

Information and Communication Technologies Implications for Social and Economic Development: Digital Currency

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Introduction

- Since the emergence of the internet, governments and the general public around the world has increasingly recognized the power of broadband to influence the economy, local community and innovation
- Canada's national dream to connect the nation through steam-powered railway
 - *The National Dream* (1969) and *The Last Spike* (1971)
- Alexander Graham Bell
- Canada an early adopter as a global digital leader

Research Objective

- Explore the role of broadband technologies and ICTs for rural socioeconomic development in agencies situated across agriculture and health for Wellington County, Canada
- Identify and describe key capacities required to develop a sustainable broadband network that is equitable to all southwestern Ontarians



Defining Broadband

- High-speed connectivity and past definitions
 - 1.5 megabits (mbs) in one direction
- Fixed versus mobile broadband

Moving Beyond Dial-Up

- Ubiquitous Access
- Cost Reduction
- Improved Communications
- Robust Infrastructure

Economic Effects of Broadband

Developing Nations

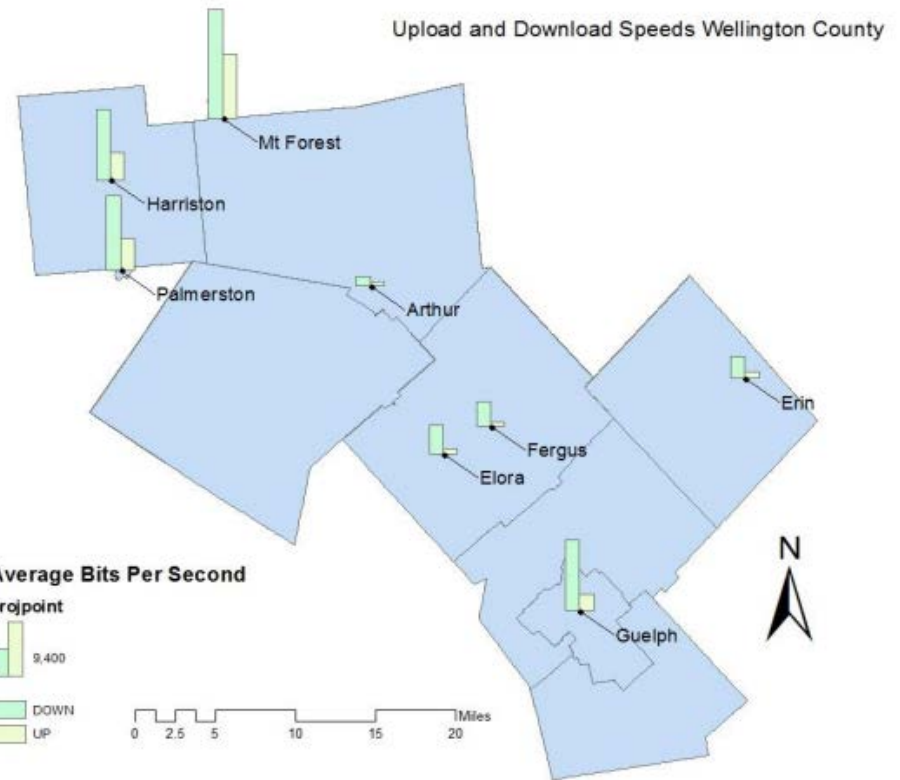
- Broadband penetration from 30% to virtually unknown
- Worldwide penetration averages to 5% (OECD)

Developed Nations

- Korea, Japan and Germany

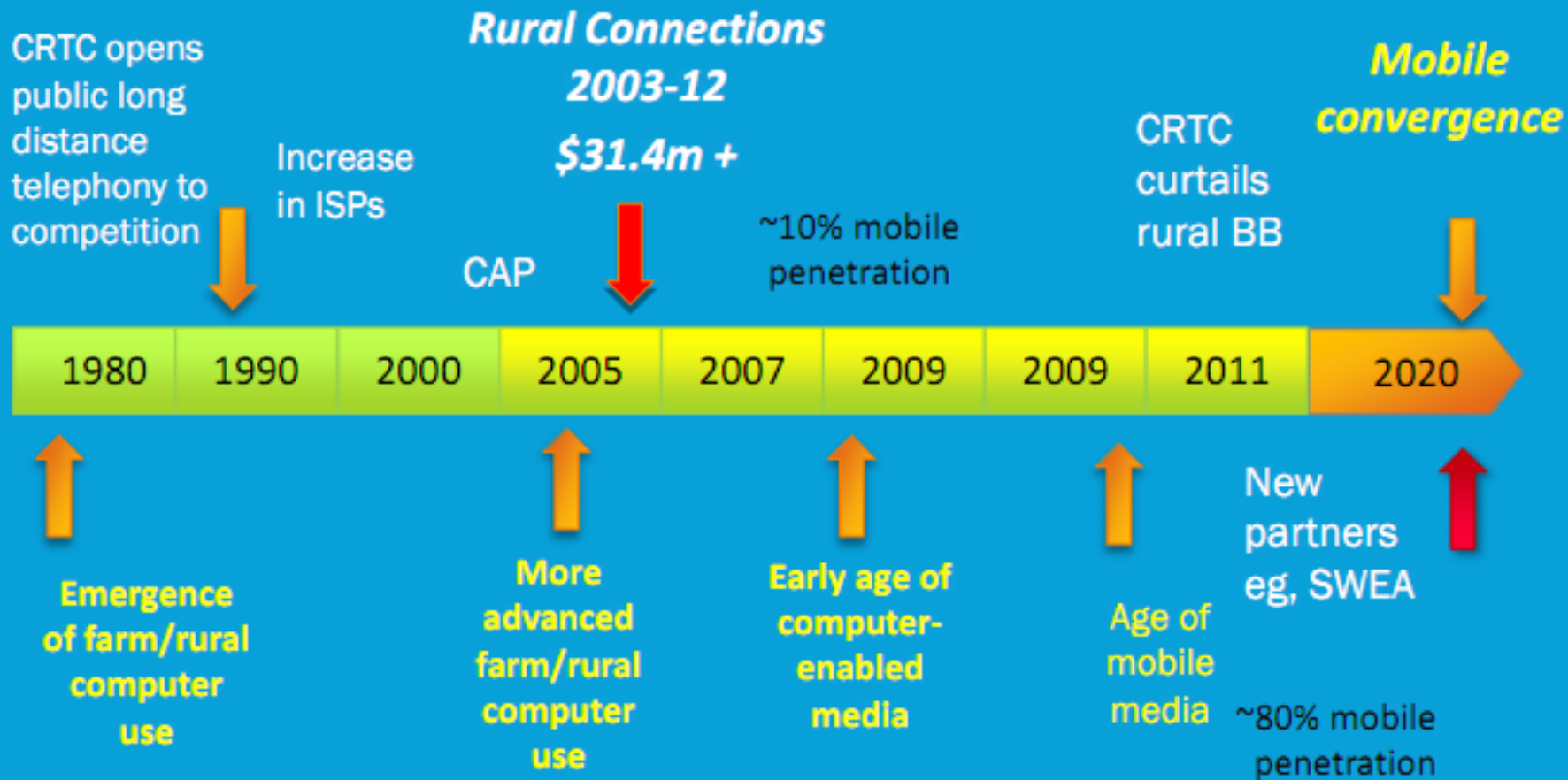


Wellington County, Canada Landscape



Recent Literature

- The literature indicates several barriers that impedes Canadian agri-business and health organizations to adopt ICT-based practices in broadband
- Demographics discourages private sector infrastructure investment into rural broadband development

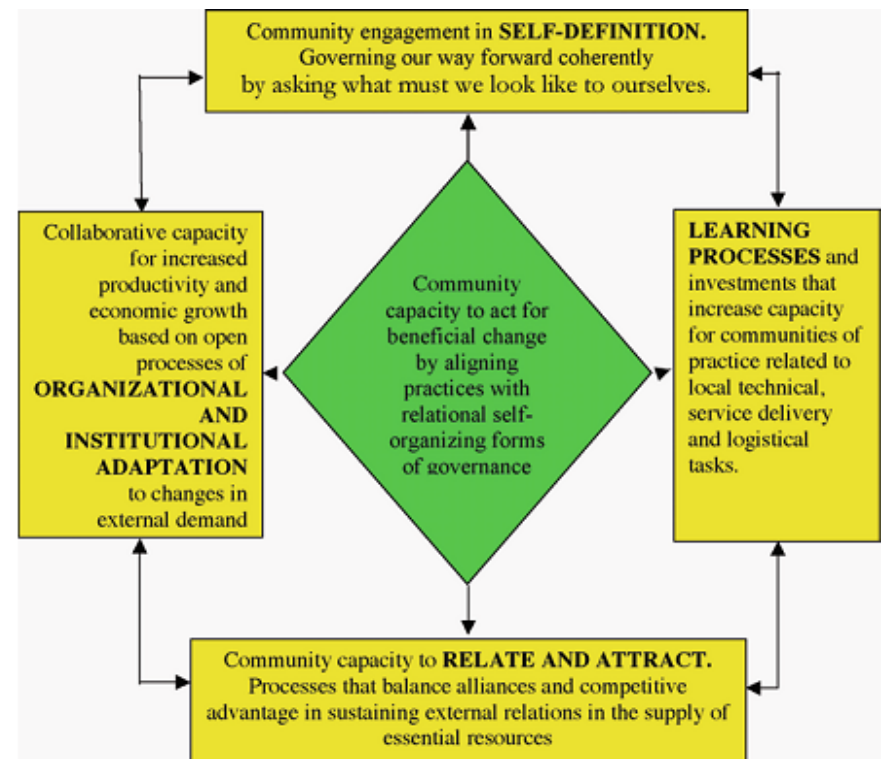


Since the 1900s investments in digital development and rural broadband have been viewed as providing the highest returns on knowledge mobilization for agricultural and rural development in Ontario . How these investments should happen is a widely contested question.

(Odame 2012)

Conceptual Framework

- Adoption of Information and Communication Ecologies
- Innovation Ecologies
- Technology Acceptance Model (TAM) of Davis (1986)
- Community e-development Framework of Graham (2011)



(Graham 2011)

Methodology

- Variables of interest: usability, availability, value and affordability
- Unit of Analysis: The experiences and perceptions of broadband technologies and the rationale (decision-making process), strengths, weaknesses, and effectiveness of broadband connectivity for socioeconomic development
 - i. Key-informant interviews and in-depth interviews
 - ii. Documentation Analysis
 - iii. Survey

- Sample size $n=24$

Health Organizations	Agricultural Farm/Firm Families
12	12
Male/Female ratio 50:50	Male/Female ratio 60:40

Preliminary Findings

Variable of Interest	Implications
Usability	
Broadband undervalued due to reliability issues	Lack of surge or critical mass to uptake any particular technology, 4G platform for mobile communications or otherwise
Availability	
Lack of connection coverage	Inadequate Number of ISPs for rural areas
Value	
Proximity and social interactions/network	Shortage of fixed protocols
Affordability	
Resource allocation and socioeconomic motivations	Disruptive Innovation

Challenges and Opportunities for Broadband Investment

- Speed/Price Comparisons
- Loss of innovation and adjustments to behavior in communication and expectations
- Rural health provision
- Education
- Employment opportunities
- Business opportunities



Strategies to Move Forward

- **Encourage public sector** to mobilize broadband services in the private sector (i.e. tower development)
- Implementation of an **information platform for rural ICT integration** in southern Ontario can act as an innovation catalyst for connectivity
- **Evaluation** of past investments
- Examine impact of **4G LTE platform** for communication



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