New Brunswick eBusiness/Information Technology Sector

New Brunswick IT “Cluster”

IT CLUSTERING DYNAMICS IN AN OLD REGIONAL ECONOMY: strengths and weaknesses of the New Brunswick model

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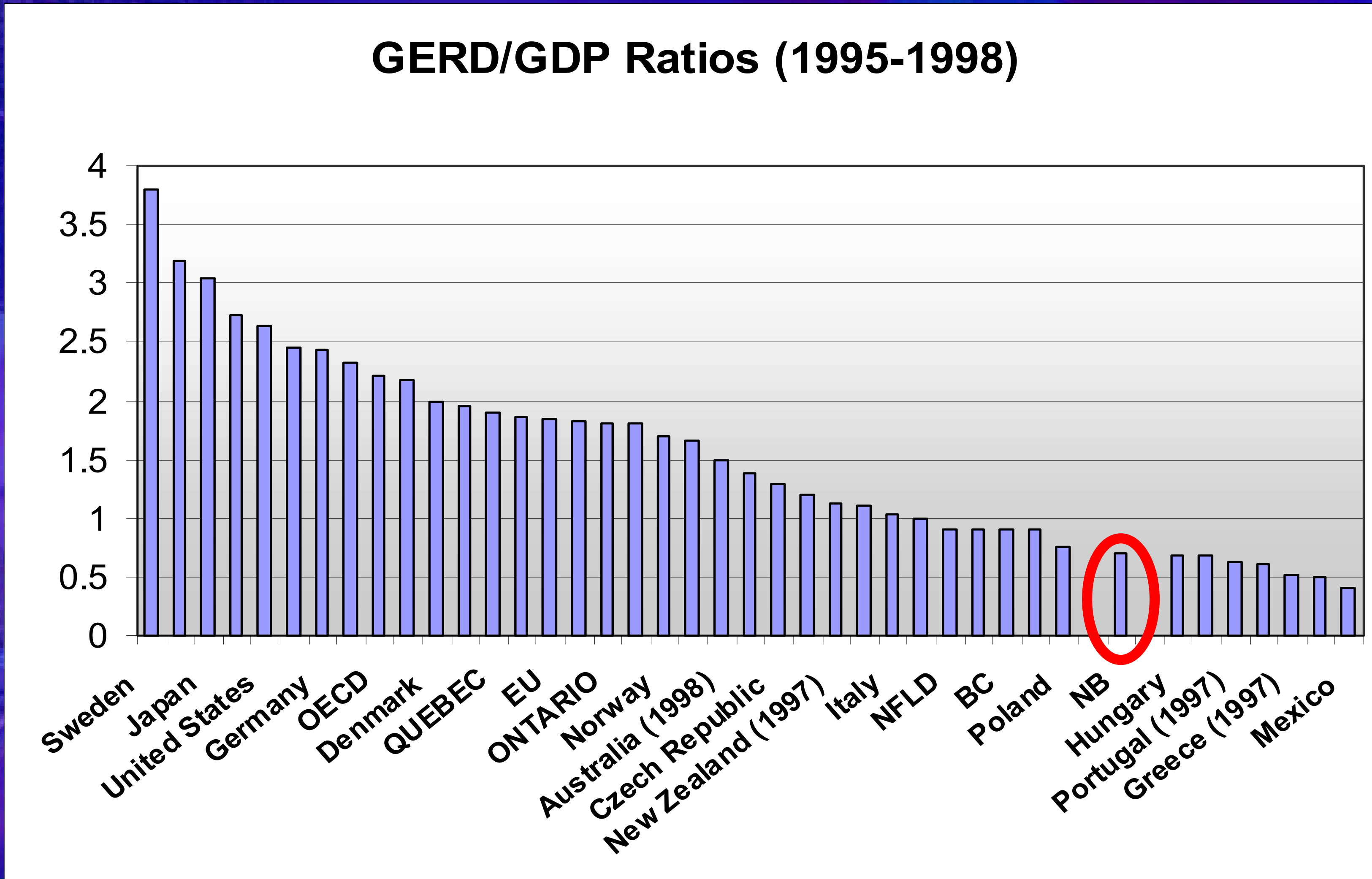
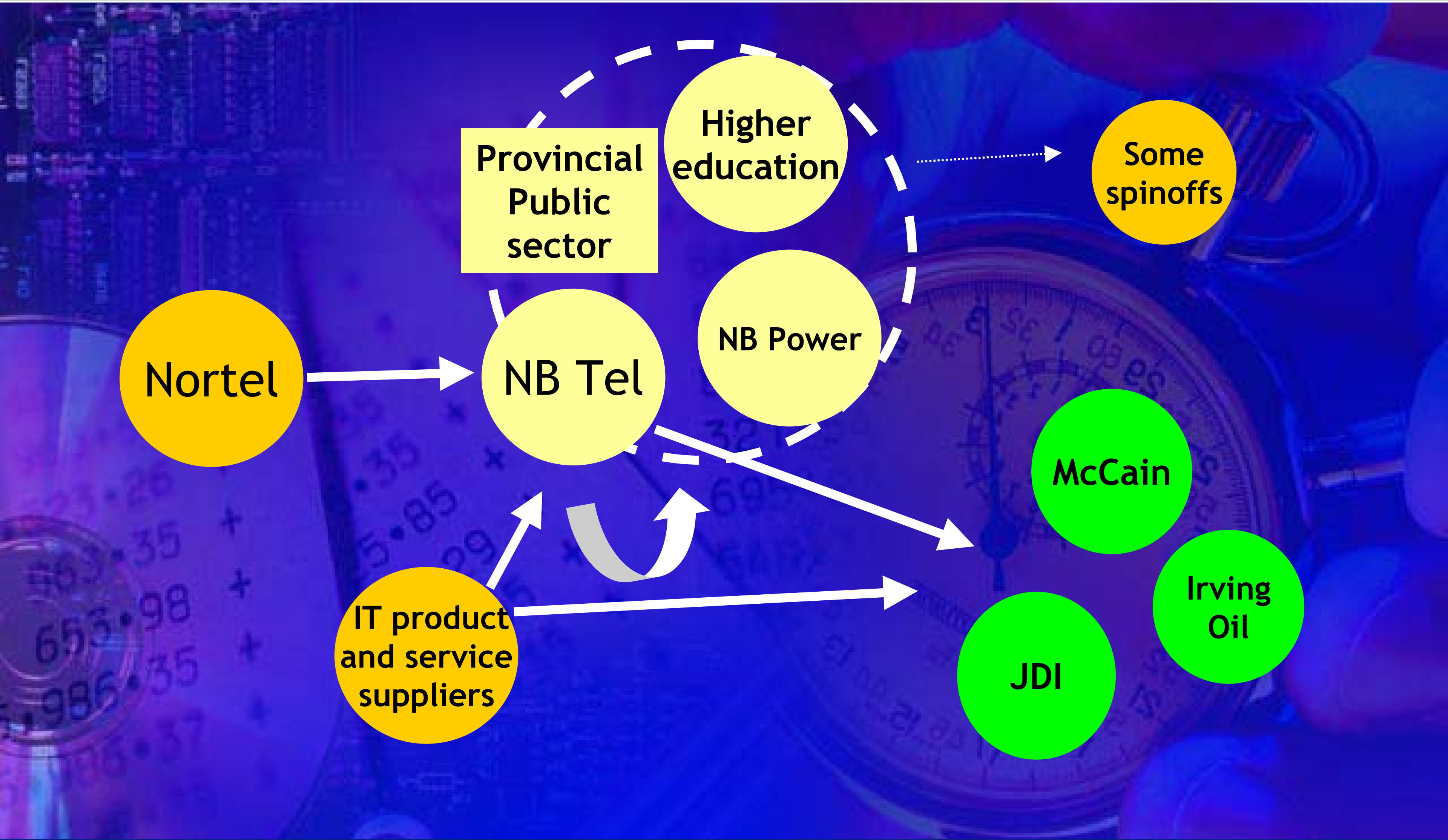
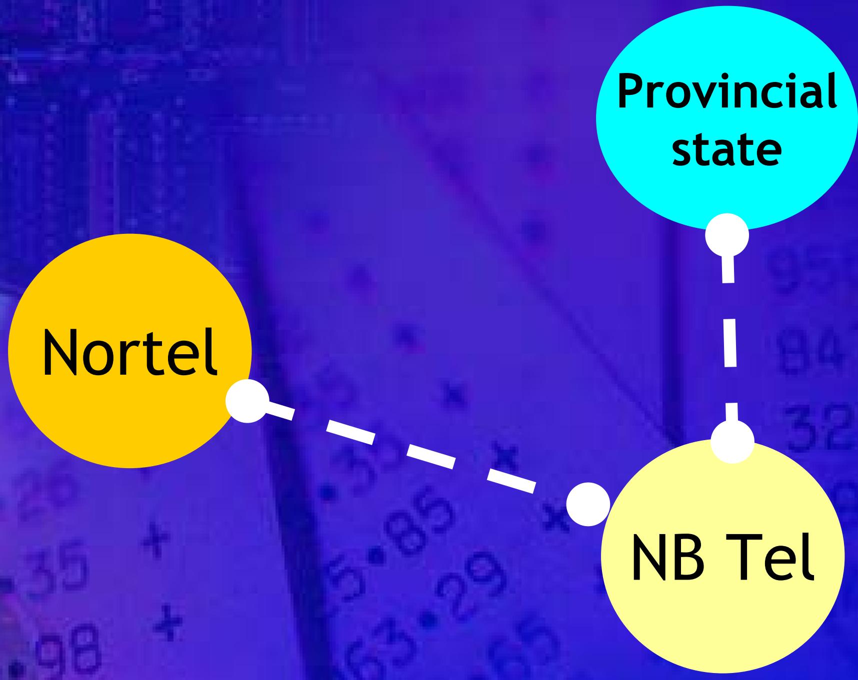
GERD/GDP ratios in NB (1995-1998)



Origins of NB IT sector (1960-1990)



Key alliances in the NB IT sector development strategy

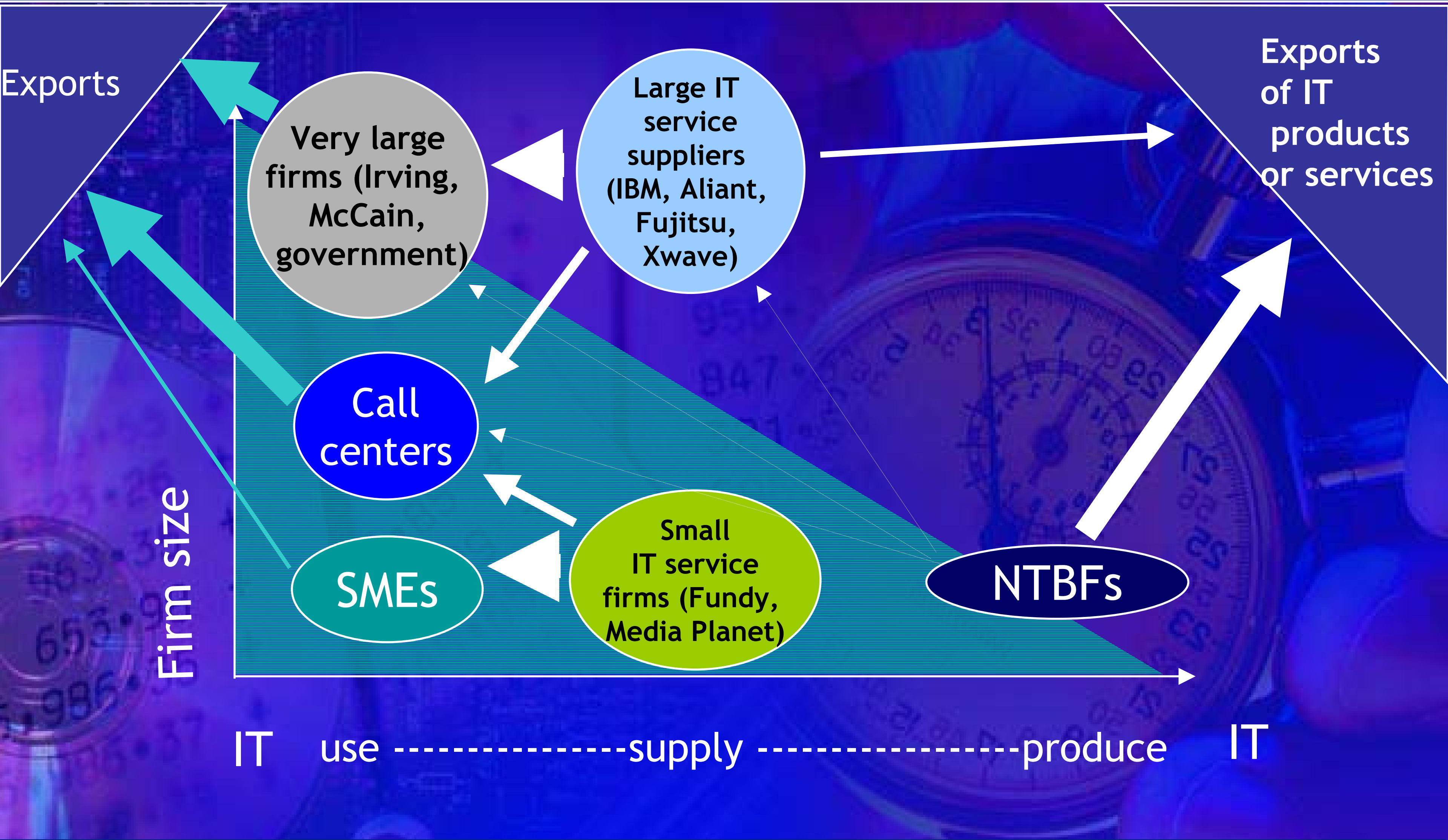


Promotion of NB as a production platform for IT-enabled services

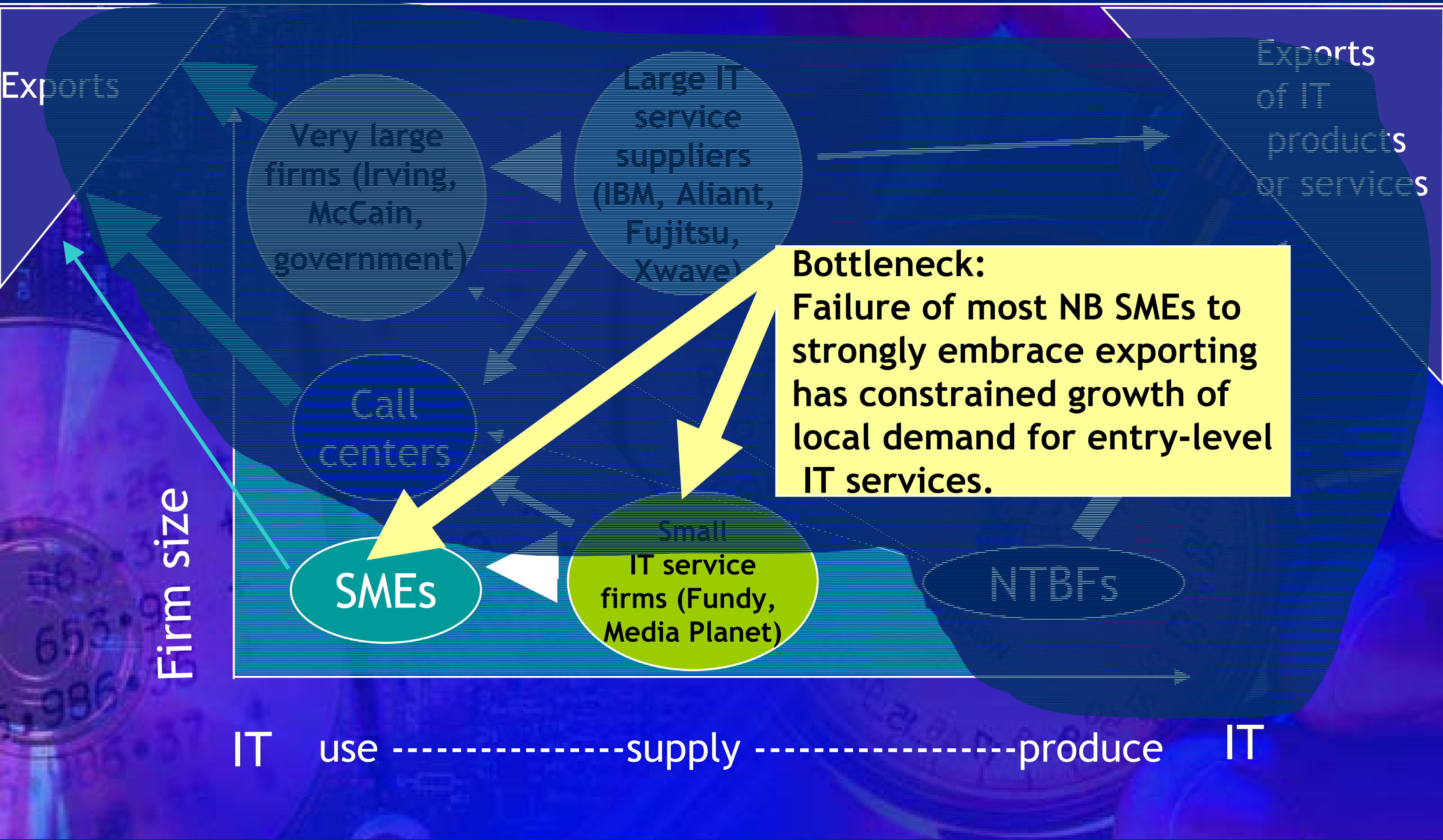
Major investment in high-speed fiber optic network around New Brunswick

Rapid introduction of telecommunications products and services for market testing in NB 'Living Lab'

Business logics in the New Brunswick IT sector



Sweet Spots and Bottlenecks in the the New Brunswick IT Cluster



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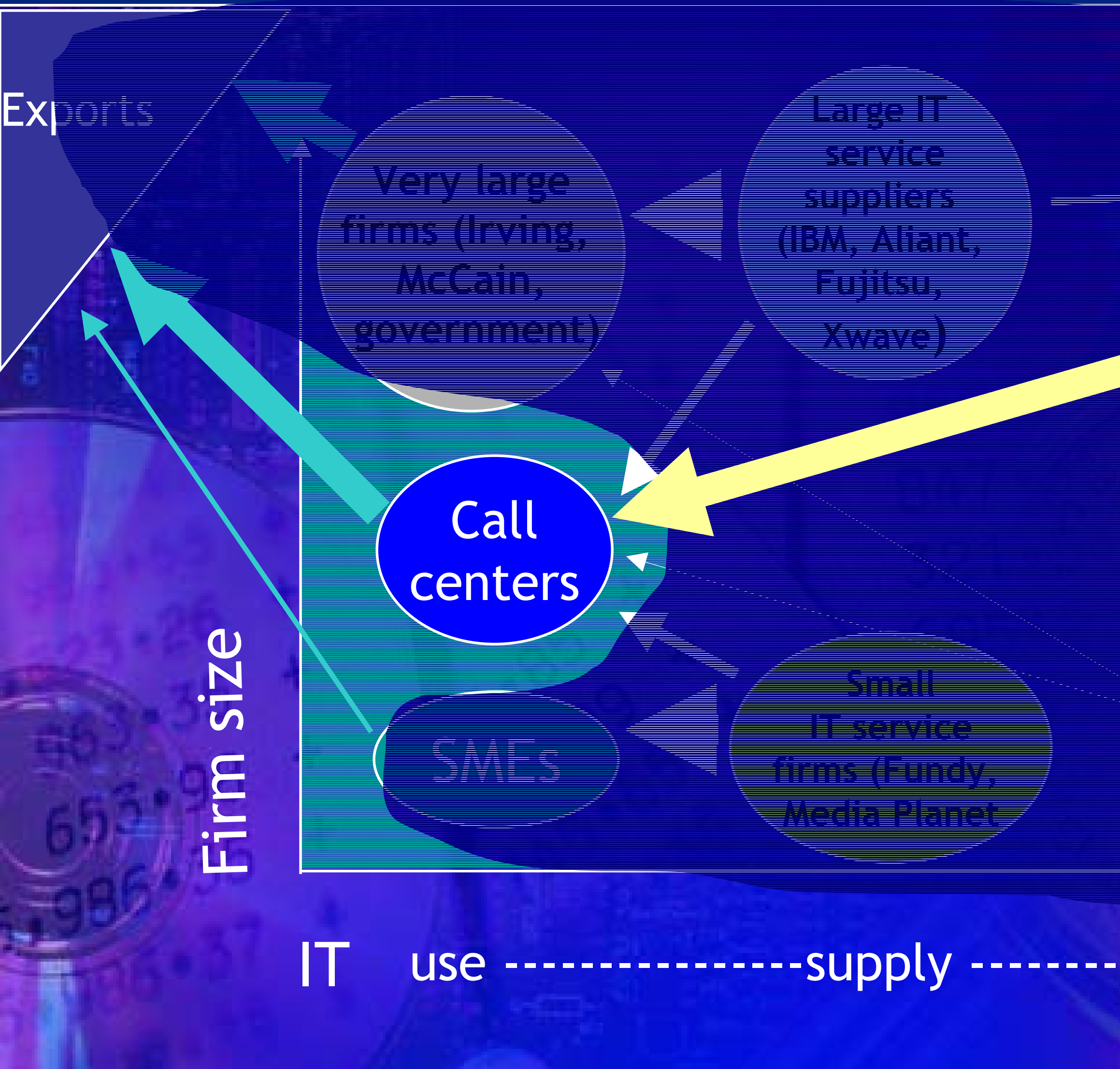
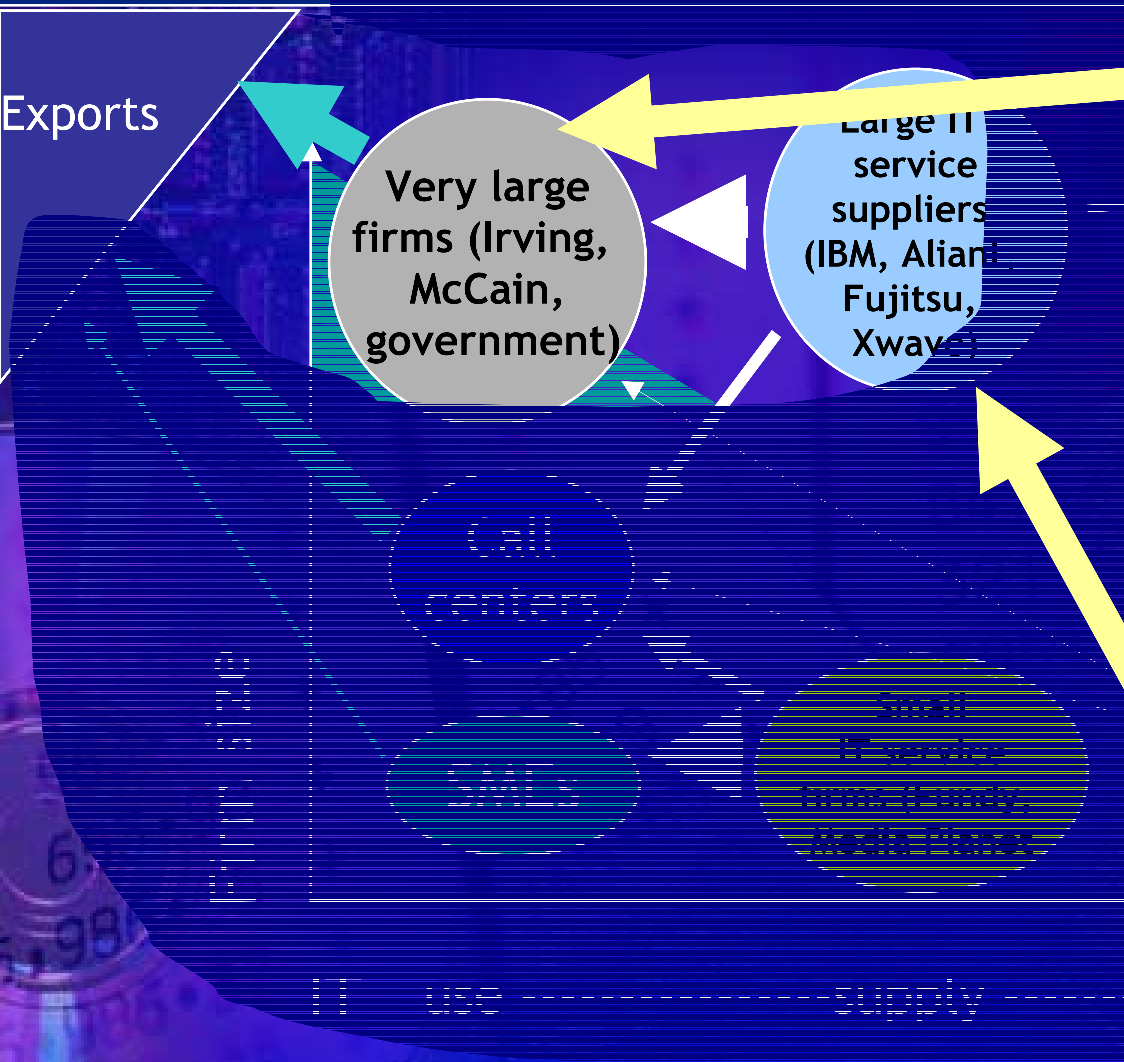


Bottleneck:
Contact center industry has few high value-added linkages with local economy.

Sweet spot: the contact centre industry is morphing into a relationship management industry. Growth in quantity and quality of demand from this industry and other IT-enabled services could induce specialized local supply industry.

Sweet Spots and Bottlenecks in the the New Brunswick IT Cluster



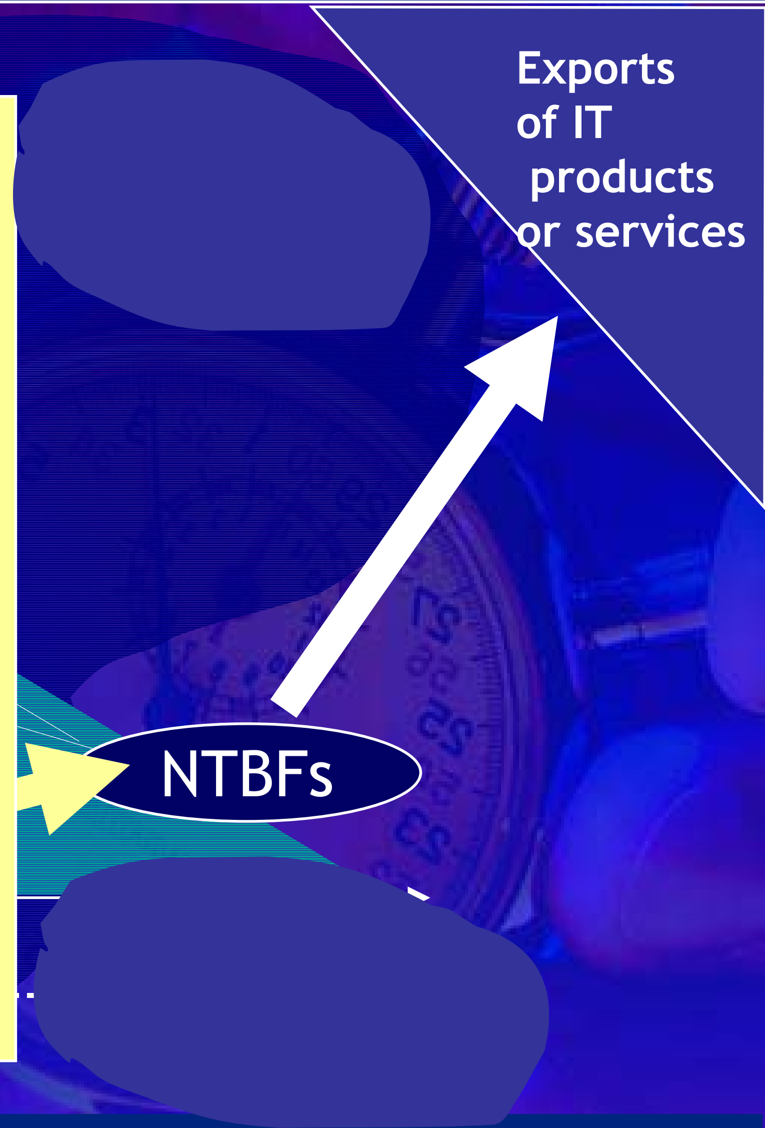
Bottleneck: as NB industrial conglomerates prepare to compete outside the region, they strategically outsource their IT needs to best-in-class suppliers, most of whom are multinational IT service firms.

Sweet spots: 1) some of these opportunities are captured by regional IT or telecommunication service firms. 2) Some large IT service supply firms from outside the region come for the local accounts but then set up shop in NB.

Sweet Spots and Bottlenecks in the the New Brunswick IT Cluster

Bottlenecks: serious and numerous obstacles to the formation and growth of NTBFs in New Brunswick incude: l) scarce financial resources; 2) need to export to distant markets almost from birth; 3) short supply of seasoned project and marketing managers; 4) need to overcome credibility gap; 5) low levels of IT R&D in the province constrain the opportunities for technology venturing.

Sweet spots: 1) recent infusion of public R&D dollars into NB; 2) abundant low-cost qualified technical HR; 3) quality of life attracts or retains some entrepreneurs; 4) relative proximity to Boswash.



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Preliminary Baseline Results

10 May 2002

SSHRC
SOCIAL SCIENCES AND HUMANITIES RESEARCH COUNCIL OF CANADA

Participation Rates

	Number	Percentage
Participants	191	83.1%
No Response	18	7.8 %
Non-participants i.e. Did not choose to participate	21	9.1 %
Total	230	100 %

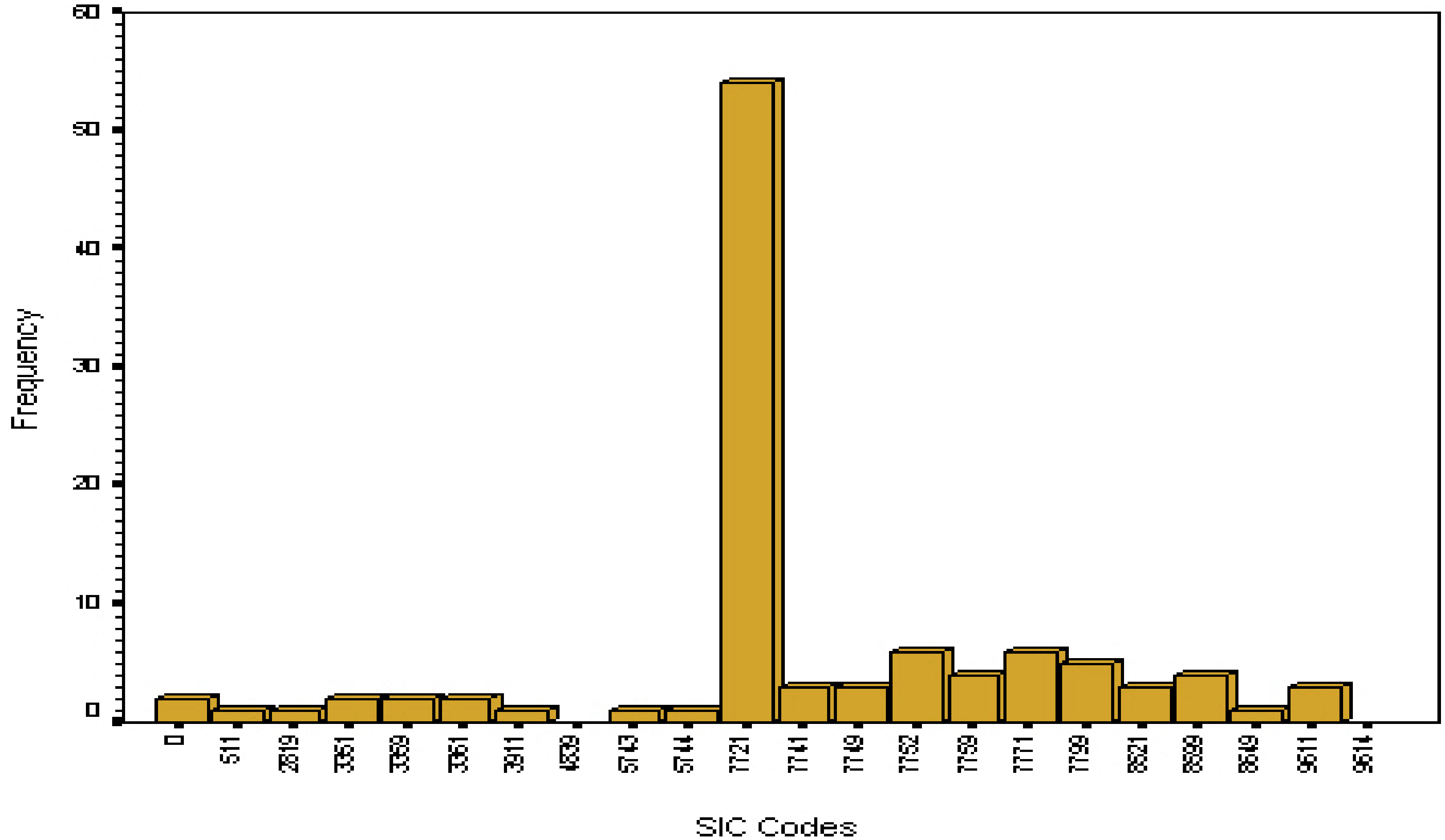
Participants by Region

	Number	Percentage
Fredericton	66	34.6 %
Moncton	50	26.1 %
Saint John	39	20.4 %
Miramichi	10	5.2 %
Other	26	13.6 %

Derivation of the List

- Information from a variety of sources including:
  - 105 of the participants in the research are listed on Strategis, Industry Canada's industry information website.
  - 12 Economic Development Commissions in New Brunswick
  - New Brunswick Information Technology Association (NBITA) (*Now Defunct)*
  - Export Development Department of Business New Brunswick
  - Cyber Social e-mail List
  - Word of Mouth
  - Business New Brunswick

Participants by Standard Industry Code



Participants by Company Classification

	Number	Percentage
Systems Integrator	5	2.6%
Internet Solutions	41	21.5%
Advanced Training	29	15.2%
Software Development	52	27.2%
Consulting	35	18.3%
Telecommunications	11	5.8%
Multimedia	17	8.9%
Call Centre	1	.5%

Participants by Independent, Subsidiary, Branch, or Other

	Number	Percentage
Independent	159	83.2%
Subsidiary	18	9.4%
Branch	12	6.3%
Other	2	1%

Participants by Employee Number

	Number	Percentage
0-3	57	29.8%
4-5	29	15.2%
6-15	55	28.8%
16-50	27	14.1%
51-100	10	5.2%
101-1000	11	5.8%
1000+	2	1%

Participants by 2001 Gross Revenue

	Number	Percentage
No Response	19	9.9%
Are in Development	10	5.2%
$1-99,000	30	15.7%
$100,000-199,000	13	6.8%
$200,000-499,000	31	16.2%
$500,000-999,000	26	13.6%
$1,000,000-$4,999,000	39	20.4%
$5,000,000-$9,999,999	9	4.7%
$10,000,000-24,999,999	7	3.7%
$25,000,000-$49,999,999	3	1.6%
$50,000,000 +	4	2.1%

Participants Involved in R&D Activities

- 112 of the participants do some form of R&D
  - 14 (12.5%) feel that their R&D efforts are more than adequate
  - 49 (43.8%) feel that their R&D efforts are adequate
  - 49 (43.8%) feel that their R&D efforts are less than adequate
  - Money, personnel, and time are the most cited reasons for not doing more R&D.

Participants Not Involved in R&D Activities

- 74 cited are not involved in R&D activity

  (5 companies failed to provide data on their R&D activities)

- When asked if they thought they would gain a competitive advantage.
  - 45 (60.8%) said yes
  - 27 (36.4%) said no
  - 2 (2.7%) said not sure
  - Money, personnel, and not in mandate are the most cited reasons for not doing R&D.

Participants who Export Outside of New Brunswick

	Number	Percentage
In Atlantic Canada excluding NB	102 (181 Responses)	53.4%
Rest of Canada	97 (181 Responses)	54%
US	90 (181 Responses)	49.7%
International	52 (181 Responses)	28.7%

*10 chose not to respond or it was N/A

Assessment of NB model

NTBFs in New Brunswick – four major sources of firm births

- Corporate venturing
  - Aliant has played the role of flagship technology company in the Atlantic region by setting up affiliated companies to commercialize technology (Innovatia, Xwave, iMagic)
  - The provincial government has played a somewhat analogous role by providing substantial support to certain IT firms (Spielo)
- Spinouts or incubation from institutions of higher education
  - Fredericton and Miramichi are the primary locations of software or IT firms that have affiliations with local universities or community colleges
- Relocations by Maritime entrepreneurs or other firms attracted from Central Canada, the US, or Europe
- Entrepreneurial entry from proximate firms or industries
  - Migration by entrepreneurs from larger firms, migration into IT by entrepreneurs in other industries, etc.

NTBFs in NB – strengths and weaknesses by origin

	Technology networks	Financial networks	Supplier networks	HR networks	Market networks	Behavioral propensity
Corporate ventures	good	strong	strong	Tech: strong Mgt: strong	good	poor
Higher ed spinouts	adequate	poor	Not critical E-learning subject matter experts	Tech: strong mgt: weak	weak	poor
Immigrants or relocations	Good	adequate	Not critical	Tech: good Mgt: strong	Adequate to start	adequate
Other startups	adequate	poor	Not critical E-learning subject matter experts	Tech: good mgt: weak mgt: weak	weak	adequate

What next?
Key challenges of IT-innovation policy in NB

- Basic problem: exhaustion of the “NB model”’s value proposition
- Required initiatives
  - Accelerate effective market learning for NTBFs
  - Introduce investment instruments for these firms
  - Improve air links with US eastern seabord
  - build an effective R&D infrastructure around the NRC IT Institute
  - Improve and deepen research in NB universities
  - Induce ability to productize and commercialize lab-based know-how
  - Induce emergence or relocation of higher value-added segments of IT-enabled services