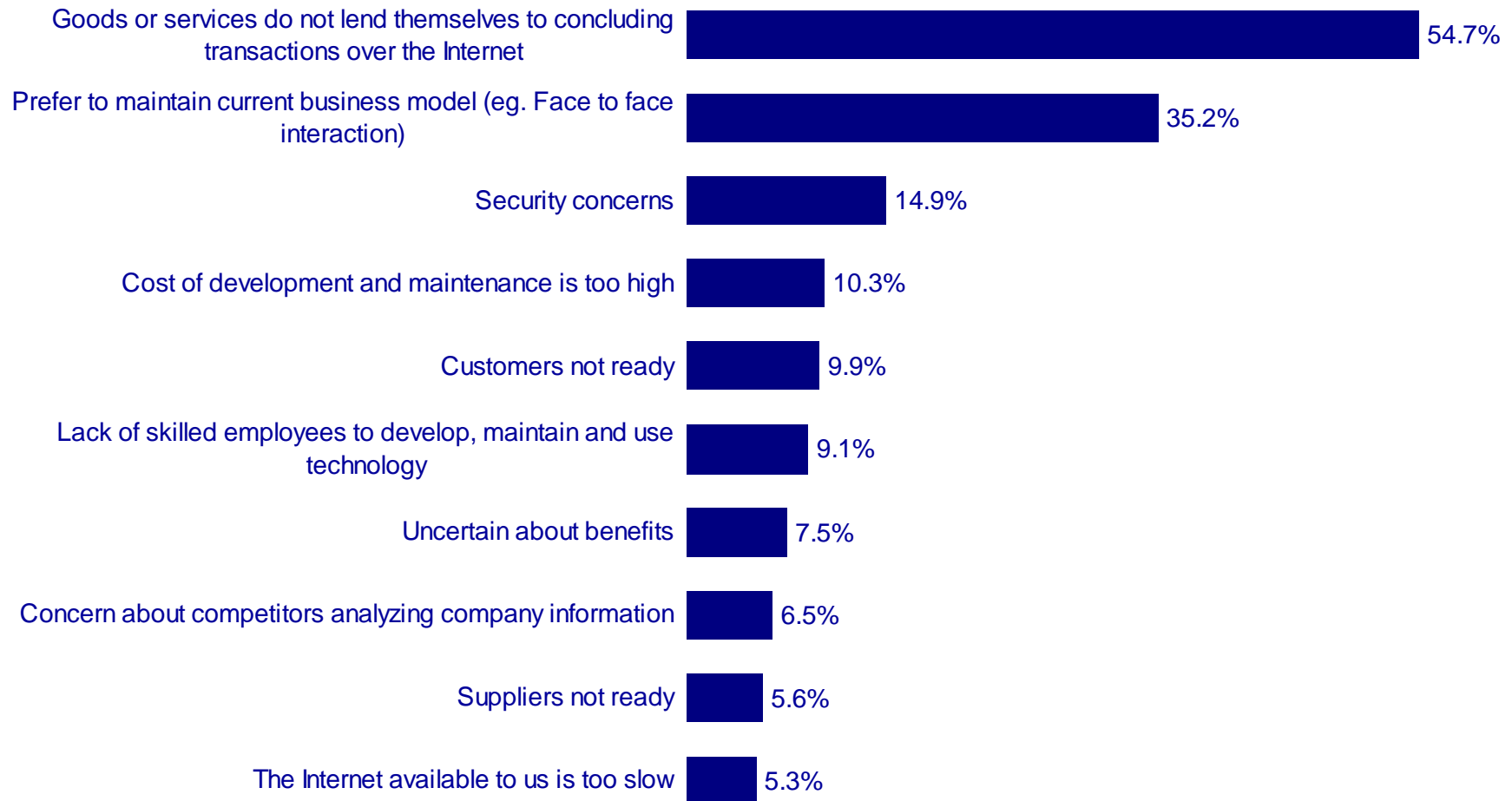
E-Commerce Use Varies By Sector

Buying and Selling Online by Sector, 2001



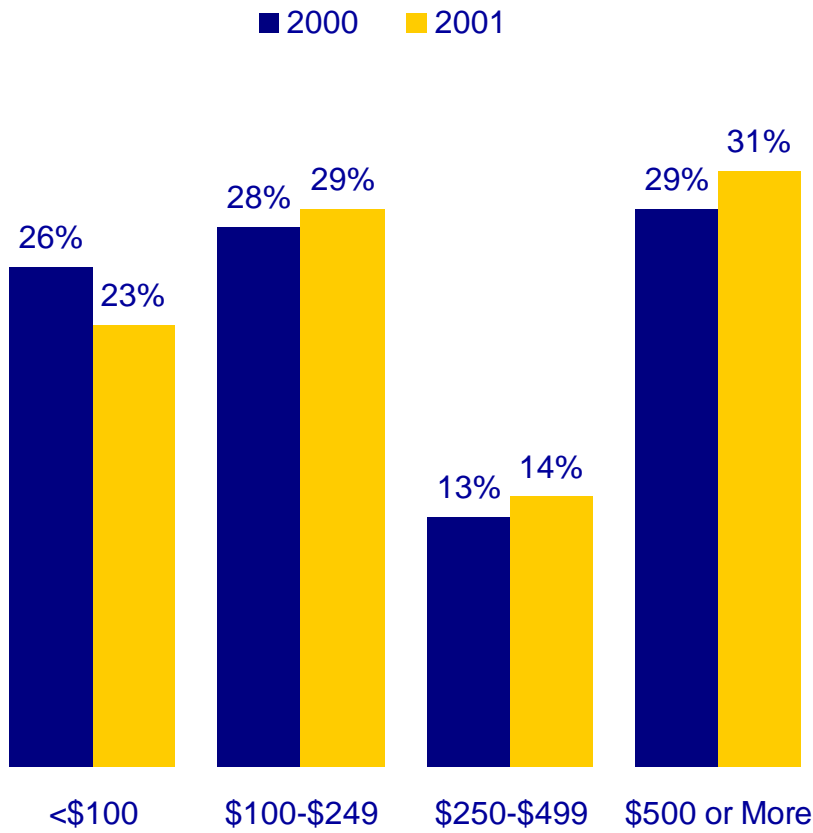
Reasons Canadian Companies Do Not Buy or Sell Online

Reasons For Not Using The Internet to Purchase or Sell (Internet users who do not use electronic commerce), 2001



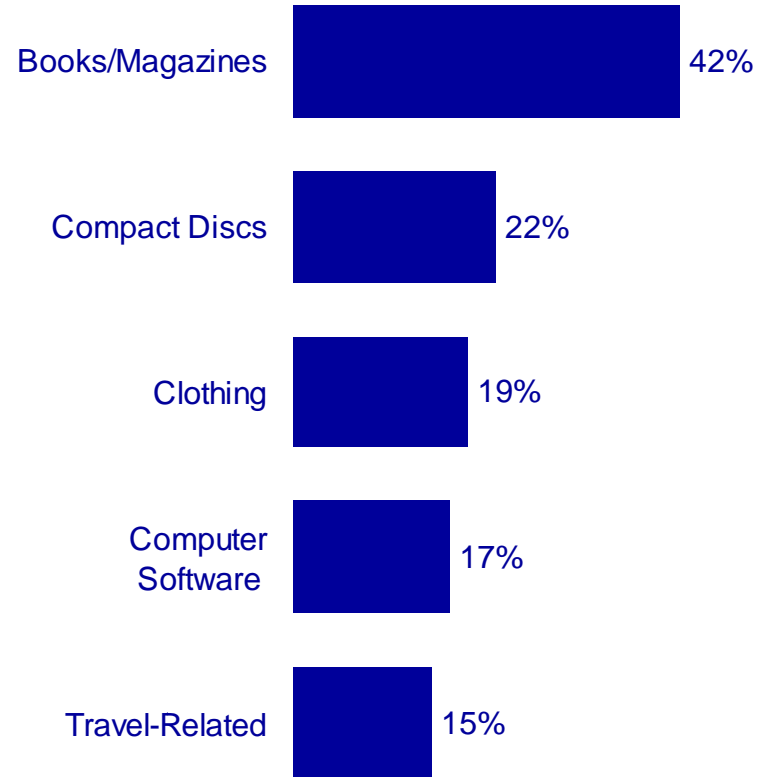
Canadians Are Purchasing Over the Internet

Annual Average Expenditure for Internet Purchases



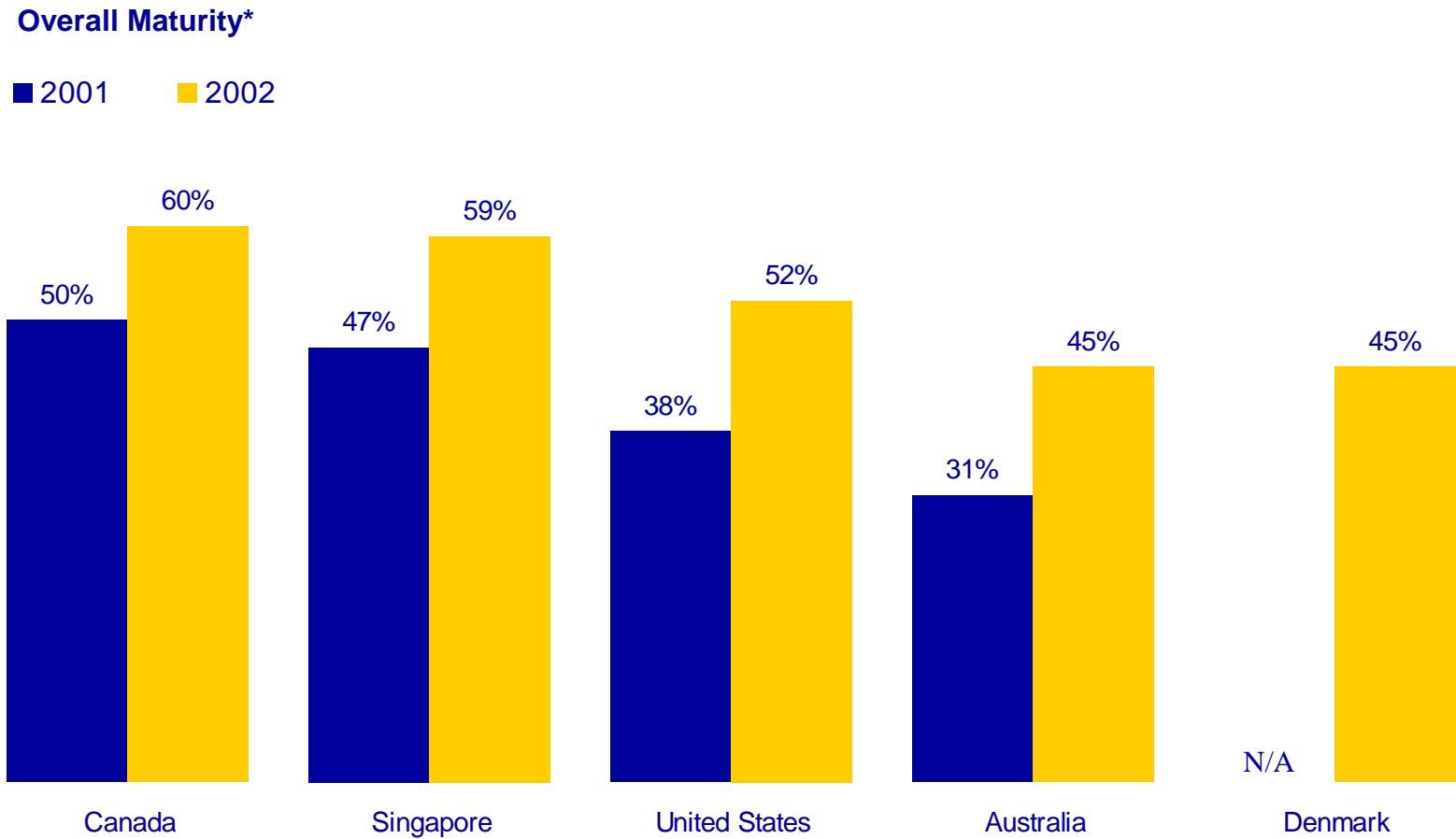
(\$817 Canada average in 2001)

Top Five Online Purchases, 2001



• 20% of e-consumers account for 80% of all online spending.

Canada Leads in Government Online Services For The Second Year in a Row

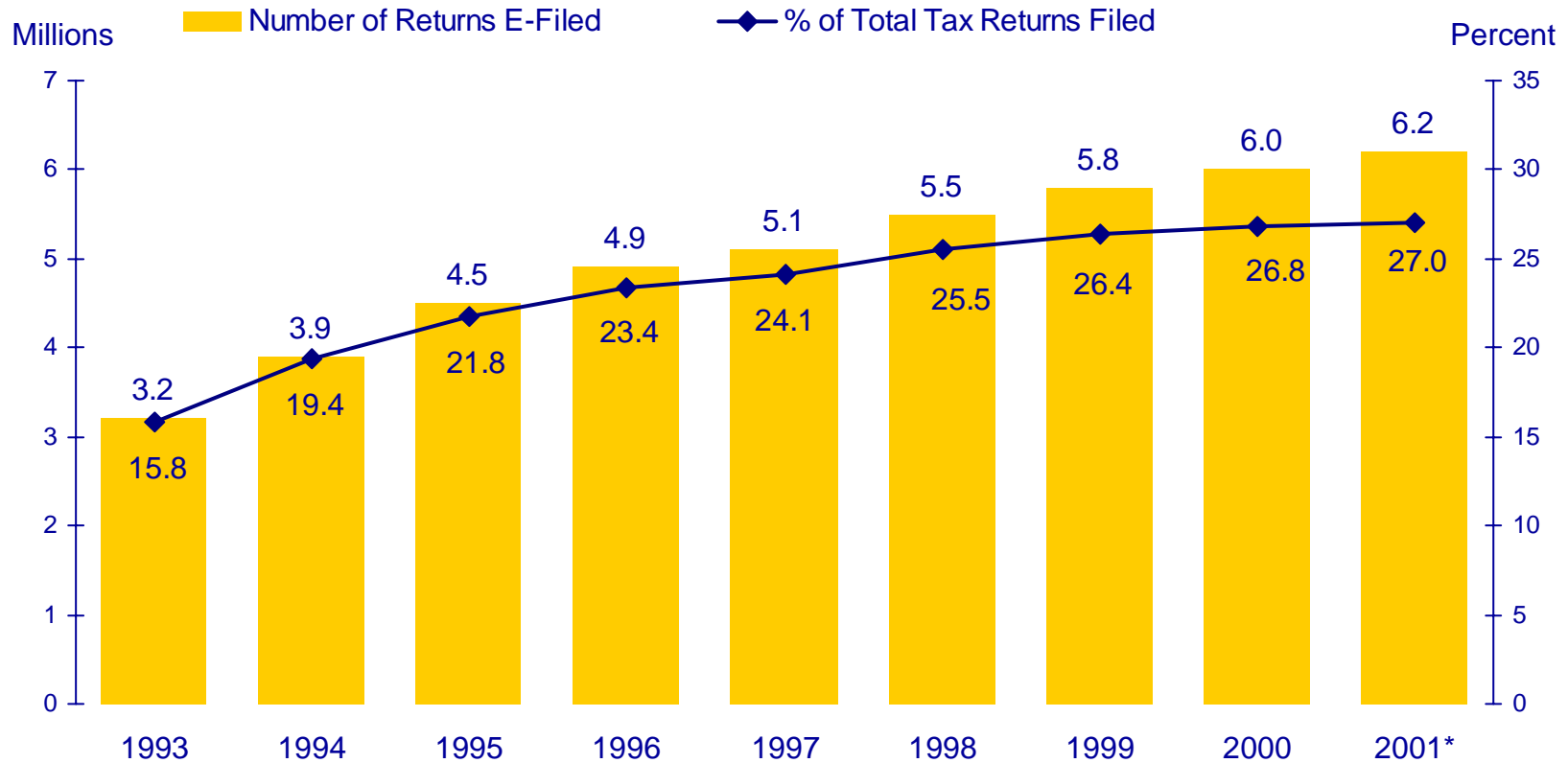


*Overall Maturity is a measure of the sophistication of online services; the extent to which governments are incorporating techniques such as customer relationship management, intentions based design and portal models in their online delivery.

Source: Accenture, *eGovernment Leadership - Realizing the Vision*, April 2002.

Canadians are Receptive to Government Online Services

E-Filed Tax Returns in Canada



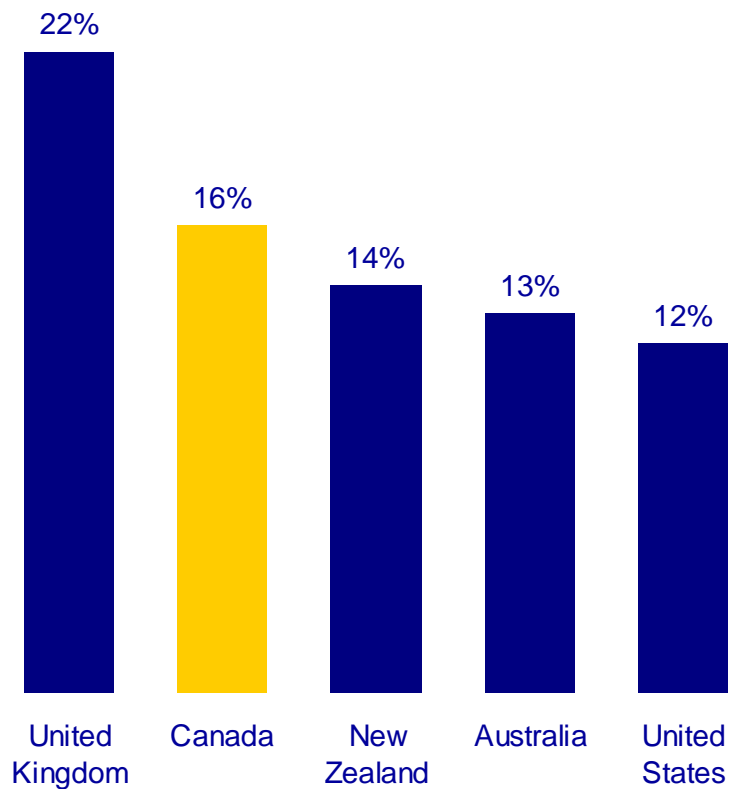
- Increasing use of net-filing from 530 in 1998 to 2.4 million in 2001.*
- Net-filing is a method of directly filing one's taxes over the Internet using approved software.

* 2001 numbers are projections.

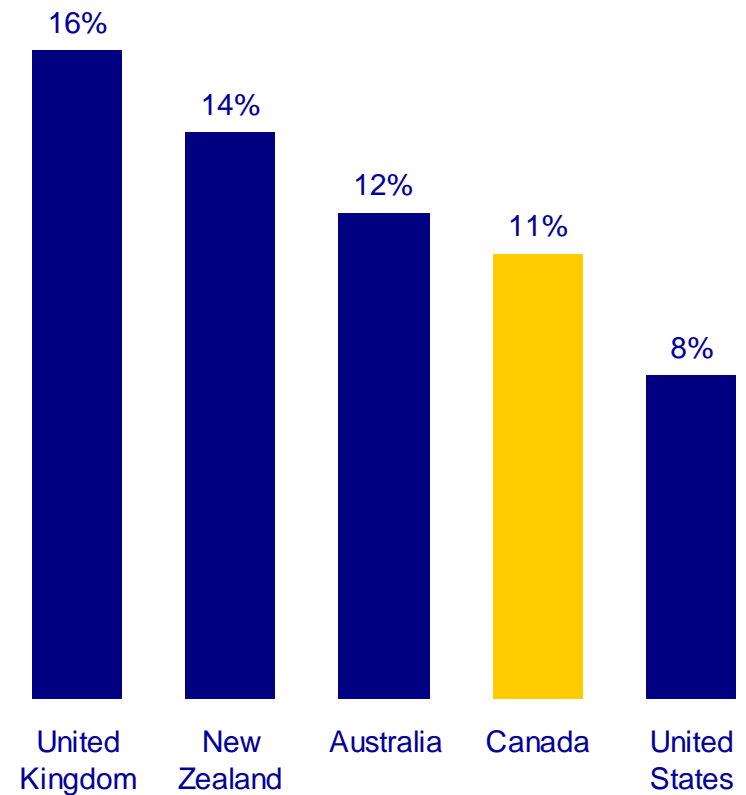
Source: Canada Customs and Revenue Agency, May 2002.

Canadian Medical Specialists are Making Use of Electronic Systems

Use of Electronic Medical Records

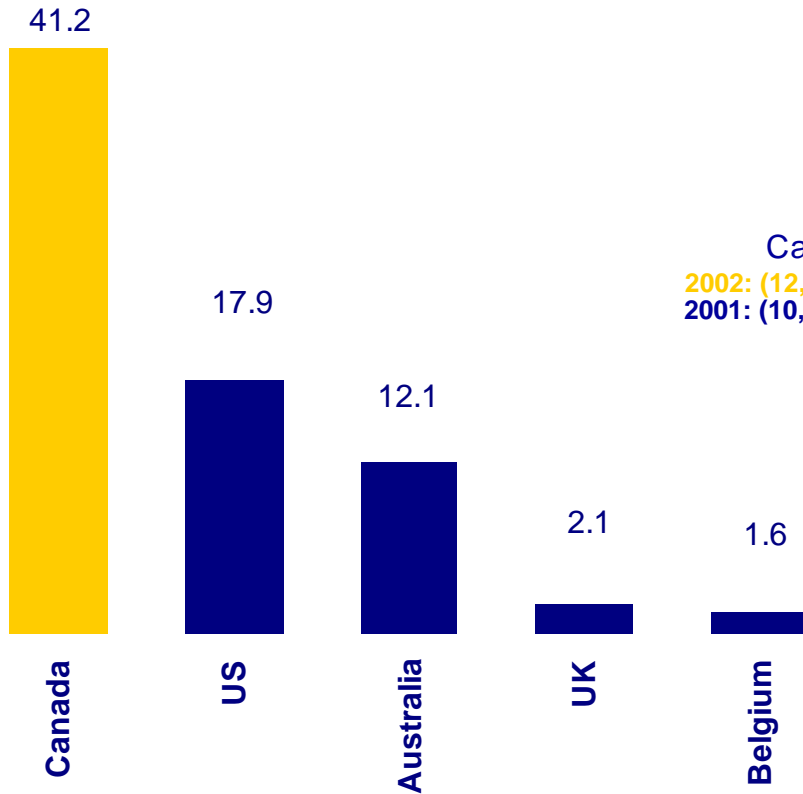


Use of Electronic Drug Prescriptions

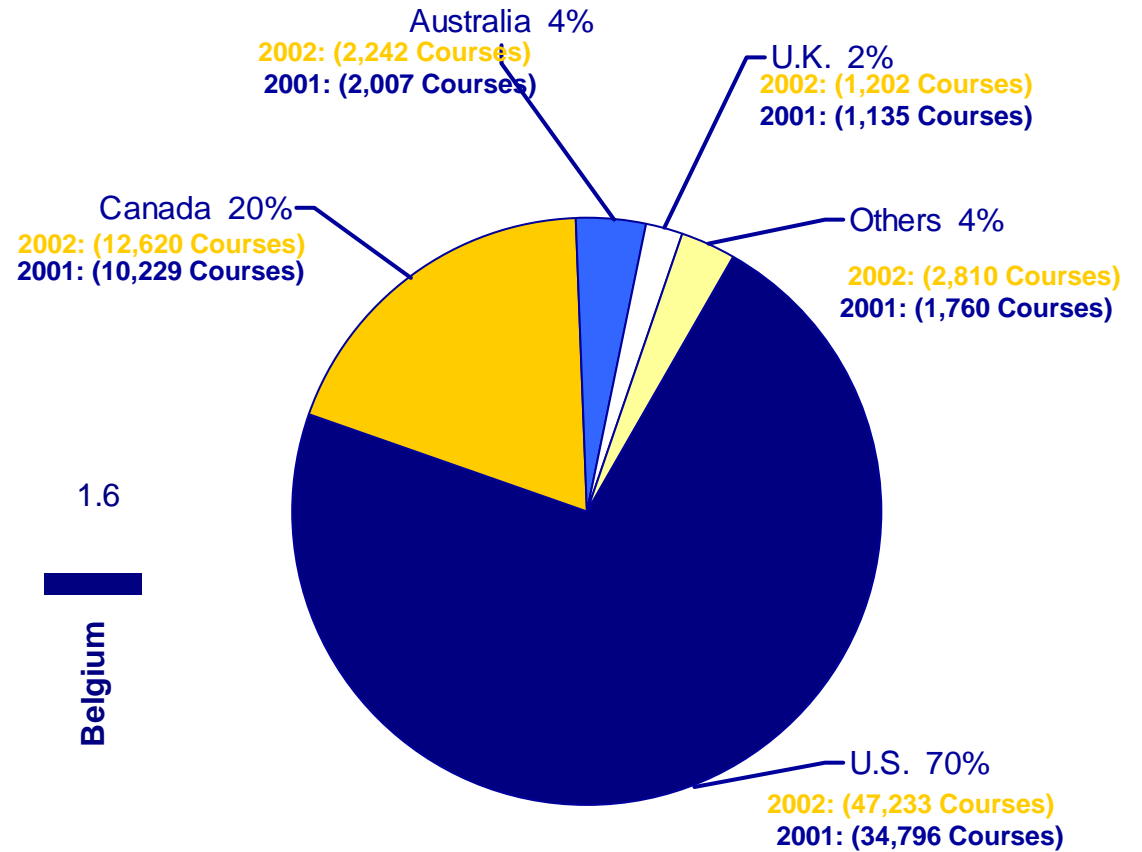


Canada is a World Leader in E-Learning

Online Courses Per 100,000 Population, March 2002

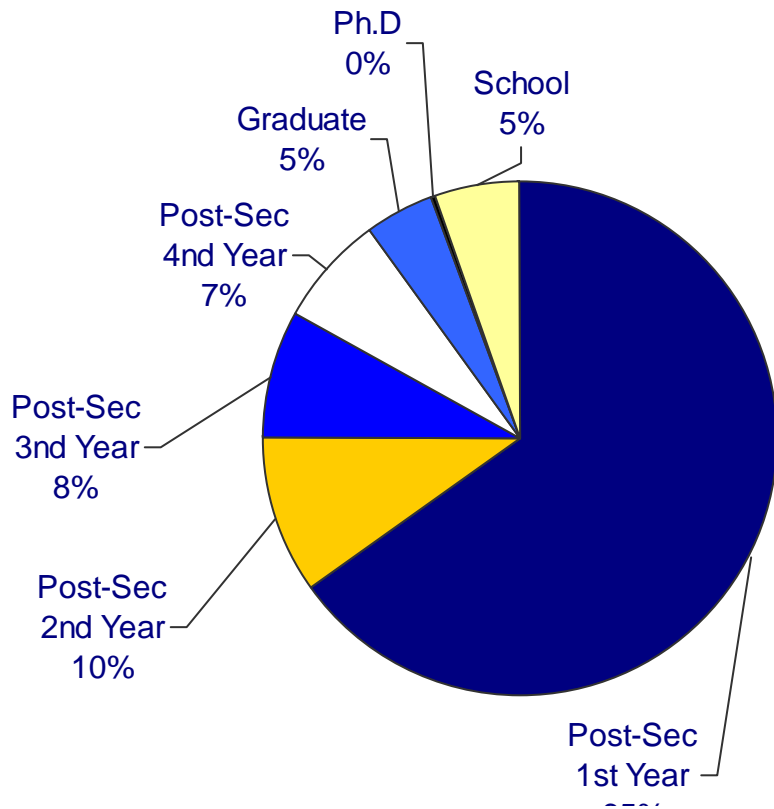


Canada Ranks 2nd for Online Courses Worldwide, March 2002

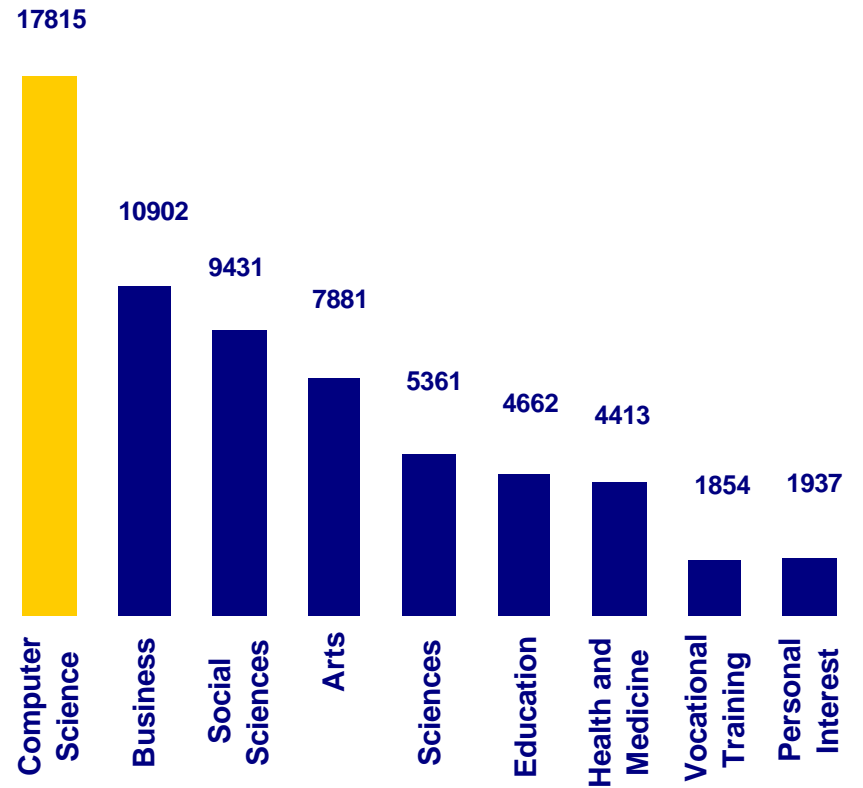


Online Courses Help Develop Highly Qualified People

Canadian Online Courses By Level, March 2002

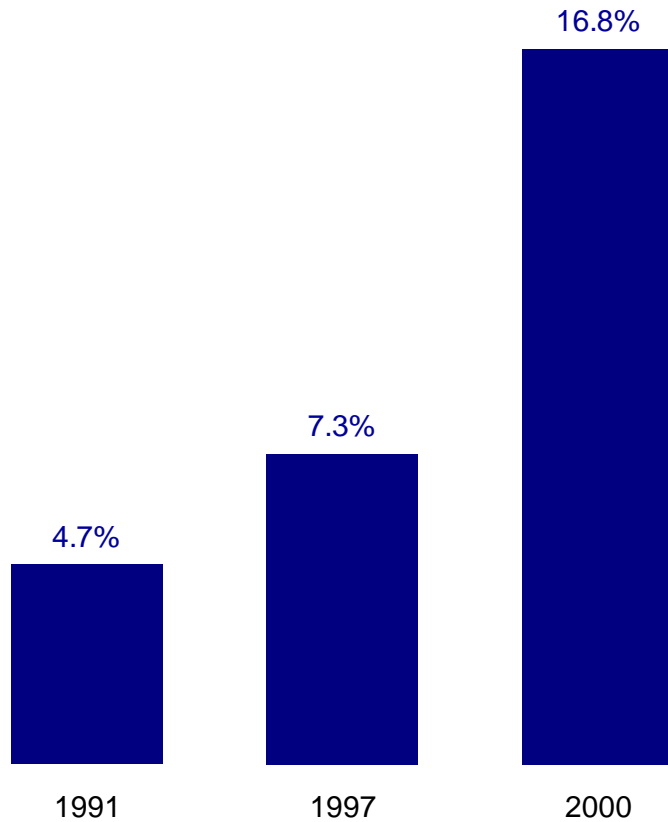


Worldwide Online Courses by Subject, March 2002

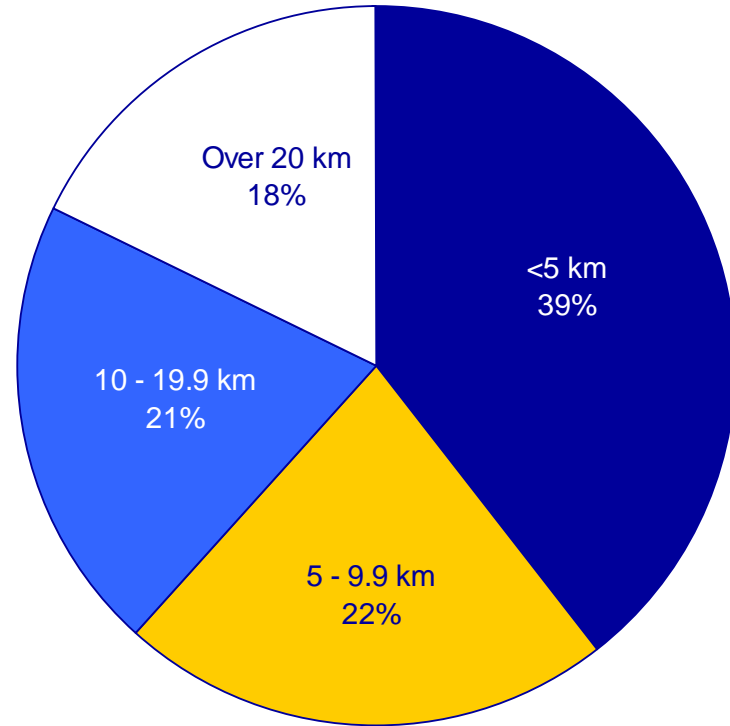


Telework Increasingly Attractive to Canadian Workers

Percentage of Employed Canadians Who Telework*



Average Commuting Distance For All Workers in Canada



* Does not include those who occasionally perform some overtime work at home.