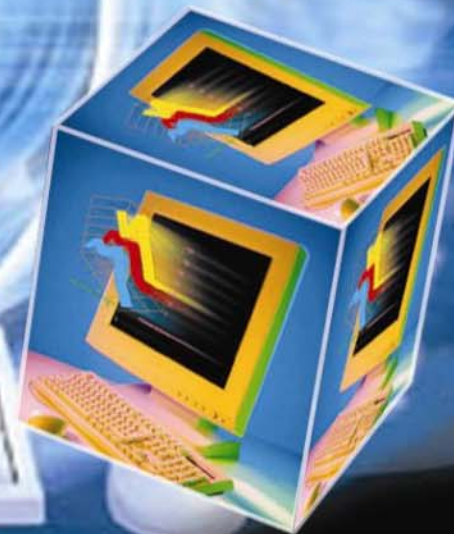




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# KEY INDICATORS ON ICT INFRASTRUCTURE, USE AND CONTENT



# **Key Indicators on ICT Infrastructure, Use and Content**

**September 2003**

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## Inquiries and Information

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 2003. Readers are encouraged to check throughout the year for more up-to-date information at <http://strategis.ic.gc.ca>

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# 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

### Services

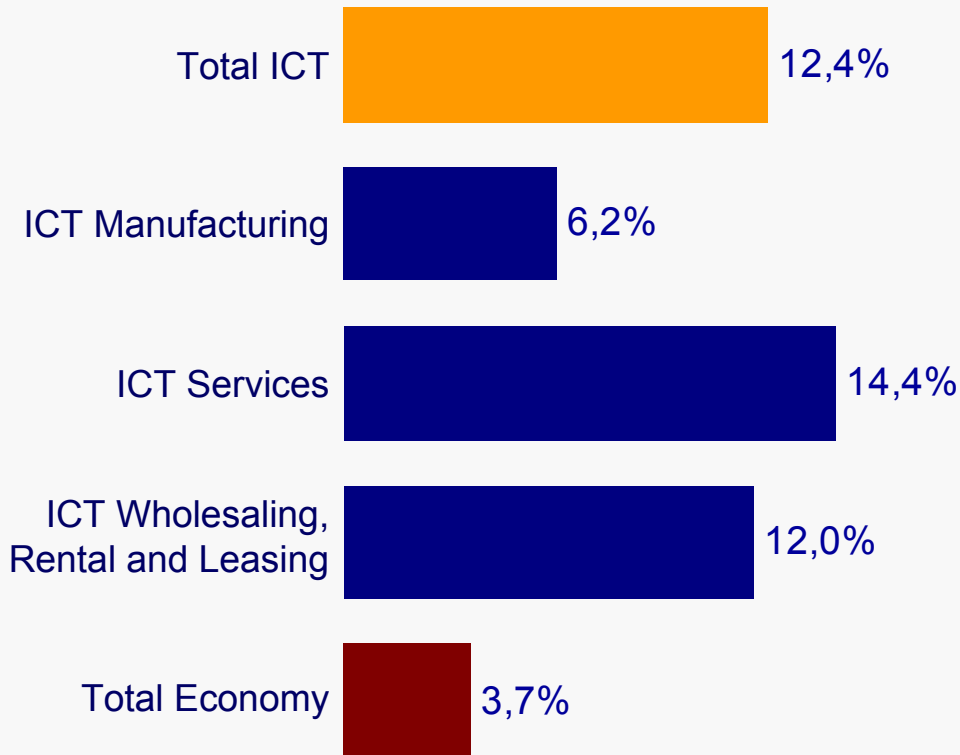
- Software Publishers – NAICS 51121 (or 5112)
- Cable and Other Program Distribution – NAICS 51322
- Telecommunications – NAICS 5133
- Other Information Services – NAICS 51419
- Data Processing Services – NAICS 51421 (or 5142)
- Computer Systems Design and Related Services – NAICS 54151 (or 5415)
- Electronic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

### Wholesaling, Rental and Leasing

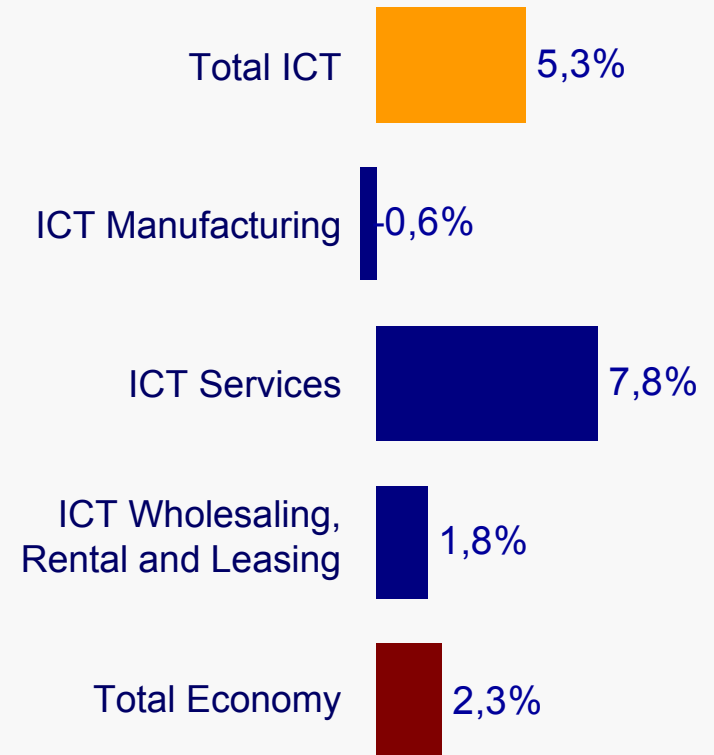
- Computer and Communications Equipment and Supplies Wholesaler-Distributors – NAICS 4173
- Office and Store Machinery and Equipment Wholesaler-Distributors – NAICS 41791
- Office Machinery and Equipment Rental and Leasing – NAICS 53242

# The ICT Sector has Grown Faster than the Canadian Economy

## Growth of Real GDP, 1997-2002 Compound Annual Growth Rate



## Employment Growth, 1997-2002\* Compound Annual Growth Rate



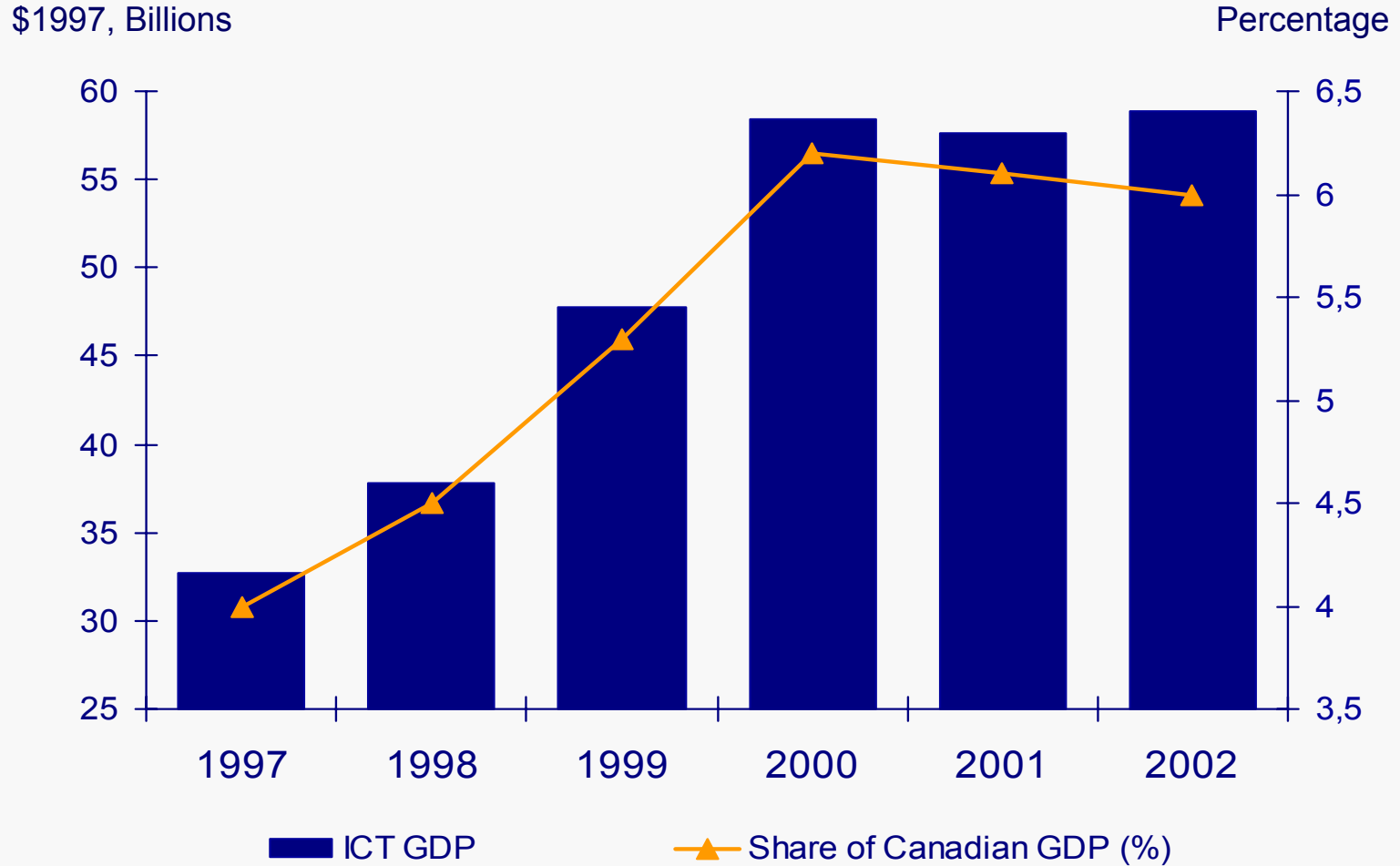
\*Employment data for 2002 are Industry Canada estimates, except for total economy.

Source: ICT Statistical Overview, Industry Canada.



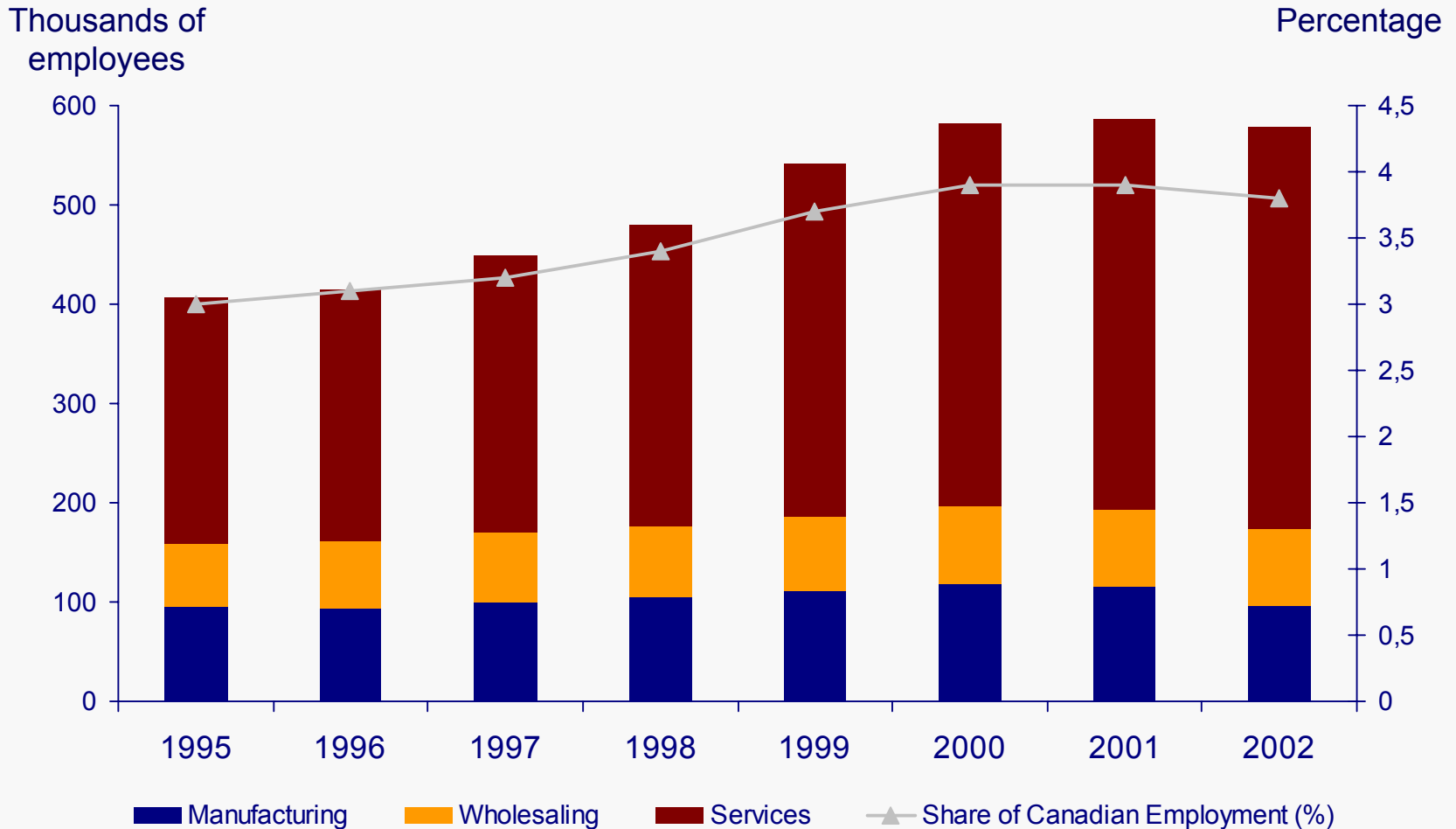
# ICT Makes a Substantial Contribution to the Canadian Economy

## ICT Sector GDP, 1997-2002



# Strong Employment Growth in ICT, Mostly in Software and Computer Service Industries

## ICT Sector Employment, 1995-2002



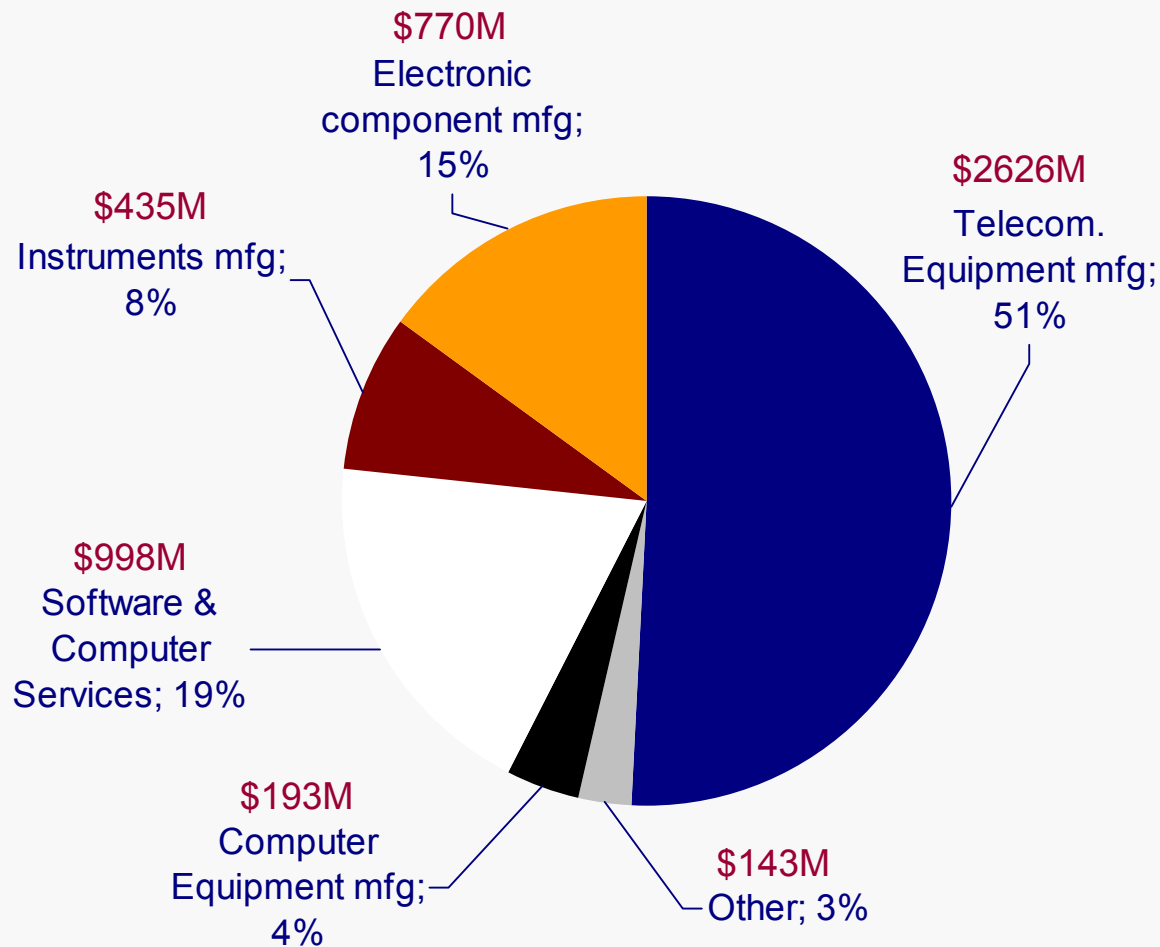
\*Employment data for 2002 are Industry Canada estimates, except for total economy.

Source: Canadian ICT Sector Profile, May 2003.

# ICT Accounted for 46% of Industrial R&D in 2002

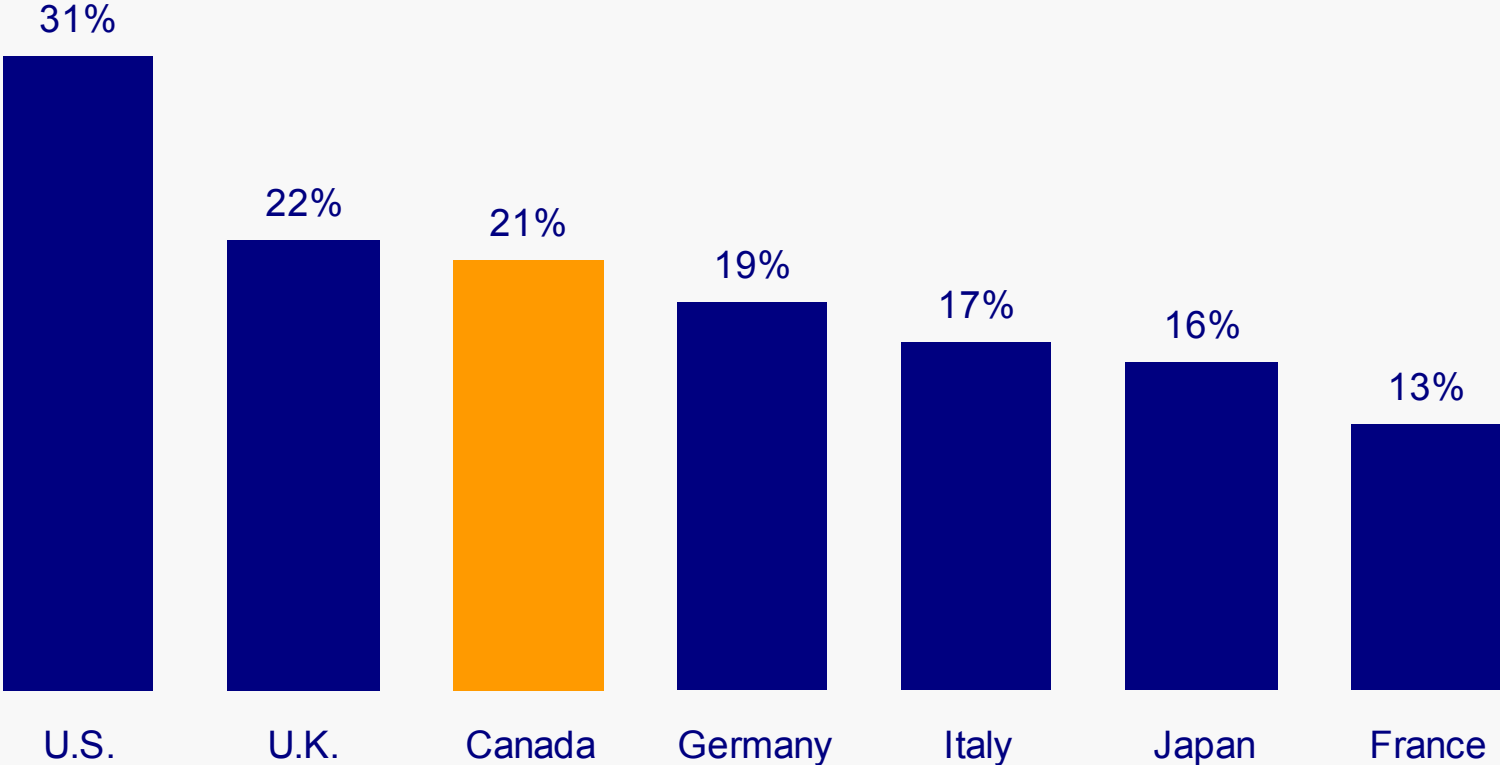
## R&D Expenditures by ICT Segment

2002 Intentions \$5.2 Billion – Down 13.4% from 2001



# Canada is Among G7 Leaders in ICT Investment

ICT Investment as a Percentage of Non-Residential Gross Fixed Capital Formation, Total Economy - 2001



Source: Seizing the Benefits of a Digital Economy. Copyright OECD, 2003 – [www.oecd.org](http://www.oecd.org).

# The Composition of Telecommunications Service Revenues is Evolving

	1998	2002
<b>Telecom Service Revenue</b>	<b>\$28.5 billion</b>	<b>\$33.0 billion</b>
<b>Composition of Service Revenues</b>		
Wireline Local Voice	23%	21%
Wireless Voice	11%	16%
Wireline Long Distance	23%	13%
Data and Internet Services	9%	13%
Carrier Services***	12%	10%
Other Telecom Services**	3%	10%
Non-telecom Services*	12%	9%
Resellers, Satellite & Other	4%	4%
Wireline Calling Features	3%	4%

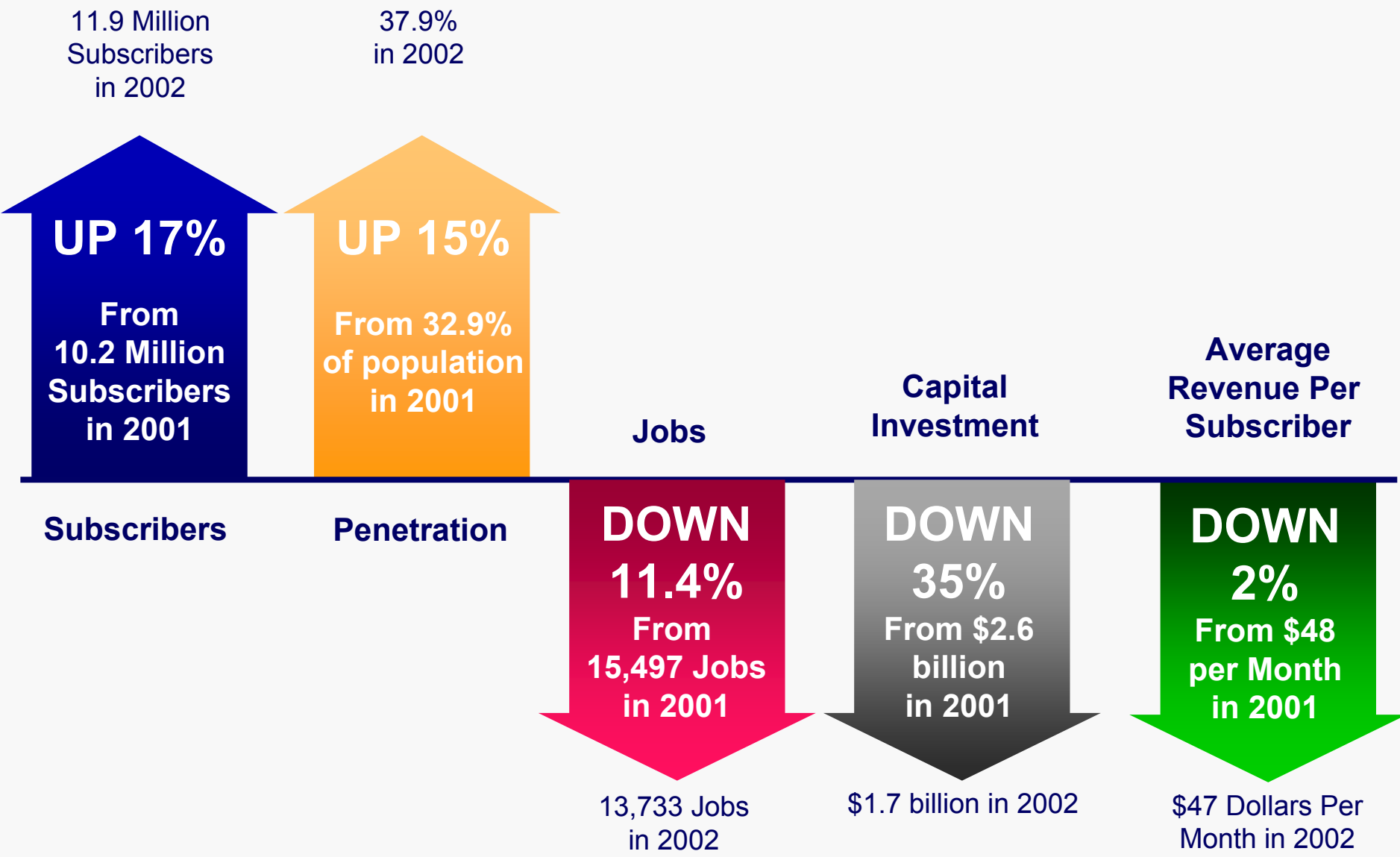
\* Non-telecommunications services include terminal equipment rentals, sale of goods, etc.

\*\* Other telecommunications services include service connections, dispatch services etc.

\*\*\* Carrier services consist of contribution, interconnection and circuit rentals to other carriers or resellers

Source: Statistics Canada, Survey of Telecommunications Service Providers.

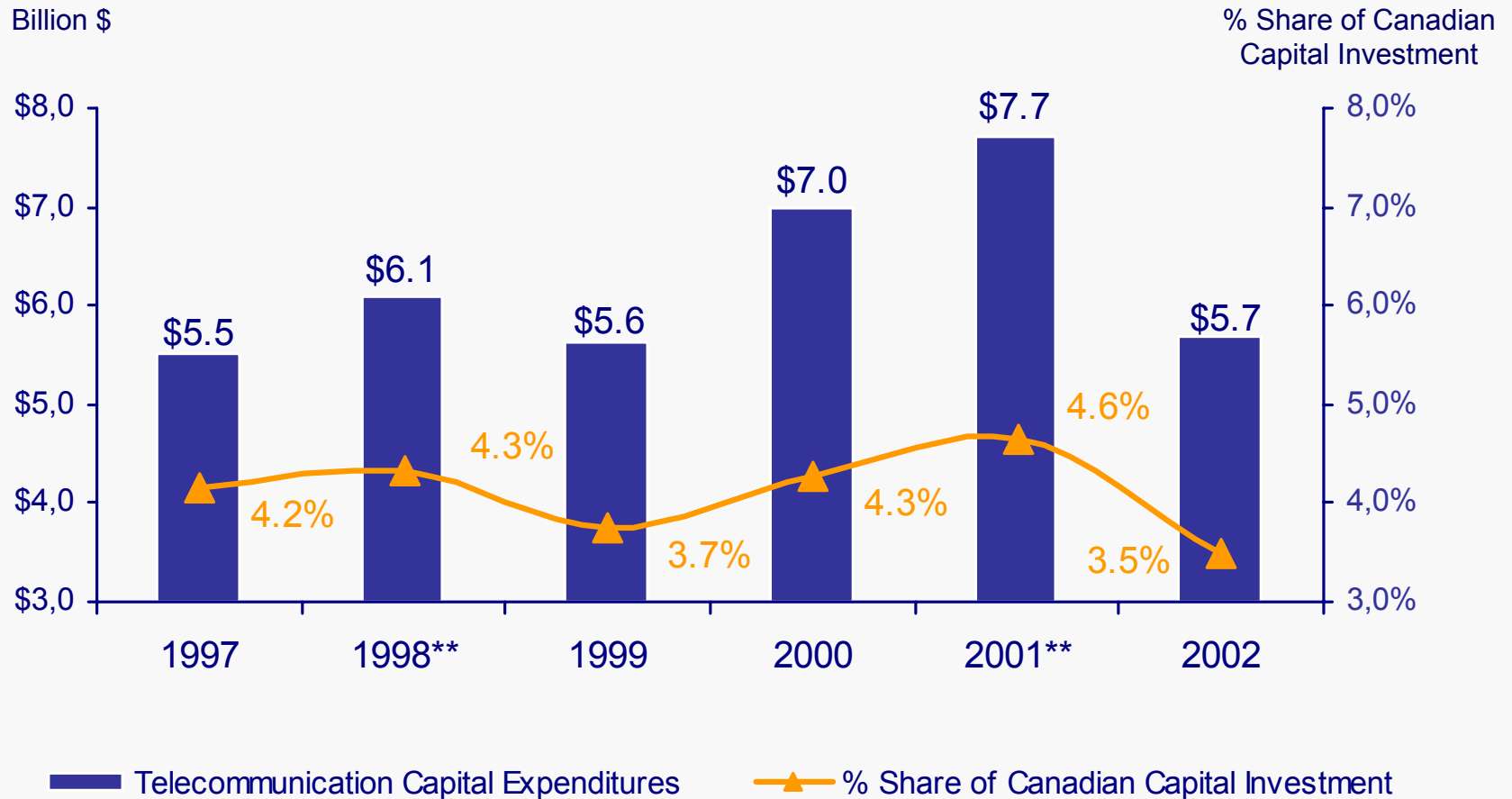
# Key Trends in the Canadian Mobile Telephone Industry



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

# Investment in Telecommunications Infrastructure Falls

## Telecommunications Services Capital Expenditures - 1997-2002\*



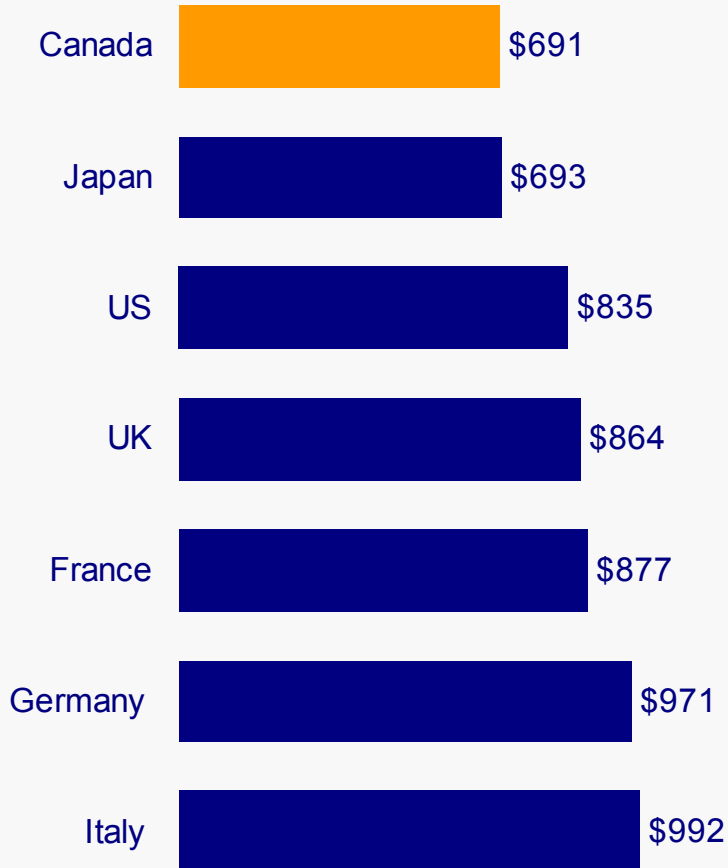
\*Telecommunications capital expenditures includes wireline and wireless only.

\*\* 1998 and 2001 include spectrum expenditures of \$0.2 billion and \$1.5 billion respectively.

Source: Statistics Canada and Industry Canada.

# Canadian Telephone Charges are Among the Lowest in the G7

## Average Annual Business Telephone Charges - 2002



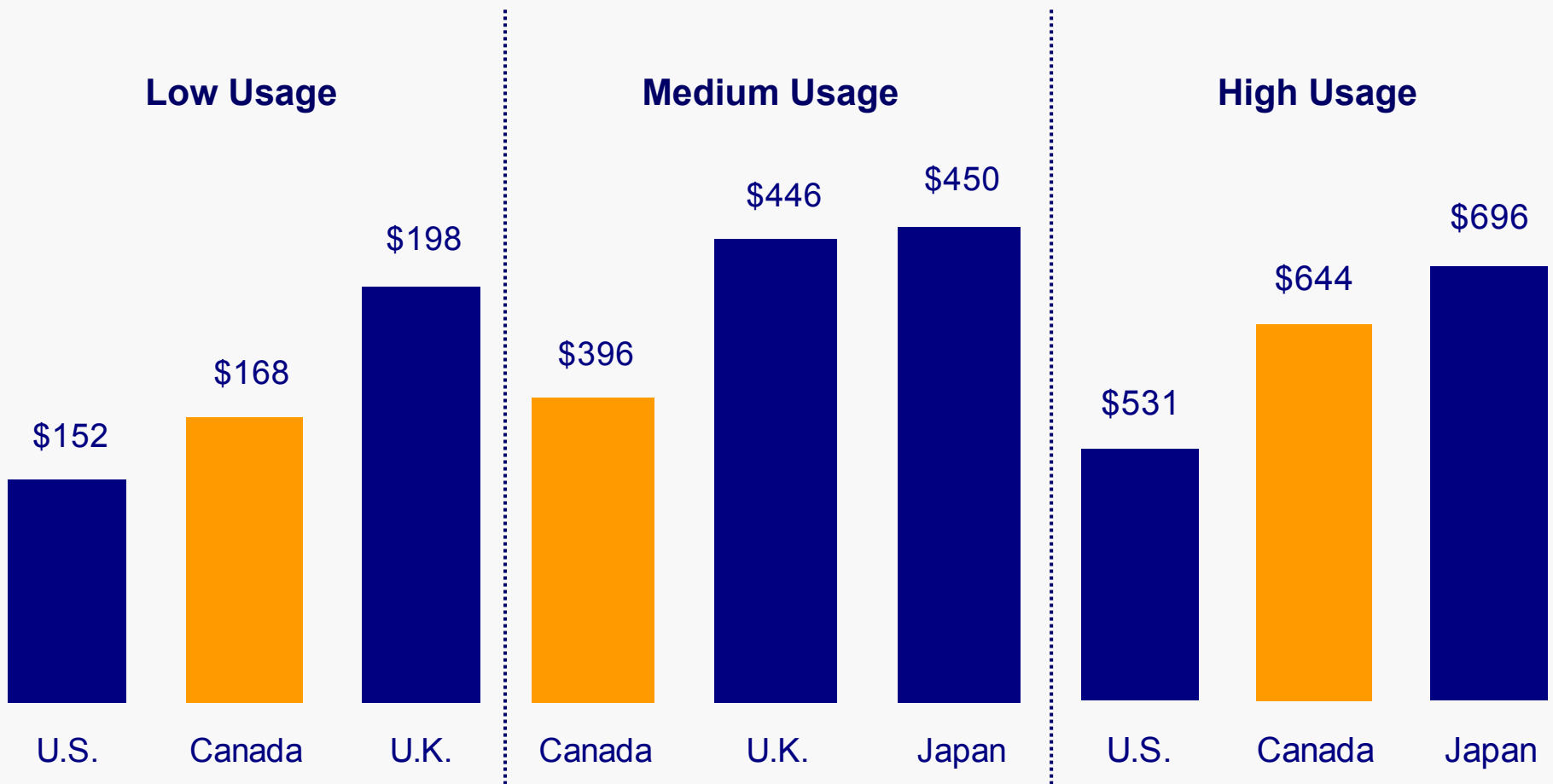
## Average Annual Residential Telephone Charges - 2002





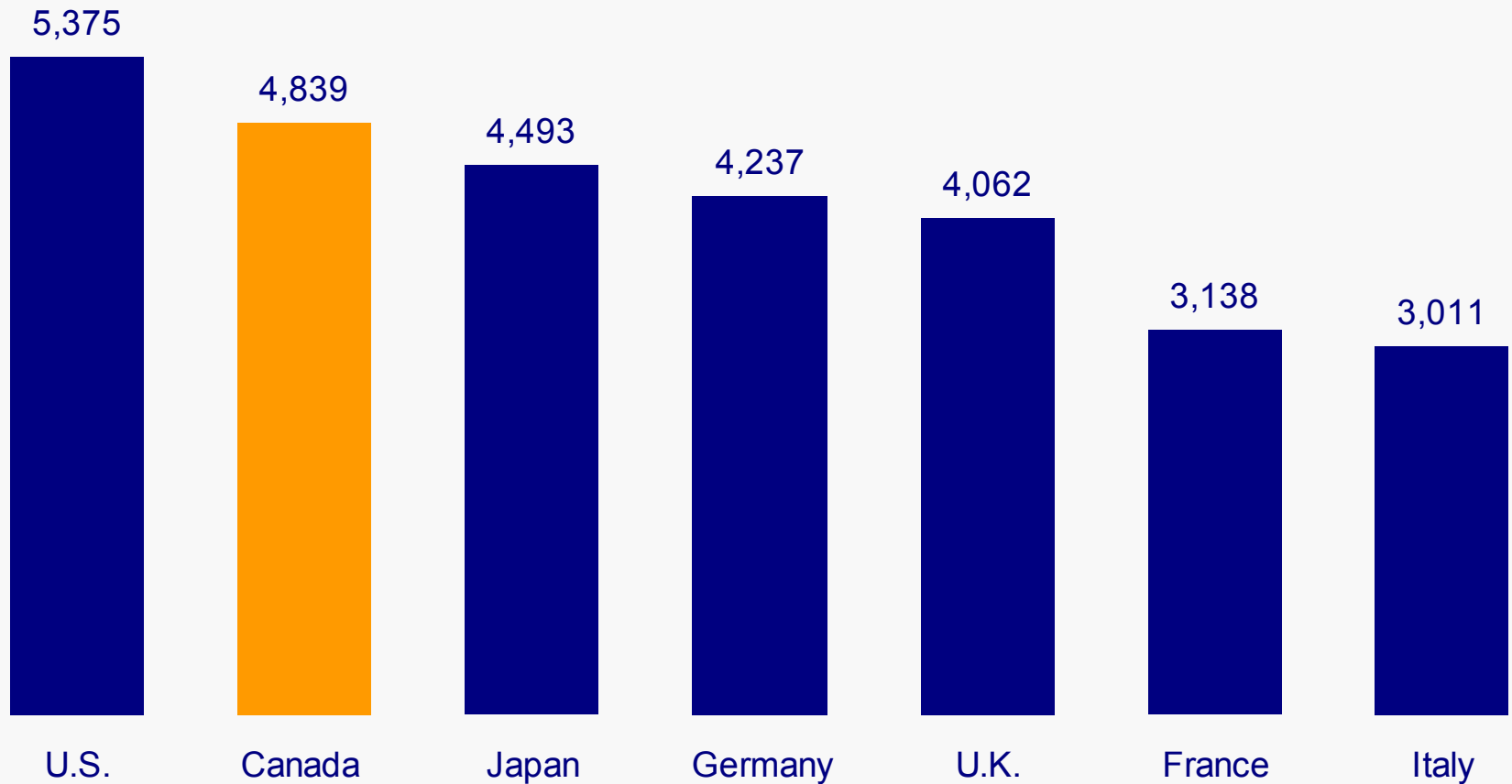
# Canada is a G7 Leader in Mobile Pricing

## Annual Mobile Telephone Charges – Aug. 2002



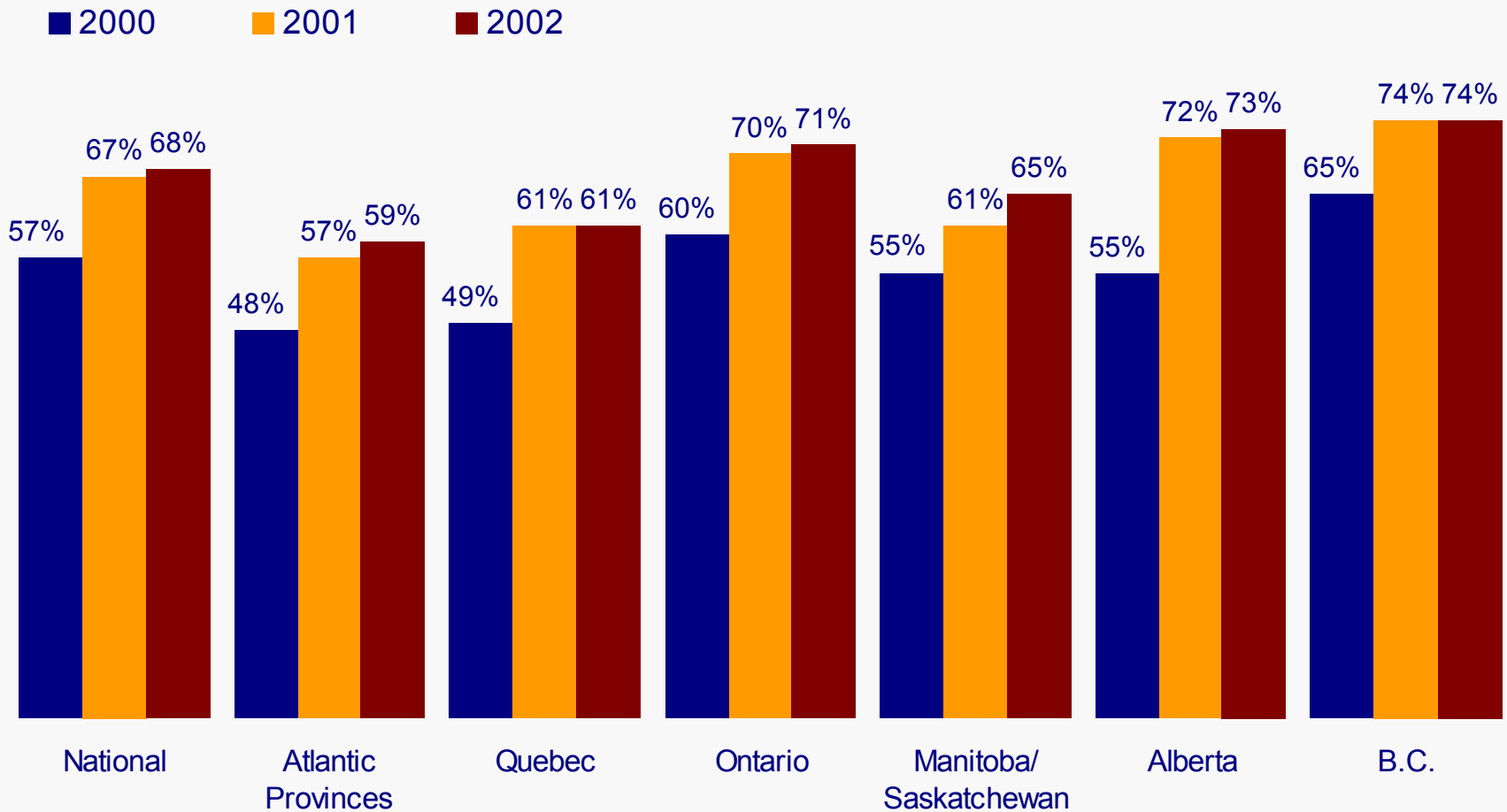
# Canada is One of the G7 Leaders in Internet Use

Internet Users per 10,000 inhabitants - 2002



# Internet Penetration Seems to be Leveling Off

## Internet Penetration\* by Province/Region\*\*



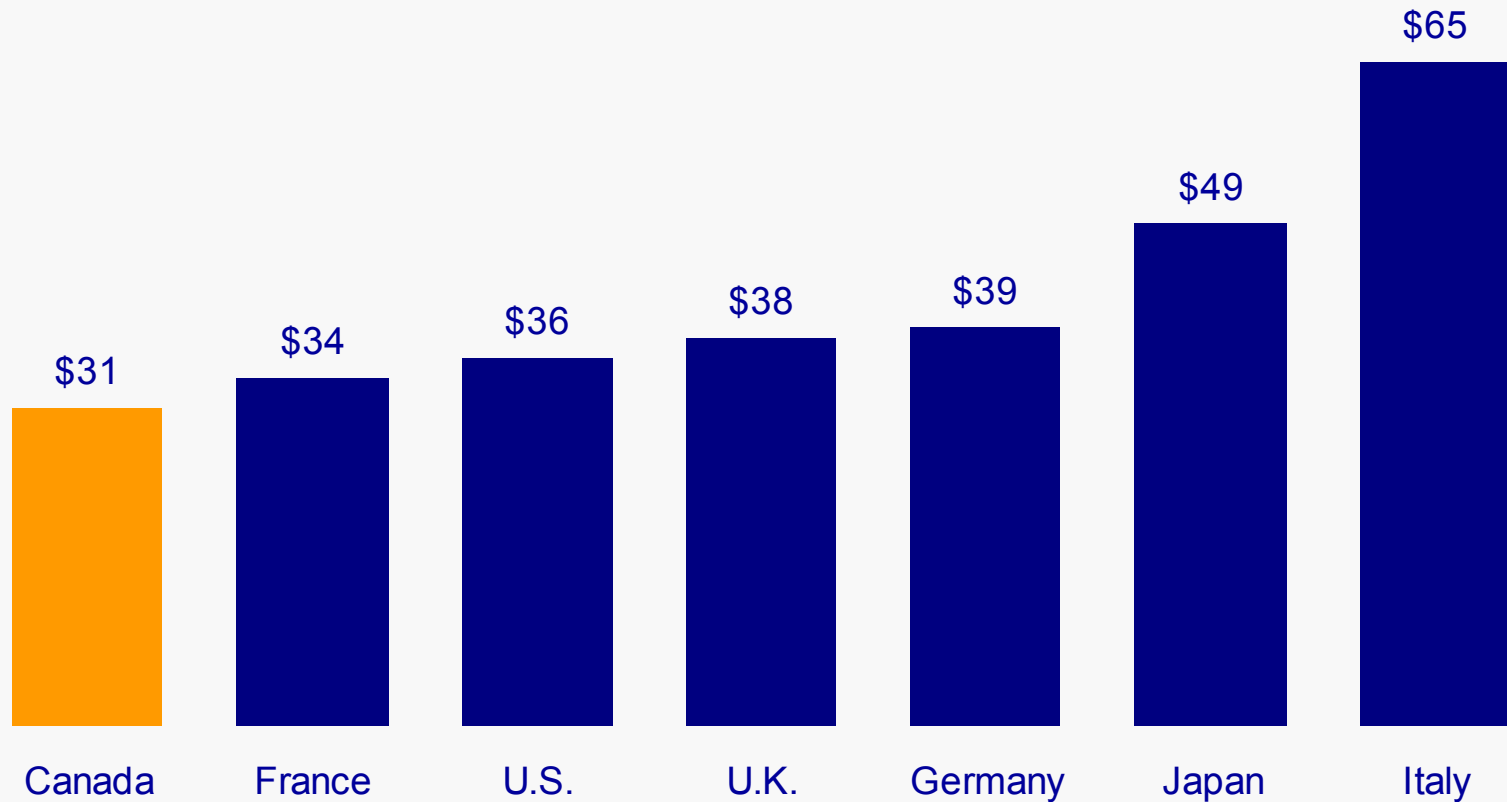
\* % of people who have used the Internet in the last 12 months, from any location.

\*\* Excludes the territories.

Source: 2003 Internet Planner, ACNielsen Company of Canada.

# Canadian Dial-up Internet Charges are Very Affordable in the G7

Basic Internet Access Costs (per 40 hr basket) – Sept. 2002



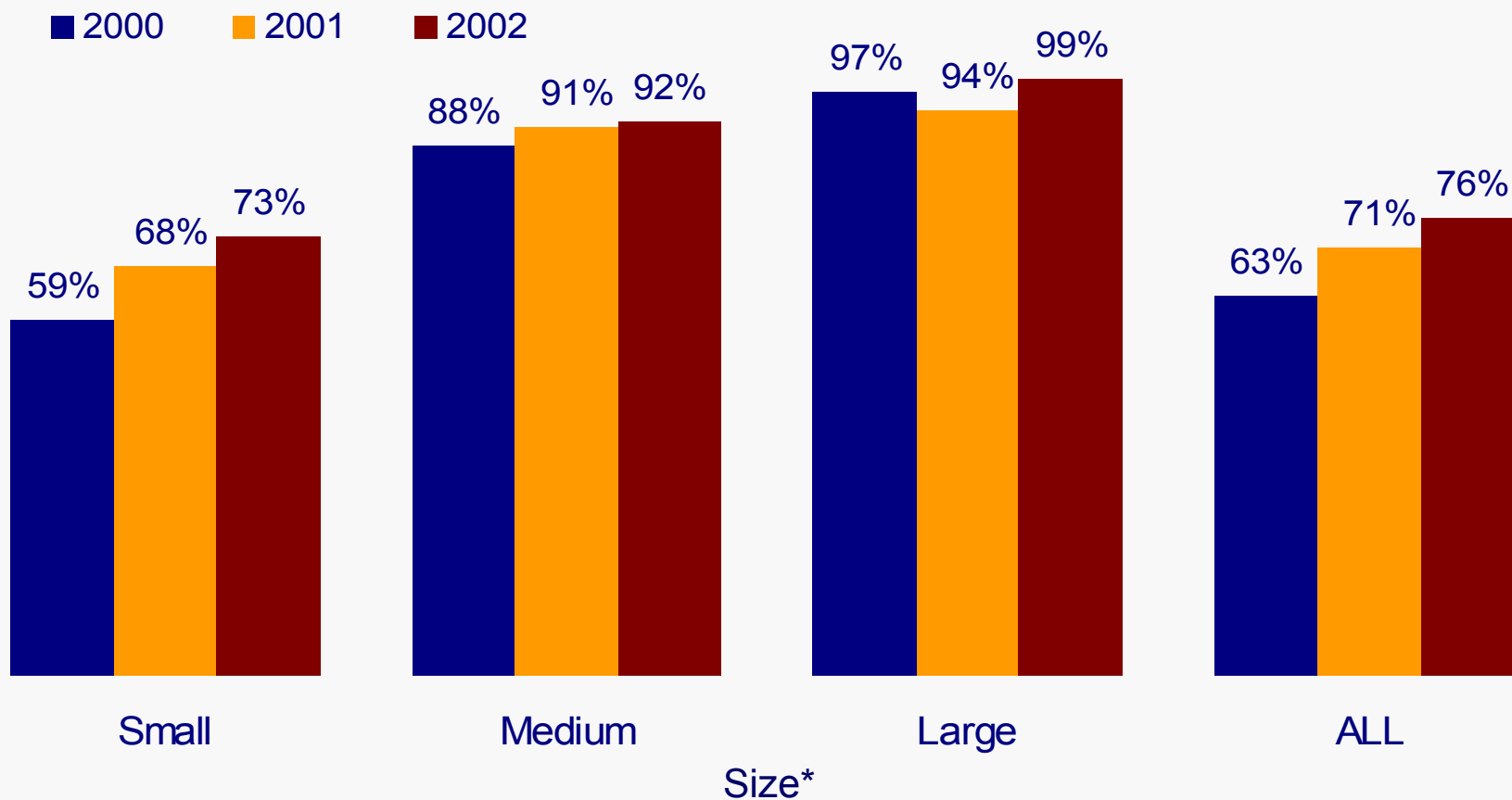
# What are Canadians Doing Online?

## Percentage of Online Canadians Performing Each Activity



# Small Firms Lagging Larger Firms in Internet Connectivity

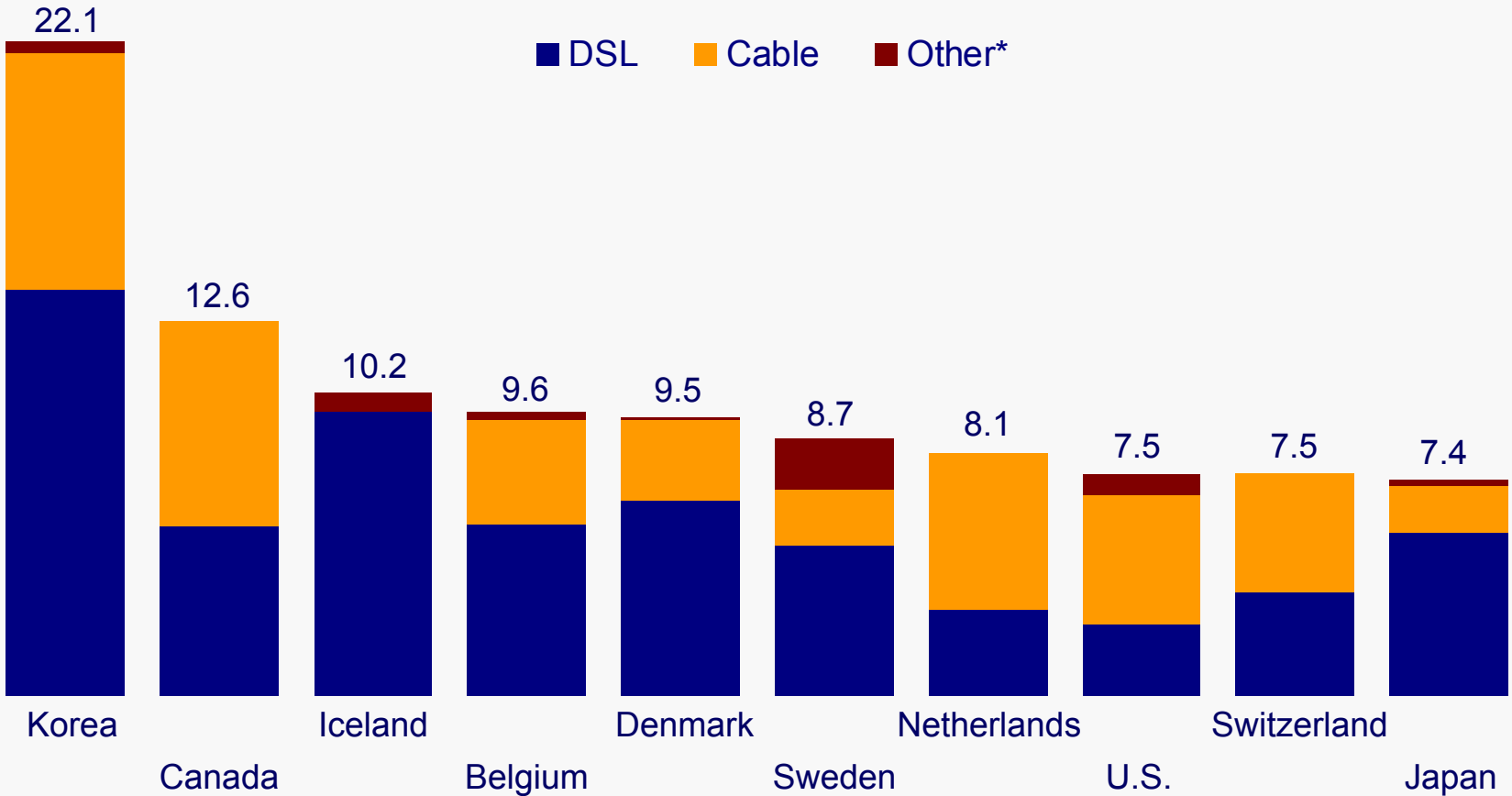
## Internet Adoption in the Canadian Private Sector by Size of Firm



\* Small: 0-19 full-time employees, Medium: 20-99 in non-manufacturing (20-499 in Manufacturing), Large: 100+ in non-manufacturing (500+ in Manufacturing).

# Canada is a Leader in Broadband Use Among OECD Countries

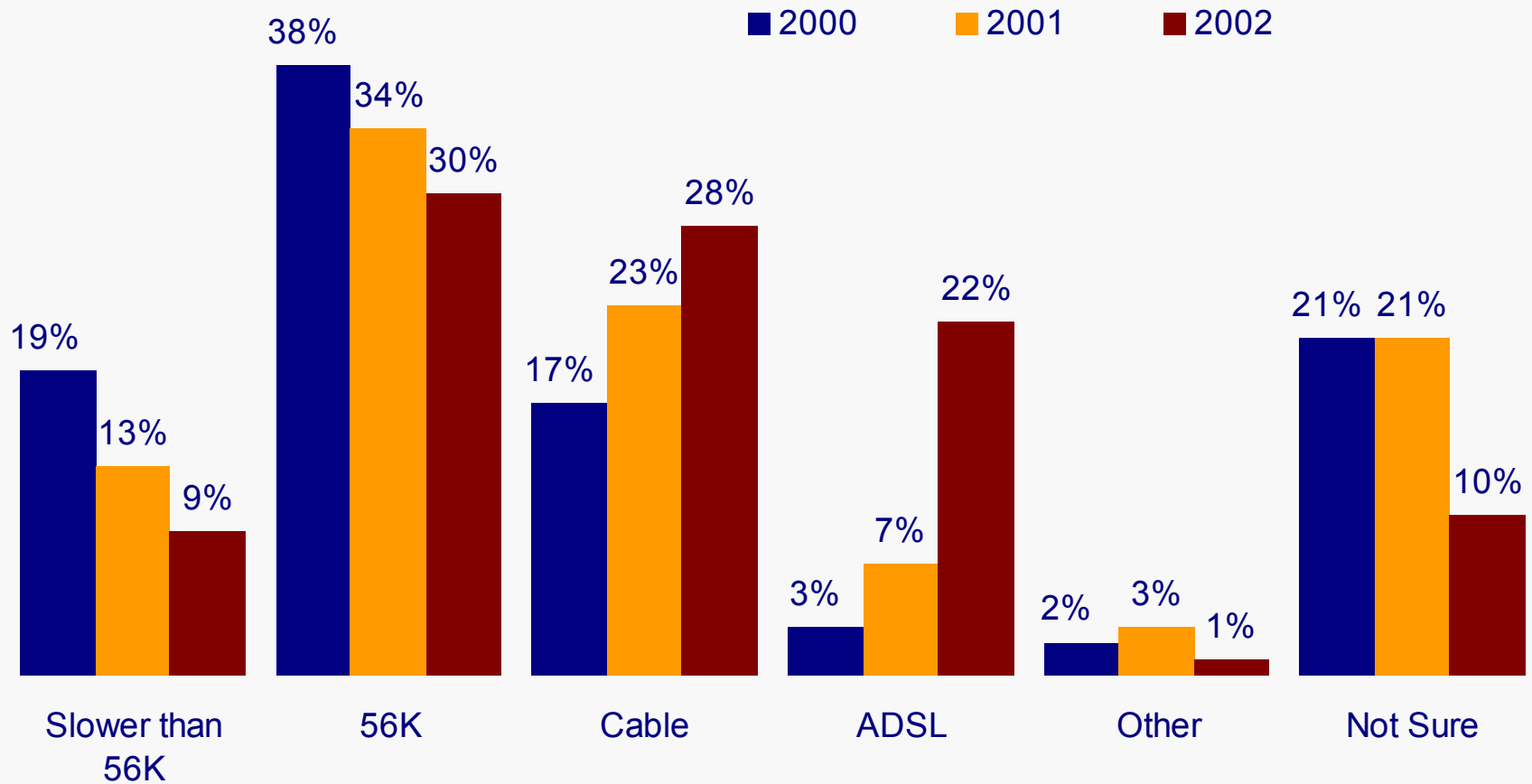
## Broadband subscribers per 100 inhabitants – Top 10 Countries March 2003



\* Ethernet LANs, two-way direct satellite, fibre to the home, and fixed wireless.

# Half of Canadian Home Internet Users are Using Broadband

## Percentage of Home Internet Users\* by Type of Internet Access



\* % of people who have used the Internet in the last 12 months.

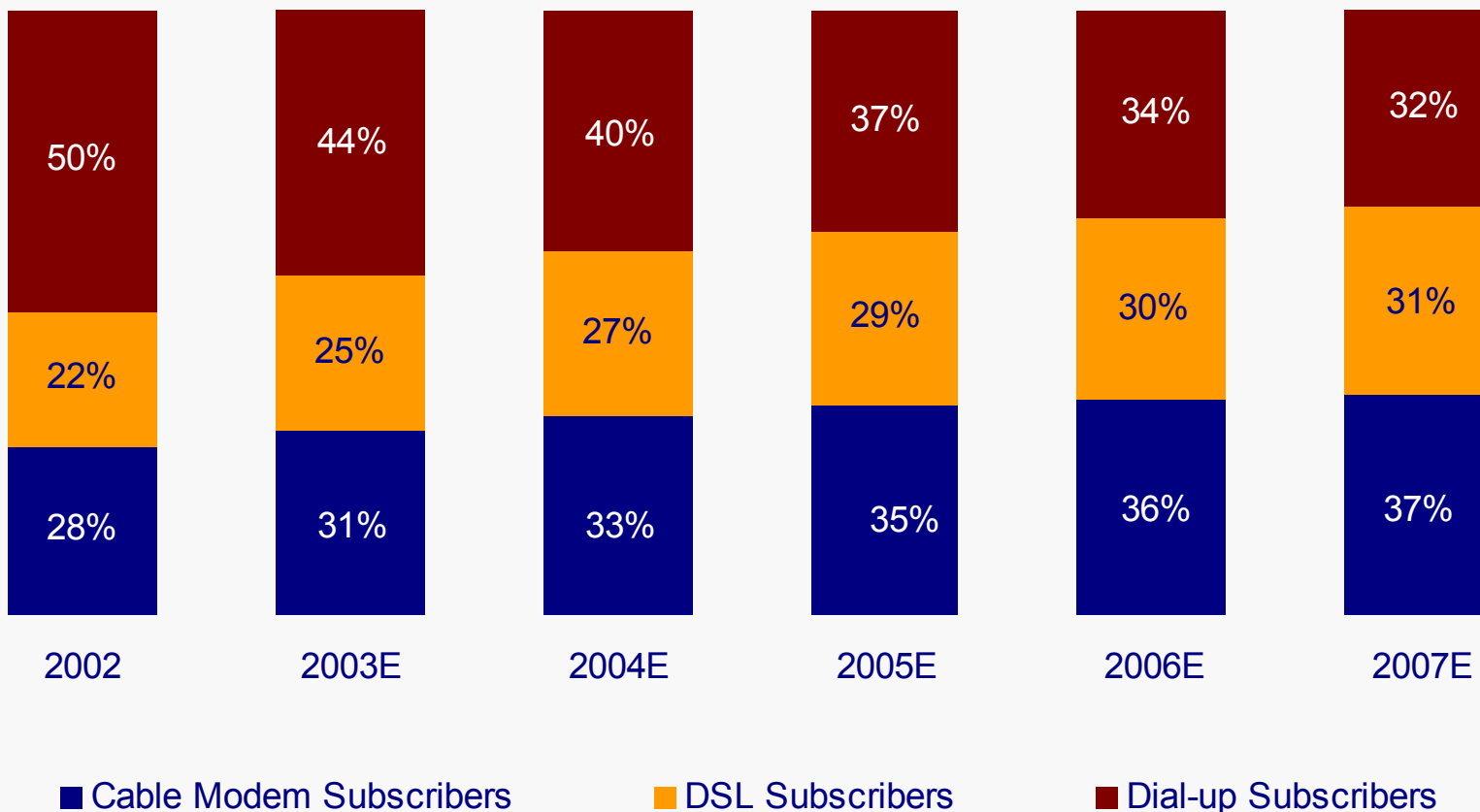
Source: ACNielsen Canada.



# Canadian Internet Subscribers will Continue to Move to High Speed

## Internet Subscribers by Market Segment, 2002-2007E

% Share



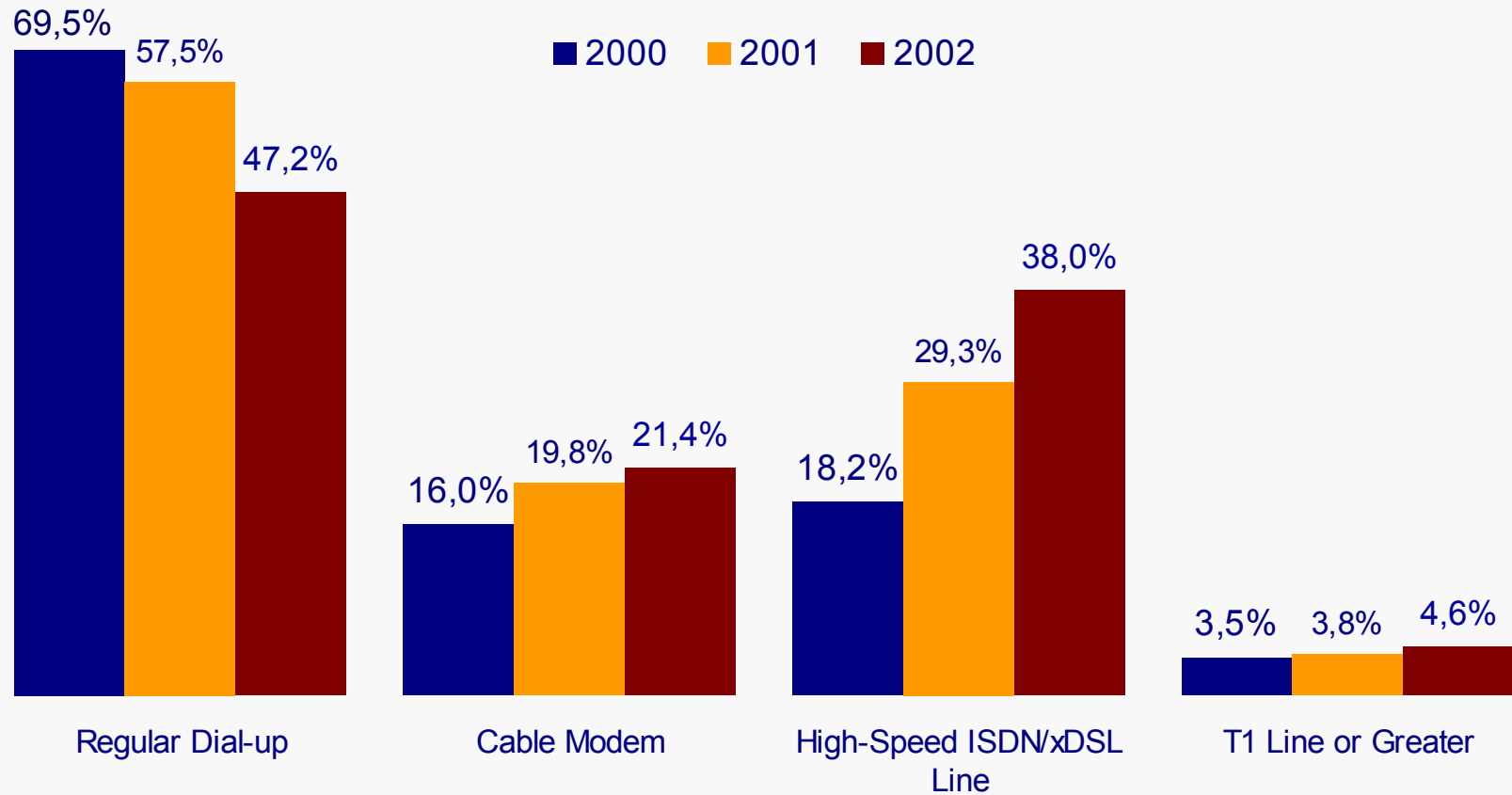
Numbers may not add up due to rounding.

Includes paid dial-up subscribers only.

Source: Yankee Group, Networked Business Strategies Forecast, June 2003.

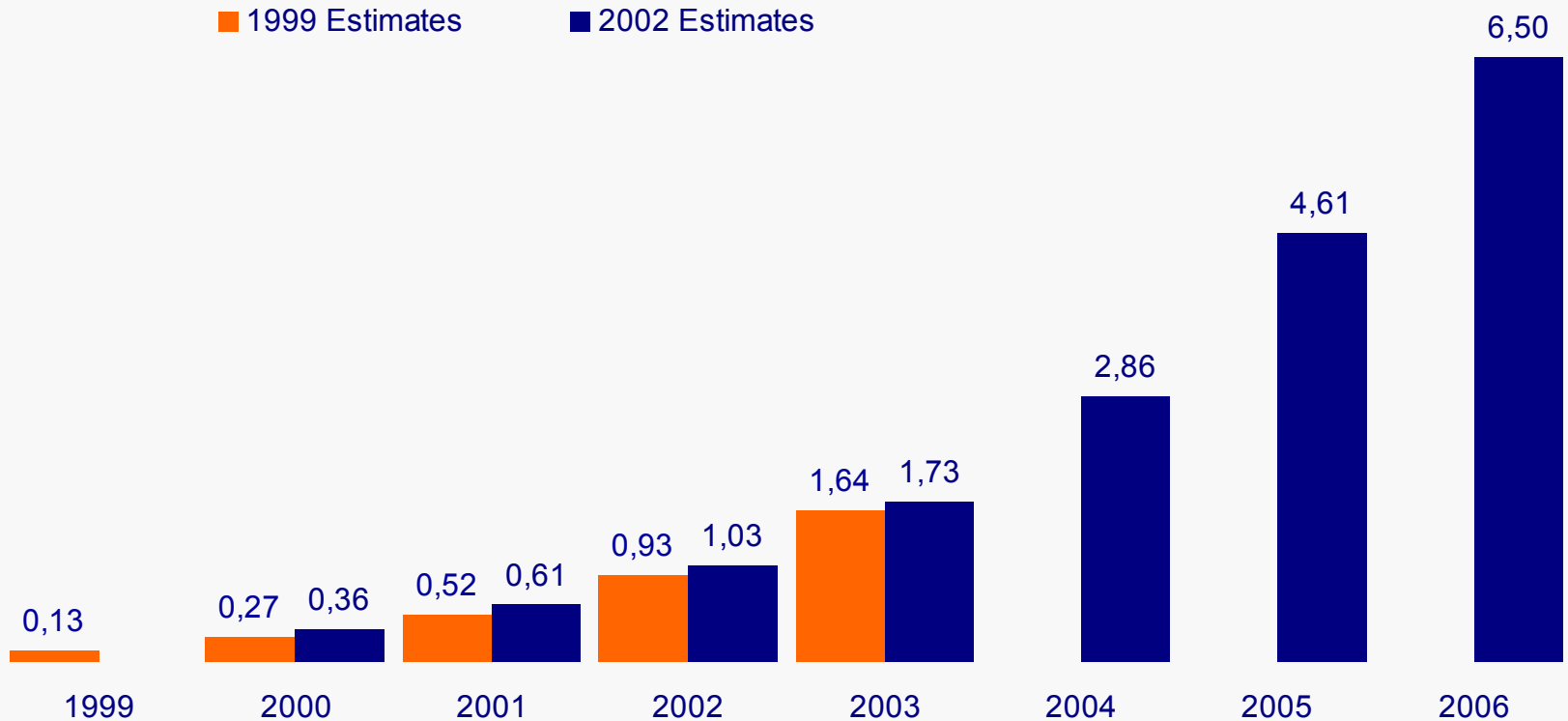
# Canadian Businesses are Moving Towards Broadband

## Canadian Businesses with Internet Access by Type of Connection (Multiple Responses Allowed)



# E-Commerce Grows Beyond Expectations

## Total Estimated Worldwide E-Commerce (U.S. \$Trillions)



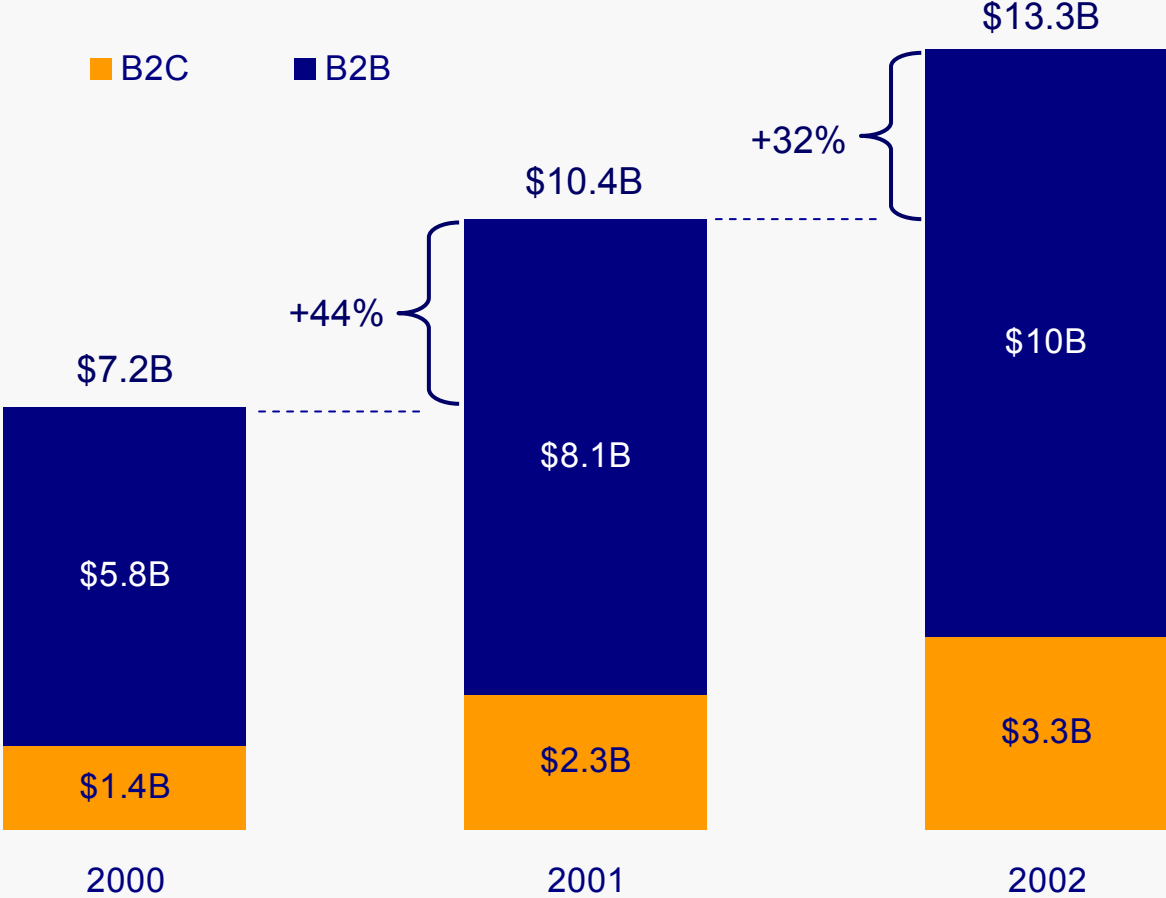
Note: Chart shows the purchase or trade of goods and services via the Internet, but excludes financial services' transactions.

Source: International Data Corporation, 1999 and 2002.

# Canada's Internet Sales Post Strong Gains

## Canada's Internet Sales (2000-2002) - Private Sector

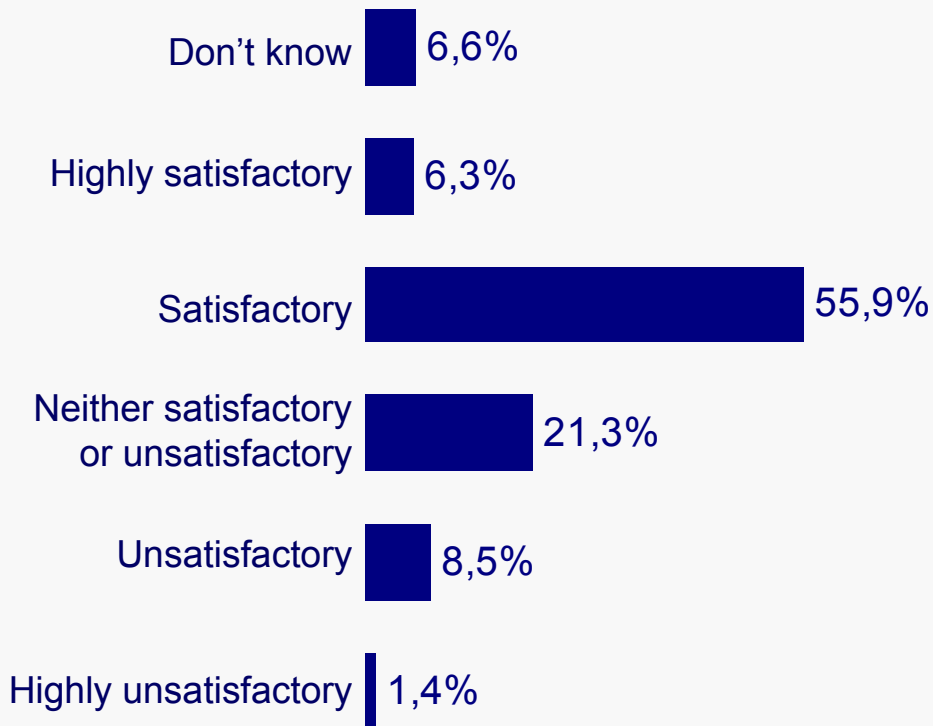
Value of Internet Sales in Billion Canadian Dollars



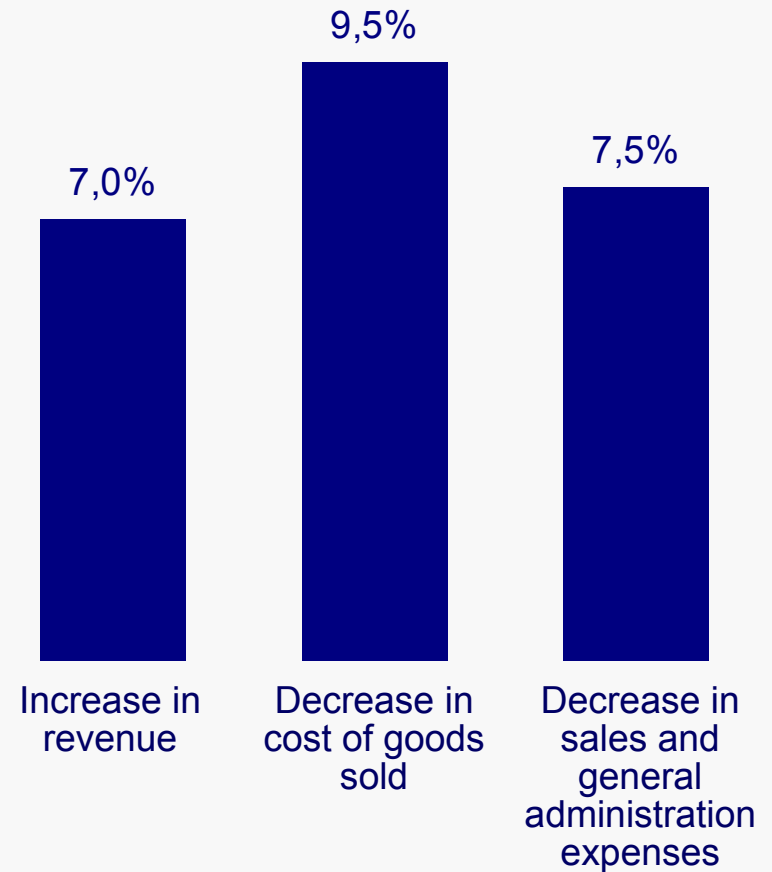
Source: Survey of Electronic Commerce and Technology, Statistics Canada, April 2003.

# E-Business Benefits are Captured by Canadian Firms

## Satisfaction with Internet Business Solutions (IBS) Investment, as % of Respondents

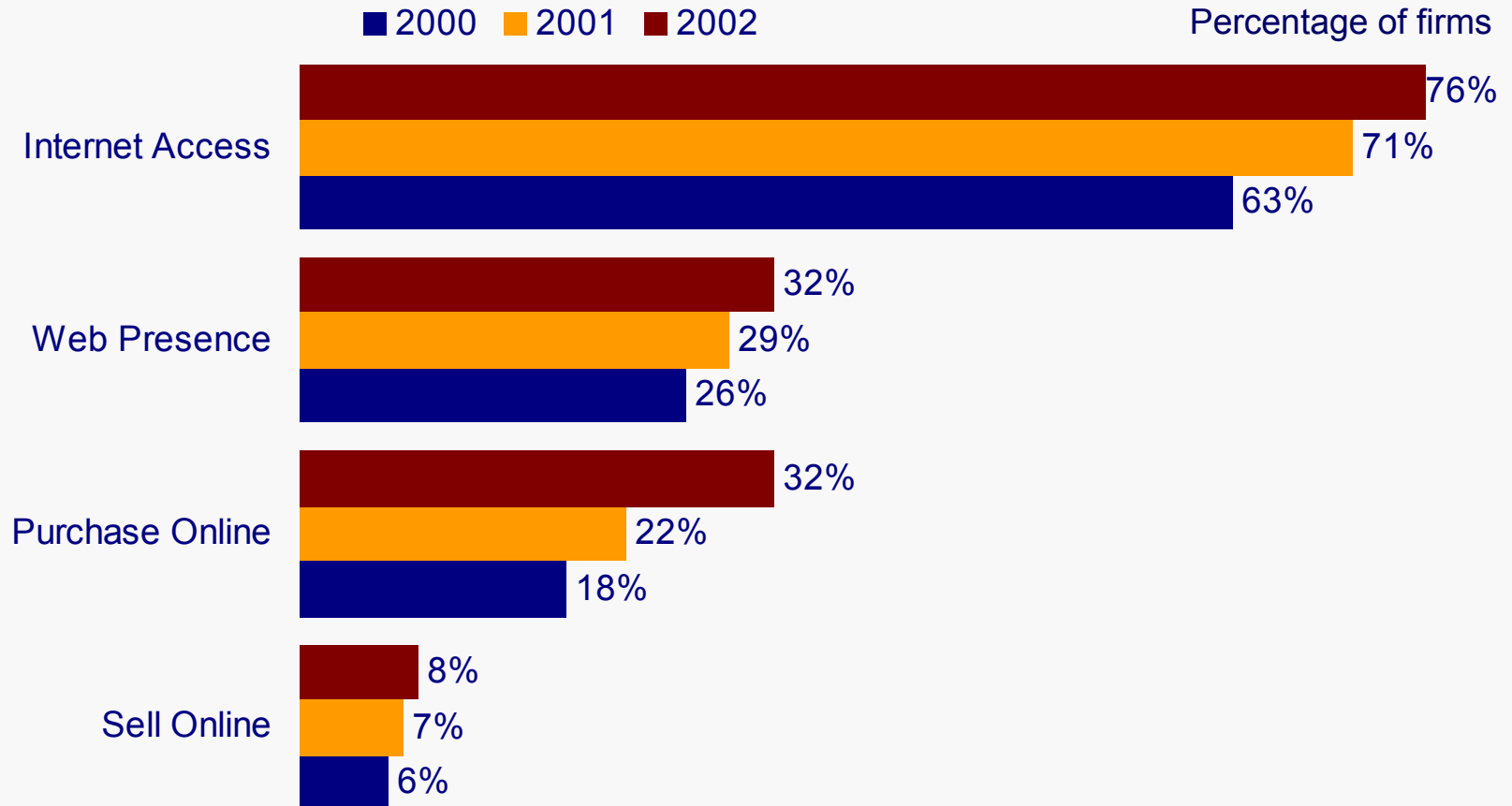


## Size of Cost Reductions and Revenue Increases Due to IBS Investment



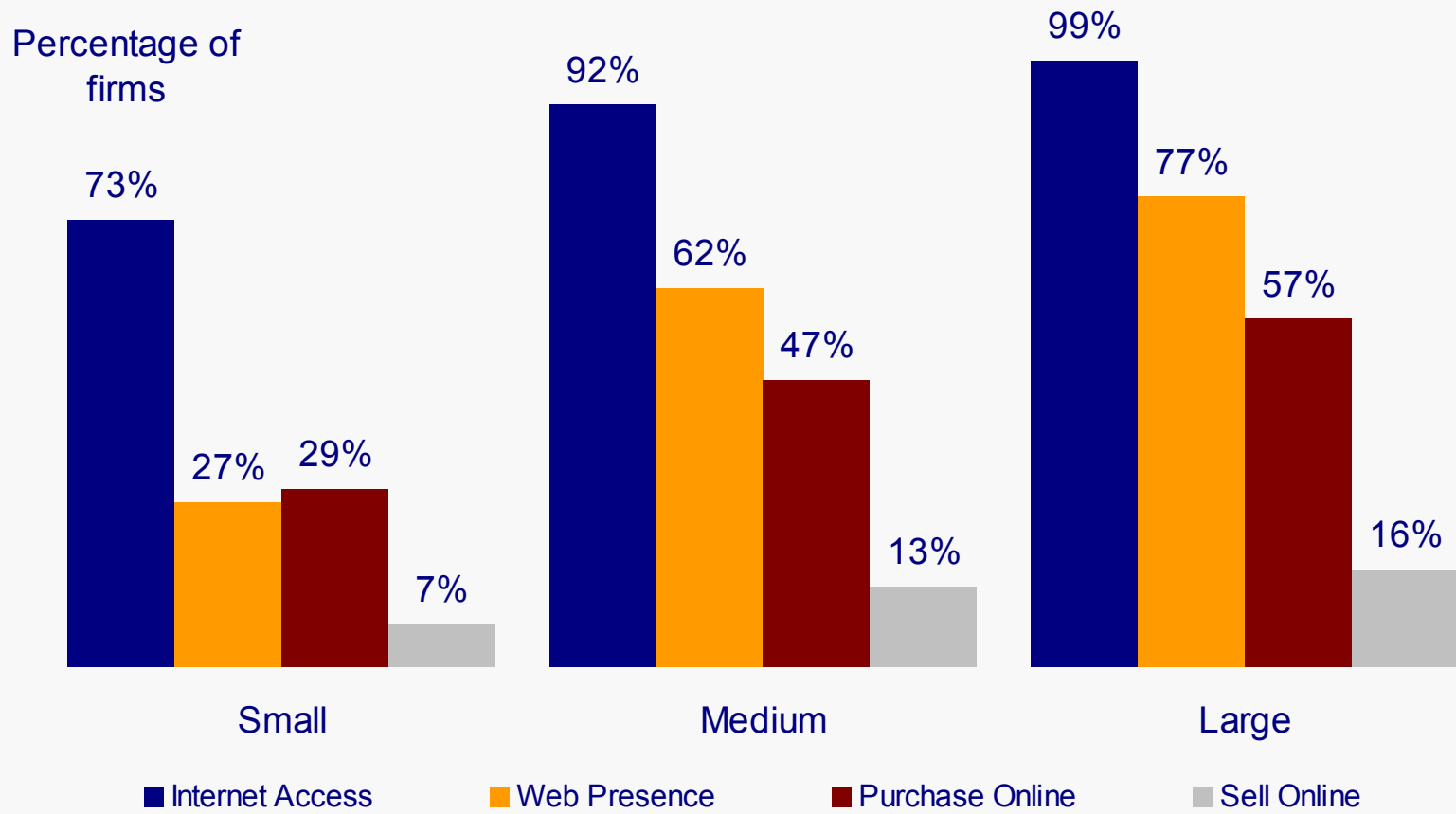
# High Business Connectivity, but Low Adoption Rates of Advanced Online Activities

## Online Business Activities in Canada - 2000-2002



# Size of Firm Matters for E-Business Adoption

## E-business Adoption in Canada, 2002 by Size of Firm



## E-Commerce Adoption Varies by Sector

### Value of E-Commerce\* Sales by Industry Sector - Private Sector Only, CDN \$ Millions

	2000	2001	2002
<b>All Private Sector</b>	<b>7,245.6</b>	<b>10,388.9</b>	<b>13,338.5</b>
Wholesale trade	1,041.2	1,914.7	3,693.4
Manufacturing	1,304.8	1,680.3	1,956.7
Transportation and warehousing	990.2	937.4	1,923.5
Retail trade	889.9	1,485.1	1,718.1
Professional, scientific and technical services	334.6	423.5	983.0
Finance and insurance	634.5	623.7	851.5
Information and cultural industries	273.9	388.5	828.5
Administration and support, waste management and remediation services	63.5	...	505.9
Accommodation and food services	175.3	259.4	166.1
Management of companies and enterprises	7.2	...	152.5
Arts, entertainment and recreation	10.5	...	98.3
Real estate, rental and leasing	137.0	...	90.8

Note: ... Figures not available

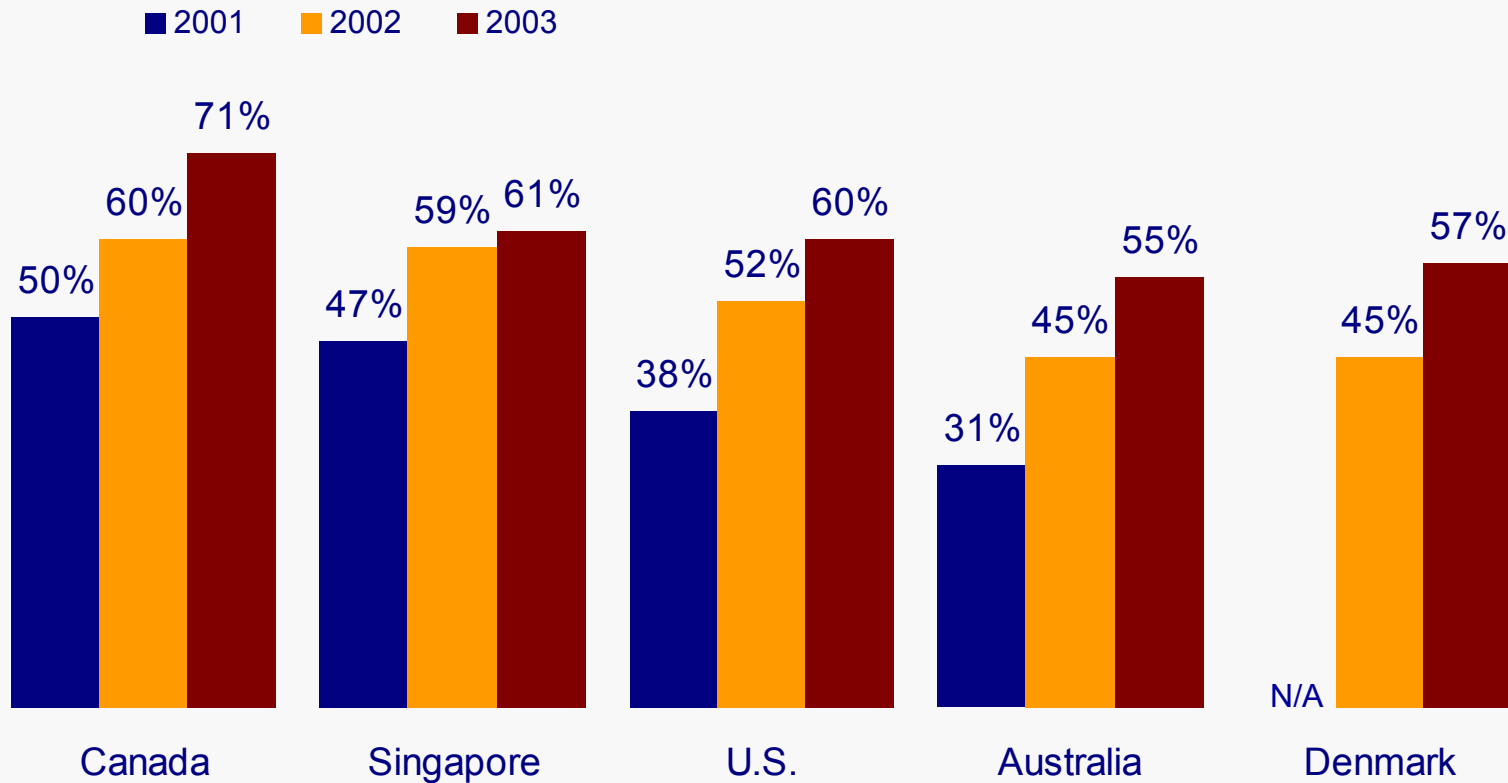
\*Total gross sales conducted over the Internet with or without online payment.

Source: *Survey of Electronic Commerce and Technology*, Statistics Canada, April 2003.



# Canada Leads in Government Online Services for the Third Year in a Row

Overall Maturity\*

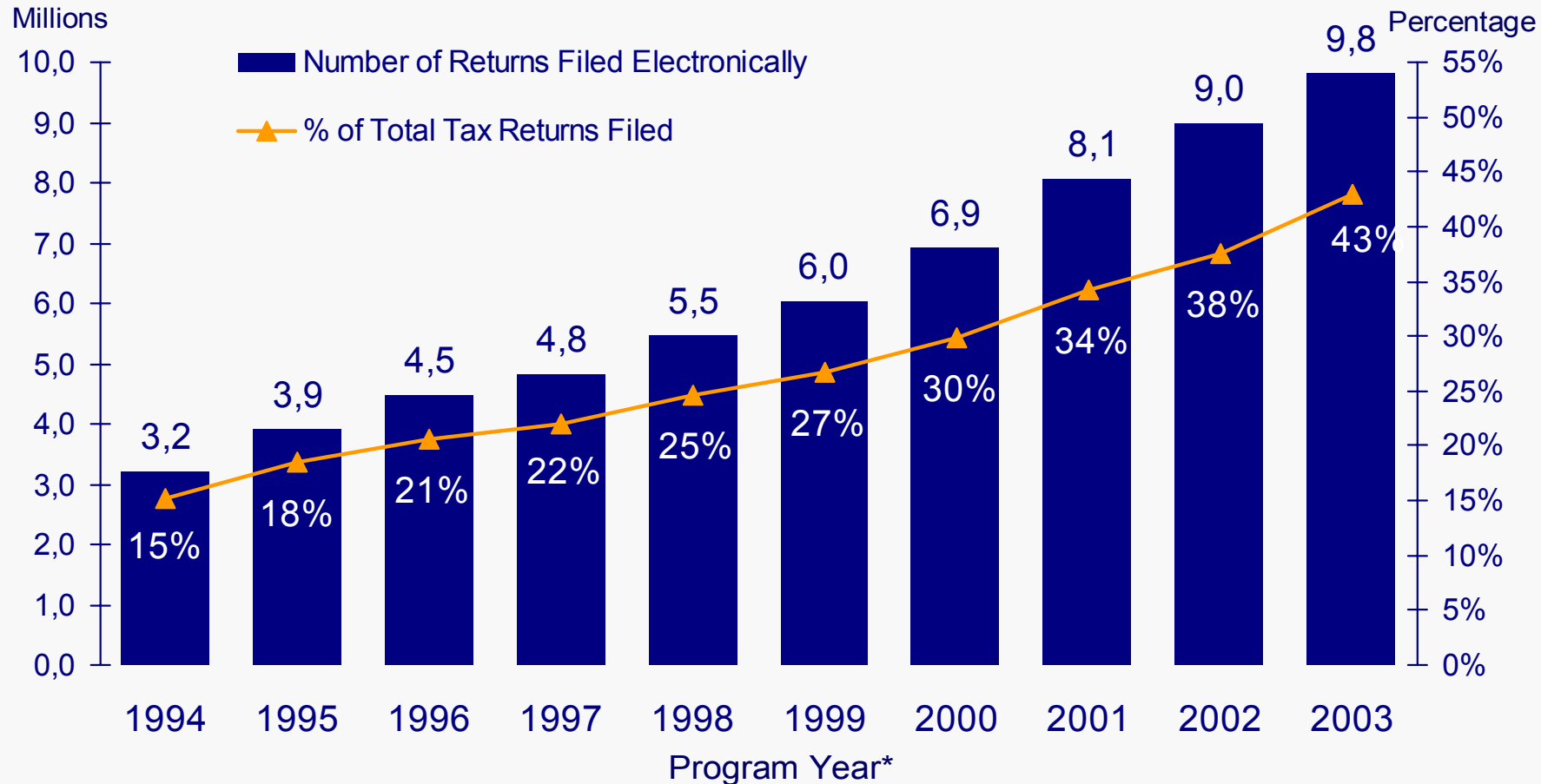


\*Overall Maturity is a measure of the sophistication of online services; the extent to which governments are incorporating techniques such as customer relationship management, intentions based design and portal models in their online delivery.

Source: Accenture, *eGovernment Leadership: Engaging the Customer*, April 2003.

# Canadians are Receptive to Government Online Services

## E-Filed, Netfiled, Telefiled Personal Tax Returns in Canada

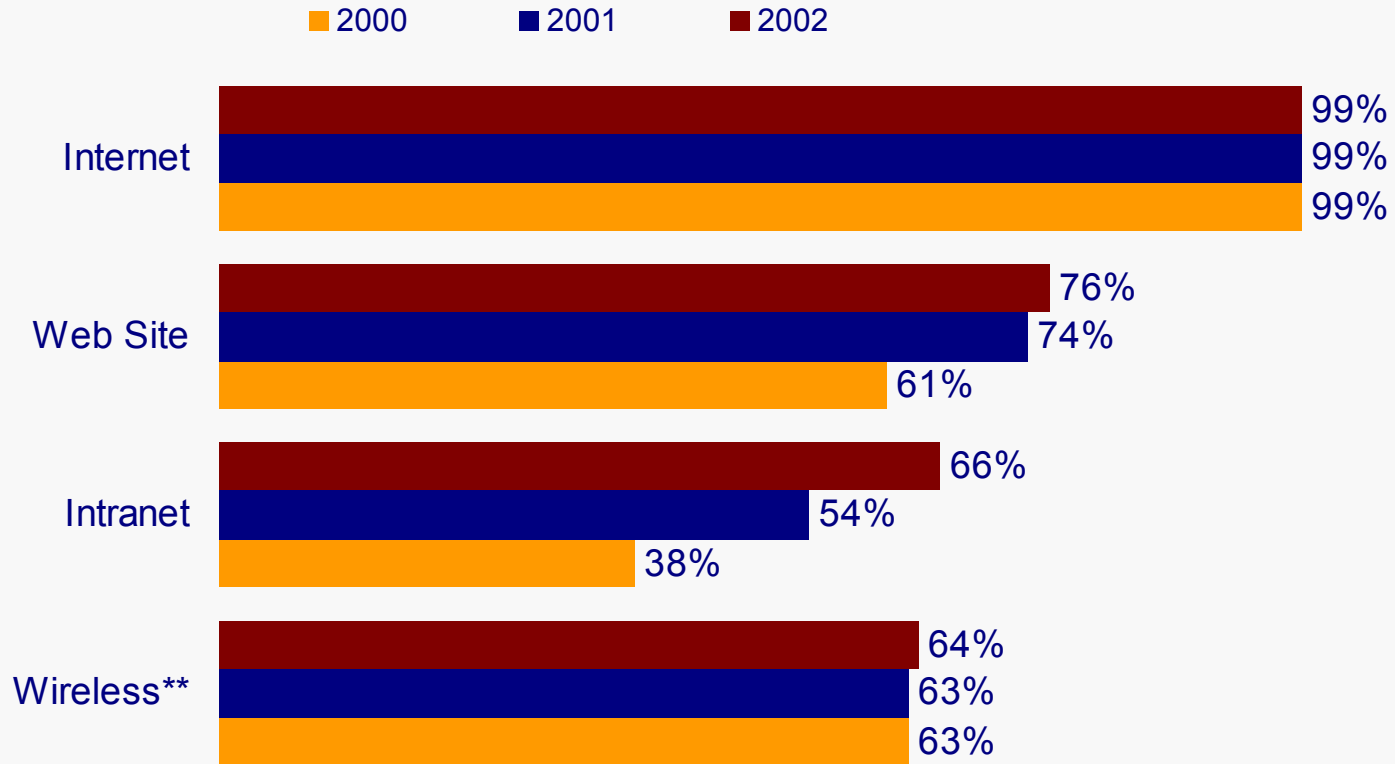


\* Program year refers to the year in which the tax return was filed and processed.

Source: Canada Customs and Revenue Agency, June 2003.

# The Canadian Health Care Industry is Increasingly Using ICT

## ICT Use in Canadian Health Care\* - % of respondents

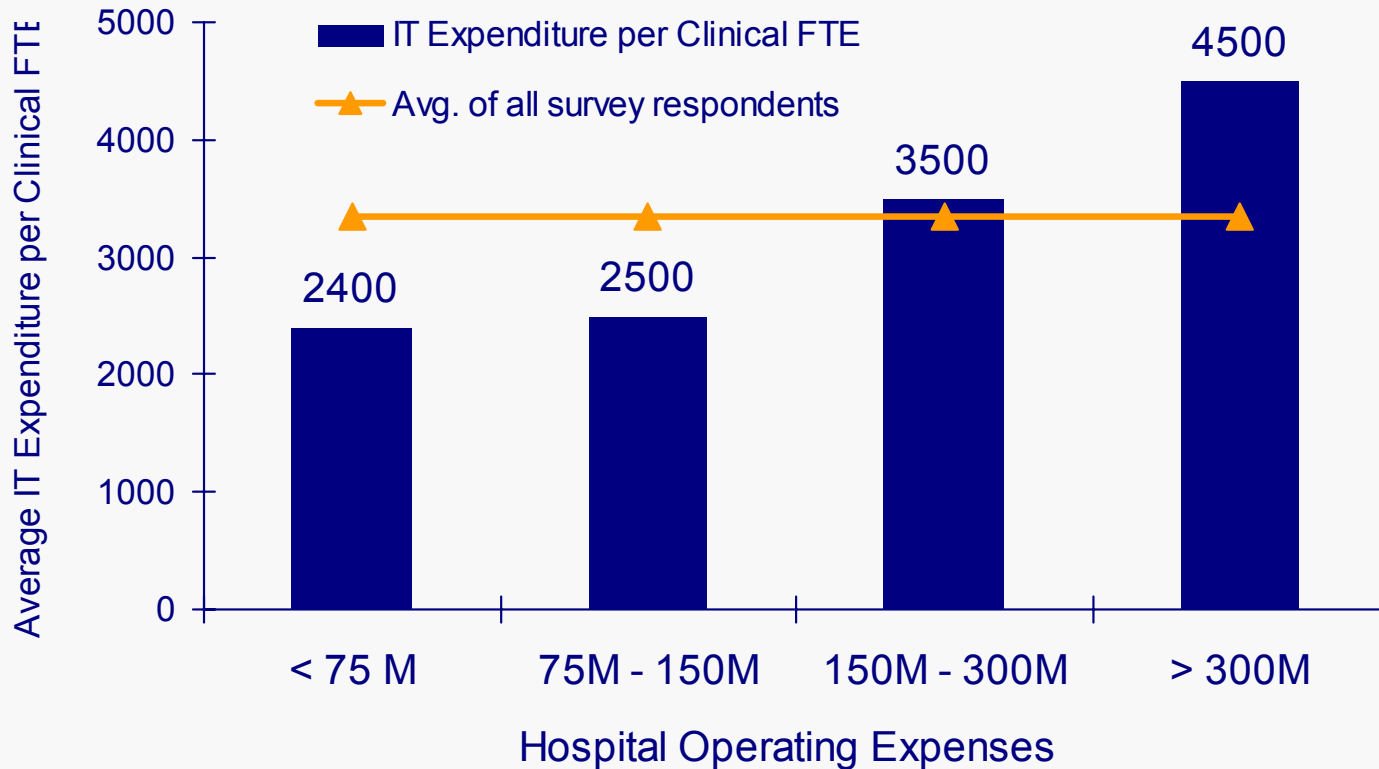


\* Includes public sector ambulatory health services, hospitals, nursing and residential care facilities, and social assistance

\*\* A wireless device that can be used to access the Internet (ex. Mobile phones, wireless PDAs, and wireless laptops).

# Size Matters in IT Spending by Canadian Hospitals

## Average IT Expenditure per Clinical FTE\* by Annual Operating Budget - 2002

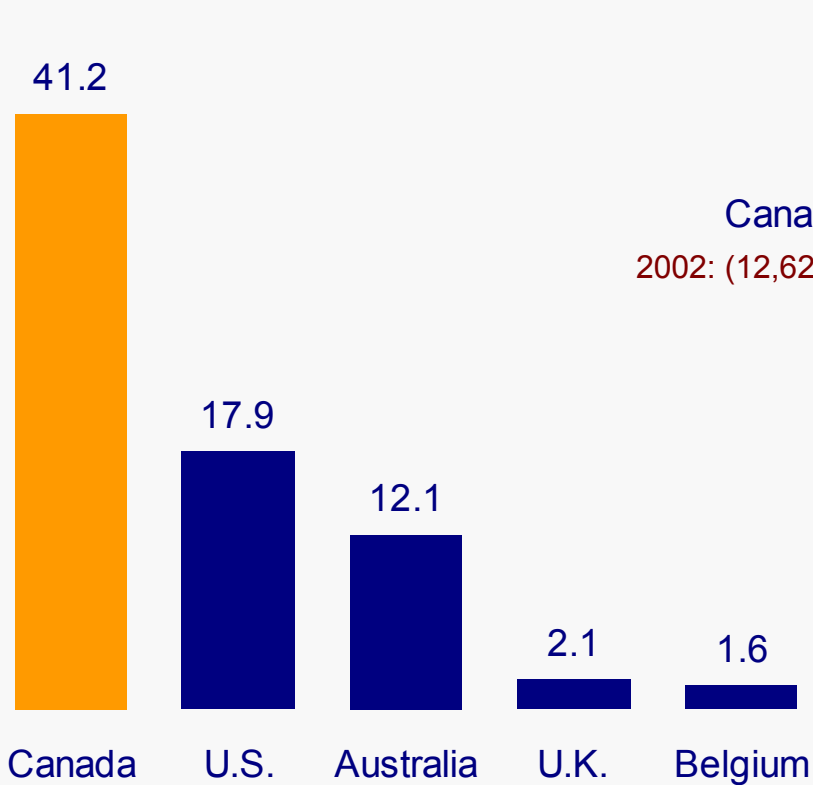


**The level of IT spending in Canadian health care organizations is low. Mean spending for organizations surveyed is about 2.5% of operating budget – compared to 5% in the U.S.**

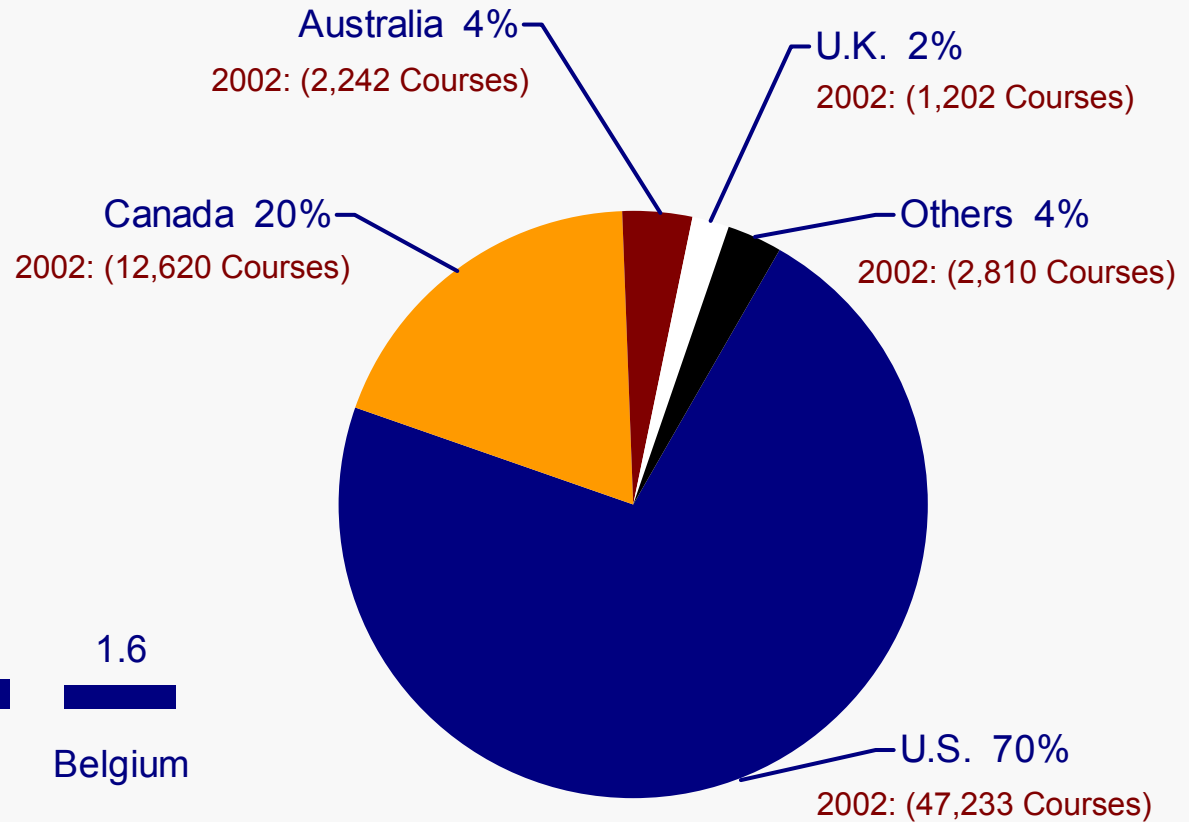
\* A clinical FTE includes allied health and nursing professionals and excludes physicians.

# Canada is a World Leader in E-Learning

## Online Courses Per 100,000 Population, March 2002

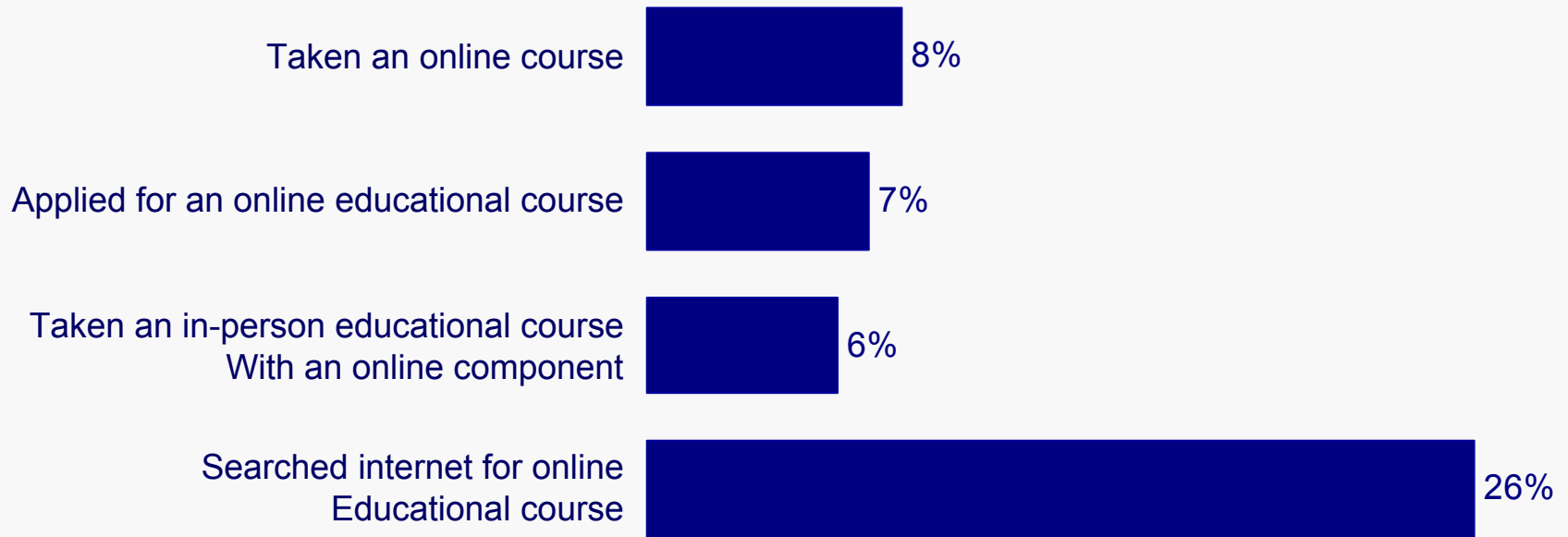


## Canada Ranks 2<sup>nd</sup> for Online Courses Worldwide, March 2002



# Online Education Poised for Significant Growth

## Education-Related Activities Performed by Canadian Internet Users – 2002



**59% of Canadian Internet users report that they are likely to take an online course in the future, if they were looking to further their education**