

Chapter 10

The Case of Chapleau Network: Why Community Wireless Networks Fail?

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ABSTRACT

Remote and underserved communities do not attract telecommunication companies because of their low income, remote location, and limited capacity. This chapter discusses the challenges small communities face when developing their own Wi-Fi network, even when an investment is made. In particular, this chapter examines the technical, social, and economic challenges faced by the community of Chapleau (Ontario, Canada) while building its Wi-Fi network. The project adopted a public-private partnership in which Bell Canada and Nortel Networks funded its pilot phase. However, the project failed because of unclear and divergent goals, lack of sustainable applications, and insufficient technical skills on the part of the community. Using a change management framework, the chapter identifies key lessons learned and success factors required for public-private partnerships.

BACKGROUND

Chapleau is a small town in Ontario, Canada, with a population of 2,600 people. It is located in a remote area, which is 800 kilometers northwest of Toronto. It is recognized as a destination for hunters and anglers, naturalists and eco-tourists, and was built to provide lumber and act as a rail-

way hub. Its surrounding area is rich in mining resources such as gold, copper, and nickel. The leaders of the community planned to provide ubiquitous and wireless communications for the purpose of improving the overall economic opportunities in the area. They hoped that ubiquitous and affordable Internet access would diversify and

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reinvigorate the community through integrating it into the information economy.

In 2004, a group of community members worked to find a solution for its outdated telecommunication infrastructure and sought government funds for a large telecommunication project that could leapfrog current technology and provide Fiber-To-The-Homes (FTTH) and Fiber-To-The-Businesses (FTTB) connectivity. Chapleau is currently served by party lines, a limited dial-up infrastructure, and an overcrowded fiber backhaul. In contrast, surrounding cities are served by an advanced national telecommunication superhighway that uses fiber cables. Although unsuccessful in its bid to the government to install fiber throughout the community, the visionary work of community leaders garnered the attention of Bell and Nortel. The small community could not provide a business case for the 200-350 kilometers of fiber cable that would connect Chapleau to the nearest city or for its local loop needs.

Traditional rural communities are restricted in the provision of broadband infrastructure, as it is financially difficult for Information and Communication Technology (ICT) companies to cover the cost of extending the infrastructure to rural areas (Youtie, 2000). Chapleau leaders felt that, as in many rural communities, they were continually last in line when it came to technology rollouts. For instance, Sudbury (a community of 160,000 located three hours south of Chapleau) has had a number of telecommunications services for more than five years (such as smart phones and several improvements in broadband) that are still not available in Chapleau. In addition, when technology is brought to Chapleau, it is not always up to date. For example, Chapleau is still using a digital 1x cellular system, a technology that cannot support smart phone applications.

Generally, many leaders in rural and remote communities see ICTs as an important enabler of economic and social development, and view broadband as a basic infrastructure similar to roads and sewers (Albert, et al., 2010; Fernback, 2005). Communities that are left out of important

developmental infrastructures face a growing digital divide (Castels, 2006), and this concern leads remote communities to seek assistance in deploying ICTs infrastructure. The Chapleau community was well aware of the possibility of being technologically left behind. In addition, residents were eager to be included in the information society, but were skeptical on the capabilities of ICTs to solve larger economic problems. ICTs are perceived as a tool and a force for change, but seldom as a full-fledged solution to economic woes. Real answers are incumbent on the actions of individuals and organizations, not the technologies that support them, but this level of engagement by stakeholders takes time and well rooted organizations.

Infrastructure projects can be complex, capital intensive, include long gestation periods and involve multiple risks to the project participants (Agrawal, et al., 2011, p. 52). This level of complexity encourages stakeholders to seek partners for the purpose of sharing risks and costs, especially when resources are limited and where institutions are looking for 'value for money' and accountability (Agrawal, et al., 2011; Clarke & Healy, 1999; Demirag & Khadaroo, 2011; Kwak, et al., 2009). Although attractive from a resource point of view, researchers of Public-Private Partnerships (PPP) point to the complexity that arises from partnered projects, including increased risks in governance, pronounced problems in managing agreements, communication and expectations related problems, and challenges inherent in asymmetric abilities. Still, PPPs remain an important solution for many communities and private sector organizations, especially in times of resource constraints (Fischer, 2010).

Bell and Nortel extended their collaborative partnership with Chapleau (called Project Chapleau) to assist it to overcome the daunting challenge of building its own wireless network. The intention was to develop a test-bed demonstration network using WiFi within an 18-month period of time. In addition, the project was expected to provide the skills, knowledge, and resources needed

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