

Eastern Ontario Regional Network  
**Increasing Returns, Productivity, Externalities, and Monitoring**  
**CONCISE SUMMARY**

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While 50/10 technology is the most common today, the next wave of technology is fibre optic, Gig technology, there are economic advantages that come with the more advanced technology.

**Increasing Returns Technology** - for new technologies, like fibre optics, requiring large initial, development investments lead to persistently declining additional costs from increased usage. Overall, 50/10 technology (diminishing returns technology) constrains economic growth; Gig technology (increasing returns technology) promotes economic growth.

**Path Dependencies Due to Increasing Returns** - each community will take different paths toward different outcomes.

**Positive Feedbacks Due to Increasing Returns** – as the network of users grows, the capacity of the users to expand their social and economic networks grows; as the technology is increasingly adopted, the networks – including access to new markets – grows faster than the adoption of the technology; extending market reach is not limited by the technology.

**Productivity Gains Due to Increasing Returns** - the ability to expand access to markets, information, education, etc. consistently increases disproportionately to the increase in the costs of getting access to more extensive markets and expanded social and economic networks; the potential increases in output from rural communities due to increasing returns technology, outstrips the necessary increase in inputs required to expand economic activity.

**Market Failure and Externalities** – market failure has resulted in the inability of the private sector to profitably satisfy the need for high-speed broadband in eastern Ontario; COVID-19 has revealed the growing social and economic value of high-speed broadband in rural communities; the external benefits of Gig technology in eastern Ontario is not included in private-sector decisions; a private-public-partnership is required to address the growing gap between rural community needs and broadband access.

**Growing Detrimental Externalities Due to COVID-19 Include (but not limited to)** - the necessity for broadband access at all levels of education; women’s access to employment given responsibilities for children requires high-speed broadband access; access to high-speed internet access is now tied to the *social determinants of health*; access to Information and markets in rural communities is essential for future economic growth especially when urban communities have it but rural communities do not.

**Measuring the Baseline, Monitoring Progress, Applying Lessons Learned, and Policy Development** - with increasing returns, various economic growth paths will emerge; baseline data, regularly monitoring and assessing how access to Gig technology can lead to a better understanding of rural economic growth and productivity improvements under the increasing returns, Gig technology that can help direct policy as more Gig technology is deployed in other rural communities across Canada.