

A Vision of High Technology Activity in Eastern Ontario During the Period 2000 - 2030

Presented by
Doyletech Corporation

**Financial Assistance Provided by
The Ontario Ministry of Economic Development and Trade**

November 2000

Background

- the OTC has been growing at **6.5%** per year for the past 30 years
- this year, growth in the OTC projected to be **20-25%**
- going forward, **6.5%** growth should be sustainable

What Will Drive the 6.5% Growth?

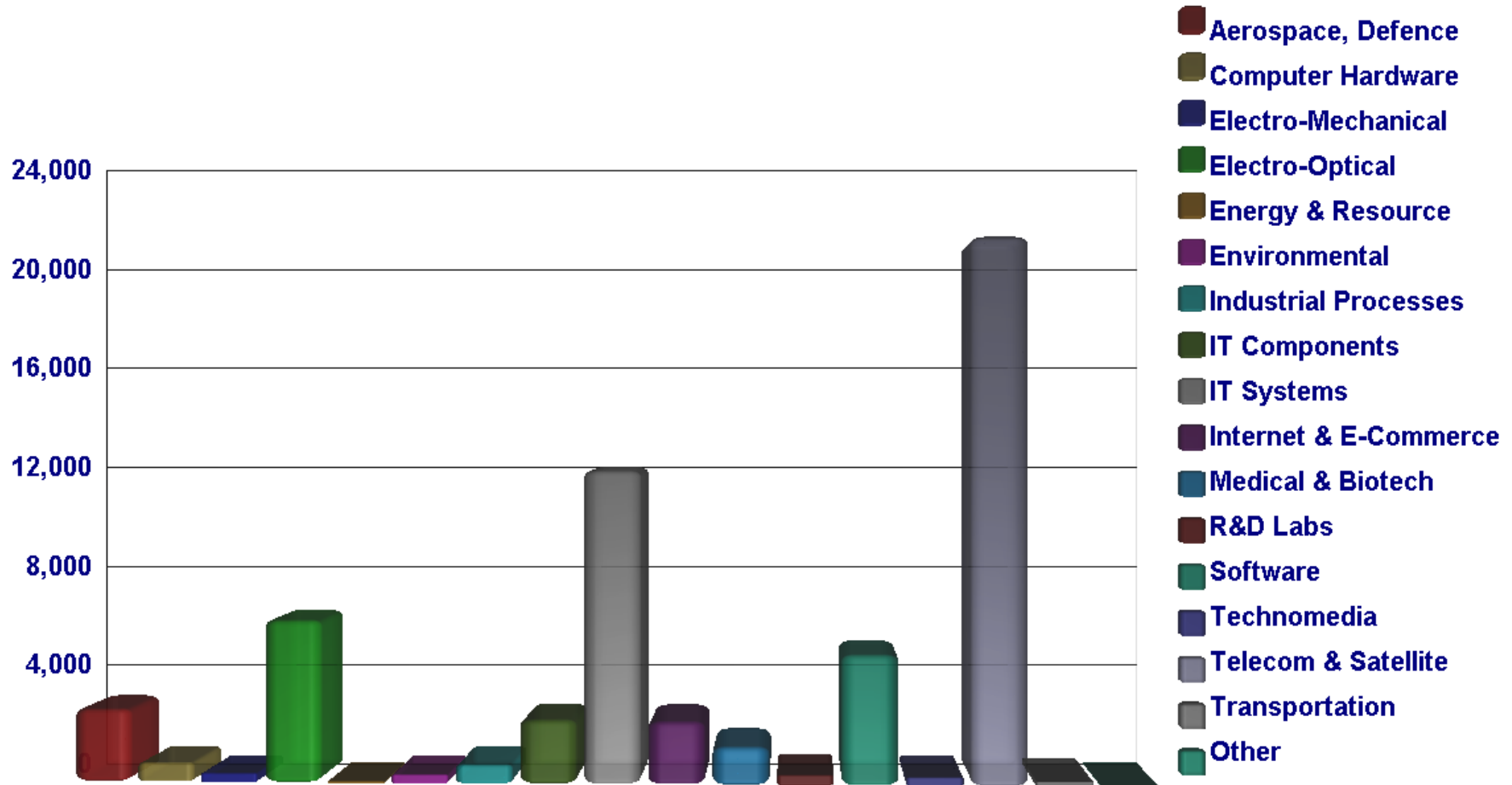
- **emergence of new sectors and generators (e.g. Internet II, video technology, etc.)**
- **convergence of segments (e.g. IT and biotechnology – perhaps through genetic coding and decoding)**
- **Environment, Geoscience, Energy & Resource sectors will develop a new sector called Geomatics**

What Will Drive the 6.5% Growth? (continued)

- **Electro-Mechanical sector will evolve into a microstructures sector that reflects the trend towards micromachines**
- **Wireless Communications – firms supplying products and services for wireless Internet, tracking of people and devices**
- **Electronics Manufacturing Services (EMS) will become more sophisticated and widespread**

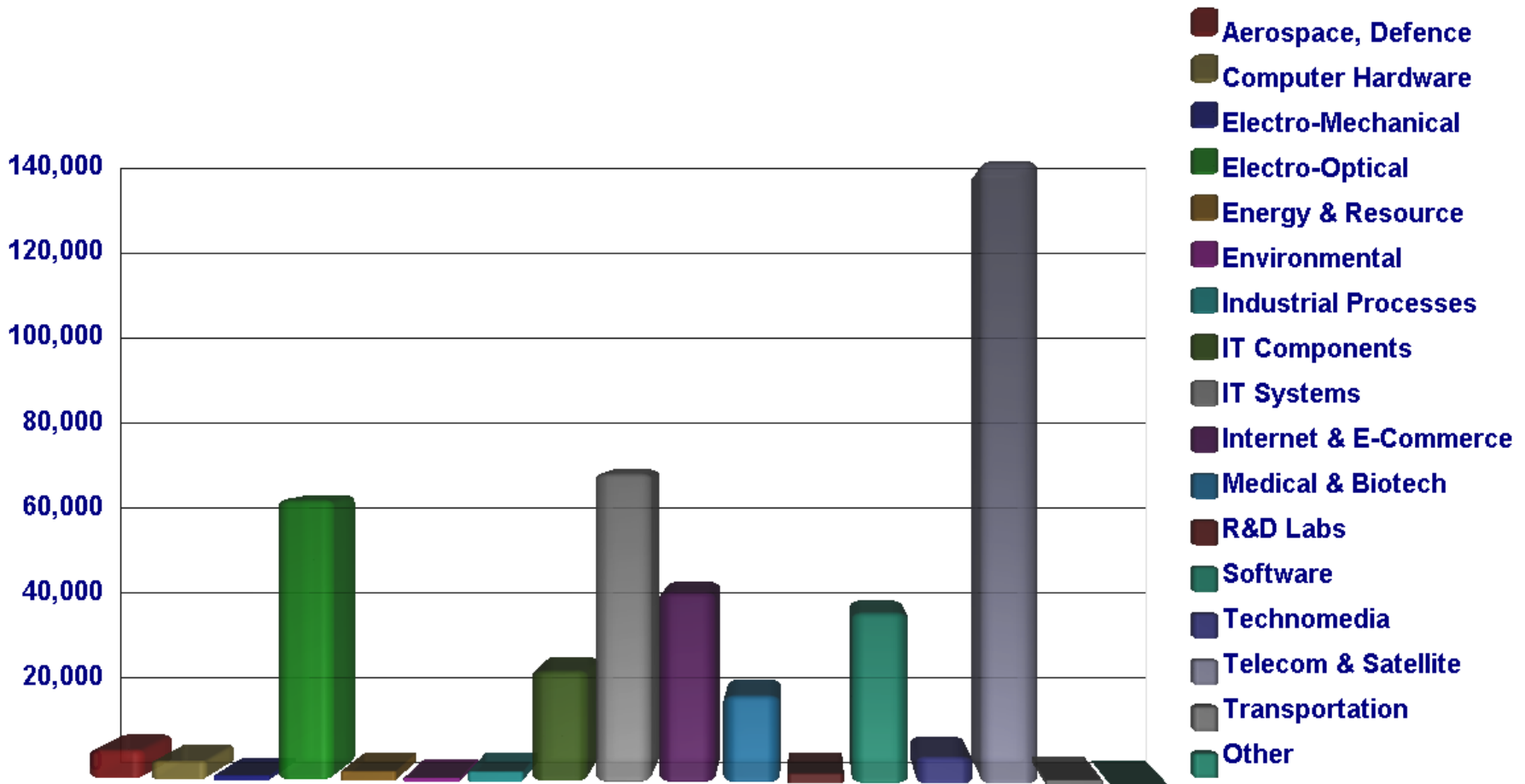
Sector	Employment	Sales Per Employee (000's)	Sales (\$ Millions)
Aerospace, Defence	2,823	190	536.4
Computer Hardware	764	180	137.5
Electro-Mechanical	361	150	54.2
Electro-Optical	6,279	225	1,412.8
Energy & Resource	74	150	11.1
Environmental & Geos.	353	150	53.0
Industrial Processes	759	150	113.9
IT Components	2,496	200	499.2
IT Systems	12,051	215	2,591.0
Internet & E-Commerce	2,450	150	367.5
Medical & Biotech.	1,489	120	178.7
R&D Labs, Testing	427	200	85.4
Software	5,035	235	1,183.2
Technomedia	362	150	54.3
Telecom & Satellite	20,945	225	4,712.6
Transportation	226	120	27.1
Other	55	120	6.6
Total	56,949	Average - 211	12,024.5

Employment in 1999 (December)



Projected Growth by Sector	Employment 1999 Doyletech Nos.	Projected CAGR (%)	Projected Employment in 2030
Aerospace, Defence	2,823	3	6,852
Computer Hardware	764	6	4,388
Electro-Mechanical	361	4	1,170
Electro-Optical	6,279	8	63,183
Energy & Resource	74	4	2,400
Environmental & Geos.	353	3	857
Industrial Processes	759	4	2,462
IT Components	2,496	8	25,116
IT Systems	12,051	6	69,215
Internet & E-Commerce	2,450	10	42,751
Medical & Biotech.	1,489	9	19,755
R&D Labs, Testing	427	6	2,452
Software	5,035	7	38,327
Technomedia	362	10	6,317
Telecom & Satellite	20,945	6.5	138,446
Transportation	226	6	1,298
Other	55	6	315
Total	56,949		425,304

Employment in 2030 (Projected)



Future Geographic Distribution

- **telecommunications in the west end**
 - will spill over into Lanark & Renfrew
- **photonics in the south & east end**
 - will impact on Hawkesbury & Cornwall
 - NRC will spin out more photonics companies
- **software and microelectronics**
 - will be dispersed throughout the region
- **there will be development south of the airport**

Major Cluster Influences

(as per Dr. Guy Steed)

- **local entrepreneurship**
 - individual initiative and risk-taking
- **R&D / Academic**
 - Research Triangle Park
- **manufacturing**
 - Ireland, Scotland
- **large government high technology presence**
 - Huntsville, Houston

The Ottawa cluster is a result of the first, second and fourth.

Economic Development Strategies

- ***Import***
 - campaigns to attract branch plants
- ***Grow-Your-Own***
 - assistance to local entrepreneurs
(business planning, accessing seed capital, etc.)
- ***Linkages***
 - informing local companies about opportunities
in a major technology cluster
 - also technology linkages

Cornwall

- **major influence will be manufacturing**
- **most effective strategies will be **Grow-Your-Own & Linkages****
- **companies will work their way up the supply chain – as they are doing in Ireland and Scotland**
- **employment will grow from **550 to 2,100****
- **C-MAC employment is the wild card**

Brockville

- **manufacturing & entrepreneurship will be the major influences**
- **telecom will be a major activity**
- **most effective strategies will be import & grow-your-own**
- **employment will grow from 2,000 to 10,000 by 2030**
- **well positioned for overflow from Ottawa (quality of life) and electronics manufacturing services (EMS) trend - outsourcing**

Kingston

- **R&D / academic will be a major influence**
- **grow-your-own & linkages will be the most effective strategies**
- **life sciences should be a major activity – will depend on effectiveness of Canadian life sciences venture capital industry**
- **poised to exploit convergence of life sciences and telecom (e.g. genomics)**
- **employment will grow from 1,500 to 11,244**

Hawkesbury

- **major influence will be the NRC (photonics)**
- **will be heavily influenced by expansion of photonics into east end of Ottawa**
- **most effective strategies will be grow-your-own and linkages**
- **connecting photonics in the eastern parts of Ottawa to Hawkesbury's manufacturing capabilities**
- **employment will grow from 50 to 1,500**

Lanark County

- **manufacturing and entrepreneurship will be major influences**
- **there will be some expansion of OTC into Carleton Place**
- **grow-your-own & importation will be the most effective strategies**
- **there will be plenty of angel money for startups**
- **activity will be mainly telecom with some defence / aerospace**
- **employment will reach 5,000 by the year 2030**
- **another 3,000 will be commuting**

Renfrew

- **similar scenario to Lanark**
- **entrepreneurism a major influence**
- **all three strategies will be effective**
- **there will be some expansion from the OTC
(mainly telecom)**
- **employment projected at 6,000 for the year 2030**

Highway 416 / Highway 43 Corridor

- **difficult to gauge because of the southward expansion of the OTC**
- **excellent communications infrastructure with local venture capital pool**
- **entrepreneurship, grow-your-own and linkages will be the most effective strategies**
- **employment could grow to 1,000 by 2030**
- **boundaries between the OTC and this area will blur**

Potential Accelerators

- **deep reduction of capital gains tax – would create pools of startup capital and improve stock market liquidity**
- **a more effective venture capital industry (especially in the life sciences) and decentralized to the community level**
- **pension funds & large institutional investors get serious about venture capital**
- **aggressive approaches by EDO's to grow-your-own & linkages strategies**
- **stronger public awareness & support**
- **the 36,844 figure could go to 44,000 (+20%)**

Potential Decelerators

- **weaker Canadian dollar – hampers U.S. sales and support efforts**
- **brain drain increases – foreign-owned R&D operations will act as a conduit**
- **the education system deteriorates – it will undergo enormous transformation**
- **prolonged period of high interest rates – will impact the flows of risk capital of all types**
- **negative public reaction to technology – because of cloning, etc.**
- **downside could be as much as 30% - 29,500**

Summary

Area	Current Employment	CAGR (%)	Year 2030
Cornwall	550	4.5	2,100
Brockville	2,000	6	10,000
Kingston	1,500	7	11,244
Hawkesbury	50	12	1,500
Lanark	900	6	5,000
Renfrew	1,000	6	6,000
416 / 43 Corridor	200	5.5	1,000
Total	6,200		36,844

The background of the slide is a dark blue gradient with abstract, curved shapes. A large, light blue curved shape is on the right side, and a dark blue triangular shape is on the left side. The text is centered in the middle of the slide.

Doyletech Corporation

Making Technology Happen