

TELUS: ETHICS AND CELLPHONE TOWER SITES¹

Xiaoyu Liu and Hao Lu wrote this case solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.

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Following its installation of a cellphone tower on the University of Calgary property near the West Campus Child Care Centre on June 11, 2015, TELUS Corporation (TELUS) faced protests from dozens of worried parents who petitioned to have the tower relocated.² The increase in demand for good cellphone reception in the University of Calgary area had resulted in TELUS's decision to install a new cellphone tower near the university. The tower, which had yet to be activated, was installed according to all legal protocols, but its location near the child care centre corresponded to the list of "discouraged locations" under the City of Calgary's Telecommunication Antenna Structures Siting Protocols (the Protocols).³ Facing the conflicts of interests from different stakeholder groups and considerable social media attention, TELUS and the University of Calgary needed to decide what to do with the tower.

BACKGROUND INFORMATION

TELUS and the Telecommunications Industry

All wireless service providers in Canada were regulated by the Canadian Radio-television and Telecommunications Commission (CRTC).⁴ In the Canadian telecommunications industry, consumers' choice of cellphone service was limited. Three mobile network operators owned and operated transmission facilities that covered most of the country, and approximately 90 per cent of Canadian cellphone users subscribed to one of the three largest national telecommunication companies, (i.e., Rogers Communications, BCE Inc. (Bell), and TELUS).⁵ Exhibit 1 lists the top five telecommunication companies and their business sectors and operating revenues in 2014.

Cellphone Towers

Telecommunications companies needed to install cellphone towers to provide cellphone service and to improve reception quality in a large geographic area. Because of the increasing number of cellphone users in the past 10 years, it was necessary to install cellphone towers in many residential communities to generate and enhance signals. A typical cellphone tower had electronic equipment and antennas that constantly received and transmitted signals at certain radio frequencies. The towers were usually 15–60 metres tall, as the antennas needed to be placed high enough to adequately cover the area. It usually took a year or more to complete the installation of a cellphone tower, at a cost of approximately CA\$150,000–\$350,000.⁶

Generally, the construction process of a cellphone tower comprised four steps:⁷ (1) power and phone services needed to be established before the construction of the tower; (2) equipment such as a base transmission station, transmitters, and receivers needed to be installed nearby; (3) the type of tower—lattice tower, monopole tower, guyed tower, or concealed tower—and its various requirements needed to be considered and constructed; and (4) antennas needed to be placed and activated to send signals. The higher the antennas, the better the signal and the wider the coverage.

Health Research Regarding Exposure to Radio Frequency Waves

To communicate with cellphones, cellphone towers sent out radio frequency (RF) waves, a form of energy in the electromagnetic spectrum between FM radio waves and microwaves. The waves could be dangerous, as a high level of RF waves could heat up body tissues. However, the levels of energy used by cellphones and cellphone towers were much lower than the dangerous RF level. Nonetheless, scientific research suggested inconsistent results regarding the relationship between RF exposure and health issues.⁸

The World Health Organization (WHO) and the International Agency for Research on Cancer (IARC) classified exposure to RF waves as being “possibly carcinogenic.” In 2001, the WHO and the IARC reported an increased risk of brain tumours in people who used cellphones more often.⁹ Although these researchers failed to find a consistent trend between the usage of cellphones and an increased health risk, the risk of brain tumours raised concerns for the public.¹⁰ Furthermore, RF waves could cause more damage to children than adults. The major reason for children’s greater vulnerability lay in the structure of children’s brains: compared with adults’ brains, children’s brains were smaller and more absorbent because their skulls were thinner. For example, given the same amount of exposure, the brain of a 10-year-old child could absorb two times more RF waves than an adult brain.¹¹ To address the public’s increasing concerns, the WHO made research on the long-term effects of children’s exposure to RF waves a high priority.¹² In 2015, the House of Commons’ Standing Committee on Health called for more research by the federal government and research institutions to examine the effects of radiation on children.¹³

Regulations on Telecommunication Antenna Structures

Various protocols from Health Canada, Industry Canada, the provincial governments, and the municipality regulated the placement of cellphone towers. The generally accepted requirements were documented in Safety Code 6 (SC6), which was issued by Health Canada to protect the public. SC6 regulated the maximum level of human exposure to RF fields, but allowed some flexibility for companies. For example, SC6 suggested that “in a field where technology is advancing rapidly and where unexpected and unique exposure scenarios may occur, this code cannot cover all possible situations.”¹⁴

In 2014, the City of Calgary also released the Protocols, which proposed guidelines for the minimum distance between a cellphone tower and any residential development (see Exhibit 2). In particular, the Protocols categorized locations within 100 metres of the nearest portion of a school building or the nearest classroom as “discouraged locations.”¹⁵

The procedure to implement such a protocol had its limitations. According to the Protocols, the City of Calgary would issue a letter showing its attitude of either support or non-support after evaluating a proposal for a telecommunication antenna structure. However, even if the City of Calgary issued a non-support letter when the structure violated the Protocols, it could not prevent a proponent from receiving permission from Industry Canada to install the structure. As clearly acknowledged by the Protocols, the City of Calgary “is not the approving authority for telecommunication antenna structures” (cell tower) submissions.¹⁶

In 2013, Noor Javed, a reporter with the *Toronto Star*, said that nobody in the neighbourhood wanted the cellphone towers, but “local governments have long been frustrated that they have almost no say in where a cellphone tower can go or not go, since approval fell under the jurisdiction of Industry Canada.”¹⁷

THE SITUATION

The Choice of Location

In Canada, residents had the right to protest against cellphone towers when they had concerns over the installation of the towers within their communities. When TELUS first initiated its new cellphone tower project and chose a location in a community near the university, residents in that community expressed their concerns over the tower’s appearance and objected to the installation in a consultation meeting. Bart Becker, vice-president of Facilities at the University of Calgary, said, “There were a number of aesthetic issues . . . as it [the tower]’s very close to family housing units,” referring to the University of Calgary’s residential accommodations for students and faculty members with families.¹⁸

After reviewing potential site locations, TELUS chose a new location at the University of Calgary that was 90 metres from the West Campus Child Care Centre despite protests from concerned parents. According to TELUS, the current location had two major advantages for the establishment of cellphone towers. First, the population density was very high in that area. Second, students and faculty members had a great need for high-quality signals. As indicated by TELUS’s spokeswoman, Liz Sauve, “It’s critical that we relocate it [the tower] to ensure that students, staff and visitors to the campus have wireless service. . . . They need to stay connected, not only to study and make phone calls home, but also in the case of an emergency. . . . The current location was the only best option.” Sauve further announced, “Our sites come hundreds, if not thousands, of times below what’s deemed safe by Health Canada . . . because they are low-powered.”¹⁹

PARENTS’ CONCERNS

The location of the tower was 90 metres from the West Campus Child Care Centre, and the centre’s nearest playground was only 84 metres away.²⁰ The parents of children in the centre included professors and students and students along with medical doctors.²¹

After they received notice of the activation of the cellphone tower, the parents had expressed concern. They had not been consulted or notified of the tower prior to its construction. They organized parents’ meetings at the child care centre and drafted pleading letters, calling for attention from the City, the university, and the media. In their outreach, parents mentioned that the scientific uncertainty regarding the safety and health issues brought about by cellphone towers was an ethical issue if the tower was placed so closely to young children, a group of particularly vulnerable stakeholders.²²

As listed in the City of Calgary’s Protocols, a public consultation meeting was required only when residential properties were situated within a 300-metre radius of a proposed telecommunication antenna structure. The current location did not meet this requirement; hence, a public consultation meeting was not required.²³

The university’s representatives asserted that the university had made every possible effort to locate the cellphone tower “as far away from the Child Care Centre as possible.”²⁴ Before the establishment of the tower, the University of Calgary had consulted the City and obtained approval for its proposal.²⁵

Many parents, who were well educated and understood the potential risk, were concerned for their children’s health, especially when the tower would emit RF waves 24 hours a day and seven days a week. One mother said,

“We don’t have a problem with what it looks like. It’s a tower. We have problems with what it’s doing, potentially, to our children who are right here.” She added, “Even if the tower is legal, it’s not ethical.”²⁶ Another stated, “It is bad public relations. You will have a lot of parents with advanced education pushing back very hard.”²⁷ In a letter sent to the Canadian Charger, another mother asserted, “If they need to put ‘it in my backyard,’ then at least they could put it further than 84 metres away (the West Campus is mostly empty land).”²⁸

Given the controversy over the placement of the tower, what should TELUS and the University of Calgary do? What choices did TELUS have in this situation? What were the costs and benefits associated with the different choices? Was the socially responsible way the best way of addressing the situation?

EXHIBIT 1: FIVE BIGGEST COMPANIES IN CANADA'S TELECOMMUNICATIONS INDUSTRY (2014)

Company	Market Share (%)	Subscribers (Millions)	Operating Revenue (CA\$ Millions)
BCE Inc. (Bell)	27.9	Wireless: 8.1 High-Speed Internet: 3.3 Television: 2.6 Local Telephone Services: 7.1	\$21,042
Rogers Communications Inc.	16.4	Wireless: 9.45 Internet: 2.011 Television: 2.024 Telephone: 1.15	\$12,900
TELUS Corporation	15.9	Wireless: 8.1 Internet: 1.49 Television: 0.916 Network Access Lines: 3.2	\$12,000
Shaw Communications Inc.	7.8	Internet: 1.93 Phone: 1.375 Video: 1.957	\$878
Quebecor Inc.	5.3	Internet: 1.538 Television: 1.56 Telephone: 1.349	\$444.8

Source: BCE Inc., *BCE Inc. 2014 Annual Report*, 2014, accessed February 8, 2018, www.annualreports.com/HostedData/AnnualReportArchive/b/NYSE_BCE_2014.pdf; Rogers Communications Inc., *Rogers Communications Inc. 2014 Annual Report*, 2014, accessed February 8, 2018, www.annualreports.com/HostedData/AnnualReportArchive/r/NYSE_RCI_2014.pdf; TELUS Corporation, *TELUS 2014 Annual Report*, 2014, accessed February 8, 2018, <http://about.telus.com/servlet/JiveServlet/previewBody/5696-102-2-6257/TELUS%202014%20Annual%20Report.pdf>; Shaw Communications Inc., *2014 Annual Report*, 2014, accessed February 8, 2018, www.annualreports.com/HostedData/AnnualReportArchive/s/TSX_SJR-B_2014.pdf; Quebecor Inc., *Annual Information Form: Financial Year Ended December 31, 2014*, March 31, 2015, accessed February 8, 2018, www.quebecor.com/documents/20143/72775/QI_Notice_2014_EN.pdf/9d0ecee1-4c26-2846-cf37-4e285c139957.

EXHIBIT 2: GUIDELINES—DISTANCE TO RESIDENTIAL DEVELOPMENTS AND DISCOURAGED LOCATIONS

1. As a guideline, it is recommended that any tower proposed to be placed on a site abutting existing dwellings should be located:
 - at least three times the height of the proposed tower away from those dwellings for towers less than 15 metres in height;
 - at least 75 metres away from those dwellings for towers 15 to 30 metres in height;
 - at least 100 metres away from those dwellings for towers 31 to 45 metres in height;
 - at least 122 metres away from those dwelling units for towers 46 to 55 metres in height; and
 - at least three times the height of the proposed tower away from those dwellings for towers 56 metres or greater in height.

2. Discouraged Locations
 - Close proximity to residences (see subsection 7.6 Residential Development Setback Guidelines)
 - Ecologically significant natural lands
 - Riverbank lands
 - Sites of topographical prominence
 - Heritage areas
 - Heritage structures (unless forming an integrated part of that structure's overall design through the use of camouflaging or other hidden stealth structures, features and forms)
 - Pitched roofs (unless screened or housed to hide the antenna array)
 - Proximity to schools (towers should be no closer than 100 metres away from the nearest portion of a school building or the nearest portable classroom, whichever is closer to the proposed installation)

Source: City of Calgary, *Telecommunication Antenna Structures Siting Protocols*, November 17, 2014, accessed November 10, 2017, www.calgary.ca/PDA/pd/Documents/development/telecommunication_antenna_structures_siting_protocols.pdf?noredirect=1.

ENDNOTES

¹ This case has been written on the basis of published sources only. Consequently, the interpretation and perspectives presented in this case are not necessarily those of TELUS Corporation or any of its employees.

² Emma McIntosh, "Parents Push Back against Cellphone Tower Next to Daycare," *Calgary Herald*, July 17, 2015, accessed November 10, 2017, <http://calgaryherald.com/news/local-news/parents-push-back-against-cellphone-tower-next-to-daycare>.

³ City of Calgary, *Telecommunication Antenna Structures Siting Protocols 2014*, November 17, 2014, accessed November 10, 2017, www.calgary.ca/PDA/pd/Documents/development/telecommunication_antenna_structures_siting_protocols.pdf?noredirect=1.

⁴ Michael Geist, "CRTC Falls Short on True Wireless Competition," *Toronto Star*, May 8, 2015, accessed October 5, 2017, www.thestar.com/business/2015/05/08/crtc-falls-short-on-true-wireless-competition-geist.html.

⁵ Emily Jackson, "'Insatiable Appetite': Canada's Big Three Telecoms End 2016 with Strong Wireless Results," *Financial Post*, February 9, 2017, accessed February 8, 2018, <http://business.financialpost.com/technology/insatiable-appetite-canadas-big-three-telecoms-end-2016-with-strong-wireless-results>.

⁶ Nick Foster, "How Much Does a Cell Tower Cost?," *Airwave Advisors*, June 9, 2015, accessed October 6, 2017, www.airwaveadvisors.com/how-much-does-a-cell-tower-cost/.

⁷ "Cell Phone Tower Construction," *Tower Point Capital*, accessed October 6, 2017, <http://towerpoint.com/cell-phone-tower-construction/>.

⁸ The American Cancer Society Medical and Editorial Content Team, "Cellular Phone Towers," *American Cancer Society*, May 31, 2016, accessed October 5, 2017, www.cancer.org/cancer/cancer-causes/radiation-exposure/cellular-phone-towers.html.

⁹ "Electromagnetic Fields and Public Health: Mobile Phones," *World Health Organization*, October 2014, accessed November 11, 2017, www.who.int/mediacentre/factsheets/fs193/en/index.html.

¹⁰ The American Cancer Society Medical and Editorial Content Team, *op. cit.*

¹¹ BC Centre for Disease Control and National Collaborating Centre for Environmental Health, *2016 Review: Radiofrequency and Health*, BC Centre for Disease Control, April 14, 2016, accessed November 10, 2017, www.bccdc.ca/resource-gallery/Documents/Guidelines%20and%20Forms/Guidelines%20and%20Manuals/EH/RPS/BCCDC%20RF%20Health%20Report.pdf.

¹² "Electromagnetic Fields and Public Health: Mobile Phones," *op. cit.*

¹³ Ben Lobb, The Standing Committee on Health, *Radiofrequency Electromagnetic Radiation and The Health of Canadians*, House of Commons Canada, June 2015, accessed November 10, 2017, www.c4st.org/images/hesa-2015/412_HESA_Rpt13-e.pdf.

¹⁴ Health Canada, "Safety Code 6: Health Canada's Radiofrequency Exposure Guidelines," *Government of Canada*, June 3, 2015, accessed November 11, 2017, www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/radiation/safety-code-6-health-canada-radiofrequency-exposure-guidelines-environmental-workplace-health-health-canada.html.

¹⁵ City of Calgary, *op. cit.*

¹⁶ *Ibid.*

¹⁷ Noor Javed, "Cellphone Towers Often Unwelcome Neighbours," *Toronto Star*, June 17, 2013, accessed November 10, 2017, www.thestar.com/news/insight/2013/06/17/cellphone_towers_often_unwelcome_neighbours.html.

¹⁸ McIntosh, *op. cit.*

¹⁹ *Ibid.*

²⁰ Carol, "Cell Tower 84 Meters from Daycare at The University of Calgary," *The Canadian Charger*, August 11, 2015, accessed November 10, 2017, www.thecanadiancharger.com/page.php?id=5&a=1908.

²¹ McIntosh, *op. cit.*

²² *Ibid.*; McIntosh, *op. cit.*

²³ Carol, *op. cit.*

²⁴ *Ibid.*

²⁵ City of Calgary, *op. cit.*

²⁶ McIntosh, *op. cit.*

²⁷ *Ibid.*

²⁸ Carol, *op. cit.*