SWIFT

SouthWestern Integrated Fibre Technology

York Region Broadband Strategy Advisory Task Force
Newmarket, Ontario

swiftnetwork.ca
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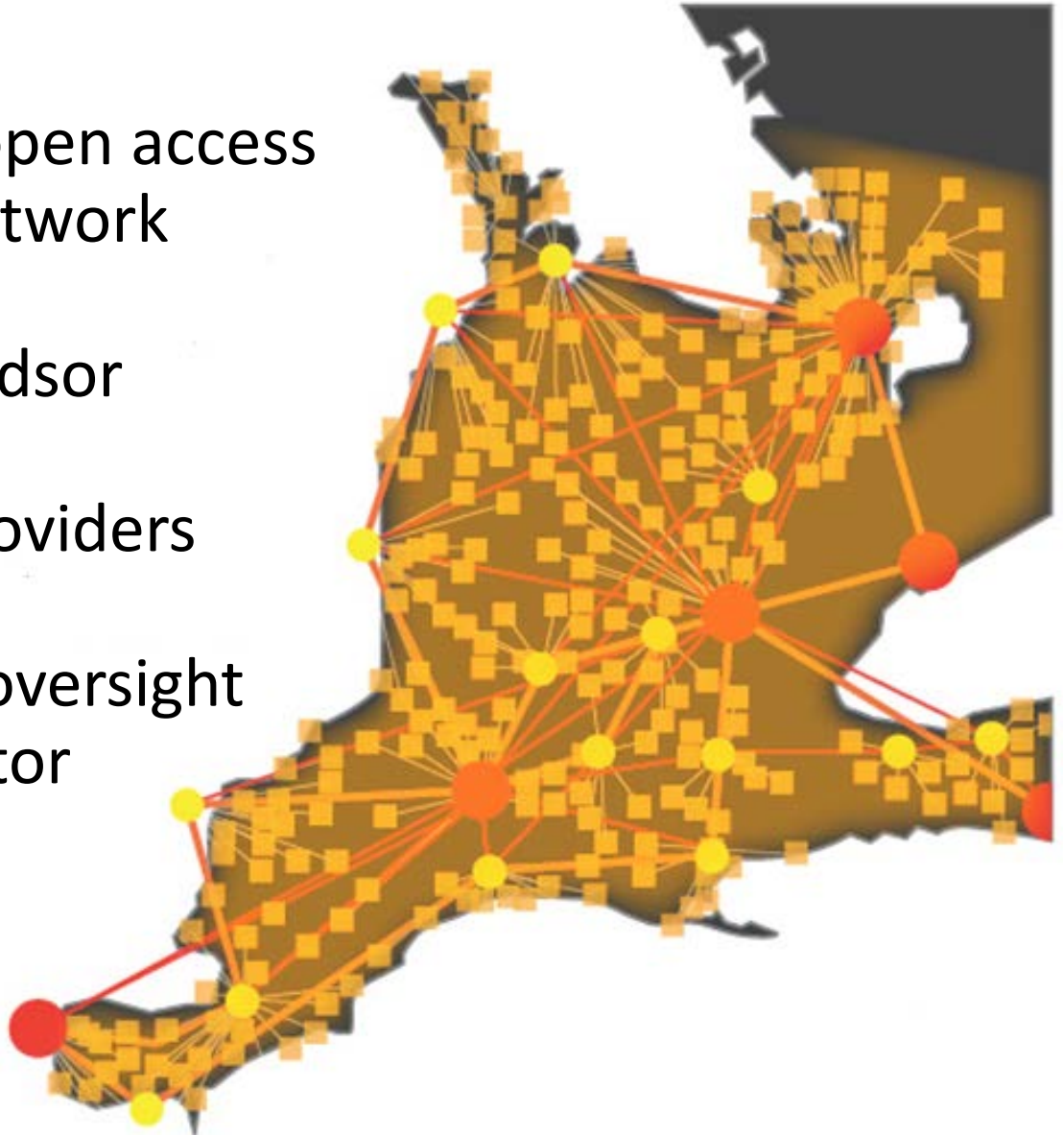
June 1, 2016

Agenda

- What is SWIFT and its mandate?

- Why was it started and by whom?

- Where is the current/planned catchment area?

- When will the plan roll-out? (In phases? Completely?)

- Who is involved? (Municipalities, Funders, Telco partners, etc.)

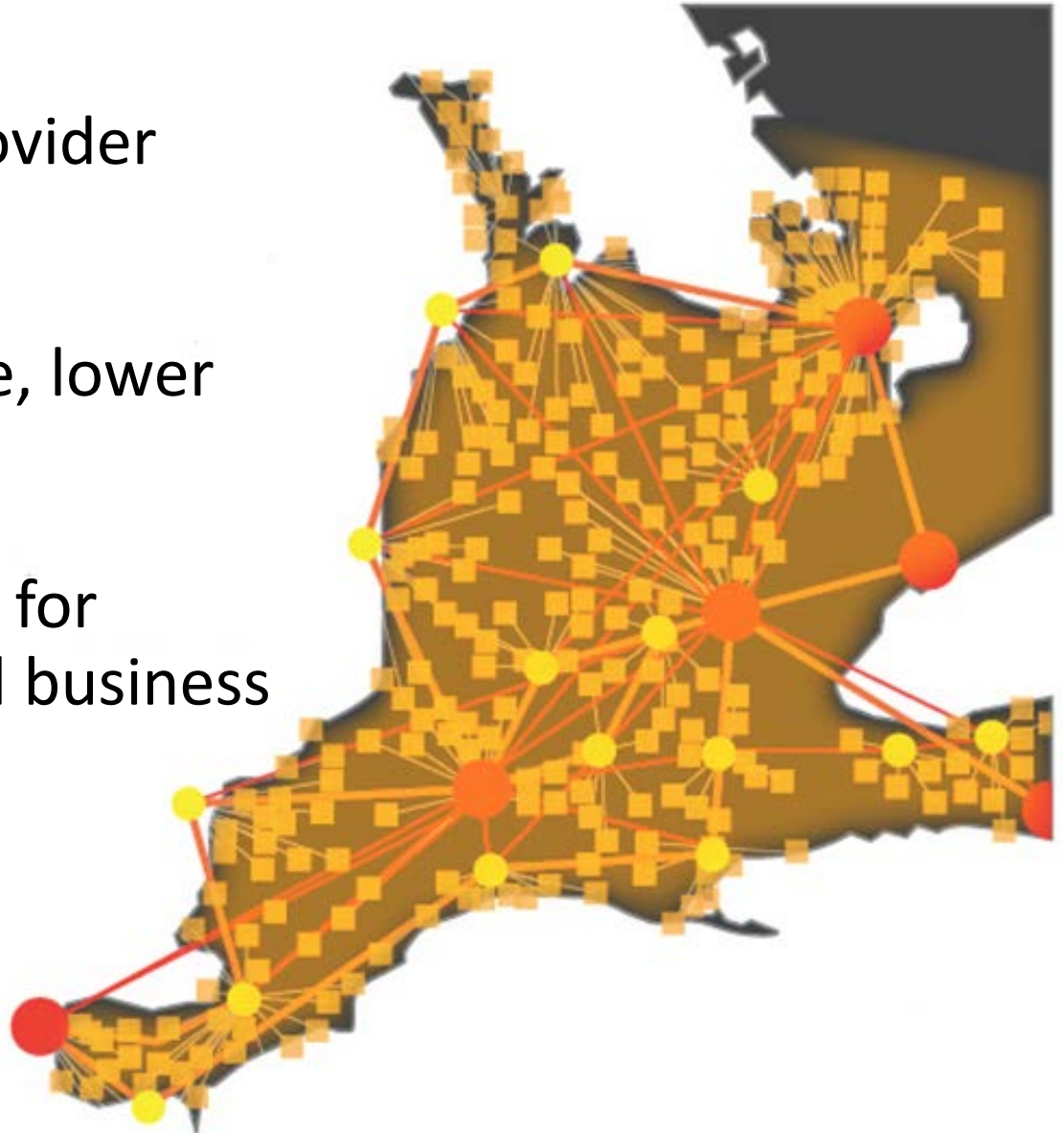- How will it proceed to fulfill its mandate

SWIFT – What Is It?

- Ubiquitous, open access fibre optic network

- Orillia to Windsor

- Owned by providers

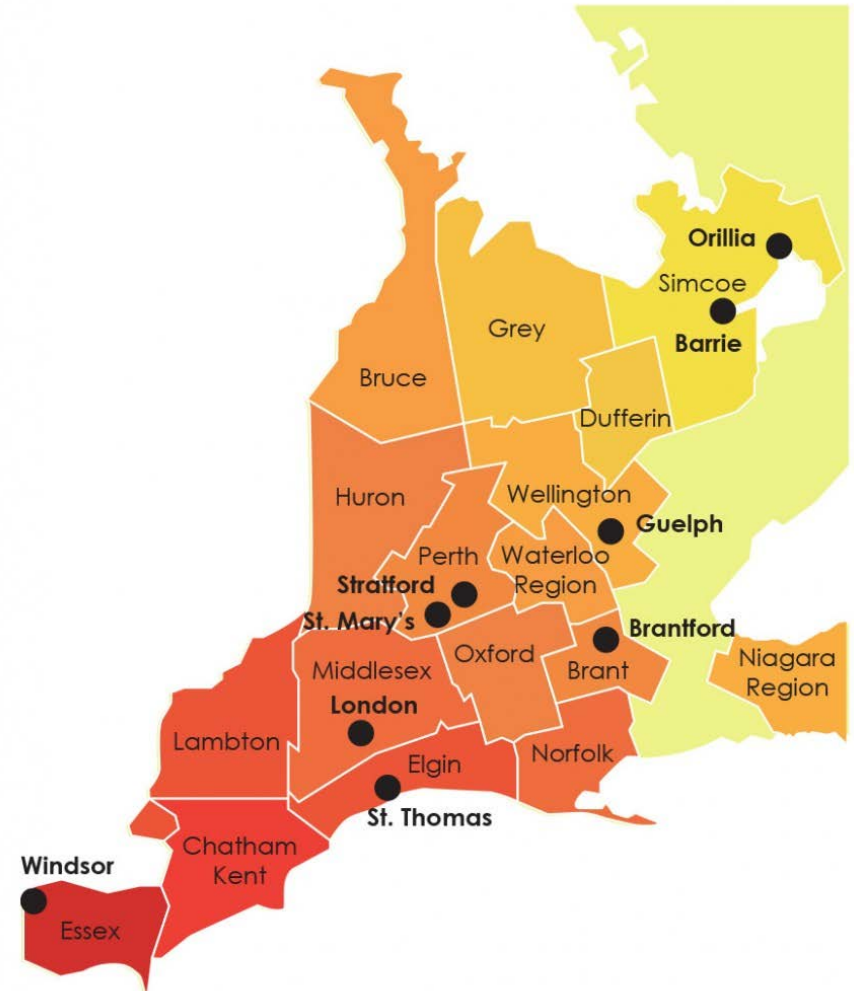- Subsidy and oversight by public sector

SWIFT – What Does it Mean?

- Increased provider competition

- Better service, lower rates

- Better access for residents and business

- Globally competitive

SWIFT - Stakeholders

- WOWC Caucus - 14 Counties and Chatham-Kent

- Region of Niagara, Town of Caledon, City of Stratford, City of Orillia, Grey Bruce Health Services, SCAN and Georgian College have joined with a financial contribution

- Region of Waterloo is part of the feasibility study

- In discussion with 7 other separated municipalities of Barrie, Brantford, Guelph, London, St. Mary's, St. Thomas and Windsor

- LDCC, Chippewa's of the Thames First Nation and Walpole Island First Nation support SWIFT.

- Other partners are educational institutions, healthcare organizations, First Nations, private sector enterprises

WOWC's Mission:

"enhance the prosperity and overall well being of our communities"

SW Ontario & Niagara has ~3.5 Million people – ~10% of Canada's population

SWIFT Board of Directors

- Gerry Marshall (Simcoe County Warden) Chair
- Mitch Twolan (Bruce County Warden)
- Randy Hope (Chatham-Kent Mayor)
- George Bridge (Wellington County Warden)
- Jim Maudsley (Middlesex County Warden)
- Roger Watt (Huron County Councillor)
- Bev MacDougal (Lambton County Warden)
- David Mayberry (Oxford County Warden)
- Armando Narvali (Town of Caledon IT Manager)
- Niagara Region (vacant)

- 5 non-municipal positions still to be filled

SWIFT Advisory Committee

- Sonya Pritchard, CAO, Dufferin County
- Geoff Hogan, Director of IT, Grey County
- Mike Morgan, IT Manager, Waterloo Region District School Board
- Helen Hambly, Associate Professor, School of Environmental Design and Rural Development, University of Guelph
- Lance Thurston, President & CEO, Grey Bruce Health Services
- Steve Benoit, Manager - Media Services & Network Communications Infrastructure, Georgian College
- Stuart Hendrie, CIO, Niagara Region
- Jennifer Whiteye, Southern First Nations Secretariat, London District Chief's Council

History

Milestone	Dates
Presentation to caucus on broadband including EOWC's EORN project	May 6, 2011
Contract awarded for feasibility study to CPC	September 14, 2012
Feasibility study adopted, budget set ($350K)	October 18, 2013
Stakeholder consultations	
SCF funding application submitted	December 19, 2014
Minister's letter received	April 2, 2015
http://www.r2b2project.ca/ funded by OMAFRA to study economic broadband impact (Helen Hambly, University of Guelph)	April 24, 2015
Very positive 3rd Party (Dr. Rajabiun) review validating project	July 28, 2015
Southwestern Integrated Fibre Technology Inc. incorporated	November 12, 2015

Dr. Rajabiun SWIFT review

"SWIFT offers an innovative, realistic and strong business model for ensuring that Western Ontario can catch up, and potentially surpass, urban Canada in broadband infrastructure quality and affordability,"

SWIFT

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CONTEXT FOR THE PROJECT

The New Reality

Job Loss in Traditional Industry

Progress Rail closing London plant

Hank Daniszewski and John Miner, The London Free Press
Saturday, February 4, 2012 11:21:18 EST AM

PLANT CLOSURE

Hundreds losing jobs as Kellogg's closing London plant

576

By Hank Daniszewski, The London Free Press
Wednesday, December 11, 2013 9:16:02 EST AM

(560 jobs)

THE GLOBE AND MAIL

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CATERPILLAR

Caterpillar closing Toronto plant, 330 employees to lose jobs +

TORONTO — The Canadian Press
Published Saturday, May. 04 2013, 12:45 PM EDT
Last updated Saturday, May. 04 2013, 2:00 PM EDT

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740 jobs lost as ketchup maker closes Leamington plant

199

By Jonathan Sher, Jane Sims, Bob Boughner, QMIAgency
Friday, November 15, 2013 11:36:02 EST AM

BlackBerry Layoffs Leave Waterloo Scrambling For New Sources Of Jobs

CP | By David Friend, The Canadian Press
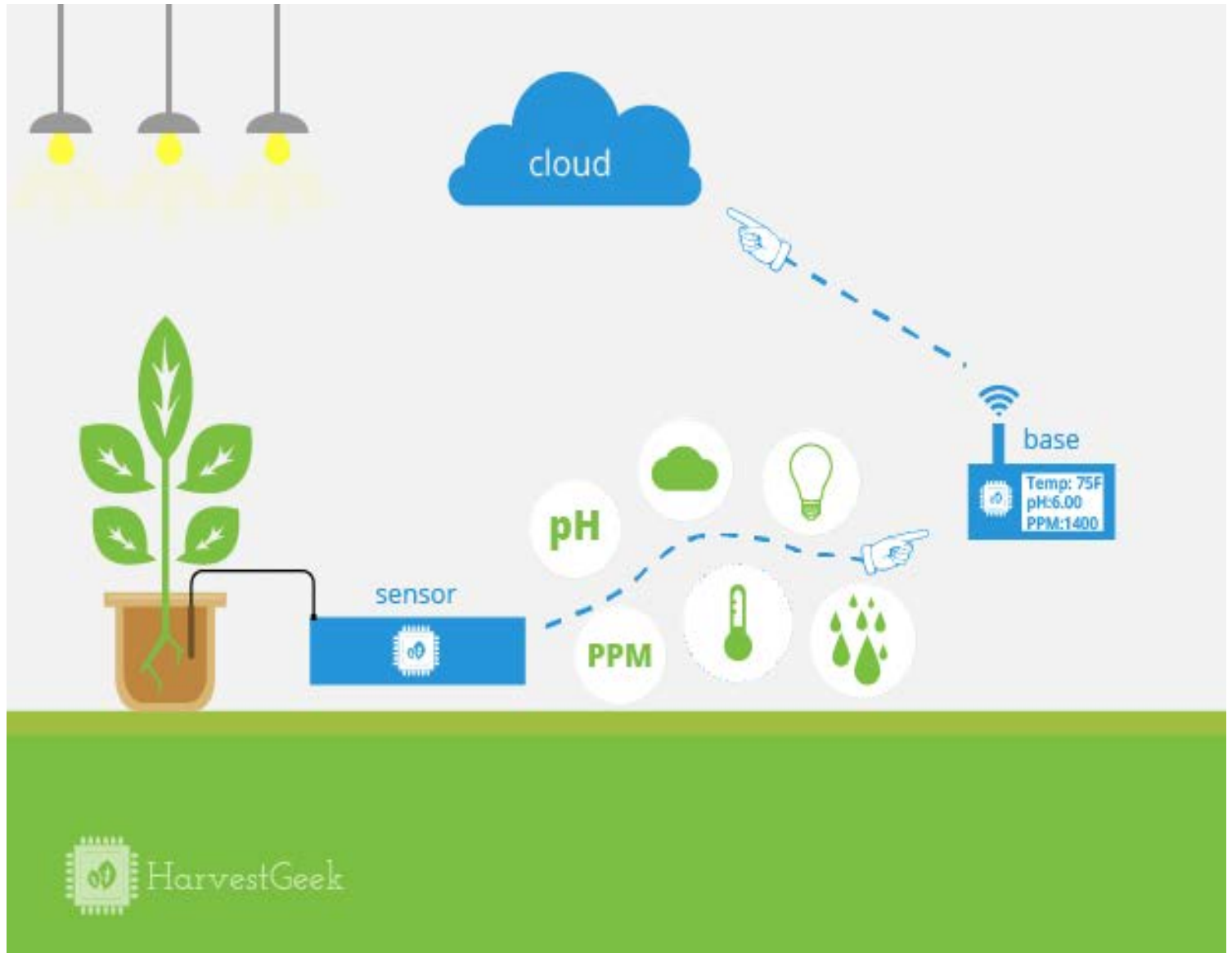Posted: 11/14/2013 6:37 pm EST | Updated: 01/23/201 6:58 pm EST

(4,500 jobs)

Ford Canada set to close St. Thomas plant as election looms

When provincial political leaders go to St. Thomas during this fall's election they will see first-hand the economic struggle that lies ahead.

(1200 jobs)

The Internet of Things

2005 — Luca Bruno / AP

2013 — NBC NEWS — Michael Sohn / AP

Changing Economy

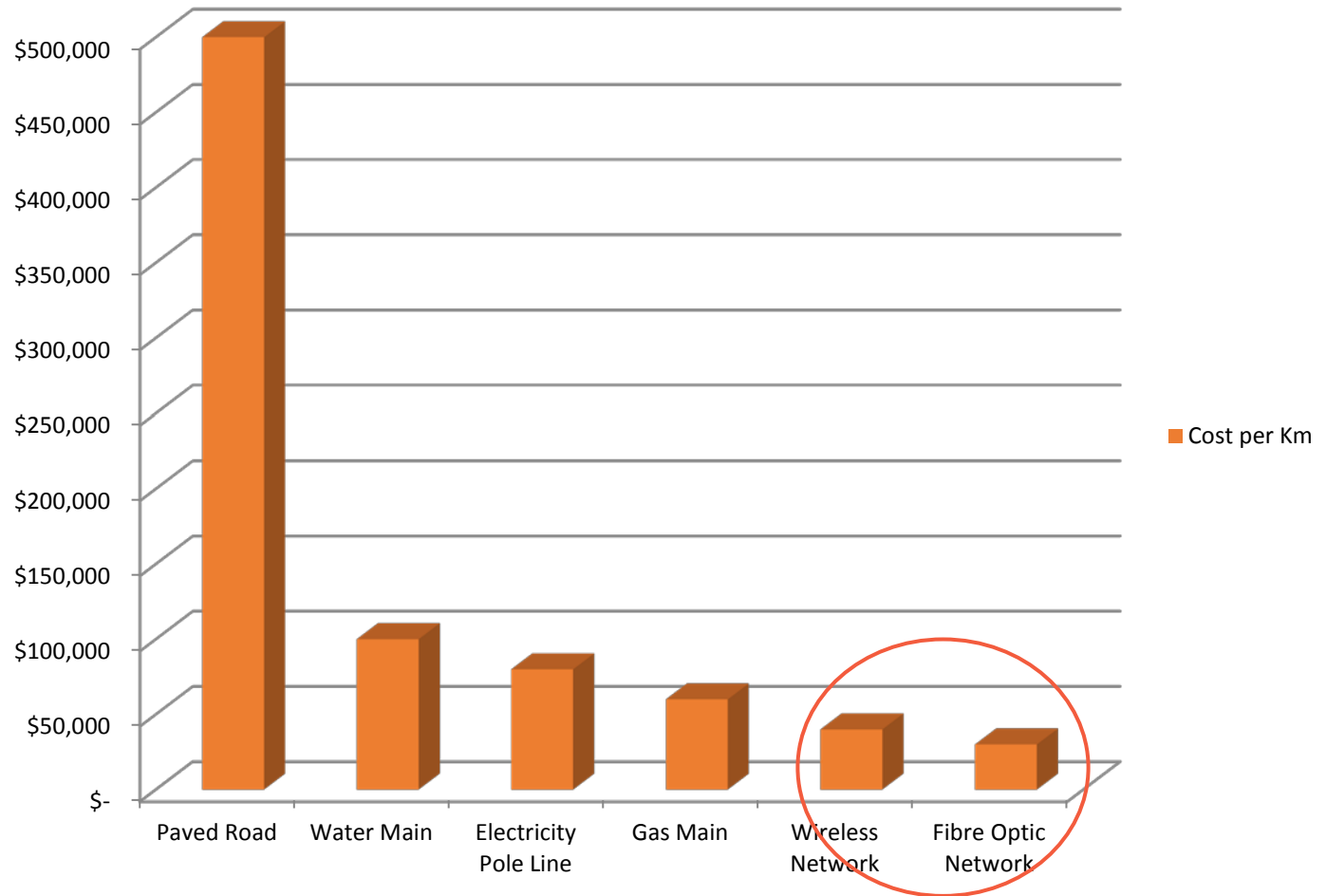|	Age	Rooms	Hotels	Countries
couchsurfing	5	2,500,000		
airbnb	4	650,000		192
IHG InterContinental Hotels Group	60	645,000	4400	100
HILTON WORLDWIDE	93	610,000	3800	88
ACCOR	44	530,000	4452	92

Adapted from a presentation from Robin Chase @rmchase
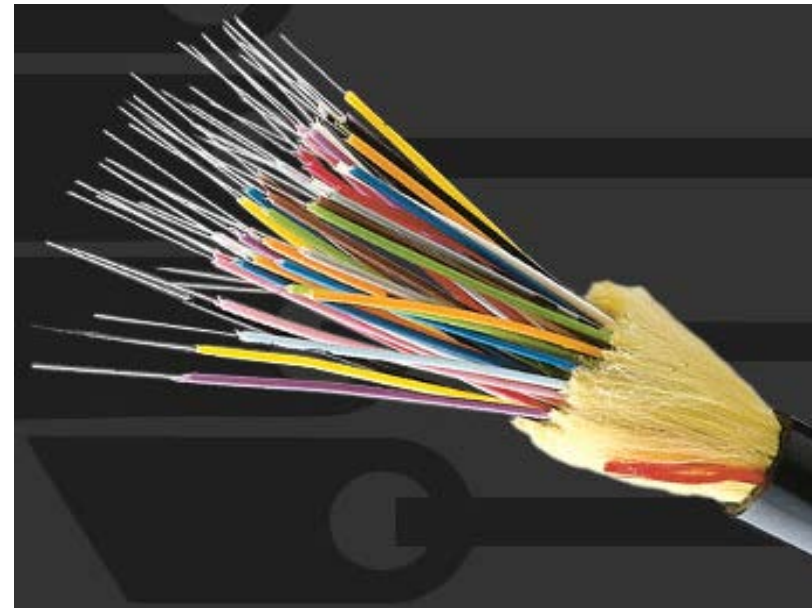
Big Data is Everywhere

Fibre – Smaller Investment, Large Return

Cost per Km

Copper/wireless vs. Fibre Optics?

The choice is clear….

Evaluation Criteria	Wireless	Copper	Fibre
Bandwidth (Information Carrying Capacity [Mbps])	70*	100	**8,000,000**
Distance Sensitivity (km)	50	0.5**	**80 - 200**
Immunity to interference (atmospheric or EMI)	✘	✘	✔
Power consumption per user (Watts)	7	10	**2**

* Bandwidth is not typically made available to a single subscriber and is shared capacity

** Assumes POTS cabling and is the maximum distance of the cable plant from the Central Office to realize 100 Mbps

Bandwidth Bottleneck or Big Road

Copper/wireless   vs.   Fibre

Asymmetrical   vs.   Symmetrical

QoS for Apps   🚫   QoS for Apps   ✅

Service guarantee for customers   🚫   Service guarantee for customers   ✅

Why is fibre optics the only answer for everyone?

1. Your connection to the Internet will be much more reliable and very fast.

2. Your Internet bandwidth can be upgraded easily and quickly.

3. Everyone in your home or business can connect to the Internet at the same time and it will work properly.

4. Voice, video, data, and all other applications may be used simultaneously by everyone with no degradation in performance.

5. Your connection will be easily scalable to meet the needs of your home or business.

6. Connectivity problems will not be a concern.

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FINDINGS OF THE FEASIBILITY STUDY
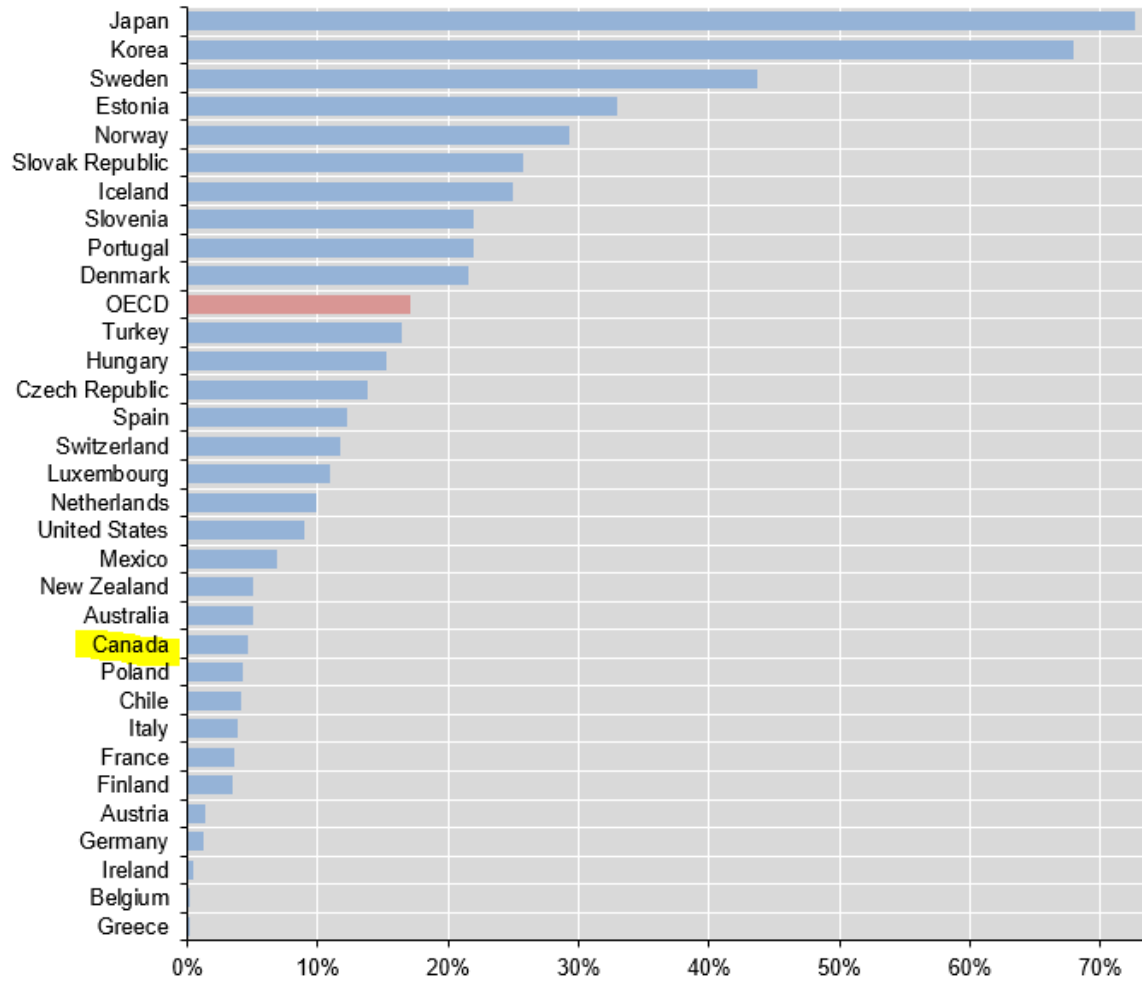
Poor Fibre Broadband Penetration

- Japan   72.7%
- Korea   68.0%
- Sweden   43.7%
- Canada   4.7%

- OECD Average 17.1%

Percentage of fibre connections in total broadband subscriptions, Dec 2014
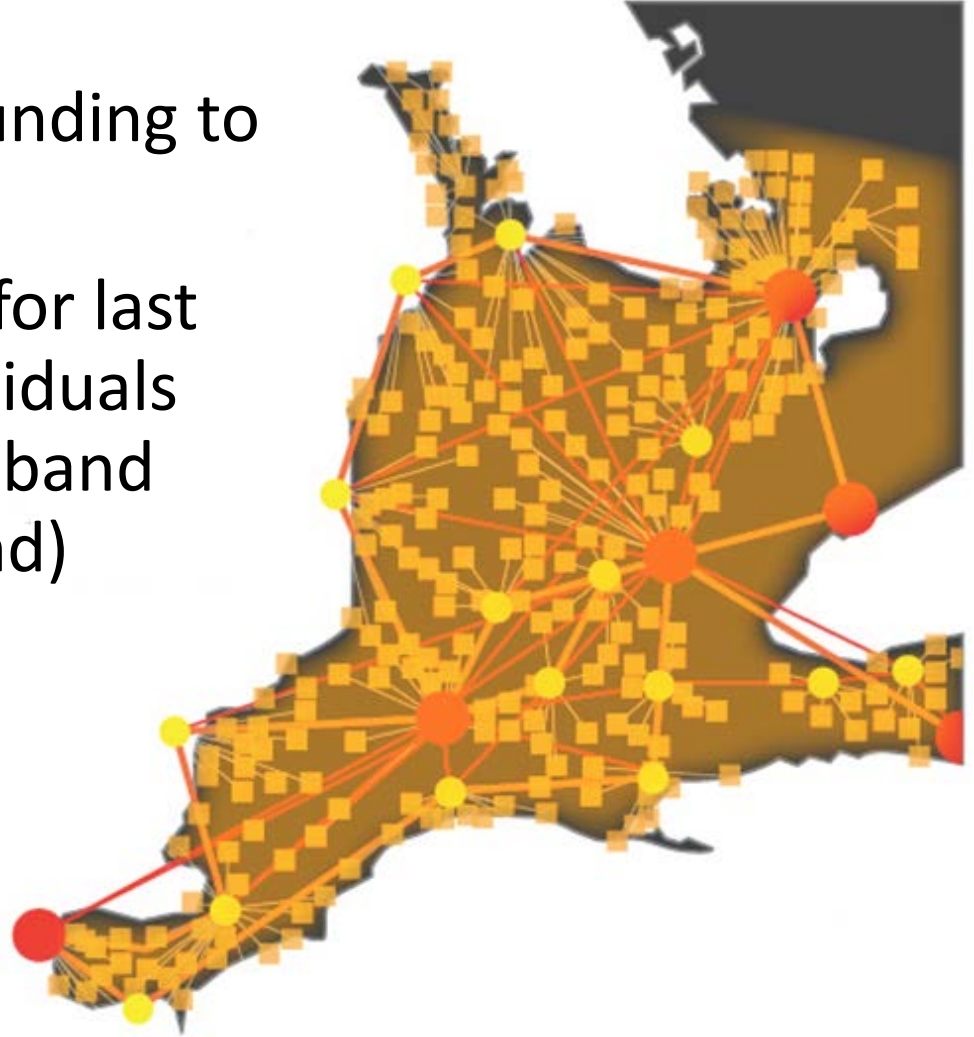
Not enough consumer choice

Providers pick the broadband winners and losers

Providers responsible to shareholders

SWIFT network is feasible to build

- One time NBCF funding to get started

- Ongoing funding for last mile based on residuals from rates (Broadband Development Fund)
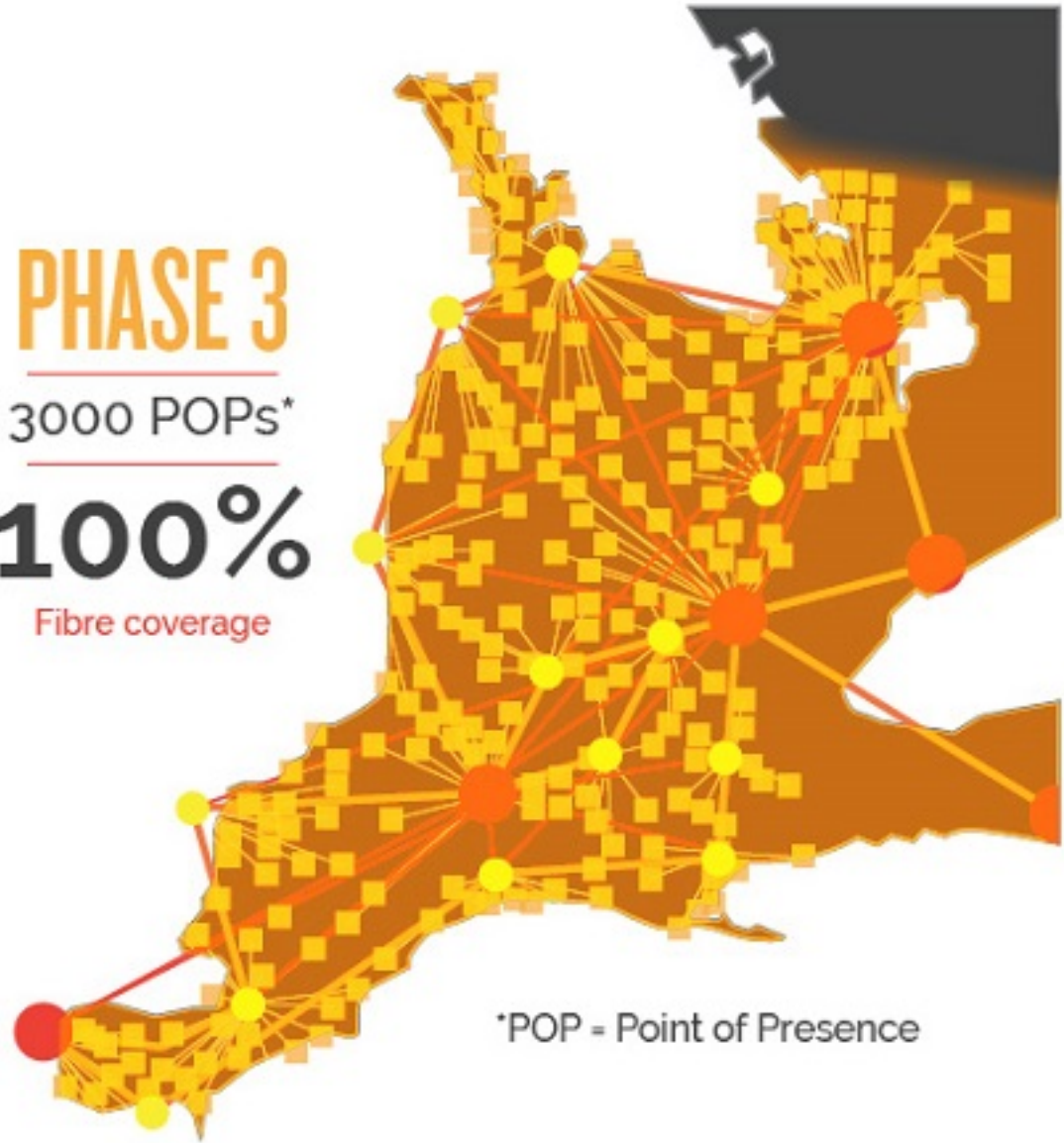
Why SWIFT?

- Modern economy (agriculture, home, MUSH, SME) requires fast, reliable broadband
- Fibre is only long term solution that scales to future needs of Internet of Things
- SWO needs a catalyst to spur broadband development to improve service quality / price
- SWIFT improves ROI for providers in rural areas (and many urban areas) to build fibre (due to density and demographics)
- SWIFT will subsidize fibre builds via RFP and has an ongoing subsidy mechanism (including further funding) so everyone gets connected

"enhance the prosperity and overall well being of our communities"

The Plan – BDF funds ongoing builds

PHASE 3

3000 POPs*

100%

Fibre coverage

*POP = Point of Presence

Broadband Development Fund (BDF)

- $281 M* does not give everyone access to fibre – need ongoing funding/subsidy

- SWIFT partner provider pays a small (~3.5%) percentage of revenue back to SWIFT for each connection

- Funds are allocated by SWIFT board periodically to continue to subsidize providers until all of SWO has access to fibre based broadband

* $4B-$7B to fibre everyone in SWO and Niagara

SWIFT

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WHERE WE GO FROM HERE

Guiding Principles

1. Standards based architecture

2. High availability and Scalability

3. Neutrality and Open Access

4. Ubiquity and Equitability

5. Competition and Affordability

6. Broad community participation

7. Sustainability

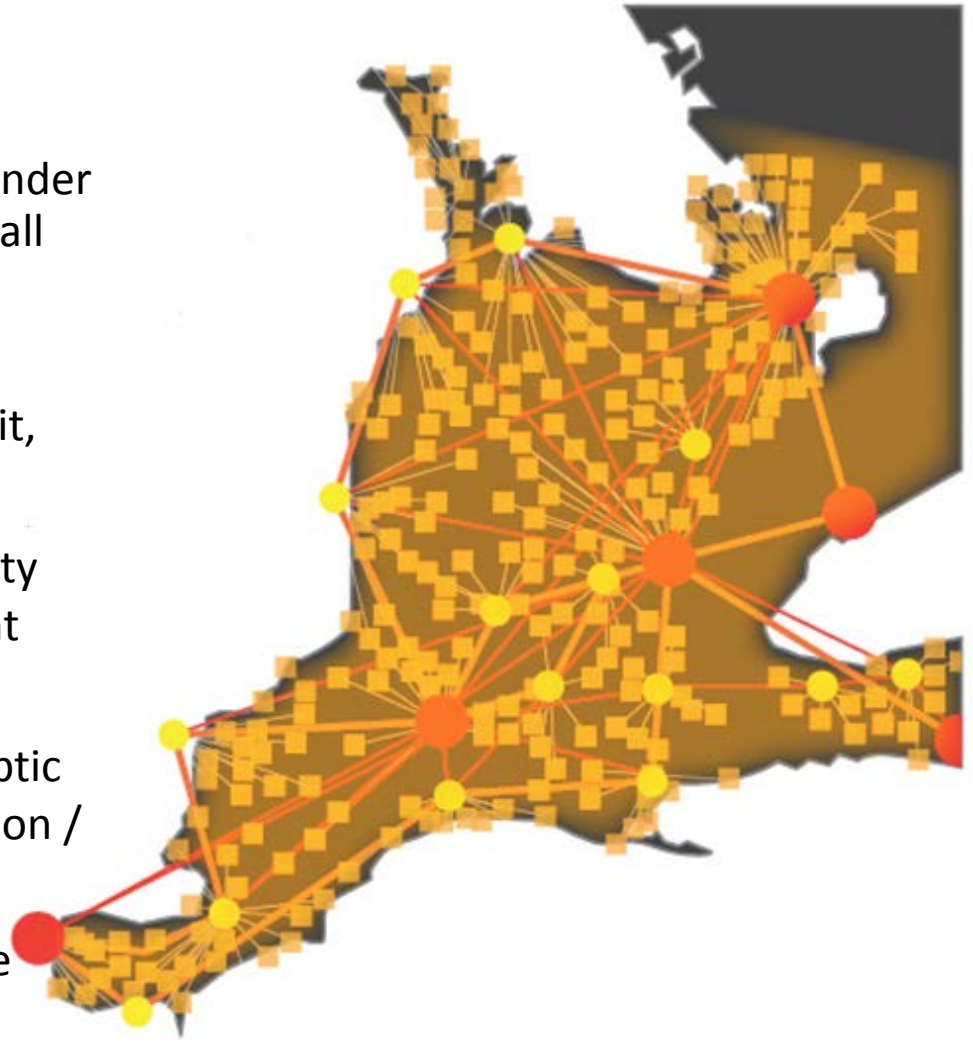# SWIFT Organizational Structure

- SWIFT - Not-for-profit, non-share capital corporation

- Governed by board of directors (10 municipal, 5 other public sector)

- Providers build, own and run network – SWIFT oversees compliance with principles and subsidy

- Existing fibre assets employed wherever available, new fibre assets built to fill gaps

- SWIFT is funded ongoing by residuals from rates from providers

The SWIFT Network Design

Phase 1 Features

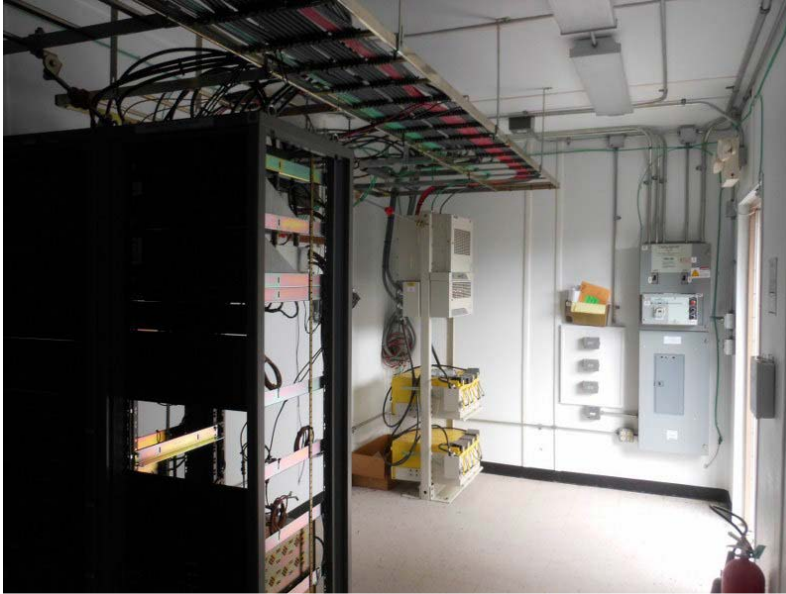- Up to 1 Gbps access for under $100/ month (target) for all business & residents

- IXP's like 151 Front St., Toronto, Windsor / Detroit, 350 Main St., Buffalo

- Path & electronics diversity from all POPs to 151 Front Street

- 350 Communities fibre optic access to as low as 4 person / km²

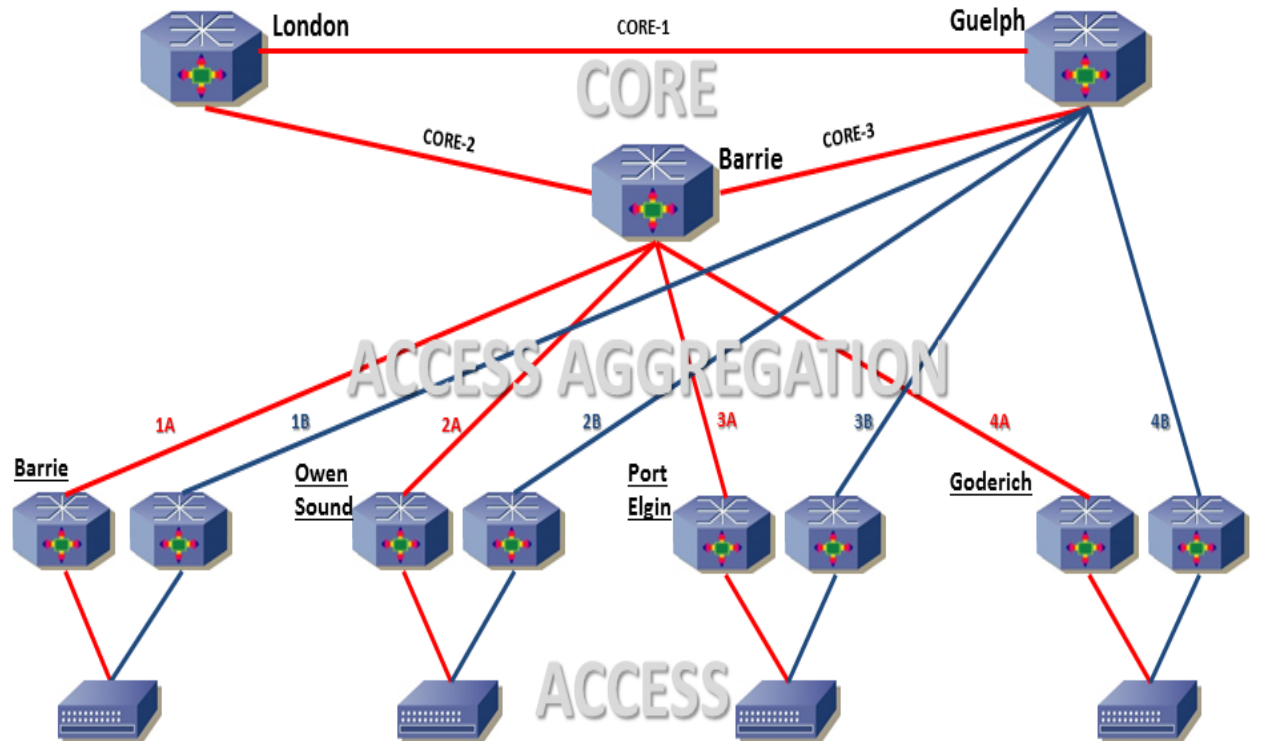- Design does not duplicate existing fibre optic infrastructure

Point of Presence (POP) "Orange Box"

Not just ubiquitous and fast, **BETTER** Internet

CORE
- London
- Guelph — CORE-1
- Barrie — CORE-2, CORE-3

ACCESS AGGREGATION
- 1A, 1B, 2A, 2B, 3A, 3B, 4A, 4B

ACCESS
- Barrie
- Owen Sound
- Port Elgin
- Goderich

Simcoe County
Alliston, Angus, Balm Beach, Barrie, Beeton, Borden, Bradford West Gwillimbury, Brechin, Chippewas of Rama First Nation, Coldwater, Collingwood, Cookstown, Craighurst, Creemore, Duntroon, Elmvale, Glencairn, Hawkstone, Innisfil, Lafontaine, Lisle, Midhurst, Midland, Minesing, Moonstone, Nottawa, New Lowell, New Tecumseth, Orillia, Oro Station, Penetanguishene, Perkinsfield, Phelpston, Port McNicoll, Port Severn, Sebright, Severn Bridge, Stayner, Stroud, Thornton, Tottenham, Victoria Harbour, Wasaga Beach, Washago, Waubaushene, Woodland Beach, Wyebridge

Grey County
Ayton, Big Bay, Bognor, Chatsworth, Clarksburg, Craigleith, Desboro, Dundalk, Durham, Elmwood, Feversham, Flesherton, Georgian Bluffs, Grey Highlands, Hanover, Holstein, Keady, Kimberley, Markdale, Meaford, Mount Forest, Neustadt, Owen Sound, Priceville, Shallow Lake, Stanton, The Blue Mountains, Thornbury, Williamsford

Bruce County
Adamsville, Allenford, Barrow Bay, Cargil, Chepstow, Chesley, Chippewas of Nawash First Nation, Dyers Bay, Ferndale, Formosa, Hepworth, Holyrood, Inverhuron, Kincardine, Lions Head, Lucknow, Mar, Mildmay, Miller Lake, Paisley, Pike Bay, Point Clark, Port Elgin, Red Bay, Ripley, Sauble Beach, Southampton, Stokes Bay, Tara, Teeswater, Tiverton, Tobermory, Walkerton, Wiarton

Huron County
Auburn, Bayfield, Bluewater, Blyth, Brussels, Central Huron, Centralia, Clinton, Crediton, Dashwood, Exeter, Goderich, Gorrie, Hensall, Huron Park, Morris-Turnberry, Seaforth, South Huron, St. Joseph, Vanastra, Varna, Walton, Wingham, Wroxeter, Zurich

Project Capital Costs

Costs

- Current Project Cost $269M*
- SWIFT only subsidizes scalable fibre
- Partners have invested over $800K on project to date

Funding

- Federal $94.3M   1/3
- Provincial $94.3M   1/3   72%
- Municipal $18.0M
- Private $80.4M   1/3

* Does not include communities over 100K population - Numbers are best estimates based on current knowledge (total project $281M)

Municipal Capital Contribution

- Municipal contribution based on formula
  - Need
    - Land area
    - Population
  - Capacity (FIR)
- Total annual contributions* vary
  - Low: Brant County $69,400
  - High: Simcoe County $491,500

- Values are subject to change
- Annual contributions happen for five (5) years
- Separated municipalities have been asked to contribute capital

RFPQ / RFP

- Funding announcement
- RFPQ
  - Pre-Qualifies Financial, Insurance and Indemnity
  - Requires location of providers fibre and points of presence
- Analysis of RFPQ data
- Provider / user consultation
- Construction Plan developed
- Business case finalized
- SWIFT member Council's approval
- RFP's released

Timeline

Milestone	Dates
Business case review	April – August 2016
Contribution Agreements negotiated	September – December 2016
Funding received *	Fall 2016
RFQ/RFPs issued to telecom service providers	Fall 2016
Telecom service provider MSA/SLAs signed	Winter 2017
End state report completed	Spring 2017
Operating plan	Spring 2017
Marketing plan	October – November 2017
Construction and deployment of SWIFT	Spring 2017 - Fall 2022

* Estimate

Support for Project

- Letters of support from
  - Providers, large and small
  - Other municipalities
  - Schoolboards, university's and business owners

- SWIFT Letter of Support – Bell
- SWIFT Letter of Support – Canning Perrennials
- SWIFT Letter of Support – Cisco
- SWIFT Letter of Support – City of Brantford
- SWIFT Letter of Support – City of Guelph
- SWIFT Letter of Support – City of Stratford
- SWIFT Letter of Support – Cogeco
- SWIFT Letter of Support – GBHS
- SWIFT Letter of Support – HOT
- SWIFT Letter of Support – Joel Adams
- SWIFT Letter of Support – Niagara Region
- SWIFT Letter of Support – Rogers

- SWIFT Letter of Support – ROPS Lights
- SWIFT Letter of Support – SJHC
- SWIFT Letter of Support – Sophia Lemon
- SWIFT Letter of Support – SMGH
- SWIFT Letter of Support – TekSavvy
- SWIFT Letter of Support – University of Guelph
- SWIFT Letter of Support – University of Windsor
- SWIFT Letter of Support – Vianet
- SWIFT Letter of Support – Waterloo Region
- SWIFT Letter of Support – WECDSB
- SWIFT Letter of Support – WRDSB

http://swiftnetwork.ca/scf-application/

Why SWIFT?

1. SWIFT is a non-profit corporation whose primary concern is the public interest.

2. SWIFT is a large buying group of users, giving it clout with telecom service providers on behalf of everyone in Southwestern Ontario.

3. An open network means you will have a wider selection of providers, creating competition, better services, and lower rates.

4. Regardless of population density, telecom providers will connect everyone with fibre using a hefty subsidy from SWIFT.

5. Telecom service providers will build, own, and operate the SWIFT Network so we don't have to reinvent the wheel.

6. The SWIFT board of directors will hold providers accountable for delivering on their promises as spelled out in the contracts for the project.

7. With your participation and others like you, SWIFT will be a sustainable system where users will have a say in when and where fibre optic infrastructure will be built, what services will be available, and how much those services will cost.

Prime Minister of India Narendra Modi

"Cities in the past were built on riverbanks. They are now built along highways. But in the future, they will be built based on availability of optical fiber networks and next-generation infrastructure."

Call to Action

- Connect with SWIFT

- Keep pressure on Federal government to create meaningful digital strategy

- Sign up for information
  - Web   www.swiftnetwork.ca
  - www.twitter.com/networkswift
  - www.facebook.com/networkswift

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Questions?

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