

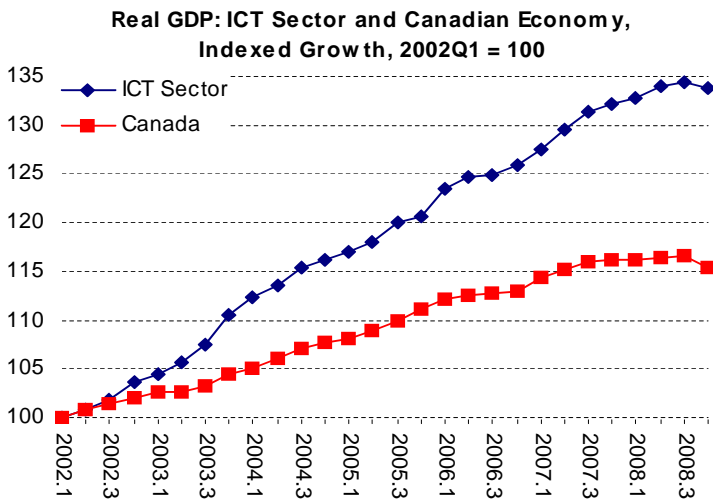


# Quarterly Monitor of the Canadian ICT Sector

## Gross Domestic Product

### ICT output declined...

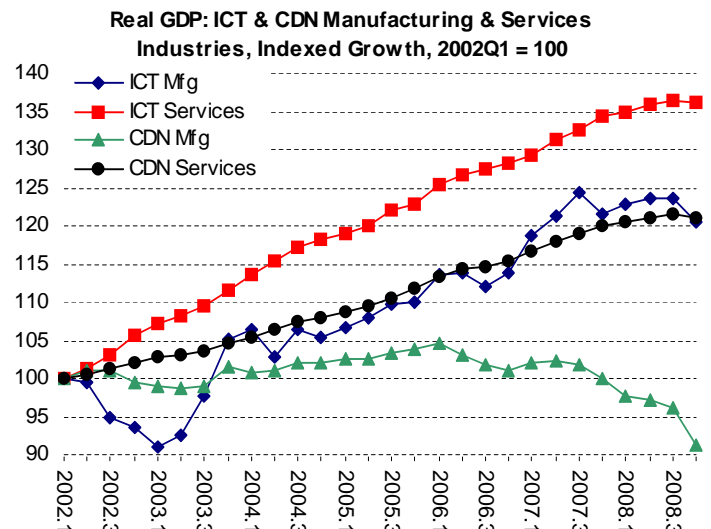
For the first time in the entire analyzed period (2002-2008), Canada's ICT sector output declined (-0.5%) at the end of 2008. However, this decline was at a slower rate than that of all Canadian industries (-1.1%). Nevertheless, year-over-year calculations indicate that Canada's ICT sector output grew by 1.1% in the last four quarters, while output in the Canadian economy fell by 0.7% within the same period.



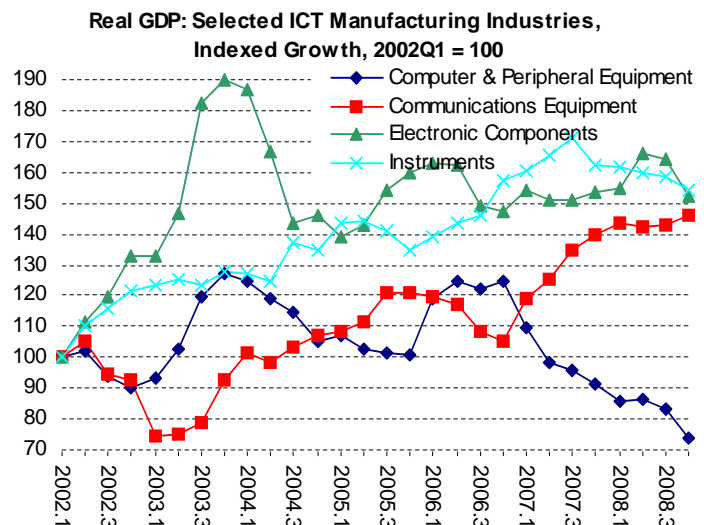
In the last quarter of 2008, ICT manufacturing GDP fell by 2.5%, while overall Canadian manufacturing GDP declined at nearly twice this rate (-4.9%). For the ICT manufacturing industries, this decline was the first one in 2008. Over the last four quarters, ICT manufacturing GDP declined by 0.8% while overall Canadian manufacturing GDP fell by 8.7% within the specified period. In addition, Canadian manufacturing GDP has been trending down since the second quarter of 2006, and has continually declined since the second half of 2007.

At the end of 2008, GDP for both ICT services\* (-0.1%) and overall Canadian services (-0.4%) declined for the first time in the past six years. Even so, each of these categories has grown during 2008 as year-over-year analysis shows that since the fourth quarter of 2007, ICT services and overall Canadian services have grown by 1.4% and 0.8%, respectively.

\* See ICT services definition on page six. This total includes the ICT wholesaling industries.



This past quarter, all ICT manufacturing industries, with the exception of wireless communications equipment, experienced drops in their GDP values. For a second consecutive quarter, both the computer and peripheral equipment and the electronic components industries declined, down by 11.0% and 7.0% in the last quarter of 2008. Although the computer and peripheral equipment industry has been declining for the last two years, the downward trend observed in the electronic components industry is more recent. The instruments industry declined for a fifth consecutive quarter, down by 2.7% this past period. In fact, this industry played the largest role in the decline of total ICT manufacturing. Due to the continued growth in wireless equipment's GDP and the stabilization of the wired industry, GDP in the communications equipment industries increased once more, up by 2.2% in the last quarter of 2008 (see annex for more details).



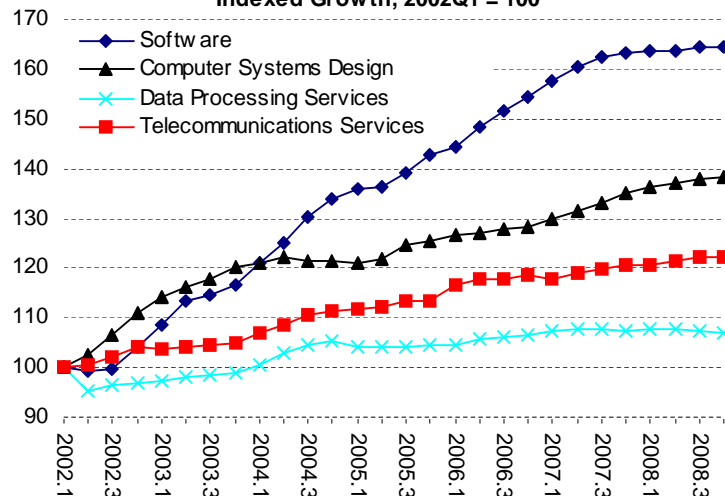


## Gross Domestic Product

Although three of the four key ICT services industries grew this past quarter, overall ICT services GDP declined. A large decline in the ICT wholesaling industries more than offset the moderate growth observed in the computer systems design (0.4%), software (0.1%) and telecommunications services (0.05%) industries. While the software industry has displayed positive growth since the second half of 2002, this growth was considerably smaller this past year. The computer systems design (38%) and telecommunications services (22%) industries have steadily increased since the beginning of 2002, where the former has recorded nearly four years of uninterrupted growth.

Even though GDP in the data processing services industry declined for a third consecutive quarter (-0.4%), fluctuations in this industry have been quite moderate compared to the other key industries.

**Real GDP: Selected ICT Services Industries, Indexed Growth, 2002Q1 = 100**



4th Quarter

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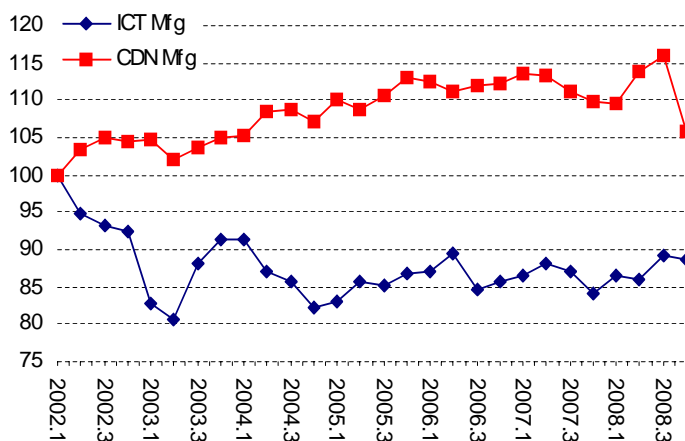
Mar '09

## Manufacturing Shipments

### ICT manufacturing shipments are down...

Although Canadian manufacturing shipments (-8.9%) were hit hard at the end of 2008, this shock did not affect ICT manufacturing shipments (-0.4%) with the same force. In fact, the decline in ICT manufacturing shipments only contributed to 0.2% of the overall manufacturing decline recorded at the end of 2008. Since the last quarter of 2007, ICT manufacturing shipments have grown by 5.7%, while Canadian manufacturing shipments have declined by 3.7%.

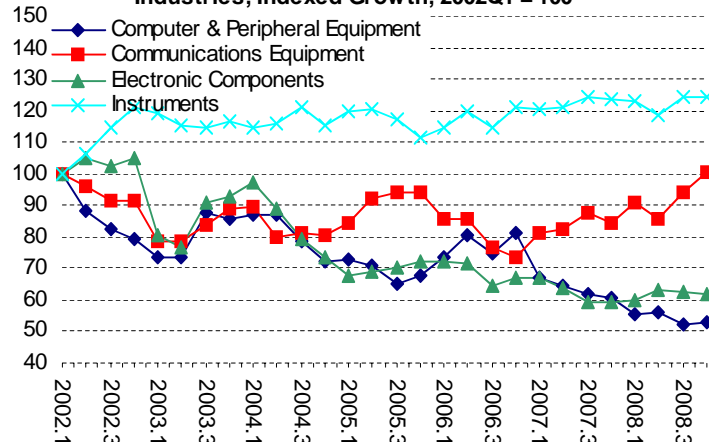
**Manufacturing Shipments: ICT and Canadian Manufacturing Industries, Indexed Growth, 2002Q1 = 100**



Since the second quarter of 2006, ICT manufacturing shipments have been relatively stable. However, they remain 11.2% lower than at the beginning of 2002.

### ...due to significant drops in two industries.

**Manufacturing Shipments: Selected ICT Manufacturing Industries, Indexed Growth, 2002Q1 = 100**



The decline in ICT manufacturing shipments (-0.4%) this past quarter is mainly attributable to significant drops in shipments of two industries: audio and video equipment (-31%) and commercial and service industry machinery (-7.1%). The communications equipment (6.8%) and computer and peripheral equipment (1.5%) industries are the only ICT manufacturing industries that reported significant shipments growth at the end of 2008. Shipments in the communications equipment industry have been trending up since the beginning of 2007 and are now 37% higher than in the fourth quarter of 2006. On the other hand, the increase in shipments in the computer and peripheral equipment industry in the fourth quarter is not representative of this industry's recent performance, as shipments have declined by 35% since the end of 2006.



Industry  
Canada

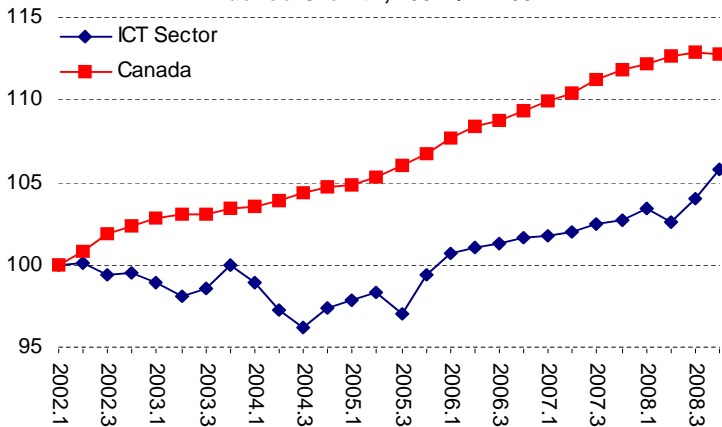
Industrie  
Canada

# Employment\*

## ICT employment grew...

While the number of employees in the ICT sector (1.6%) grew for a second consecutive quarter at the end of 2008, this number declined by 0.1% in the Canadian economy. This is the first decline in the Canadian economy since the third quarter in 2003. Employment in the ICT sector has grown by 2.9% since the end of 2007, compared to a small increase of 0.8% in the Canadian economy.

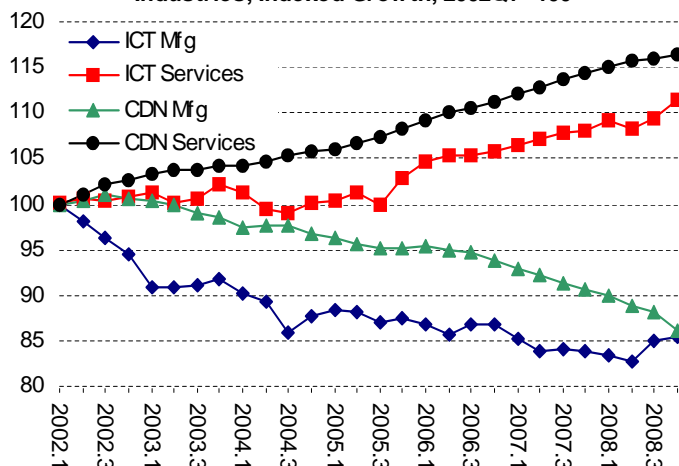
**Employment: ICT Sector and Canadian Economy, Indexed Growth, 2002Q1 = 100**



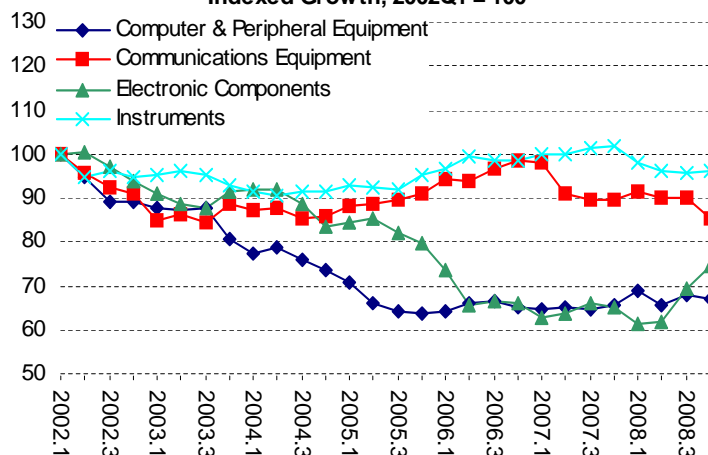
This past quarter, the number of employees in Canadian manufacturing declined by 2.3%, while those employed in the ICT manufacturing industries grew by 0.5%. As well, ICT manufacturing industries showed signs of improvement in the last half of 2008, compared to the continuous declines recorded in Canadian manufacturing. Nevertheless, these two categories have been trending down at very similar rates since the beginning of 2002, by 0.59% and 0.55%, respectively.

Employment in the services industries continued to grow in the fourth quarter, with increases of 1.9% in the ICT services industries and 0.3% in the Canadian services sector. The graphs for the ICT sector and ICT services resemble each other, due to the intense concentration of individuals employed in ICT services (82% since the second quarter of 2007).

**Employment: ICT & CDN Manufacturing & Services Industries, Indexed Growth, 2002Q1 = 100**

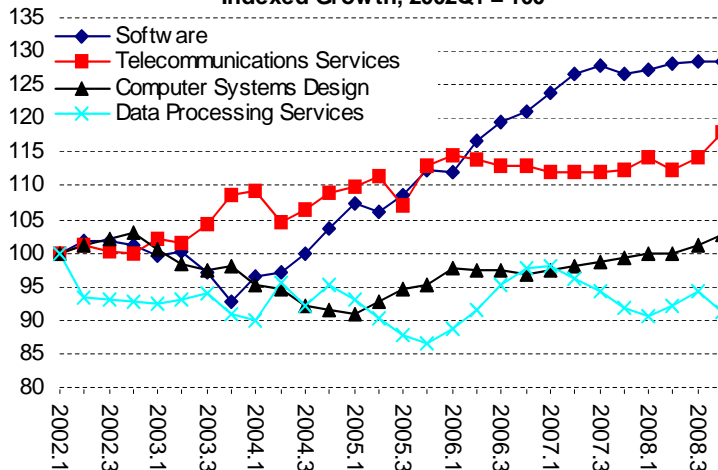


**Employment: Selected ICT Manufacturing Industries, Indexed Growth, 2002Q1 = 100**



In the ICT manufacturing industries, growth in the electronic components industry (7.3%) was enough to offset the declines recorded by the communications (-5.3%) and computer and peripheral (-1.6%) equipment industries in the last quarter of 2008. Furthermore, after hitting its lowest level at the beginning of 2008, the electronic components industry displayed significant growth the rest of that year. For the past two years, communications equipment employment has been declining at a rate of 2.0% per quarter. Despite the drop this past period, the number of employees in the computer and peripheral equipment industry has remained relatively stable since the second half of 2006. Following three consecutive quarters of decline, employment in the instruments industry increased by 0.6% in the last quarter of 2008, but has been relatively stable since the beginning of 2006.

**Employment: Selected ICT Services Industries, Indexed Growth, 2002Q1 = 100**



For a second consecutive quarter, employment increased in the two largest ICT services industries. Specifically, employment rose by 3.4% in telecommunications services and 1.4% in computer systems design services. While employment in the former industry fared positively this past year, up by 5.1% over the past four quarters, employment in the latter has grown by 5.5% since the beginning of 2007. Employment in the data processing services industry increased in the second and third quarters of 2008, but by year's end, employment levels had reverted to those reported at the beginning of 2008, a drop of 3.1% in the fourth quarter.

4th Quarter

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Mar '09

\* see note 1 on page 6

Information and Communications Technologies Branch, March 2009

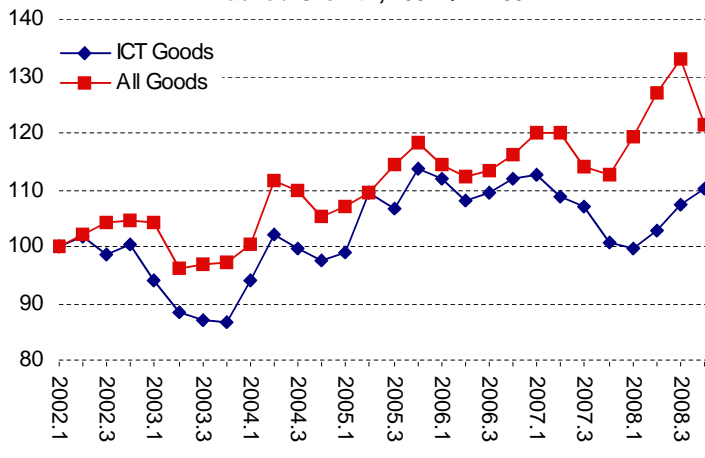


# Exports of Goods

## Exports of ICT goods grew...

In the last quarter of 2008, exports of Canadian goods (-8.7%) were hit hard by the economic downturn. However, ICT goods exports were not affected with the same force, as they grew by 2.6% during the same quarter. In fact, following declines in 2007, ICT exports increased by 7.3% in the last three quarters of 2008.

Exports: ICT Goods and All Goods,  
Indexed Growth, 2002Q1 = 100



## ...led by strong growth in electronic components.

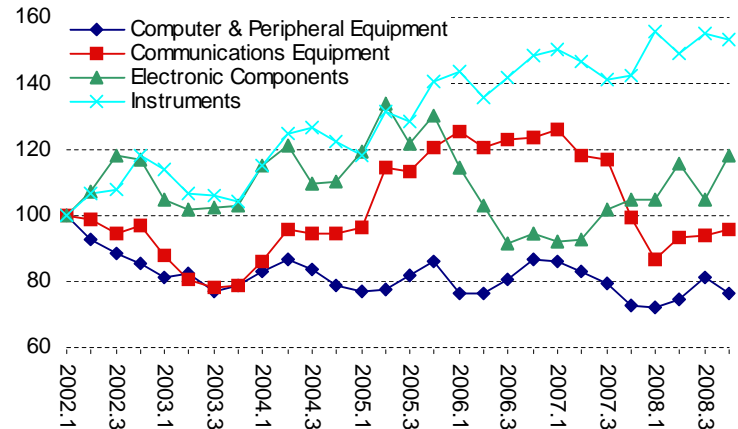
Exports of electronic components, by far, were the fastest growing (12.6%) and largest nominal contributors to the increase observed in ICT goods exports at the end of 2008. In the past year, exports of this product group have exhibited considerable fluctuations and have been trending up since their lowest recorded level in the third quarter of 2006.

For a third consecutive quarter, exports of communications equipment grew, up by 1.9% this period. This growth resulted from increased wireless exports (15%) as opposed to the decline in wired exports (-10.3%), a decline which has been persistent since the second half of 2006 (see annex for more details).

Following two consecutive quarters of increases, exports of computer and peripheral equipment declined, down by 5.7% this past quarter. Overall, exports of these goods have been relatively stable since 2003.

Instruments exports declined by 1.3% in the last quarter of 2008. Nevertheless, exports of this group have been trending up since the beginning of 2002, and are now 53% higher.

Exports: ICT Goods by Selected Product Group,  
Indexed Growth, 2002Q1 = 100

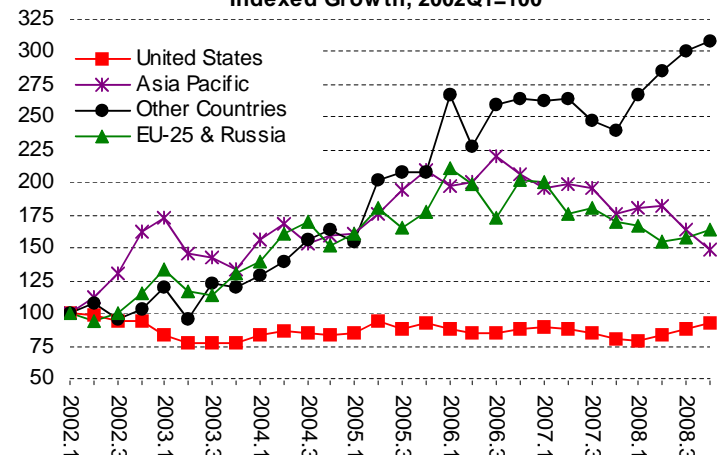


## Exports to the US increased...

ICT exports to the US increased for a third consecutive quarter, up by 4.9% this period. The US share in Canadian ICT exports now stands at 68%, up by five percentage points since its low in the third quarter of 2006. The US continues to be Canada's main trading partner due to its proximity and economic integration with Canada.

While ICT exports to the EU-25 & Russia increased in the last half of 2008, those to "Other Countries" grew throughout the entire year, up by 3.8% and 2.3% in the last quarter of 2008. In particular, ICT exports to the EU-25 grew by 7.4%, whereas those to Russia declined by 42%. Exports to "Other Countries" have tripled since the beginning of 2002. Conversely, ICT exports to Asia Pacific economies continued to decline, down by 9.0% this period. Since the last quarter of 2007, exports to both the Asia Pacific economies and the EU-25 & Russia have fallen, while those to "Other Countries" rose. Shares of exports to the EU-25 & Russia (at 13.0%) and "Other Countries" (at 9.7%) increased marginally, while the share of Asia Pacific economies (at 9.3%) hit a low that had not been seen since the third quarter of 2002.

Exports: ICT Goods by Major Market,  
Indexed Growth, 2002Q1=100





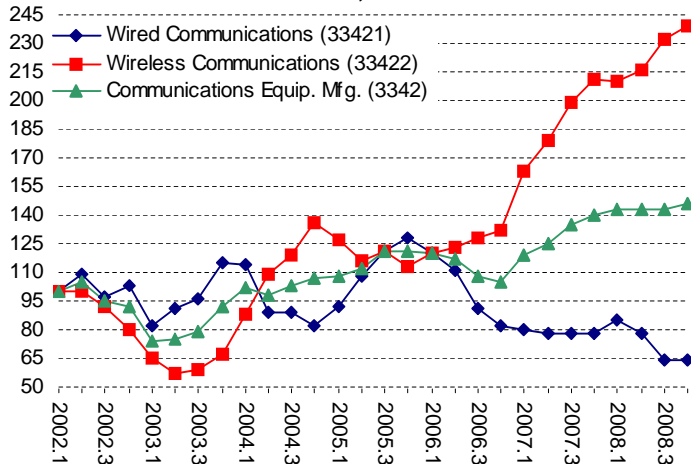
## Focus on the Communications Equipment Industry

The communications equipment industry (subdivided into wired and wireless groups) merits further evaluation in order to understand this industry's recent developments.

### *The wireless industry has led GDP growth since 2006...*

GDP in communications equipment grew once more, up by 2.2% in the last quarter of 2008. Performance this period improved from the previous two quarters. Specifically, GDP in the wireless industry increased for a third consecutive quarter, up by 3.0% at the end of 2008. As well, the wired industry's GDP remained fairly stable this period, compared to the significant declines recorded in the second (-8%) and third (-18%) quarters of 2008. Since the beginning of 2006, the converse trend between these two industries has amplified. That is, the wireless industry doubled in value, while the wired industry fell by nearly 50% within the specified period. Overall growth in communications equipment, these past two years, has been heavily influenced by the growth recorded in the wireless industry.

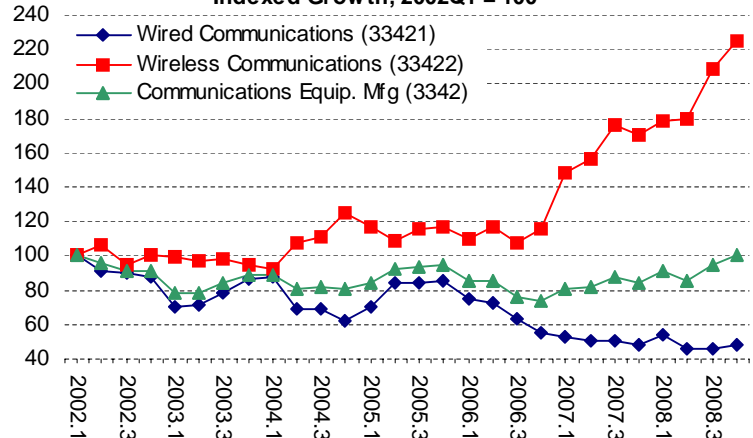
**Real GDP: Wired and Wireless Manufacturing Industries, Indexed Growth, 2002Q1 = 100**



### *...as well as the growth in shipments.*

Shipments of communications equipment grew by 6.8% this period, of which three quarters of the growth was attributable to wireless communications equipment. This industry rose by 7.7% at the end of 2008, and has depicted exceptional growth since the end of 2006, up 93% since then. Despite the growth in shipments of wired communications equipment (5.0%) this quarter, this industry has been trending down since the beginning of 2006. Similar to GDP, the growth in shipments of wireless communications equipment has dictated the overall growth of communications equipment, but to a smaller extent.

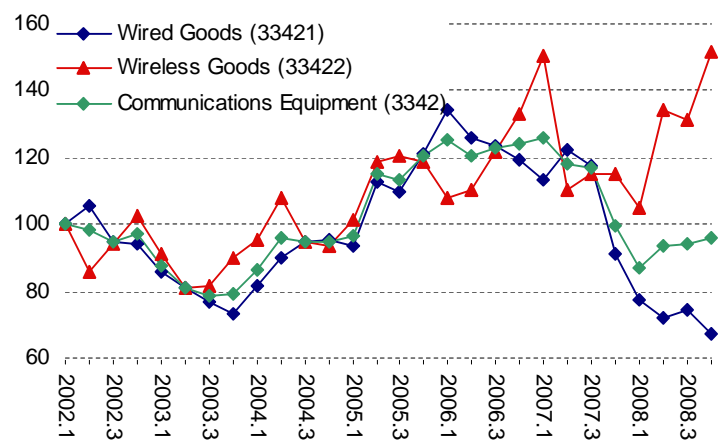
**Manufacturing Shipments: Wired and Wireless Industries, Indexed Growth, 2002Q1 = 100**



### *Exports of wireless goods outperformed wired in the last six quarters...*

In the last quarter of 2008, communications equipment exports (1.9%) grew due to the significant increase exhibited by wireless exports (15%). Conversely, wired exports declined by 10.3% this period and have been falling since the second quarter of 2006. In the past, exports of wired goods exceeded those of wireless, but in 2008, the gap between the two narrowed and by the end of the year, wireless exports had surpassed wired. Exports of wireless goods have fluctuated considerably since the beginning of 2006 and have dictated the overall movement of communications equipment these past four quarters.

**Exports: Wired and Wireless Goods, Indexed Growth, 2002Q1 = 100**



In short, the shift in Canada's communications equipment industry from production of wired to wireless equipment became evident in 2006. This move shows an increasing demand for wireless equipment in the domestic and international markets. At the end of 2008, wireless equipment accounted for 77% of value-added (GDP), 67% of shipments and 54% of exports of Canadian communications equipment. Three years ago (first quarter of 2006), these same ratios were only 47%, 38% and 30% respectively.



## Notes, Definitions and Sources

### Real GDP Versus Manufacturing Shipments

It is important to note that GDP and shipments differ in two ways. First, GDP measures the total contribution of an industry to the economy in terms of value-added while shipments are a simple measure of revenues. Most of the time, changes in shipments are good indicators of changes in GDP but structural changes to an industry (for example, an increase in outsourcing) can lead to different trends in GDP and shipments indices. Second, GDP is measured in constant dollars while shipments are measured in current dollars. This means that when prices increase, GDP fluctuates less than shipments but when prices decline, GDP fluctuates more than shipments. In the ICT context, this difference is very important in measuring output of the computer equipment industry since a hedonic price index is used. A hedonic price index is a statistical tool used to standardize per unit prices for goods whose quality and characteristics change rapidly such as a computer. The hedonic price index adjusts the price of a computer based on the improvements in speed, design, etc. Using this hedonic price deflator, a very rapid decline in production prices is observed resulting in a much stronger growth in the GDP index compared to the shipments index for the computer equipment industry.

### Information and Communications Technologies Sector\*

#### ICT Manufacturing:

- Computer and Peripheral Equipment Mfg
- Communications Equipment Mfg
  - wired communications equipment mfg
  - wireless communications equipment mfg
- Audio and Video Equipment Mfg
- Electronic Component Mfg
- Instruments Mfg
- Communication Wire and Cable Mfg
- Commercial and Service Machinery Mfg

#### ICT Services:

- Software
- Computer Systems Design
- Data Processing Services
- Telecommunications Services
- Cable and Other Program Distribution
- ICT Wholesaling

\* Based on the North American Industry Classification System

#### Sources:

GDP (2002 constant dollars): GDP by Industry, Industry Measures and Analysis Division, Statistics Canada.

Manufacturing Shipments: Monthly Survey of Manufacturing, Manufacturing, Construction and Energy Division, Statistics Canada.

Employment: Survey on Employment, Payrolls and Hours (SEPH), Labour Statistics Division, Statistics Canada.

Exports: Trade Data Online, International Trade Division, Statistics Canada.

#### Notes:

1. Employment trends based on the Survey on Employment, Payrolls and Hours (SEPH) used in this publication might be slightly different from the trends based on annual industry specific surveys reported in the ICT Statistical Overview. Although data from SEPH might not be as reliable as data from industry specific surveys, they are more timely and provide an indication of the current employment situation.
2. Data used in this report are adjusted for seasonal variation.

### Export Markets:

United States: United States.

EU-25&Russia: United Kingdom, Germany, France, Belgium, Netherlands, Italy, Spain, Sweden, Austria, Finland, Ireland, Denmark, Poland, Portugal, Czech Republic, Greece, Luxembourg, Hungary, Slovenia, Latvia, Lithuania, Estonia, Slovakia, Cyprus, Malta, and Russia.

Asia Pacific (based on Department of Foreign Affairs and International Trade definition): Afghanistan, Australia, Bangladesh, Bhutan, Brunei Darussalam, Burma (Myanmar), Cambodia (Kampuchea), China, Cook Islands, Fiji, French Polynesia, Guam (U.S.), Hong-Kong, India, Indonesia (includes East Timor), Japan, Kiribati (includes Tuvalu), South Korea, Kyrgyzstan, Laos, Macau (Macao), Malaysia, Maldives, Micronesia, Mongolia, Nauru, Nepal, New Caledonia, New Zealand, Niue, Pakistan, Papua New Guinea, Philippines, Singapore, Solomon Islands, Sri Lanka, Taiwan (Taipei), Tajikistan, Thailand, Tonga, Turkmenistan, Uzbekistan, Vanuatu (New Hebrides), Vietnam.