



Ontario's Information & Communications Technologies Sector: An Overview

Ministry of Economic Development and Trade

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Virtualtech



PURPOSE

- Provide an overview of the ICT sector in Ontario.
- Our investment and trade strategy.
- Identify key ICT sectors and companies.
- Discuss Ontario government support for the sector.

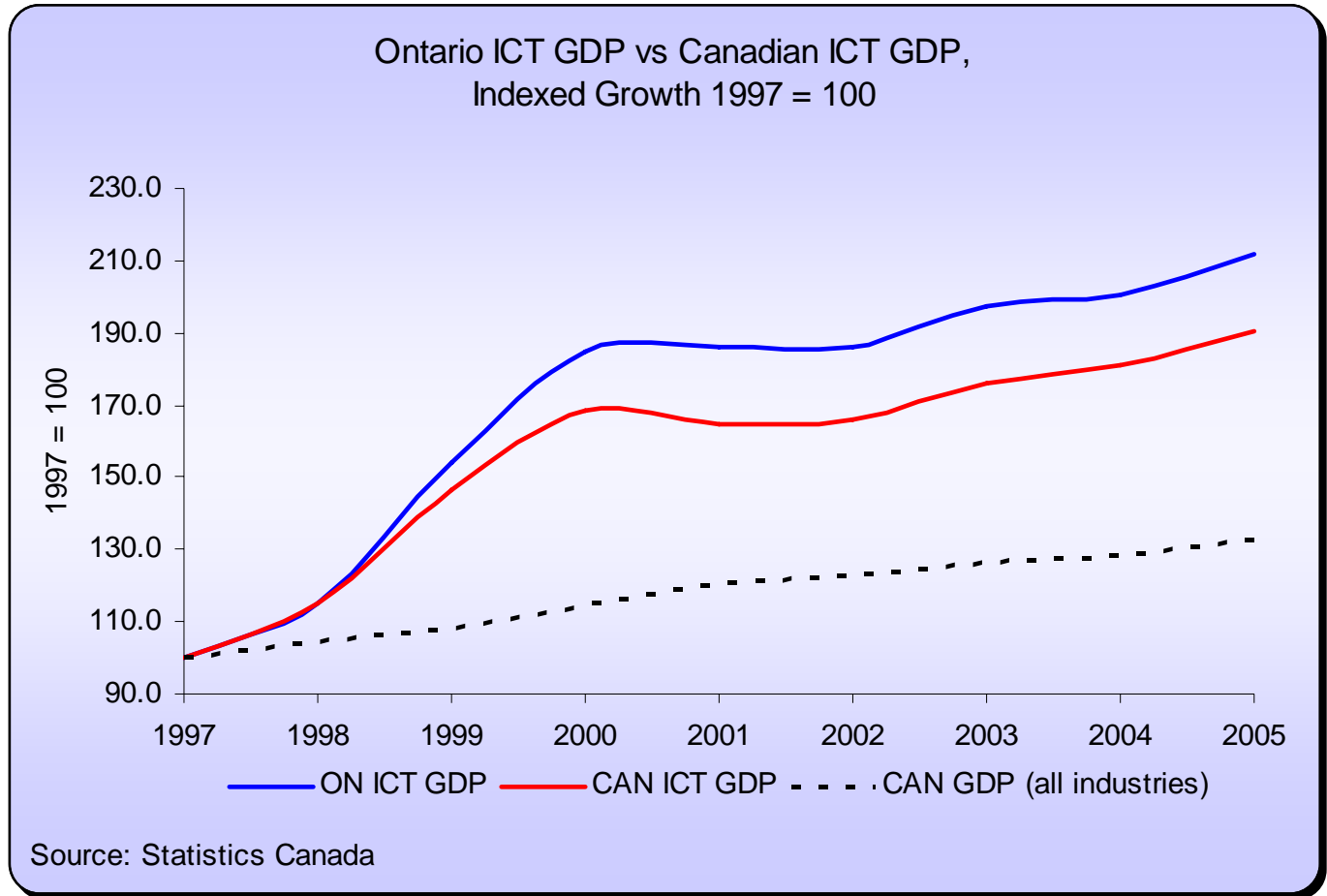
A SNAPSHOT OF ONTARIO'S ICT SECTOR

- Ontario's ICT sector employed 244,000 people in 2005.
- In 2005, Ontario's ICT GDP reached its highest level at \$31.2 billion.
- In 2005, Canadian ICT R&D reached \$5.2 billion, increasing 2.0% or \$103 million from 2004.

Ontario contributes to about half of Canada's ICT economic activity and employment.

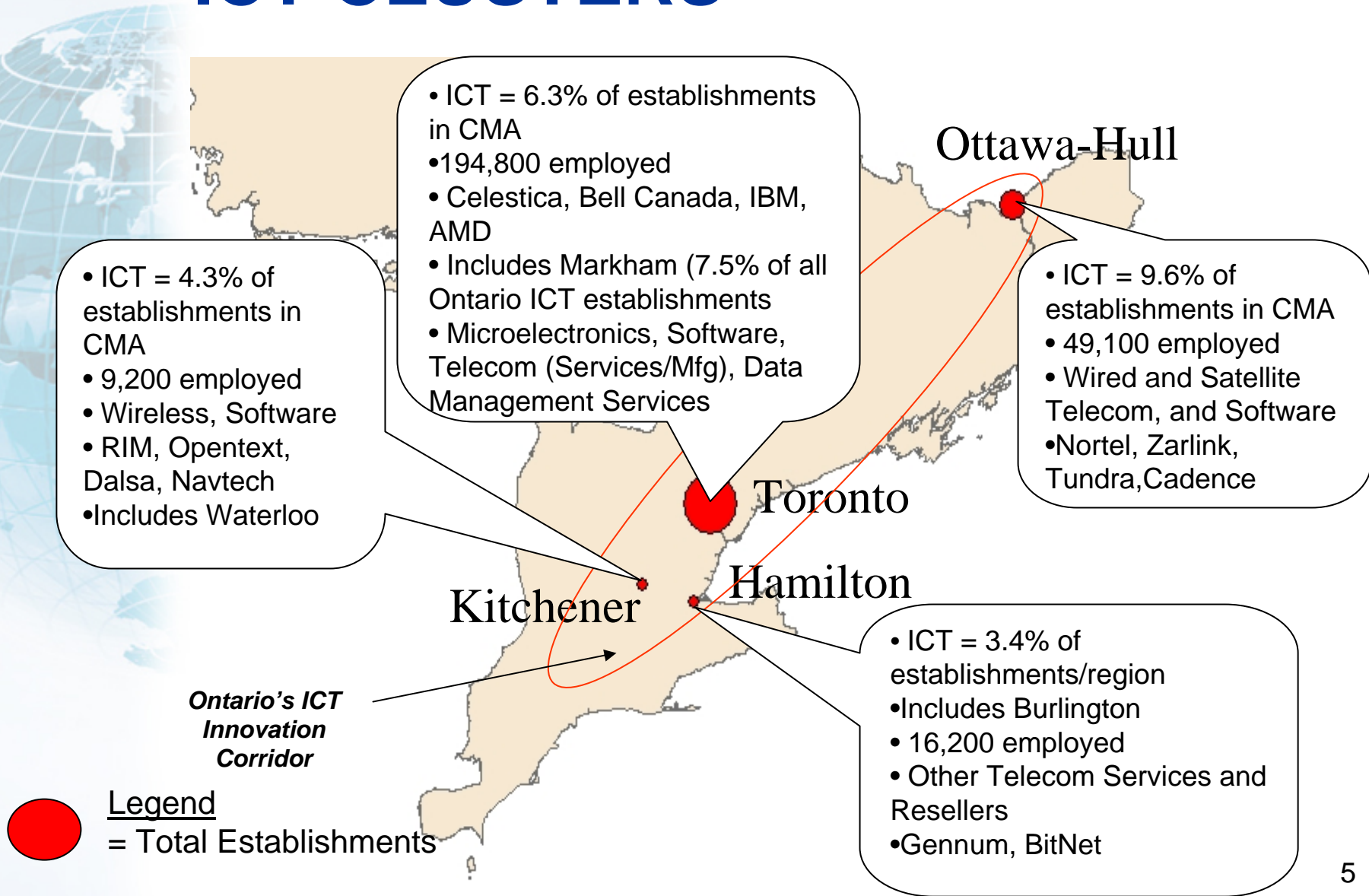
“Toronto is the 3rd largest ICT cluster in North America” 3
(E&B Data, 2004)

ONTARIO HAS STRONG GROWTH IN ICT



- 2005 ICT GDP reflects an increase of 5.5% over 2004 and accounts for 5.6% of total Canadian GDP. Ontario accounted for 48% of total Canadian ICT GDP in 2003.

ICT CLUSTERS



Source: Statistics Canada Business Register, June 2003; Statistics Canada, A decade of growth, 2003 (using 2000 data)



ONTARIO'S INVESTMENT & TRADE STRATEGY

A CHANGING ENVIRONMENT FOR INVESTMENT AND TRADE...

MAJOR TRENDS

HISTORICALLY

High unemployment

New/ "Greenfield" investments

Local competitors
e.g. Great Lakes states

Investment separate from trade

NOW

Skills shortage

Buyouts (Mergers & Acquisitions)
and Venture Capital

Global competitors
incl. developing countries

Global supply chains

A CHANGING ENVIRONMENT FOR INVESTMENT AND TRADE...

GOVERNMENT ROLE

HISTORICALLY

Any jobs

Any firm

Only attraction

Few investment & trade players

Limited global presence

NOW

Quality jobs/high value-added

Sector/cluster approach

Relationship management
(Retention & Expansion)

New Players: municipalities,
regional marketing groups,
other jurisdictions

Strategic presence in key global
markets
(e.g. International Marketing
Centres)

INVESTMENT AND TRADE STRATEGY

Core Strategies

1. Increase Investment

- New Investors
- Repeat Investors
- Business Immigrants

2. Increase Trade

- New Exporters
- Existing Exporters
expanding their markets
- Exploring ways to assist
with outward Foreign
Direct Investment (FDI)

3. Build our brand

4. Expand our international presence

5. Leverage partners

6. Improve organizational efficiency and effectiveness

Enabling
Strategies

Connecting businesses in Ontario and throughout the world with the people, products and ideas that make Ontario "Canada's Economic Powerhouse"



INCREASE INVESTMENT

Build/Grow Mature Markets

Diversify by Tapping Emerging Opportunities/ Markets

Attract Immigrants for skills & investment

Respond to Opportunities

SECTORS AND MARKETS

INVESTMENT

Sectors

Auto
Adv Mfg*
ICT
Life Science
Business
Process
Outsourcing

*Aerospace,
Alternative
Energy,
Environ Tech,
Adv. Materials,
Automation,
Value-added
Wood product

Markets

USA
Germany
U.K.
France
Japan

Emerging Markets

China
India

Clients

Multi-national Enterprises

TRADE

Sectors

Auto
Adv Mfg*
ICT
Life Science
Bus/Prof.
Services
Bldg. Products/
Constuct.

*Aerospace, Env.
Mining, Transit,
Mach/Equip.

Clients

Small-Medium sized
Enterprises (SME) that are new
or experienced exporters

Markets

USA
EU
Japan
Gulf States
Israel
Mexico

Emerging Markets

China
India
Brazil
Chile
Russia

BUSINESS IMMIGRATION

Markets

USA
EU
Asia

Some effort on:
South America
Middle East

Clients

Potential Immigrant
Investors

STRATEGIC USE OF INVESTMENT RESOURCES



Why these sectors?

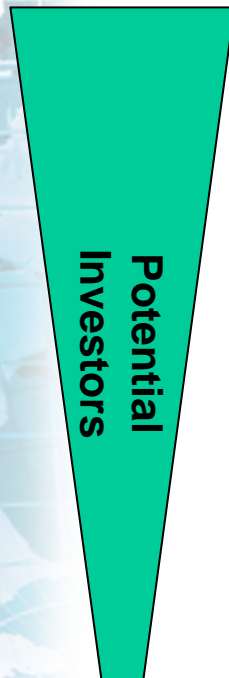
- Quality, high-paying jobs, high value-added products/services
- Sectors closely connected to innovation and research
- Aligned with Ontario's traditional strengths

Why these markets?

- Capabilities align with Ontario's target sectors
- Over 80% of the Global 500 have their head office in these markets
- Top seven foreign capital investors in Ontario include: USA, Germany, Japan, UK, France
- Sources of highly skilled immigrant workers and immigrant investors.
- Chinese and Indian companies are beginning to expand globally

THE INVESTMENT CONTINUUM

Investment attraction can be viewed as a funnel, with many potential investors resulting in a few successful investments



AWARENESS & INTEREST BUILDING

- Advertising & Media Relations
- Marketing materials (brochures, website)
- Market Research

RELATIONSHIP BUILDING

- Intermediary Calls (professional, trade associations)
- Work with Embassies and Consulates
- Industry Networking

LEAD GENERATION

- Corporate Calls
- Targeted Prospecting
- Networking at Industry Events (trade shows)

BUSINESS CASE DEVELOPMENT

- Cost Analysis (KPMG Study)
- Identifying appropriate locations
- Analysis / information of labour, energy, etc.
- Competitive Market Research

DEAL CLOSING

- Corporate Interaction
- Ontario Site Visits
- Work with local Economic Development Offices
- Programs and other incentives

AFTER CARE & EXPANSION

- Corporate Calls
- Intelligence Gathering
- Advocacy
- Retention and Expansion

New Investors

Existing Investors



INCREASE TRADE

Build/Grow Priority Strengths

Promote International Trade by offering value-added services

Adapt to Changing Environment

USE OF TRADE RESOURCES

Why these sectors?

- Sectors reflect Ontario's world class strengths and quality reputation
- Sectors closely connected to innovation and research
- Quality, high-paying jobs, high value-added products/services
- Client-driven needs

Why these markets?

- Target countries with identifiable import needs in Ontario's leading sectors
- Market analysis to assess size/wealth/trade barriers/political and economic risk/Ontario's competitiveness
- Top five export markets are: USA, European Union (EU), Mexico, China, Japan
- Mandate to diversify export markets beyond US border states
- Aligns with federal government priorities (Leverage our resources).



BUILDING ONTARIO'S ECONOMIC BRAND

Launch and implement new brand strategy

Engage Business Community

Market Ontario and our Services



WHY WE BRAND

- To differentiate Ontario
- To create awareness of Ontario
- To dispel misconceptions of Ontario

TACTICS TO BUILD OUR BRAND

- Build awareness
- Support sales and business case presentations with collateral materials
- Build/strengthen relationships
- Develop and enhance web/electronic mediums
- Develop highly effective communications tools
- Profile Ontario's business advantages and successes



EXPAND OUR INTERNATIONAL PRESENCE

International Marketing Centres (IMCs)

In-market Business Development
Consultants (IBDCs)

International Trade Consultants (ITDCs)

WORKING TOGETHER ABROAD



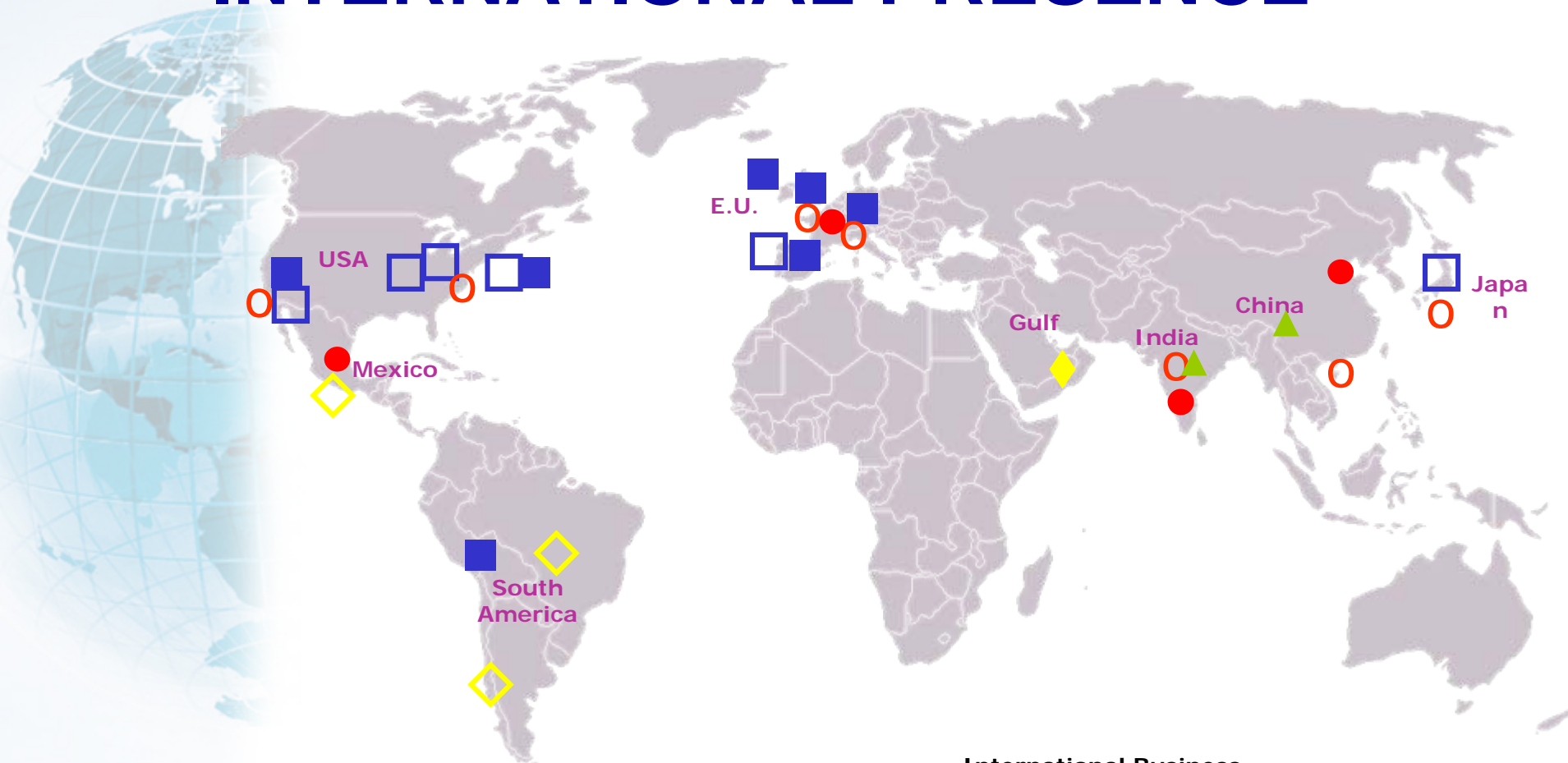
Each of MEDT's three models of representation has a distinct role to play

In markets where Ontario has an International Marketing Centre and at least one of the other models of representation present, efforts are coordinated by:

- collaborative annual business planning
- regular sharing of monthly reports, call lists
- quarterly meetings/debriefings organized by Senior Economic Officers
- undertaking shared initiatives

International Marketing Centres identified to federal posts as first point of contact for sharing of business leads, opportunities

INTERNATIONAL PRESENCE



International Marketing Centres (IMCs):

- Existing: Munich, New York, Shanghai, New Delhi, London, Los Angeles, Tokyo
- Proposed: Mexico City, Beijing, Paris, Mumbai (1 officer only)

International Trade Development Consultants (ITDCs):

- ◇ Existing: Chile, Brazil, Mexico
- ◆ Proposed: Dubai

International Business Development Consultants (IBDCs):

- Existing: US (4), EU, Japan
- Proposed: US (2), EU (4), South America

Hybrid ITDC/IBDC:

- ▲ Proposed: India, China



LEVERAGE PARTNERS

Engage the Business Community

Liaise with Ontario Ministries

Maximize help from other Government

TACTICS TO LEVERAGE PARTNERS

BUSINESS COMMUNITY:

- work with Special Advisor and Investment & Trade Advisory Council to provide feedback on programs and services and act as business champions

FEDERAL GOVERNMENT:

- share country strategies to identify opportunities to partner on both trade and investment activities; maximize advantages of co-location in federal posts

REGIONAL ECONOMIC DEVELOPMENT ORGANIZATIONS:

- coordinate efforts to avoid duplication; share branding to gain support; collaborate on business development activities in foreign markets

BUSINESS STAKEHOLDERS:

- share plans to coordinate efforts, leverage contacts, and avoid duplication

MINISTRY COUNTERPARTS:

- work together to build best business case for investment leads; share branding to achieve consistency in messages; represent and support interests through the International Marketing Centres



ICT SUCCESS STORIES

TELECOMMUNICATIONS



NORTEL
NETWORKS
BUSINESS WITHOUT BOUNDARIES



RIM



ROGERS



Bell Canada
Enterprises



ALCATEL



MITEL

- Ontario is a leader in the telecommunication sector focusing on innovative areas such as wireless broadband, mobile data networks, smart antennas, software-defined radio and last-mile solutions.
- Ontario's telecommunication industry is one of the most research intensive in Canada. About 80 per cent of Canada's Telecommunications R&D occurs in Ontario.
- Some key companies include: Nortel, Research in Motion (RIM), Bell Canada, Rogers Communications, Alcatel, Mitel

Research In Motion: An Ontario Success Story



Research In Motion is a leading designer, manufacturer and marketer of the *Blackberry* wireless device. RIM technology also enables a broad array of third party developers and manufacturers to enhance their products and services with wireless connectivity.



Founded in 1984 and based in Waterloo, Ontario, RIM operates offices in North America, Europe and Asia Pacific. The company employs over 2,000 people, principally in Waterloo and mainly in highly skilled positions.

Company officials speak informally of a “RIM Model” The model is premised on engaging and investing in a steady flow of knowledge between the company and regional and international universities. Design, R&D and production are integrated in Waterloo.



MICROELECTRONICS



GENNUM
CORPORATION



CELESTICA



ATI



DALSA



Agilent Technologies



cadence



TUNDRA

- Ontario's microelectronic industry includes semiconductor manufacturers, component suppliers and electronic manufacturing service (EMS) providers.
- Companies such as ATI focus on fabless manufacturing in Ontario by taking advantage of their global supply chain to provide high-end and cost effective products.

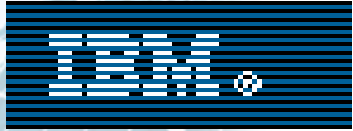
Some key companies include: Gennum, Celestica, ATI, Dalsa, Agilent Technologies, Cadence, Tundra Semiconductors

ATI Technologies: leader in video graphics processors

- ATI was founded in 1985 as spin-off company from the University of Toronto.
- Today, ATI has 20 offices around the world, employs over 3,500 people and has sales of over \$2 billion/year and dominates over half of the world's PC graphics market.
- ATI is also one of Ontario's innovation leaders. In 2003, ATI was the 5th largest R&D spender in Canada, investing 17% of its revenue, or \$328 million on R&D.
- Microsoft's latest gaming console, the Xbox 360 uses a custom designed graphics card from ATI.
- ATI was recently acquired by AMD but continues to develop graphic chips under the AMD brand.



SOFTWARE & SERVICES



- Ontario's software and services industry has thousands of world leading firms including subsidiaries of large multinationals like IBM, Microsoft and Oracle.
- The software sector in Ontario focuses on areas such as: network application & connectivity; business intelligence; content & information management; enterprise planning solutions; CRM tools; security; IT services; and, graphics and multimedia.
- Some key companies include: IBM, Cognos, Descarte Systems Group, Hummingbird, Oracle Canada, Microsoft Canada, Open Text.

IBM Canada's Toronto Software Development Lab

- High-tech, software application research & development lab -- one of the largest in Canada
- One of the top three software development labs in IBM worldwide
- 2,500 employed in Markham, Ontario



- **Global responsibility**
 - DB2 Universal Database
 - VisualAge for Java and other AD tools
 - WebSphere Commerce Suite
 - WebSphere Business Components
- Centre for Advanced Studies (CAS)



ONTARIO IS HOME TO MANY OTHER ICT SUCCESS STORIES





SUPPORT TO ONTARIO ICT COMPANIES

KEY ONTARIO GOVERNMENT PROGRAMS

- **Advanced Manufacturing Investment Strategy (AMIS)**
 - \$500 million repayable loan program to promote investments in advanced manufacturing and to establish Ontario as the leading North American jurisdiction for manufacturing technology innovation
 - Targeted to innovative activities in advanced manufacturing.
 - Intended to tip the scales for investment decisions in Ontario's favour.
- **Ontario Research Commercialization Program (ORCP):**
 - \$27 million program designed to strengthen public research institution/industry linkages and collaboration and help entrepreneurs, start-ups and industry bring new products to market .



Ontario Centres of Excellence

There are five Ontario Centres of Excellence (OCE):

- Centre for Communications and Information Technology
 - Centre for Photonics
 - Centre for Materials & Manufacturing
 - Centre for Earth and Environmental Technologies
 - Centre for Energy
-
- The Ontario Centres of Excellence work with industry and universities through directed research, commercialization of technology and training of workers. OCEs are designed to bridge the gap between university research and the market.

REGIONAL CLUSTER ASSOCIATIONS SUPPORT ICT



Communitech (Kitchener-Waterloo Region)



Ottawa Centre for Research and Innovation (Ottawa Region)



York Technology Association (Toronto and York Region)

Ontario's regional ICT cluster associations support ICT businesses to foster a networking and learning environment conducive to the growth and success of all technology stakeholders and to take action, on behalf of its members, on issues that are important to the technology industry.

GOING FORWARD

- Ontario's challenge is to find ways to encourage the ICT industry to continue to invest in the Province versus China, India and other emerging economies.
- As emerging economies grow in sophistication, Ontario will foster relationships with key jurisdictions to create opportunities that will help generate new ideas and establish entry into these new markets.



Thank You!

Further information

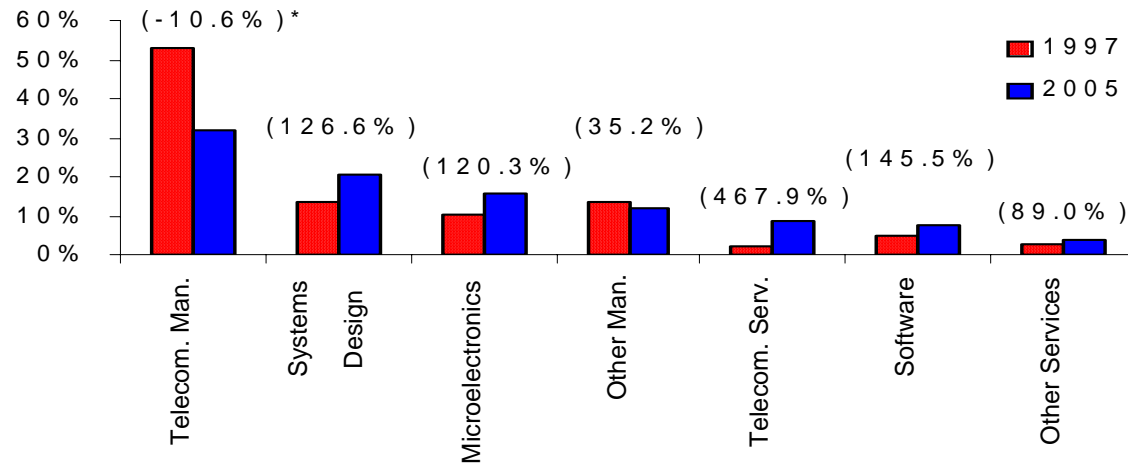
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Extra Slides

Research and Development

Distribution of Private Sector ICT R&D Spending in Canada, 1997 vs 2005



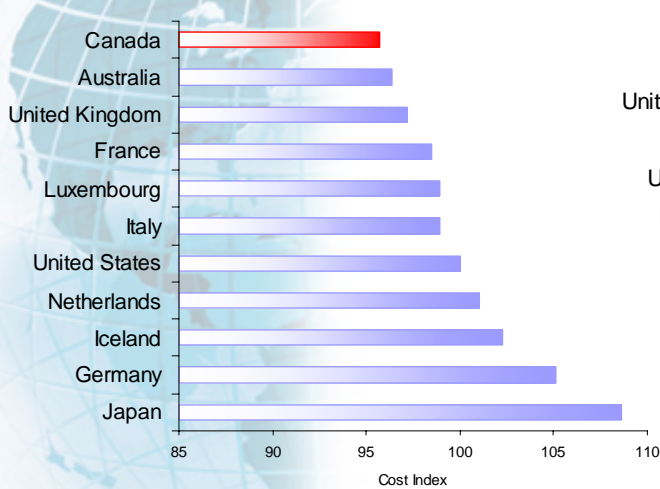
Source: Statistics Canada

* Percentage Change between 1997 and 2005 in brackets

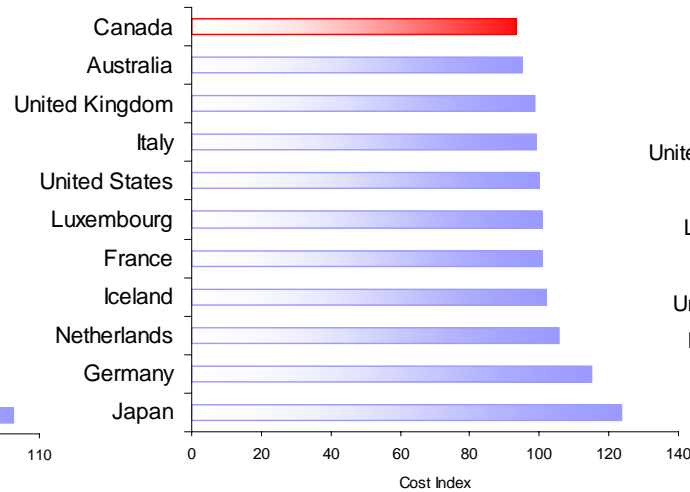
- In ICT services, there was a 126.6% increase for Computer Systems Design, which represents a 20.6% share of ICT R&D and an increase of 467.9% in telecommunications services R&D, which represents 8.8% of ICT R&D

CANADA'S KEY ICT SECTORS ARE GLOBALLY COST COMPETITIVE

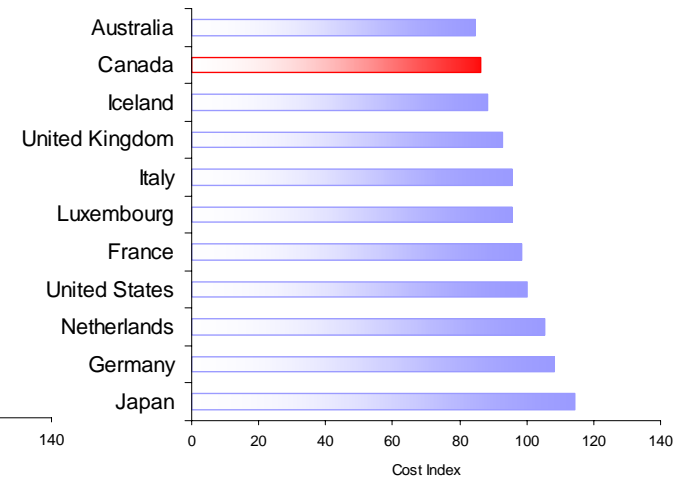
Telecom Equipment Mfg (US=100)



Electronic Assembly (US=100)



Advanced Software Development (US=100)



Source: KPMG, Competitive Alternatives 2004

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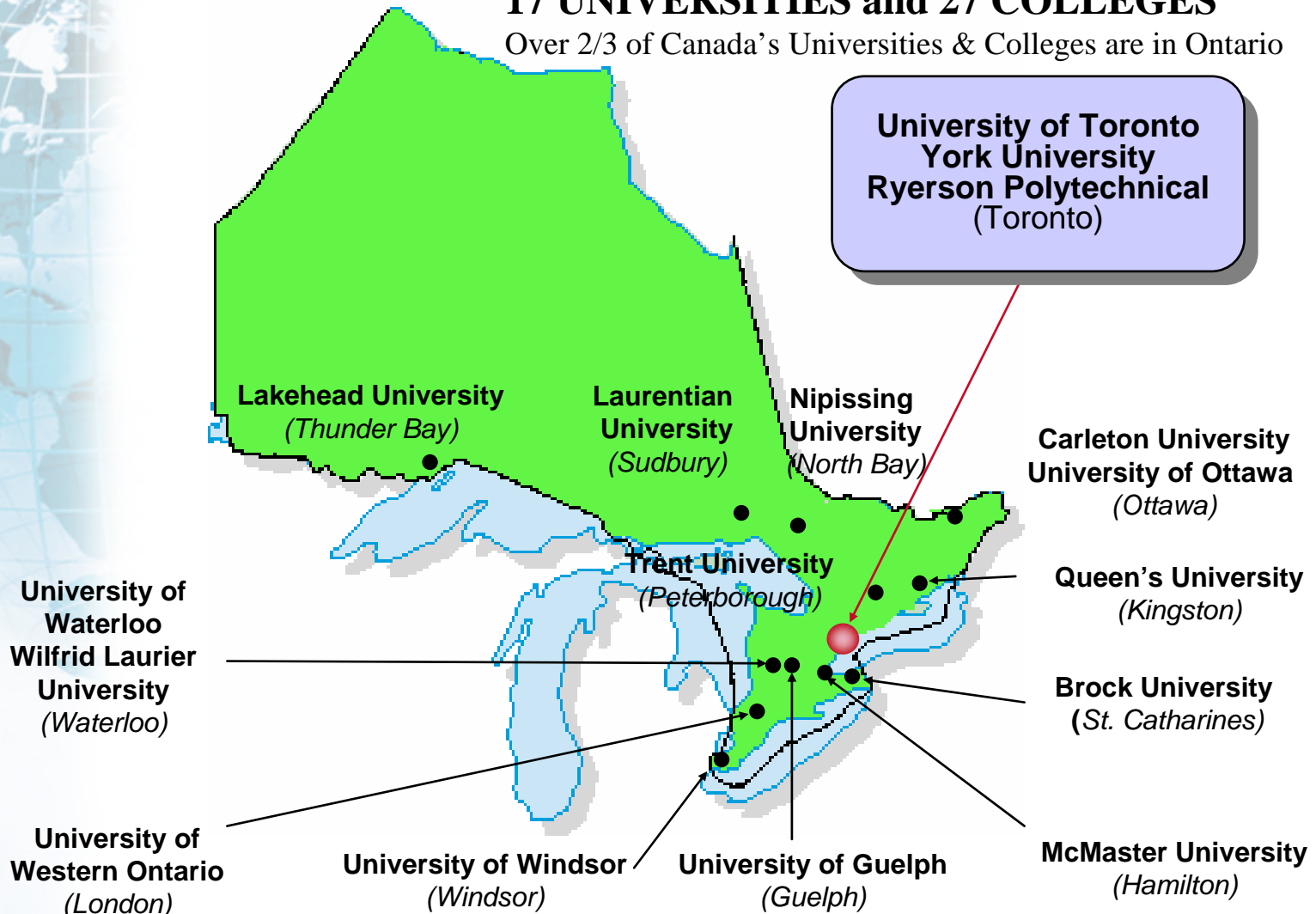
Source: KPMG, Competitive Alternatives 2004

- According to KPMG's 2004 "Competitive Alternatives" report, Canada is the lowest cost jurisdiction among the G-7 countries to do business in the Telecommunication Manufacturing, Electronic Assembly and Software Design sectors.

EDUCATIONAL FACILITIES

EDUCATIONAL INFRASTRUCTURE SUPPORT: 17 UNIVERSITIES and 27 COLLEGES

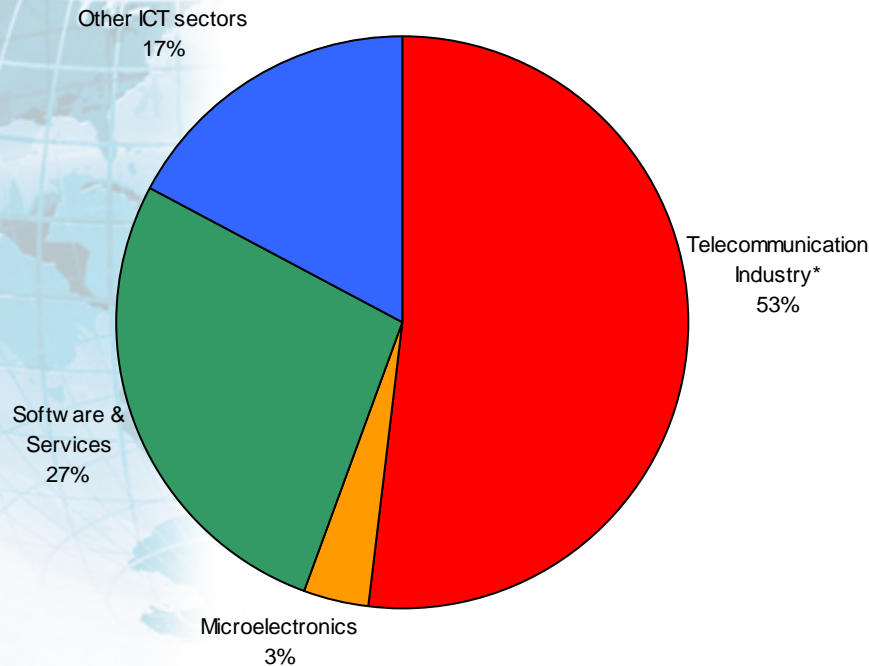
Over 2/3 of Canada's Universities & Colleges are in Ontario



Source: Ministry of Education and Training

CANADA'S ICT ECONOMIC ACTIVITY IS CONCENTRATED IN THREE MAJOR SECTORS

Canadian ICT GDP by sector, 2004

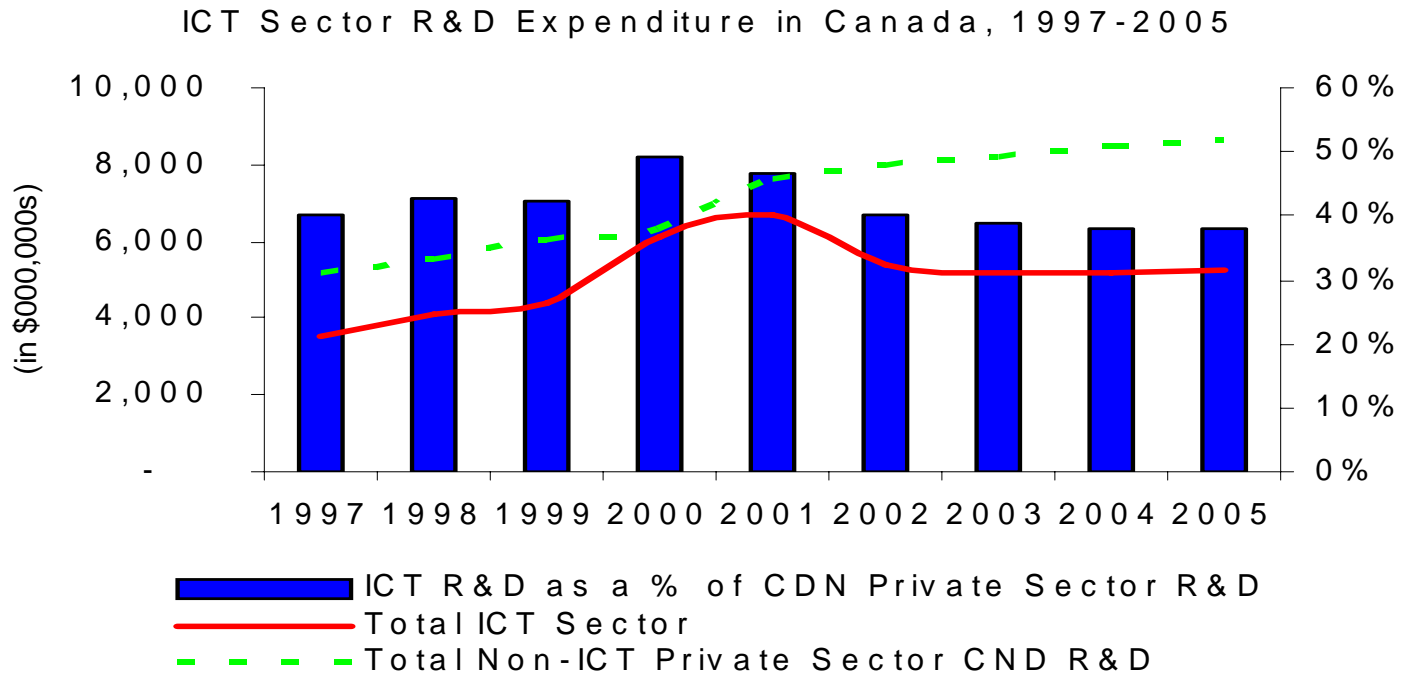


Source: Statistics Canada

* - The Telecom industry includes:
wired and wireless telecom manufacturing; telecom wire and cable manufacturing; cable and other program distribution; and, telecom services

- Over half of Canada's ICT's economic activity is from telecommunication manufacturing and services.
- Software and Microelectronics accounted for another third of the contribution to GDP.

Research and Development



Source: Statistics Canada

- Although ICT sector R&D is experiencing slower growth than non-ICT private sector R&D, total ICT R&D has grown 48.9% since 1997.