



ONTARIO AGRICULTURAL COLLEGE

SCHOOL OF ENVIRONMENTAL DESIGN
AND RURAL DEVELOPMENT



MP Dan Ruimy
Chair, Standing Committee on Industry, Science and Technology
House of Commons Room 565
180 Wellington St.
Ottawa, Ontario
K1A 0A6

Dear Hon. MP Dan Ruimy and INDU Committee Members,

Thank you for the opportunity to submit a brief statement on the three questions posed by the Standing Committee on Industry, Science and Technology for your deliberations on Rural Broadband.

I am responding to this call for input based on my expertise and experience as one of a handful of academic researchers in Canada specializing in regional and rural broadband policy implementation analysis. I am writing this brief as an individual contributor, but I am a faculty member of the Ontario Agricultural College at the University of Guelph. As the project leader for the Regional and Rural Broadband project (R2B2project.ca), I am writing on behalf of my research team which includes an action research partnership involving geospatial and economic broadband analysis and data stewardship. Specifically, we are collaborating closely with the Southwest Integrated Fibre Technology (SWIFT) Inc. which, as you know, is a “game-changer” for connectivity across our region. We expect SWIFT and southern Ontario to make important progress on rural broadband to address the connectivity constraints that limit the uptake and functionality of new digital technologies for agriculture, food, health care, employment, work and education.

Within this scope, I wish to respond your three questions, as follows:

1. What constitutes acceptable high-speed service?

High-speed service must meet three requirements at the user level: 1) value for subscribers; 2) reliability of service; 3) ubiquity/accessibility to all users and their required applications. That is, quality of service must be ensured. At the infrastructure level contemporary broadband networks must have an architecture that can scale to future needs, offer interoperability and be easy to support, likely ensuring open access to enable accessibility and competition in the network, in the short and long-term. The problem is, and it's a major

issue requiring a re-think: high-speed service is too often defined as a speed target. Hitting that target is rare, and even if the target makes sense for all of the conditions outlined above, it is a static target, that has to change in time; this change can be exponential given the rapid change in technologies and user needs and demands. Furthermore, speed targets (ie. Canada's current target of 50 Mbps download and 10 Mbps upload) are set but not realized by all Canadians. Fixing such a target is aspirational and does not take into account the multiple variables that account for "acceptable high-speed service" by users. Altering aspirational speed targets downwards has occurred in policy implementation with uncertain, if not negative, social, economic and political implications.

Undoubtedly, the use of speed targets for policymaking, and more importantly, policy implementation including planning and evaluation has serious drawbacks. Within the rural context, defining an internet user group is tremendously important. A so-called "served" or "underserved" community based on internet speed (typically only download speed) is erroneous and difficult to validate for three reasons: 1) incomplete or inaccurate underlying data; 2) misusing the relative speed index as an indicator of broadband access; 3) lack of multi-variable analysis, including clear definition of what is a community (R2B2's analysis states that a 'settlement area' is not synonymous with a "served/underserved community" lack of geo-spatial accuracy hides crucial use-based considerations that determine satisfactory levels of connectivity.

With insufficient data and analytics, assumptions are continually being made about areas deemed served/underserved. Speed data for rural and more remote areas is often unavailable and where it is, the commercial data offerings (e.g. Ookla, CIRA) are expensive and limited in terms of the variables collected (mainly speed and latency).

In summary, there are two basic points to make on this question: 1) Acceptable internet service is best constituted in relation to users' need, value for money and the likelihood of changing service demands. 2) High-speed defined at 50/10 Mbps or 1 Gig is largely irrelevant without attention to multiple variables that define what it is to be underserved/served within a specific region.

2. What are the financial challenges of implementing high-speed service?

It is stated that per unit cost of fibre-optic is far less expensive than many other types of infrastructure (e.g. roads, bridges, etc.). Cost/benefit analysis is not so clear. This is a major knowledge gap that the R2B2 research project pursues – that in Canada, economic analyses of broadband investments are few and methodologically inadequate. The underpinning data is difficult to obtain and analysis is best done regionally. The granularity of available data has been an issue for in-depth regional analyses. Many proponents rely on OECD return-on-investment analyses and studies completed in jurisdictions outside Canada with respect to estimating consumer surplus attributed to broadband. We must do better to

ensure that public investments achieve anticipated impact. More data and better analytics are needed if the financial challenges of broadband policy implementation are to be understood and addressed. My review of briefs submitted to the Standing Committee, to date, indicate that there is little empirical analysis performed or sourced by the contributors to support of statements of the financial and other implementation challenges associated with broadband. There are many reasons for this problem including the proprietary nature of data from telecommunication service providers (TSPs) and lack of “ground truthing” which compares advertised speed/services with actual user experience. There is a lack of longitudinal data to inform more visually and statistically rigorous approaches to assessing the impact of rural broadband.

The other dimension of financial challenges is that most contemporary larger-scale rural broadband investment programs will involve a mix of public (municipal, provincial and federal) funding and private sector contributions. Sustainability strategies for improved broadband infrastructure continue to be a major challenge for financing broadband in the longer-term. Innovative approaches are being tried (e.g. SWIFT Inc. Broadband Development Fund) and these efforts offer opportunities to ensure sustainability, but also equitability of regional and rural ICT infrastructure and deployment.

3. What are the regulatory changes to encourage the implementation of high-speed service?

R2B2 focuses less on national regulatory and policy dimensions of regional and rural broadband initiatives. There are very good Canadian researchers specialized on the nation’s regulatory context. That said, it is clear that institutions such as CRTC and ISED could advance on major issues outlined in this brief including, 1) Data and improved broadband analytics that ensure state-of-the-art geo-spatial and economic analyses for federal, provincial and municipal public policymaking, strategic investment and program implementation and evaluation. 2) For the unique needs and context of Canada’s rural user groups, improved balancing of regulation and market forces (see the Van Horne Institute brief for a more detailed discussion). 3) Attention to regulatory changes that have potential for open access broadband networks, increased attention to broadband within all infrastructure renewal programs (including a federal policy for “dig once” or “one touch” policies which mandate laying conduit and/or fiber optic cables when undertaking capital projects such as road construction. Even this regulatory change can improve the implementation of high-speed service in Canada.

This brief is short, and admittedly, tentative in its conclusions. In 12 months, and even 48 months from now, we expect to provide a stronger input to the House of Commons Standing Committee, with growing evidence of the state of broadband in relation to economic and social

benefit and innovation. Through important research partnerships with public institutions such as University of Guelph, we can improve the broadband data challenge and analytics that address the questions posed here on high-speed service for rural Canadians. This is not a task done by one institution, but in partnerships. We support efforts for the widest possible engagement with many different internet user groups, involving different levels of government and recognizing the crucial role of TSPs and organizations across many sectors of the economy and society. We acknowledge First Nations and efforts like those made by the FCCM to support community engagement in broadband policy and program implementation. There can be greater equitability of access and sustainability for the benefits of broadband. Connectivity shapes the futures of our regions, rural areas and lives.

Sincerely,

A handwritten signature in black ink, appearing to read 'H. Hambly', with a stylized, cursive script.

Helen Hambly, PhD
R2B2 Project Leader