

## Chapter 105

# Cyber Behaviors in Canada

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### ABSTRACT

*The real world impacts the use of the cyber world. Two characteristics shape the Canadian cyber world: first, the bilingual nature of Canada; second and most important, the immensity of the Canadian territory and the related difficulties in physically reaching its population. Due to this situation, Canada has been at the edge of the development of cyberspace, investing major efforts in cyber-applications for the health system and for tele-education. This chapter describes the characteristics of cyber behavior in Canada and summarizes the current state of Canadian cyberspace, with a particular focus on the involvement of the government, media and entertainment, universities and hospitals, and a special emphasis on tele-medicine. Finally, this chapter describes some of the research of Canadian scientists in the field of cyber behavior. In the context of a globalized world, the experience of Canada provides a useful example for optimizing the use of cyberspaces in large territories, and facilitating interactions between different – real or virtual – communities.*

### INTRODUCTION

What makes cyber behavior in Canada different from that in other Western countries, such as the USA, the United Kingdom, or France? The Canadian real world impacts the Canadian cyber world. The reality of the Canadian cyber world is shaped by two characteristics of Canada itself:

the immensity of its territory, and the bilingual aspect of Canadian society.

With more than 9.9 millions square kilometers of land, Canada is the second largest country of the world after Russia. However, the Canadian population ranks only 36<sup>th</sup> in the world with more than 34 million people, leading to one of the lowest human population densities in the world (3.41 inhabitants per square kilometer, ranking 228<sup>th</sup>). The immensity of the physical space and

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the human need to maintain interindividual social contacts contributes to the propensity of Canadian people to use virtual tools and cyberspaces. But Canada is not the only country characterised by an immense but not densely populated space. Russia, Australia, Brazil or even, to a lesser extent, China and the USA, share this particularity. Yet, a second unique characteristic makes Canada particular: Canada is the only officially bilingual country of this size. The presence of two official and thriving communities (the English-speaking and the French-speaking Canadians), grounded in different languages and cultures, strongly impacts cyber behavior in Canada.

In the context of the use of cyberspaces, these two fundamental characteristics shaped Canadian cyber behavior slightly differently than in other places, reinforcing the wish of people to occupy those new spaces in order to keep an active exposure. Thus, in combination with the aforementioned problem of immensity of physical space, bilingualism emulated and stimulated an intensive use of virtual spaces by Canadians. Early on, the Canadian government at the federal and provincial levels, Canadian Universities, and the Canadian health care system invested massive efforts in the development of applications based on the Internet and the utilisation of the new media of telecommunication, which progressively structured into rich, self-growing yet coherent, and highly integrated cyberspaces.

Some key dates show the historical grounding of the Canadian cyber community. In 1987, a group of volunteers from the University of British Columbia (Vancouver, BC) started the .ca registry. The same year, some of Nova Scotia's hospitals initiated a program of live echocardiogram transmission, pioneering the use of tele-medicine. The first month of 1988 witnessed the registration of the first .ca domain by the University of Prince Edward Island (upeu.ca). In 1990, Canada hosted the first Internet Engineering Task Force (IETF) meeting held outside of the USA. Via the National Research Council, an agency dedicated to scien-

tific research and development, the Government of Canada supported the creation of CANet in 1990 in order to develop high-speed networks across the country. In 1993, CANet evolved into the Canadian Network for the Advancement of Research, Industry and Education (CANARIE), a Canadian government-supported non-profit corporation aiming to connect the provinces and territories of Canada with high-speed optical fiber networks. In 1998, having to face a growing demand with over 60,000 sites registered, the Canadian Internet Registration Authority (CIRA) was incorporated and became the official .ca registry on December 1<sup>st</sup> 2000. The number of registered sites has increased from 140,000 to over 1.5 million today.

In this Chapter, we will describe the present situation of Canadian cyberspace. We will then mention the particularities of recreational and official uses of Canadian cyberspace, before describing the major impact of tele-medicine, in which Canada can be considered as a leading country. Finally, we will summarize some of the research directions investigated by Canadian researchers in the broad field of cyber behavior.

## **INTERNET USE IN CANADA**

Currently, Canada is one of the leading countries in the world in terms of Internet access and Internet use. According to OECD (Organisation for Economic Co-operation and Development), in 2007 Canada held the 10<sup>th</sup> position in the world for the percentage of households with access to home computers (78.4%), before the other North America countries (USA: 61.8%, based on the last OECD data from 2003, Mexico: 22%), the former colonial powers (United Kingdom: 75.4%, France: 61.6%), or the other countries with very large territories (Russian Federation: 33% in 2006, Australia: 75%, Brazil: 24%). Despite the immensity of its territory, Canada succeeded in providing an extremely high level of access to the Internet and new technologies to its population. Indeed, in

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