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DIGITAL READINESS: AN EVALUATION OF
RURAL BROADBAND MODELS IN BRITISH COLUMBIA -
2021 APPLIED RESEARCH PROJECT

Rural Connectivity Models



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PUBLICATION DETAILS

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EXECUTIVE SUMMARY

Internet access is vital to enabling access to critical services, participation in society, recreation, supporting access to information, facilitating freedom of expression and association, and more. However, rural communities continue to face connectivity challenges. The [Digital Readiness](#) project was developed to identify, understand, and evaluate models of community connectivity in rural BC. Project activities included the creation of an inventory of rural case studies, the development and testing of a framework to evaluate existing cases, and the preliminary development and refinement of a typology of rural connectivity models. The following summarizes the key findings of the project.

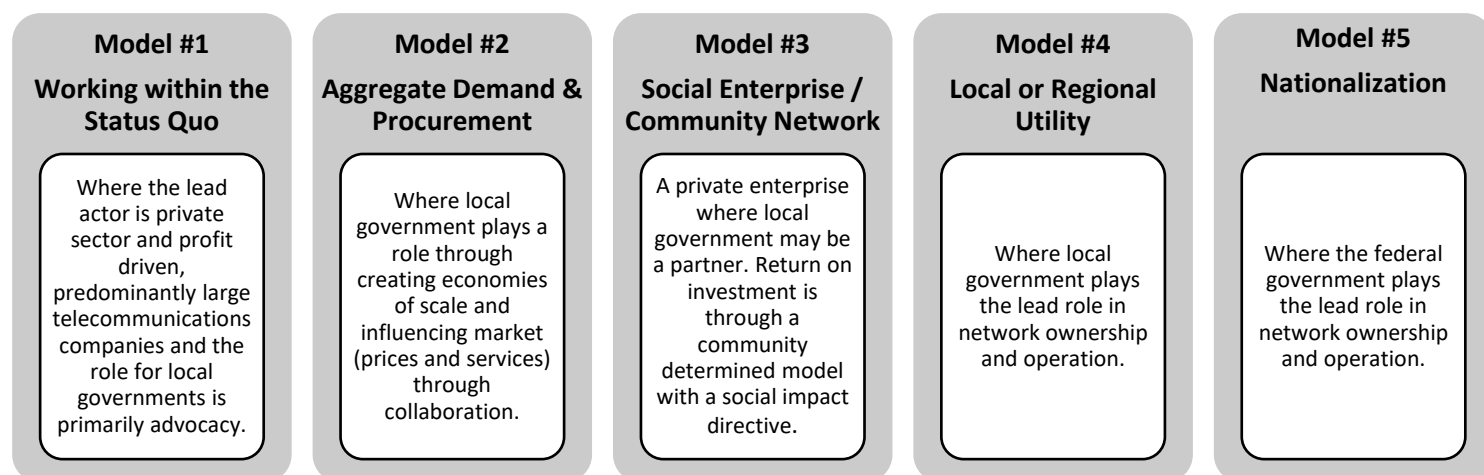
There are two important points relevant to existing models of community connectivity:

- Community-led projects succeed despite the system, not because of it.
 - **Key factors of community success include:** leadership, experience, partnerships and relationships, expertise, funding, access to capital, and a community focus.
- Early consideration of interactions with large private telecommunications companies is important.

Rural communities within an unchanged Canadian telecommunications landscape are likely to face one of three possible scenarios:

- **Failure to Launch:** Many community connectivity projects have not been initiated or have fizzled out due to lack of local expertise, lack of funding, lack of capacity, lack of support, or another gap in the key characteristics essential to success. Even when success factors are present, they must be aligned at the right moment in time in order to move forward.
- **Corporate Capture:** Large-scale corporate capture of Canada's digital infrastructure and service delivery is an impediment to policy change and efforts to closing connectivity gaps. Addressing corporate capture is foundational to supporting alternative and innovative connectivity initiatives.
- **Sisyphus' Network:** Much of the work completed by community networks seems analogous to Sisyphus' never-ending efforts to push a boulder up a mountain. It takes immense effort and capital to participate in the connectivity space and this work takes place in a broader policy environment that simultaneously celebrates the resilience of community networks while underfunding their work and reinforcing the primacy of market-determined service delivery.

Canada's approach to telecommunications legislation/governance make it difficult to propose clear and discrete connectivity models. However, based on project findings, **five models for community connectivity initiatives in rural Canada were identified, demonstrating that the existing private-market delivery approach is not the only model for connecting Canadians.**



To guide communities through which model may be appropriate for them, we developed a set of questions related to key structural variables which should be carefully considered. Those communities unable to make it through these guiding questions without substantive responses will likely remain within Model 1.

Structural Variable	Guiding Questions	Example of Responses and Related Model
Timeframe	How much time do you have? Are there timing constraints to available funding?	Limited timeframes and short-term funding windows could consider pursuing partnerships under Model 1.
Level of Intent	How much capacity do you have? Do you have sufficient expertise? Can you add that expertise? Is this a long-term project that requires planning or an immediate, stop-gap solution?	High levels of local capital and expertise could consider Models 3 or 4.
Action Type	How much capacity do you have? What is the existing market dynamic? How much funding do you have?	Communities with low risk tolerance should maintain Model 1.
Geographic Scale	What are your boundaries? Are you working with other governments (peers/partners or other orders; is there a hierarchy?) What are your limits?	Strong local and regional collaboration could result in Model 2.
Ownership	Who is the lead actor? Who will own this? What are the lines of accountability? How much capacity do you have? Do you have sufficient expertise?	Strong desire for community driven assets and existing leadership could consider Models 2, 3, 4.
Capital Orientation	How is the project funded? What are the conditions of that funding? Who has a stake – and what do they need in return?	Existing and accessible funding supports Models 2, 3, 4.
Profit Structure	Will profits be reinvested in the network/project or distributed to shareholders? Is the goal revenue generation or public good?	Strong local need for direct local investment and social return on investment could consider Models 3 and 4.

This project was intended to support communities considering their own connectivity initiatives. Through this research we highlight opportunities for future research and suggest potential policy recommendations. We highlight how these models of developing rural community connectivity can inform the efforts of other communities as they pursue their own projects. Lastly, we discuss turning models into action by pointing to future research opportunities and providing policy recommendations for connectivity-oriented rural development.

1. INTRODUCTION

The importance of internet connectivity has been widely recognized for several decades. In Canada, internet has been recognized as an essential service by the Canadian Radio-television and Telecommunications Commission (CRTC).¹ The United Nations General Assembly passed a non-binding resolution in 2016 that recognized the role of internet in the promotion, protection, and enjoyment of human rights.² Internet access is vital for enabling access to critical services (e.g., employment, education, health, banking), participation in society, recreation, supporting access to information, facilitating freedom of expression and association, and more.³⁻⁶ However, rural communities across Canada, including those in British Columbia (BC)⁷, continue to face challenges with connectivity, including both infrastructure and service provision.⁶ The COVID-19 pandemic has emphasized this facet of the digital divide and its resulting inequities.⁸

In Canada, connectivity, as with most aspects of the telecommunications industry, is primarily under federal jurisdiction, but with substantial roles for provincial and territorial governments.^{5,8} There is increasing recognition and exploration of the roles that local governments can play in connectivity, as well as roles for civil society, community groups, and individuals. Often small and rural local governments become involved in connectivity projects as a result of the ongoing absence of broadband and lack of initiatives from upper level governments or the private sector.^{8,9} This has given rise to a broad range of approaches to infrastructure construction, service procurement, and service delivery.

There is an emerging body of academic and community-based research that attempts to understand and explain different approaches and strategies for improving connectivity. However, research into community broadband models remains limited. Broadband research generally focuses on the technical or technological aspects of connectivity projects, local economic impacts, or covers jurisdictions outside Canada (such as Christopher Ali's recent *Farm Fresh Broadband: The Politics of Rural Connectivity*,¹⁰ which examines rural connectivity in the United States). Few studies have focused on the specific sociological dynamics and governance arrangements of community-led initiatives. Even fewer studies address the unique legislative and governance arrangements of the Canadian telecommunications landscape. At the time this report was written we were not aware of any in-depth examinations of this kind regarding community broadband initiatives in BC. Further, there is no clear typology of rural models, nor a consistently employed framework for evaluating these initiatives, and there is little research to demonstrate what enables models to be successful, or to help communities to understand what models may be appropriate to use.

In response, the *Digital Readiness* project was developed to identify, understand, and evaluate existing models of rural connectivity in BC. The project focused on developing better understanding of the different models of community involvement in connectivity initiatives, including the benefits and challenges associated with different approaches. This report, and the other reports produced by this project, are intended to support other communities considering their own connectivity initiatives.

The development and refinement of potential models for approaching and evaluating community-led broadband initiatives are the focus of this report. The following sections presents an overview of the project approach (scope and rationale), results of the preliminary development and refinement of models of rural connectivity, followed by a discussion and lessons learned through the *Digital Readiness* project. We use this research to highlight opportunities for future research and to suggest potential policy recommendations for actors responsible for rural connectivity. Lastly, in we discuss turning models into action by pointing to future research opportunities and providing policy recommendations for connectivity-oriented rural development. We highlight how these models of developing rural community connectivity initiatives can inform the efforts of other communities, local governments, or organizations as they pursue their own connectivity projects.

2. PROJECT APPROACH: SCOPE AND RATIONALE

The *Digital Readiness* project aimed to contribute to the understanding of community broadband initiatives and contemporary rural development and policy research more broadly through the following activities:

- Creation of a typology of rural connectivity models;
- Development of a case study inventory;

- Development of a transferable evaluation framework; and
- Evaluation of two case studies.

To accomplish these objectives, the following activities were undertaken:

- **Preliminary development of a typology of rural connectivity models:** To identify the different models of community involvement in connectivity initiatives, the project team first had to develop an understanding of the scope of potential models and existing examples of community involvement in connectivity. A literature review was used to identify existing approaches to connecting rural communities. Approaches were categorized into a working typology based on: drivers; structure; approaches; benefits; challenges; and potential transferability. Group discussions were used to identify key structural variables which were used to create and define models. See Section 3.
- **Case study inventory:** Through a broad scan of rural connectivity initiatives the project team developed a case study inventory. The focus of this scan was rural BC, but other notable examples from across Canada were included. This inventory is not exhaustive, but represents broad range of connectivity projects completed or currently under way. The inventory was used to identify which BC community-led connectivity initiatives would be evaluated. The inventory was used to support refinement of the model typology. See Appendix.
- **A transferable evaluation framework:** Using existing evaluation examples combined with group discussion, and partner input, the project team developed a framework for qualitative and quantitative analysis of the characteristics of community-led rural connectivity initiatives.¹¹ This process was also used to explore and better understand the workings and impact of existing rural examples of community-led connectivity initiatives. See Sections 3 and 4.
- **Select case study evaluation:** The project team identified two case studies for further investigation (City West and Kaslo infoNet Society) and applied both the typology and the evaluation framework to these cases. This process was used to refine the evaluation framework and model typology based on the results of in-depth interviews with key stakeholders and thematic analysis of contextual information about each community-led connectivity initiative.^{12,13} See Section 4.2.
- **Refine typology of rural connectivity models:** Based on the results of the above, the preliminary rural connectivity models were refined based on lessons learned from the development and application of the processes described above and how these have been incorporated into our proposed models for community-led broadband initiatives. See Sections 4 and 6.

3. PRELIMINARY MODEL DEVELOPMENT AND CASE INVENTORY

To achieve the goal of developing a working framework for categorizing existing community connectivity projects into an emerging typology based on common characteristics the project team had to first build an understanding of the scope of potential models and existing examples of community involvement in connectivity.

3.1. Literature Review

The project team conducted a targeted literature review, focused on literature that had identified existing models of connectivity, the role of community in those models, and existing examples of those models in action. The review was guided through consultation with project partners and subject matter experts.

Within the literature reviewed, examples of existing attempts to model or classify community options or approaches to connectivity were identified. While there are commonalities, each took differing approaches and focused on different variables. For example, as part of their [municipal road map](#), the Rural Ontario Municipal Association developed a spectrum of broadband options of activities for communities designed to assist communities to determine what type of role they could play.¹⁴ Among the activity options included were allowing the market to operate on its own, advocating for action, creating local incentives for Internet Service Providers (ISP), collaborating with ISPs, and a

municipality owned broadband network.¹⁴ In another example, the [Alberta Broadband Toolkit](#) provided broadband business models and related examples based on infrastructure, network operation, internet service provision, and ownership (private and public).⁵

The literature review helped the project team identify drivers, basic structure and variations in approach, pros and cons, and potential transferability. We completed a broad environmental and cross-jurisdictional desktop scan to identify different structures that shape connectivity initiatives across Canada. These include, but are not limited to:

- **Timeframe:** Most connectivity initiatives take substantial amounts of time to develop. Timelines from initiation to sustainable operation or completion, and pressures to advance on a given timeline, are influenced by funding availability, jurisdictional leadership (municipal, provincial, federal, private sector, or a combination thereof), and the nature of the project. For example, service procurement often takes less time than building physical infrastructure.
- **Level of Intent:** Some initiatives develop in a more ‘ad hoc’ manner in response to pressures and opportunities (e.g., available funding, community action, local expertise development, or perceived threats from external forces), while others develop through more strategic action responding to external threats/opportunities while also seeking to shape existing agendas according to long-term community vision(s) for the future.
- **Action Type:** Communities have choices about their course of action – from minor, more passive actions to development of major projects. For example, some degree of informed advocacy is almost always present as a foundational element of community connectivity projects. Pursuing changes to local policy (i.e., municipal by-laws) is sometimes considered as part of planning and land use management processes (e.g., to allow ‘dark’ fibre or other more passive infrastructure investments). Some communities may pursue infrastructure investment through municipal servicing processes, while others may choose to take on delivering services like a utility. Others may choose to aggregate community demand and negotiate service delivery procurement. Decisions on the type of action depend on goals, available funding, leadership, and other structural issues.
- **Geographic Scale:** Community projects may expand to regional or larger scale projects; expansion, however, comes with challenges. The scale of a connectivity project ultimately determines the available resources, leadership, governance, and the overall structure of that project. Jurisdictional confusion is a limiting factor in Canadian connectivity policy, and many community initiatives face challenges in advocating for different approaches at the provincial or federal scale – the orders of government which, most frequently, are responsible for crucial funding and which, as a result, often dictate evaluation metrics.
- **Ownership, Capital Orientation, and Profit Structure of connectivity investments and networks:** These factors shape governance choices. Who ‘instigates’ a project (i.e., incumbent service providers versus other private actors versus public actors, or some combination thereof) will determine the capital orientation (e.g., profit vs. embedded return-on-investment in community). Ownership and the originating funding source for connectivity projects may limit whether that project becomes a long-term operational utility or similar body based solely on whether such a longer-term entity could (or should) become a profit-centre. Public-private-partnerships further complicate decision-making about ownership and profit structures, necessitating discussions related to who is investing and who is benefiting (e.g., public sector investment generating economic benefits for private sector partners). Many community connectivity projects led by local governments operate as non-profit organizations. Small ISPs and other entities sometimes pursue community projects as a core aspect of their business model.

Taken together, these structural variables inform a framework of critical criteria shaping connectivity initiatives. This framework was developed in tandem with the collection of an inventory of existing community connectivity cases, with each activity informing and refining the other through an ongoing process.

3.2. Building the Typology Framework

The project team, in conversation with other subject matter experts, used the identification of structural variables that shape connectivity initiatives described in Section 3.1 as the starting point for a framework of structural variables we identified as influential in shaping community connectivity projects (see Figure 1).

It is important to note that this framework should be read horizontally, rather than vertically. Each horizontal category stands on its own as a factor. They do not build on each other vertically like a flow chart. For example, there are projects that are not-for-profit and driven by private sector ownership, there are policy structures that act across different scales, and different time frames can apply to any of these factors.

Figure 1: Structural Variables Framework

VARIABLE	DETAILS					
Timeframe	Short term		Medium Term	Long Term		
Level of Intent	Ad Hoc			Strategic / Sustainable		
Action Type	Informed Advocacy	Policy / Permitting	Infrastructure	Service Delivery	Service Procurement	
Geographic Scale	Community	Regional (sub-provincial)	Provincial	Regional (sub-national)	National	International
Ownership	Society		Public	Private		Partnership
Capital Orientation	Shareholder Profit		Co-operative Profit	Cost Recovery		Commons/ Public Good
Profit Structure	Not for Profit			For Profit		

As with all research projects, the *Digital Readiness* project faced specific time and resourcing constraints that required the project team to focus their efforts. The project team reviewed each of potential variables for inclusion in model development in order to best focus based on the project's goal and objectives (i.e., rural, community focused). Figure 2 is an evolution of Figure 1, reflecting those variables selected for focus during this project and the related rationale.

Figure 2: Structural Variables Framework – Project Focus

VARIABLE	AREA OF FOCUS						RATIONAL
Timeframe	Short term		Medium Term	Long Term			Focus on projects that were established enough to have produced community impacts, lessons learned, and organizational or community capacity.
Level of Intent	Ad Hoc			Strategic / Sustainable			Focus on projects that were engaged in a strategic vision was chosen to select for cases that could draw linkages between their goals and project outcomes.
Action Type	Informed Advocacy	Policy / Permitting	Infrastructure	Service Delivery	Service Procurement		Focus on projects that were involved directly connecting people to service. Aspects related to advocacy or policy/permitting were not specifically excluded from the case study evaluations, but were not the focus of this work.
Geographic Scale	Community	Regional (sub-provincial)	Provincial	Regional (sub-national)	National	International	Focus helps control for jurisdictional issues, capacity limitations, and resourcing differences that occur when comparing cases at different scales. This choice was informed by the project partner (City West) as a community and regional-scale initiative. Selecting for community-scale projects supported the development of modelling and evaluation processes that can be applied across rural BC communities (and rural communities across Canada).
Ownership	Society		Public	Private	Partnership		Given the focus on community-led connectivity initiatives, the project team set local ownership – either through local or municipal government or via locally-based partnerships – as the initial ownership criteria.
Capital Orientation	Shareholder Profit		Co-operative Profit	Cost Recovery	Commons/ Public Good		Open to considering all models of capital orientation and profit structure providing there was local ownership.
Profit Structure	Not for Profit			For Profit			Open to considering all models of capital orientation and profit structure providing there was local ownership.

Based on the variables and areas of focus three initial potential models were identified to be explored and refined (see Figure 3).

Figure 3: Initial Prototype Models of Community Connectivity

Variable	Prototype Model 1	Prototype Model 2	Prototype Model 3
<i>Action Type</i>	Infrastructure	Service Procurement	Combination of 1 & 2
<i>Timeframe</i>	Long term	Long term	Long term
<i>Level of Intent</i>	Strategic	Strategic	Strategic
<i>Geographic Scale</i>	Community and Regional (sub-provincial)	Community and Regional (sub-provincial)	Community and Regional (sub-provincial)
<i>Ownership</i>	Local government and partnership	Local government and partnership	Local government and partnership
<i>Capital Orientation</i>	Any	Any	Any
<i>Profit Structure</i>	Any	Any	Any

The realities of Canada's approach to telecommunications legislation/governance and the way ISPs have evolved to navigate that territory make it difficult to propose clear and discrete connectivity models. As indicated by the models put forward by others, the difficulty of modelling approaches to connectivity in Canada serves as an important reflection on the complexity of the problem at hand and underscores the challenges to engaging effective interventions without also requiring changes to the overall telecommunications industry. These initial models helped illustrate that the way connectivity projects are modelled depends on who does the modelling, who the modeller assigns ultimate responsibility for connectivity, and the incentives driving particular modelling frameworks.

3.3. Developing a Case Study Inventory

Through input from project partners and subject matter experts, the project team completed a desktop review using the areas of focus from Figure 2 to build a case study inventory and to guide identification of potential case study sites for further investigation. Due to the project's focus on BC, this inventory focused on rural BC examples, with 25 cases identified (see Appendix). However, prominent examples from across Canada were also noted within the inventory to help contextualize these cases and support the ongoing refinement of the 'structural variables' framework. This desktop exercise aimed to gather publicly available information about these community-led connectivity initiatives in order to refine the structural factors framework and contextualize the case studies selected for closer examination.

The project team selected two case studies for close examination. As City West was the project partner and co-funder of this research, City West was pre-selected as a case study. Kaslo infoNet was selected as the second case study for evaluation. Completed evaluations are available online.^{12,13}

4. USING THE EVALUATION TO INFORM MODELS

4.1. Approach

Building on the literature, the project team developed an evaluation process that could be used to explore and better understand the workings and impact of existing rural examples of community-led connectivity initiatives.¹¹ Through the desktop review of the structural variables framework, case study inventory, and consultations with subject matter experts, twenty metrics were identified as potentially relevant to both the evaluation process, as well as building an understanding of the models. The relevance of these metrics as related to the models are described in Table 1.

Table 1: Metric Description

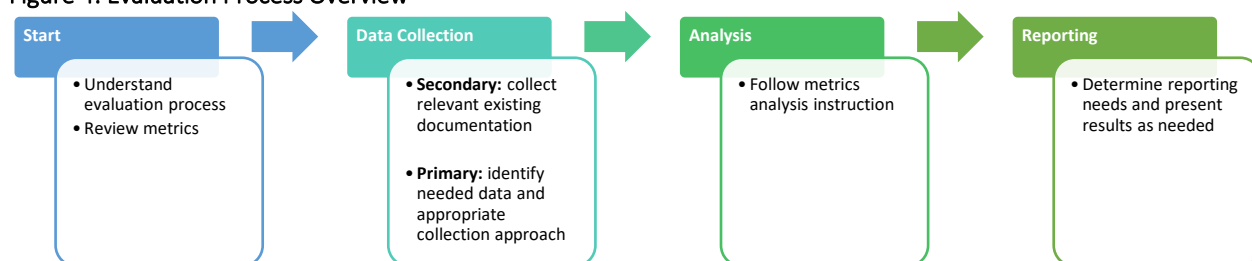
Metric	Evidence Required
Community Digital Capacity: <i>Identify existing communal digital literacy. Speaks to market need.</i>	<ul style="list-style-type: none"> Assess digital literacy of decision-makers and leadership Local digital skills inventory

Metric	Evidence Required
Community Impact: <i>Determine who benefits and impact factors. Contribute to understanding of challenges, barriers, cons.</i>	<ul style="list-style-type: none"> • Sensitivity to key benefactors • Mitigation measures for potentially excluded populations • Strategies for reducing barriers to service and participation • Attention to leadership and representation in decision-making
Community Investment: <i>Determine amount invested into community and what it is spent on.</i>	<ul style="list-style-type: none"> • Plan for investments in community capacity (digital literacy), education (skill development), institutional transfer of skills (long-term operation), ongoing infrastructure investments and maintenance
Community Needs & Customer Satisfaction: <i>Understand community connectivity needs. Determine how customers feel about their current internet services. Relates to customer retention factors and areas for improvement.</i>	<ul style="list-style-type: none"> • Assess current adoption and uptake rates • Assess current customer satisfaction, complaints, service gaps
Company Structure and Performance: <i>Gain an understanding of the case study ISP and the environment it operates in.</i>	<ul style="list-style-type: none"> • Develop metrics for evaluating impacts (how will you know it's successful)
Competition & Price of All Available Internet Services: <i>Information on case study and competitor pricing. Will help determine competitive advantage and probability of success. Understand existing competitive landscape and determine role and level of autonomy the case study service provider has.</i>	<ul style="list-style-type: none"> • Determine if/who/how customers are already served (or not) • Assess long-term capability to compete • Determine if competing with ISPs, procuring service from existing ISPs, or developing alternative arrangements
Consumer Income Levels: <i>Indication of the purchasing power of clients/users. Speaks to equity and accessibility.</i>	<ul style="list-style-type: none"> • Assess affordability based on local indices • Assess balance between costs of operation vs cost to consumer, adjust based on goals of the project and profit structure as well as local tolerance of cost fluctuation
Demographics: <i>Determine potential client base and user population. Speaks to market size.</i>	<ul style="list-style-type: none"> • Assess local client base using the following key measures: total population; density; median age; settlement areas
Existing Government Activity: <i>Determine the involvement or role of all levels of government.</i>	<ul style="list-style-type: none"> • Assess current municipal, regional, provincial, and federal programming/investments • Incorporate key partnerships as early as possible
Existing Service Quality, Technology Quality, and Types: <i>Determine type of technology used and reason behind its use. Identify services offered and the quality of services in the service area.</i>	<ul style="list-style-type: none"> • Determine type of service available (e.g., fibre, satellite, DSL) versus type of service desired • Assess quality (redundancy, latency, up/down speeds, up/down time of networks)
Funding: <i>Determine sources and amount of funding. Speaks to financial capital.</i>	<ul style="list-style-type: none"> • Determine amounts and sources of funding • Address any limiting factors to funding sources (i.e., conditional funding, ability to 'stack' funding, influence of funding partners in decision-making) • Consider advocacy avenues for shifting funding agendas as dictated by community need and evidence on addressing service gaps
Infrastructure: <i>Determine infrastructure needed to support broadband operations and expansion, and associated expenses.</i>	<ul style="list-style-type: none"> • Determine existing infrastructure types, locations, status, quality, and ownership • Reduce overbuilding wherever possible

Metric	Evidence Required
	<ul style="list-style-type: none"> Consider and integrate plans for holistic network planning (how will the network connect to backhaul infrastructure, how will it connect to other networks)
Model Profit: <i>Determine profitability and return on investment for the model.</i>	<ul style="list-style-type: none"> Assess profit model structure depending on funding, community goals, long-term operations, governance, etc.
Number and Types of Businesses: <i>Determines potential business clients and user base. Speaks to market size and need.</i>	<ul style="list-style-type: none"> Assess local client base using the following key measures: total number of businesses; types and distribution of economic sectors; use-case for different types of economic activity; biggest challenges inhibiting local businesses (connectivity)
Organization Capacity: <i>Determine current level of human capacity within organizations.</i>	<ul style="list-style-type: none"> Assess capacity across participating partners (technical, leadership, social capital, financial capacity) to support start-up, ongoing operations, procurement Capacity will determine pragmatic choices of structure – building capacity expands available opportunities/choices
Terrain and Landscape: <i>Determine constraints on infrastructure options and physical challenges.</i>	<ul style="list-style-type: none"> Geo-spatial considerations influence the type of infrastructure, the cost of building that infrastructure, and ongoing maintenance and operational costs

Communities, organizations, or individuals pursuing connectivity initiatives should consider (at minimum) the above metrics as they develop their plan of action. For the evaluation metrics were applied in a process described in Figure 4.

Figure 4: Evaluation Process Overview¹⁵



4.2. Evaluation Results

The transferable evaluation process was applied to the two selected rural BC community examples, City West and Kaslo infoNet Society.^{12,13} The project team compiled and analyzed the quantitative and qualitative secondary data that was collected during this project against the 20 pre-determined metrics to surface the key success factors presented by the different approaches taken by City West and Kaslo infoNet Society, which are presented in Table 2.

Table 2: Key Success Factors^{12,13}

Kaslo infoNet	City West
Leadership: KiN's social capital and leadership is a large contributing factor to their success. Their leadership team possesses a unique and extensive collection of skills, including electrical, construction, engineering, business, and network operation experience. Some of KiN's leaders also had experience with permitting requirements and international shipping and purchasing practices from previous career experience which was extremely helpful. In addition to voluntarily contributing their time, the founders also contributed startup capital before KiN was able to secure grant	Experience: Since its inception in 1910 ¹ , City West has had over 100 years of experience. They are well versed in the connectivity landscape and have been providing connectivity solutions to several communities over the past few years and continue doing so. The majority of the interviewees explained that this large amount of experience has helped City West clearly identify the best broadband solutions for the different communities they serve based on community needs and other variables. The company's performance and working as discussed in our metric findings demonstrates how City West has been in this field for so many years.

Kaslo infoNet	City West
<p>funding. The hard work and dedication of KiN's staff and volunteer board should also be recognized.</p> <p>Partnerships: According to interviewees, a critical partnership that KiN has is with the Columbia Basin Broadband Corporation (CBBC), whose fibre backbone connects KiN's last mile services to the internet exchanges in Vancouver and Calgary. In addition to lending KiN their infrastructure, CBBC has helped KiN coordinate grant funding applications on occasion, so that they can continue expanding their community network and bringing connectivity to surrounding rural communities. Additionally, KiN's close cooperative relationship with the Village of Kaslo has proved to be an asset.</p> <p>Funding: KiN has received multiple funding opportunities from municipal, provincial, and federal sources. Some of these sources include Network BC (Connecting Communities), Connecting Canadians federal grants, Columbia Basin Broadband Corporation (CBBC), and Regional District Central Kootenay (RDCK). Startup capital was also contributed by founding local citizens. Consistent and generous funding has allowed KiN to establish itself and the expansive network that services the North Kootenay Lake communities.</p> <p>Community Focus: Throughout KiN's history, the non-profit organization has maintained its community focus by dedicating itself fully to the community and evolving to fulfill the community's needs at the given time. In 1996, when students required connectivity for their studies, the original founders of KiN connected them. When the community was later faced by high toll charges imposed by a larger telecommunications company, KiN adjusted its focus. Now, when the North Kootenay Lake communities need reliable connectivity, KiN build a robust and innovative network to serve the communities and help keep them viable. KiN's standing as a non-profit is also a reason that the organization has been able to become successful, given the spread and small population of the North Kootenay Lake communities do not typically present a compelling enough business case to attract larger telecommunications providers. This versatility, dedication, and non-profit standing have made a significant impact on the community and have helped to make KiN the success it is today.</p>	<p>Expertise: City West possess the technical expertise required to manage broadband solutions as well as to design and implement infrastructure essential for connectivity. Personnel possess the necessary skills and knowledge required to conduct operations in the connectivity landscape. Interviewees mentioned that City West hires qualified people from within the communities it serves. This demonstrates the need for strong organizational capacity.</p> <p>Funding & Access to Capital: The majority of interviewees emphasized that the telecommunications industry is a capital-intensive industry. Interviewees, as well as secondary data, confirm that substantial capital is required to set up infrastructure and conduct operations. This is especially evident when everyone wants fiber and fiber is more expensive than the other options available.⁹ Funding through grants issued by Provincial and Federal governments play an important role in providing City West with the necessary funds to conduct its operations in the communities it serves.</p> <p>Relationships: Building long term relationships with their customers has enabled City West to be successful. City West's mandate is to serve the public. They are focused on solving community needs and people's problems rather than solely on making profits. The majority of the interviewees have noted that City West has excellent customer service and aims to do what is right. City West partners with communities and helps them diversify their economy, not just through connectivity, but they actually politically work together.</p>

4.3. From Case Evaluation to Model Typology

The process of evaluating City West and Kaslo infoNet produced several consistent success factors for these community-led connectivity initiatives (see Table 2). The evaluation metrics, the resulting success factors generated through the case study evaluations, and information gathered through the broader desktop case inventory were layered over the structural variables framework (Figures 1 and 2) to produce insights about the connection between structural factors, indicators of success, and potential for replicability by other communities (see Figure 5).

The variation in the goals, constraints, and opportunities facing each community means that this framework does not easily condense into a decision-tree or flow-chart. However, the information within this framework does lend itself to supporting communities in taking inventory of their assets, limitations, opportunities, and challenges.

Figure 5: Insights on Connections between Structural Factors and Indicators of Success

Related Goals/Metrics	Influencing Parameters / Decision Points	Key Success Factors
Timeframe		
<ul style="list-style-type: none"> • Community Impact • Community Digital Capacity • Infrastructure • Organization Capacity • Funding • Existing Government Activity • Community Investment 	<ul style="list-style-type: none"> • Short-Term Project/Undertaking • Medium-Term Project/Undertaking • Long-Term Project/Undertaking 	<ul style="list-style-type: none"> • Leadership • Partnerships • Funding & Access to Capital
Intent		
<ul style="list-style-type: none"> • Community Digital Capacity • Company Structure and Performance • Infrastructure • Funding • Organization Capacity 	<ul style="list-style-type: none"> • Ad Hoc • Strategic 	<ul style="list-style-type: none"> • Leadership • Expertise • Funding & Access to Capital
Model/Pathway		
<ul style="list-style-type: none"> • Community Digital Capacity • Community Impact • Community Investment • Community Needs & Customer Satisfaction • Competition & Price of All Available Internet Services • Existing Government Activity • Existing Service Quality, Technology Quality, and Types • Funding • Demographics 	<ul style="list-style-type: none"> • Informed Advocacy • Policy/Permitting • Infrastructure • Service Procurement • Service Delivery 	<ul style="list-style-type: none"> • Expertise • Funding & Access to Capital
Geographic Scale		
<ul style="list-style-type: none"> • Terrain & Landscape • Existing Government Activity • Funding • Infrastructure 	<ul style="list-style-type: none"> • Community • Regional (sub-provincial) • Provincial • Regional (sub-national) • National • International 	<ul style="list-style-type: none"> • Community Focus • Partnerships
Ownership		
<ul style="list-style-type: none"> • Model Profit • Community Investment • Funding • Competition & Price of All Available Internet Services • Existing Government Activity • Existing Service Quality, Technology Quality, and Types • Company Structure & Performance 	<ul style="list-style-type: none"> • Civil Society • Private • Public • Partnership 	<ul style="list-style-type: none"> • Community Focus • Relationships • Expertise • Funding & Access to Capital

Related Goals/Metrics	Influencing Parameters / Decision Points	Key Success Factors
<ul style="list-style-type: none"> Community Investment 		
Capital Orientation		
<ul style="list-style-type: none"> Company Structure & Performance Community Investment Model Profit Consumer Income Levels 	<ul style="list-style-type: none"> Shareholder Profit Co-Operative Profit Cost-Recovery/Non-Profit Commons/Public Good 	<ul style="list-style-type: none"> Funding & Access to Capital Community Focus
Profit Structure		
<ul style="list-style-type: none"> Company Structure & Performance Model Profit 	<ul style="list-style-type: none"> Non-Profit For Profit 	<ul style="list-style-type: none"> Funding & Access to Capital Community Focus

5. REFINING AND OPERATIONALIZING THE MODEL FRAMEWORK

In order to support transferability of the findings from the *Digital Readiness* project and support knowledge mobilization to other rural communities, companies, and policy makers seeking strategies for addressing connectivity gaps, the project team synthesized project to propose prototype models of community connectivity. By taking the structural variables framework (Figures 1 and 2) with the transferable evaluation metrics (Table 1) and working in the results of the case study inventory and the case study analysis of City West and Kaslo infoNet, the project team aggregated and generalized key themes from the *Digital Readiness* project to propose and refine probable potential models of community-led connectivity initiatives. This process is detailed in the following sections.

5.1. Lessons from Case Study Analysis

Through broad consideration of the case study inventory and analysis of City West and Kaslo infoNet cases, two key findings emerge relevant to existing models of community connectivity:

- Community-led projects succeed despite the system, not because of it:** Community run networks, telecommunications companies (of all sizes), and campaigns to bridge the digital divide are operating as efficiently as they can within the current regulatory and investment environment in Canada. The success of community initiatives like Kaslo infoNet and City West should be seen as outliers. Little of the current funding or regulatory landscape is set up to facilitate alternative models for connecting Canadians outside the dominance of the three major telecommunications companies.⁶ While it is possible to provide recommendations based on existing community or regional examples to support other communities in pursuing similar initiatives, it remains frustrating for researchers and communities alike to know that these recommendations are more focused more on getting around the system than working within it.
- Interactions (current and future) with the large private telecommunications companies need to be considered from the start:** When new networks or small ISPs begin to gain traction with consumers, they will need to consider their interactions with the larger telecommunications companies. In areas where the large telecommunications companies offer comparable services, larger firms with greater capital may engage tactics like predatory pricing. In areas that are not served or who are underserved by the large telecommunications companies, new, small networks are often acquired by one of the dominant players. If communities are unaware or unprepared, this process is expensive and potentially damaging if communities have invested more terms of financial and human capital than what they stand to gain. Consideration of relationships with the larger telecommunications companies early in the life cycle of a project can help address this risk – whether through the development of partnerships, purposefully aiming to be acquired, or – where neither are possible or preferable - having a plan to address potentially predatory behavior. This can help to avoid short-term disruption to local economies and services brought on by unplanned buy-outs and predatory pricing.

The above findings are critical for informing future projects or policy changes, as they indicate that rural communities engaging in an unchanged Canadian telecommunications landscape are likely to face one of three possible scenarios:

- **Failure to Launch:** It is impossible to estimate how many community connectivity projects have not been initiated or have fizzled out due to lack of local expertise, lack of funding, lack of capacity, lack of support, or some other major gap in the key characteristics that showed themselves as essential to success (see Table 2). Further, through the stories shared by key stakeholders at City West and Kaslo infoNet, it appears that even when those factors are present, if they are not perfectly aligned at the right moment in time, community connectivity projects simply fail to launch – regardless effort and investment in development.
- **Corporate Capture:** Large-scale corporate capture of Canada’s digital infrastructure and service delivery is a major impediment to policy change and efforts to closing connectivity gaps. This is evidenced through the repeated capitulation of the CRTC to the interests of major telecommunications firms, the way that these firms are perceived as holding rural broadband projects hostage when challenged, and the emphasize on paying profits to shareholders versus delivering critical infrastructure - even after receiving public investment. Addressing corporate capture is foundational to supporting alternative and innovative community-led connectivity initiatives.¹
- **Sisyphus’ Network:** Much of the work completed by community networks seems analogous to Sisyphus’ never-ending efforts to push a boulder up a mountain. It takes immense effort and capital (financial and human) to assess community needs, forecast investment needs, contract physical infrastructure builds, maintain that infrastructure, develop a structure for delivering service across that infrastructure, and ward off predatory behaviour from competitors. This work takes place in a broader policy environment that simultaneously celebrates the resilience of community networks while underfunding their work and reinforcing the primacy of market-determined service delivery.

5.2. Prototype Models for Community Connectivity Initiatives

By taking stock of the context and conditions facing rural communities seeking to advance connectivity projects, we re-developed our models based on the combined structure-metrics-success-factors framework put forward in Section 4, taking the three initial models identified in Figure 3 and expending them to five models (see Figure 6). The prototype models are listed along a spectrum from working within the status quo to driving complete change in the way connectivity is planned, built, and governed in Canada.

The way that the models in this report have evolved underscore the iterative, complex realities of developing an inventory of key factors/decision-points for local actors interested in pursuing connectivity initiatives and inform where communities may find themselves. Once this information is collected and placed in context –weighed based on the most pressing conditions, challenges, and opportunities facing proposed projects in the community - would-be leaders of connectivity initiatives can gauge where they might locate themselves along a spectrum of the models below and choose their next steps based on both their realities and their aspirations.

The five potential models that emerge for approaching community connectivity initiatives in rural Canada range from the maintaining status-quo approaches, where telecommunications firms determine and direct infrastructure development and service delivery with a small degree of oversight from regulators to the full nationalization of Canada’s telecommunications infrastructure. As such, these models also represent an escalation from what is most likely to occur (Models 1 and 2) to what is least likely to occur (Models 4 and 5). The revised models 2, 3, and 4 (see Figure 6) are most similar to our initial models (see Figure 3) used when cataloging the case studies and inventory.

¹ It is important to note that ‘corporate capture’ is different than planned transition of an initial project by a smaller local actor that does not wish to become a long-term telecommunications utility. Planned acquisitions or transfers to larger networks or utilities can and should be undertaken on purpose at the direction of the public interest.

Figure 6: Refined Models of Community Connectivity

		Model 1: Working within the Status Quo	Model 2: Aggregate Demand & Procurement	Model 3: Social Enterprise (Community Network)	Model 4: Local or Regional Public Utility	Model 5: Nationalization
Lead Actor		Private Sector - major telecommunications firms	Government - local or regional	Private Enterprise - social impact directive	Municipal Government or Public Commission	Government of Canada
Role	Government – Upper	Regulatory Funding support	Regulatory	Regulatory Funding support	Regulatory	Regulatory Owner and operator – physical infrastructure and service delivery
	Government - Local	Advocacy May be a partner	Management - aggregate demand of local users	May be a partner	Owner and operator – physical infrastructure and service delivery	Advocacy
	Private Sector	Market determined solutions Return on investment to shareholders Owner and operator – physical infrastructure and service delivery	Market determined solutions Respond to tender/bid on service contracts Service delivery	Market determined solutions Return on investment through a community-determined model Service delivery	Role in building or service delivery, if managed through contracts/open access networks May be a competitor	Role in building or service delivery, if managed through contracts/open access networks
	Community	Consumer	Consumer	Consumer May be a shareholder	Consumer Governor (through electoral relationship)	Consumer Governor (through electoral relationship)
Operations		Service-at-market-rate Market determined Influence through bilateral agreements	Oriented around service-at-market-rate Market influence through collaboration	Impact-investing/ social-enterprise framework	Public good/public infrastructure May compete with private sector	Public good/public infrastructure
Goals		Revenue generation	Service delivery Increased market influence	Revenue generation in support of network sustainability and community investment	Connecting service area to affordable, ultra-high-speed connectivity	Universal, affordable, ultra-high-speed connectivity
Examples		Current state	Eastern Ontario Regional Network	Kaslo infoNet; SWIFT; Hamiota	O-Net; City West	Australian National Broadband Network

5.3. Model Selection for Rural Communities

How then are communities to determine which model will work for them? In practice, most rural communities will find themselves limited to Model 1 – perhaps to their frustration. However, without concerted effort from other orders of government to reconfigure the macro-landscape of Canada’s telecommunications industry structure (e.g., improvements to 2, 3, 4 or shifting to 5), communities without available resources, technical expertise, and capacity to change their local market dynamics will find themselves facing significant challenges in advancing to another model beyond the status quo.

This difficulty comes down to the incompatibility between the positioning of broadband as critical infrastructure and essential service and the way that all orders of government in Canada continue to act as if private-market delivery is the only mechanism for connecting Canadians. The largely unchallenged assumption that broadband infrastructure and services must provide a return on investment to private investors remains the critical fault-line throughout which most community-based connectivity initiatives fall through the cracks and fail. This is a definitional problem when it comes to connectivity; there is a difference between building the right infrastructure and building the infrastructure right.

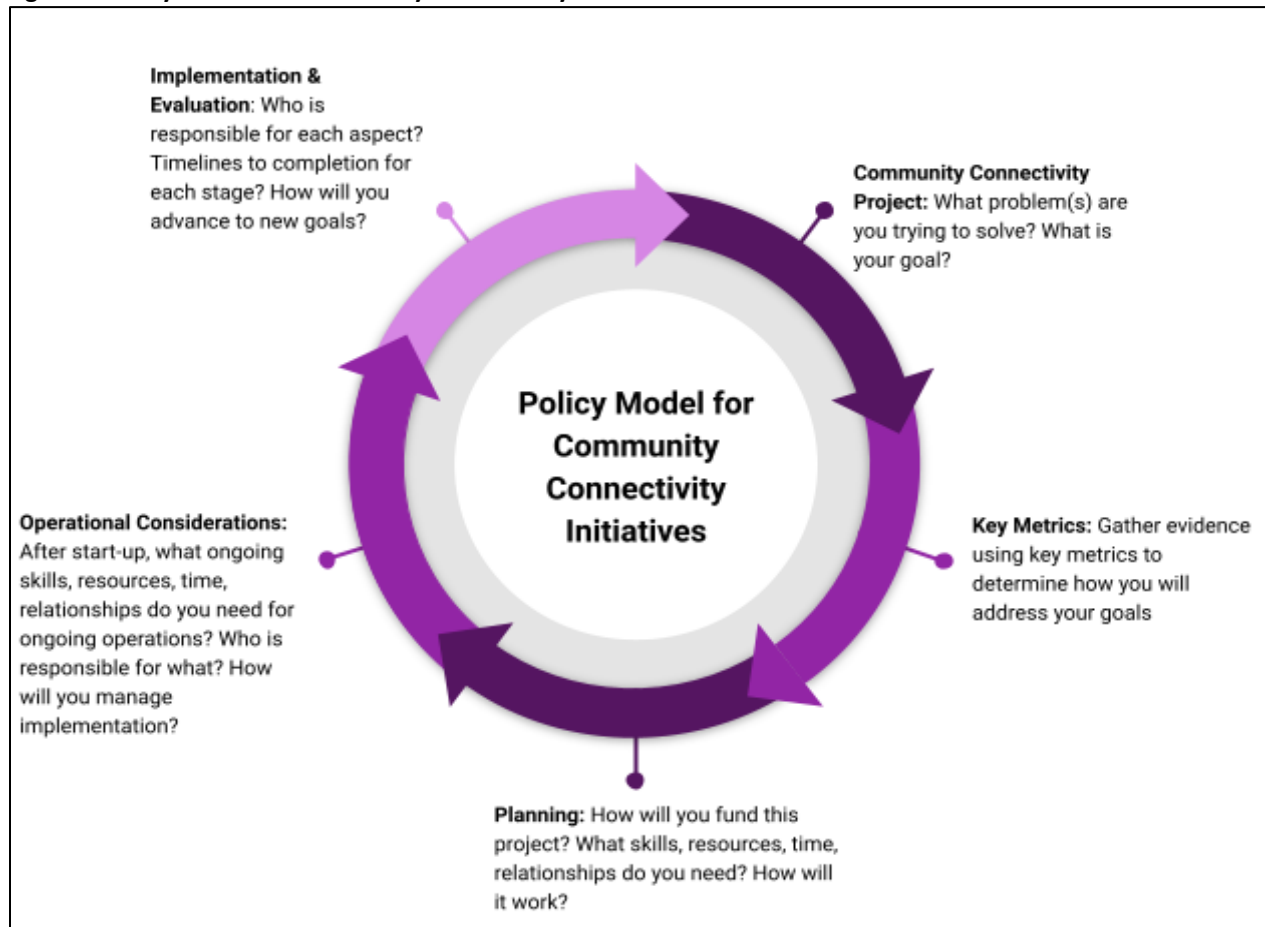
We have developed a non-exhaustive set of questions to guide how a community might begin to complete an inventory of the structural factors and capacity levels they face when approaching connectivity initiatives and how that inventory should be considered and weighted based on capacity to change existing conditions/contexts to advance specific goals based on existing assets, limitations, challenges, and opportunities (see Figure 7).

Figure 7: Guiding Questions for Model Selection

Structural Variable	Guiding Questions	Example of Responses and Related Model
Timeframe	How much time do you have? Are there timing constraints to available funding?	Limited timeframes and short-term funding windows could consider pursuing partnerships under Model 1.
Level of Intent	How much capacity do you have? Do you have sufficient expertise? Can you add that expertise? Is this a long-term project that requires planning or an immediate, stop-gap solution?	High levels of local capital and expertise could consider Models 3 or 4.
Action Type	How much capacity do you have? What is the existing market dynamic? How much funding do you have?	Communities with low risk tolerance should maintain Model 1.
Geographic Scale	What are your boundaries? Are you working with other governments (peers/partners or other orders; is there a hierarchy?) What are your limits?	Strong local and regional collaboration could result in Model 2.
Ownership	Who is the lead actor? Who will own this? What are the lines of accountability? How much capacity do you have? Do you have sufficient expertise?	Strong desire for community driven assets and existing leadership could consider Models 2, 3, 4.
Capital Orientation	How is the project funded? What are the conditions of that funding? Who has a stake – and what do they need in return?	Existing and accessible funding supports Models 2, 3, 4.
Profit Structure	Will profits be reinvested in the network/project or distributed to shareholders? Is the goal revenue generation or public good?	Strong local need for direct local investment and social return on investment could consider Models 3 and 4.

Those communities unable to make it through these guiding questions without substantive responses will likely remain within Model 1. Figure 8 further refines guiding questions into an overarching policy model to guide communities intending to move forward along Model 2, 3, or 4.

Figure 8: Policy Model for Community Connectivity Initiatives



6. FROM MODELS TO ACTION

The *Digital Readiness* project was developed to identify, understand, and evaluate existing models of rural connectivity in BC. The project focused on developing better understanding of the different models of community involvement in connectivity initiatives, including the benefits and challenges associated with different approaches. The following sections present an overarching summary of observations related to the two in-depth case studies (Section 6.1), followed by an in-depth discussion of community connectivity models in relation to policy, and ending with ideas for future research.

6.1. Observations of Case Studies

There are examples of successful community-led connectivity projects. However, these examples represent outliers in the current rural policy and development landscape. As observed through the analysis and evaluation of City West and Kaslo infoNet, the factors that lead to success depend, to a large extent, on individual actors or organizations leveraging both social and financial capital to address the lack of infrastructure or digital capital in their community or region. There was consistency in the identified success factors between the two case sites, despite their different origins and orientations.

Leadership, community focus, experience, expertise, and partnerships/relationships played important roles in the development and success of City West and Kaslo infoNet as community-led connectivity projects. In the case of Kaslo

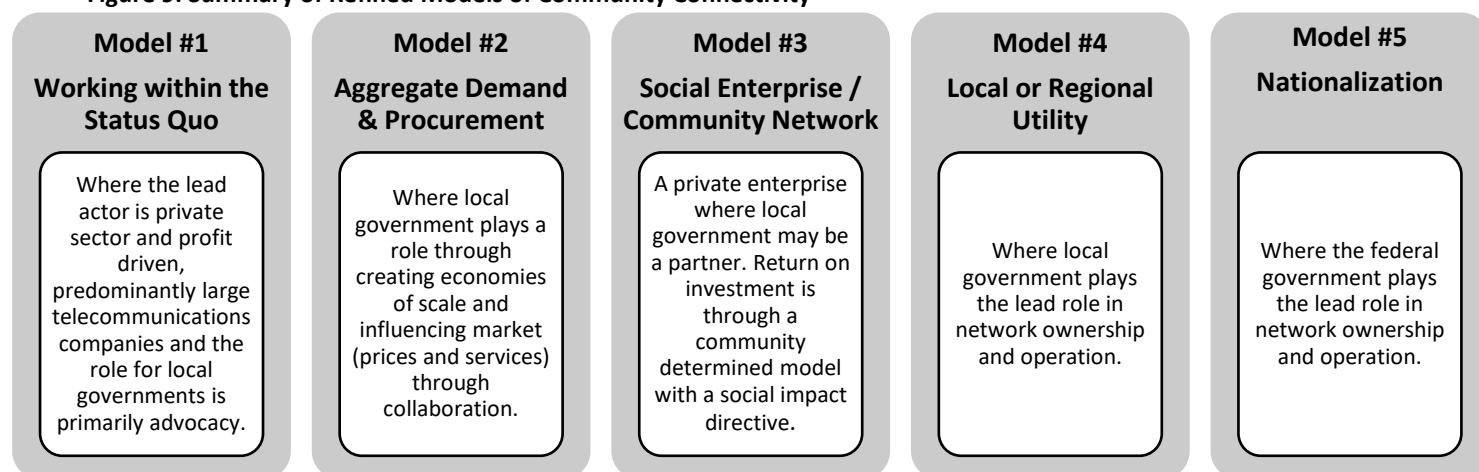
infoNet, the initial start-up of the network and its ongoing expansion have been led by dedicated volunteers with strong cross-sectoral relationships and local legitimacy. In the case of City West, the network's 100-year history and structure as a private firm focused on telecommunications allows them to leverage specific technical expertise and long-standing relationships to remain focused on connecting clients. While both have close ties to their communities, neither of these examples is operated under the direction of a government agency. Their structural separation from government(s) may enable these organizations to operate with a greater degree of freedom to pursue innovative ways of connecting their clients and communities through cross-sectoral partnerships, leveraging different sources of capital funding, and pursuing layered approaches to building not only infrastructure but capacity to use that infrastructure.

It comes as no surprise that the type and amount of available funding and access to capital for connectivity projects is a significant factor in determining not only the success of the project, but its form and function. Funding determines the available time to complete part or the entirety of a project, the type of project pursued, and, ultimately, the overall impact of that project in the community. If funding comes directly from community actors, it serves as an anchor to the overall community focus of the project. Funding from governments (local, provincial, or federal) often comes with conditions about when and how it can be directed – influencing the timeframe, pathway, scale, and ownership of that project. Building physical infrastructure is capital intensive, and communities without sufficient funding or without appropriate partnerships with infrastructure-building actors may find themselves limited in the type of connectivity projects they can pursue. Finally, the stability and security of available funding influences the ability of a community to act proactively/strategically (versus reactively to funding announcements), the time horizon for projects, and the long-term sustainability of projects to continue work on network maintenance and expansion (if building physical infrastructure).

6.2. Models, Decision-Making, and the Policy Landscape

The aim of this project was to identify and refine existing models of rural connectivity in order to help enable other communities in selecting actions. We now revisit this aim and ask whether this can be modelled? To which the response is – not easily or cleanly, owing to the number of structural variables, but also the surrounding landscape. In this respect, our proposed five models join others in providing a simplified perspective of options and activities (see Figure 9).

Figure 9: Summary of Refined Models of Community Connectivity



Like the Ontario [municipal road map](#), our proposed models recognize a range of potential activities, from the status quo (letting the market operate on it's own to advocacy to a municipally owned network.¹⁴ Similarly to McNally et. al.'s [Alberta Broadband Toolkit](#), our proposed models acknowledge the range of infrastructure and service construction, operation, and ownership.⁵ The models presented in Figure 9 evolve and expand both conversations, identifying and clarifying potential roles for both local government and the community at large, as well as basic identification of the success factors required to support the more active community models (i.e., models 2, 3, 4). Counterintuitively, the successes of these communities represent a critical failure of the policy environment. This is not to detract from the

significant work undertaken by these communities; indeed, we intend quite the opposite. Community or regional success stories are not being driven by effective overarching federal or provincial strategies, but rather each community or regional network has to develop their own strategies – in which the goals and drivers work to circumnavigate the policy and regulatory landscape in reaction to a specific local goal or pressure. The above makes modelling difficult, because these existing examples are, to a large extent, outside the system we’re trying to model.

Additionally, these models are simplified perspectives and generalizations. While these can help inform and assist communities in their decision-making, in one respect it is challenging to create a clear and logical decision tree because of the complexity of factors in terms of number and combination. In another respect, the decision tree for communities could also be seen as exceptionally simple – the barriers to entry within the connectivity space are sufficiently high that the majority of rural communities have little choice but to work within the status quo. Any model beyond advocacy – including partnership with a major telecommunications company - requires both the presence and alignment of multiple key success factors. The current landscape is not conducive for involvement of the average rural community.

The models described above need further research and investigation, and, even if they are confirmed, should not be seen as forgone conclusions, particularly within a shifting landscape. Should the federal or provincial orders of government choose to reconfigure the way telecommunications is regulated, new opportunities for supporting community-led connectivity initiatives will emerge. For example, between the summer of 2021 when this research was conducted and the writing of the report (winter 2022), the Government of British Columbia announced investments to accelerate the timeline of connecting all BC communities, closing the digital divide on an “accelerated timeframe”.¹⁶

However, in spite of new announcements and commitments, challenges remain in the surrounding policy landscape. These challenges are both symptomatic and systemic. Symptomatic challenges being those often felt by communities working within the connectivity landscape – hurdles related to permitting and planning that pose challenges. Symptomatic challenges are small, but challenging to address because they only exist due to the larger, systemic challenges – the structure of the surrounding regulatory environment, including competition, spectrum control, and infrastructure spending. Within the broader systemic challenges it is important to acknowledge the disconnect between the framing of broadband as critical infrastructure and the continued focus on building and delivering as a profit-centre for private enterprise. It is difficult to find examples of other acknowledged critical service that is allowed to operate in this way in Canada. There is a reluctance to take up broadband infrastructure as a public good. There is also a breadth and depth of discussions and perspectives that extend beyond the scope of this project related to the efficacy of using public dollar investment either as leverage to incentive private sector spending, or as a subsidy to private for-profit infrastructure. However, what is clear is that without changes to this system, successful community-led initiatives will continue to be anomalous, and stumbling blocks will remain to meaningful advancement of connectivity in rural and underserved communities. Put another way – successful involvement of more communities in connectivity requires systemic change.

As noted above, those initiatives celebrated as successes are anomalous. It is possible that guidance and funding could be developed to support communities to replicate these successes, but in the absence of system change the benefit of doing so is uncertain, particularly in light of the financial and capacity cost to communities. It is clear that change is needed in the way that we consider community involvement in connectivity, as well as the surrounding policy and regulatory landscape in order to address the digital divide.

Heading forward, further research can and should focus on regional models, provincial models, national models, and international frameworks as separate-yet-parallel/complementary models for delivering Internet services. As future research considers more and different examples of community connectivity initiatives, it is expected that this process and the associated evaluation framework will evolve as more evidence is collected and reviewed.

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APPENDIX: RURAL CASE STUDY INVENTORY

British Columbia Case Study Inventory

Case Name	Service Area
ABC Communications ⁱⁱ	Vancouver, Penticton, Prince George, Burns Lake, François Lake, Fort Fraser, Fraser Lake, rural Vanderhoof, Clucuz Lake, Pilot Mountain, Tabor Mountain, Deka Lake, Lone Butte, Lac La Hache, and rural 100 Mile House. We also recently upgraded our services in Cherryville, Quesnel, and rural Lumby.
Campbell River Advantage	Campbell River
Conuma Cable Systems Ltd. ⁱⁱⁱ	Gold River, Tahsis
Central Coast Communications Society	Bella Coola Valley, Hagensborg, and the Nuxalk First Nation communities
China Creek Internet Services	Greenwood, Midway
Cintek ^{iv}	Cranbrook
City West	Hazeltons, Houston, Kitimat, Kitwanga, Metlakatla, Port Edward, Prince Rupert, Smithers, Terrace. Future expansion planned.
Columbia Wireless	Kootenay Region, Nelson
East Shore Internet Society	Crawford Bay, Gray Creek, Kootenay Bay, Pilot Bay, Riindel Road, Ainsworth, Queens Bay, Mountain Shores, Boswell and Sanca
FlexiNET Broadband	Cranbrook, East Kootenays
Granisle Internet Services	Granisle, Regional District Electoral Area G residents living along Highway 118, Mill Bay and Topley Landing.
Kaslo infoNet Society	Kaslo and surrounding area
Monashee Communications	
Nelson Fibre	Nelson and surrounding area
Robson Valley Internet Corporation ^v	Robson Valley, Valemount
Swift Internet Inc.	Creston Valley
Waglisla Cablevision Ltd.	Heiltsuk (Bella Bella)
XploreNet Communications	Colchester-Cumberland
YourLink Revelstoke ^{vi}	Revelstoke

Other Identified Canadian Case Studies

Case Name	Service Area
EEYOU Communications Network	Northern Quebec
EORN	Eastern Ontario
Kuhkenah Network (K-Net)	Ontario (mainly Central and Northern Ontario)
Midwest Hi-Speed Internet	Hamiota, Manitoba
O-Net	Olds, Alberta
Southwestern Integrated Fibre Technology (SWIFT)	Southwestern Ontario
Tough Country Communications	Southern AB, Southeast BC

In addition to those cases listed, a number of additional examples exist of former partnerships or community-based case studies acquired by large telecommunications companies.

ⁱⁱ Telus Acquisition

ⁱⁱⁱ Telus Acquisition

^{iv} Telus Acquisition

^v Acquired by Monashee Communications

^{vi} Telus Acquisition