

WIFI fever

Free wireless Internet service sweeps Toronto and U of T

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by Graham Longford and Rhonda McEwen

Early last September, Toronto Hydro Telecom (THT) launched a free wireless Internet service (commonly referred to as "WiFi") in the city's financial core, the first phase of a plan to blanket the downtown and, eventually, the entire city with ubiquitous wireless connectivity. In doing so, Toronto joined a growing list of cities in North America gripped by WiFi fever, as municipalities compete to attract and retain business investment, skilled workers, and tourists.

Toronto Hydro Telecom's OneZone service will be available on U of T's St. George campus later this month. While students, faculty and staff have enjoyed access to a campus wireless network in U of T buildings for several years now, OneZone will offer wireless Internet service outdoors as well, creating a zone of perpetual wireless connectivity enveloping the campus. What is driving the rapid deployment of these WiFi networks? What are the benefits? How are they changing the way we communicate, work and learn at U of T? And what, if any, are the downsides?

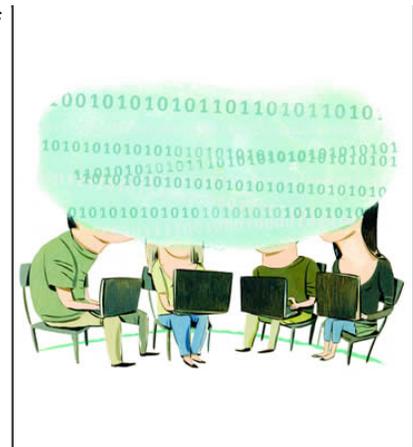


Image: Amanda Duff

Municipal WiFi – "the Electricity of the 21st Century"?

Access to high-speed communication networks is becoming essential to participating in today's information economy and society. Some have dubbed broadband wireless networks "the electricity of the 21st century," arguing they will soon be as important to the new century as electrical power grids, road and rail transportation networks and other utilities were to the previous one.

If this is the case, then Toronto has some work to do to ensure that its citizens have access to the 21st-century infrastructure they need to thrive and prosper. Today, at a typical cost of \$500 annually, only 60 per cent of Toronto households subscribe to high-speed Internet service. Fully 25 per cent of Toronto households have no Internet access at all. This "digital divide" excludes hundreds of thousands of Torontonians from enjoying the benefits of broadband connectivity.

In addition to providing ubiquitous mobile connectivity to laptop-toting professionals, wireless fidelity or WiFi technology has recently been touted as a solution to the difficulties of getting affordable broadband to every home, also called "the last mile." The economics of laying expensive fibre dissuades telecom firms from serving all areas with quality broadband access. WiFi and other wireless technologies may provide a relatively inexpensive solution to the problem. WiFi enables the creation of wireless local area networks, commonly referred to as "hotspots," that broadcast Internet signals using the same unlicensed radio spectrum as common household devices like TV remotes. Interconnected and overlapping "mesh" networks of hotspots can also be created to form a wireless "cloud" covering an entire urban area, practically eliminating the problem of the last mile.

Torontonians stand to benefit considerably from the development of a municipal wireless network. A free or more affordable service will place broadband access within reach of more low

income households in the city. Enthusiasts claim that municipal WiFi has the potential to benefit all Torontonians by, among other things, introducing more choice and lower prices for broadband consumers; providing access to civic information and opportunities for citizens to engage with politicians and each other; providing mobile Internet users with a more seamless and convenient wireless service; and attracting new investment, skilled workers and tourists to the city.

Toronto Hydro Telecom plans for its municipal WiFi network to blanket the entire city within three years. THT also claims that its WiFi Internet service will be up to 10 times faster than existing broadband services. The catch is that it will only be free for an initial six-month period, after which the service will be available on a subscription basis for \$29 per month. Who will adopt this service and what changes will it bring about?

Here at U of T, wireless connectivity has been available for several years and already we are beginning to see suggestive patterns and trends.

“Lighting up” the campus

University campus wireless networks (CWNs) are growing in popularity and have become a selling feature in the competition to attract top students. Most universities in Canada are planning or already deploying CWNs. The University of Toronto started “lighting up” the campus six years ago. Today, the UTORcwn is available via 900 access points spread across all three campuses.

U of T has deployed CWNs for a number of reasons. Increased student enrolments have placed heavy demand on universities to provide computing workspace and Internet access points. WiFi access provides more connectivity and turns new locations into student workspace without the cost of additional physical infrastructure. Individual programs see a competitive advantage in offering WiFi to prospective students. Individual departments and projects have also requested network nodes.

Judging by the numbers, many U of T students, faculty and staff have embraced campus WiFi. Today the UTORcwn has 28,000 registered users and sees peak traffic of 2,000 to 3,000 users at once depending on the time of day and year. WiFi offers students and faculty “anywhere, anytime” mobile Internet access and the ability to use one’s own laptop computer with the software, settings, bookmarks, etc., of one’s choice. WiFi also allows faculty and students to incorporate Internet resources directly into their in-class teaching and learning practices, such as accessing online documents and, increasingly, audio and video files to supplement course materials and presentations. Arguably, the availability of WiFi also helps students become accustomed to and more proficient at the increasingly mobile forms of computing and communication that will become a staple of their working lives.

OK, so WiFi on campus has great appeal; but will anyone be willing to pay for it? Toronto Hydro Telecom is betting they will. Unlike UTORcwn, OneZone will offer WiFi primarily outdoors, with coverage along major streets and in nearby green spaces and common areas. U of T’s existing WiFi network is predominantly an indoor service. Therefore, OneZone offers an attractive outdoor supplement to UTORcwn. This will certainly be appealing to many on a warm spring or summer day (so long as it isn’t raining). But would anyone be willing to pay for such a service when they can simply walk inside almost any U of T building and get the same service for free? If OneZone reaches the point where it can offer cheap residential WiFi service as well, however, it will be much more tempting.

The down side of lighting up?

Finally, for all the recent hype about WiFi, enthusiasm is not universal. Last winter, for example, Lakehead University announced that it would forego deploying campus-wide WiFi for now.

President Fred Gilbert imposed the ban out of concern for the health effects of prolonged radio frequency exposure on young adults. Other universities have examined the scientific literature, however, and have concluded that WiFi is safe.

Others worry about the impact of ever-present connectivity on teaching and learning in the classroom and on intellectual focus and dialogue at other academic meetings. Campus WiFi introduces yet another potentially intrusive and disruptive competitor for the attention of students and, let's face it, faculty too. Checking e-mail or surfing the web have become commonplace practices for many of us during lectures, workshops and meetings. Don't such minor but repeated attention deficits endanger the integrity and shared experience of sustained and engaged face-to-face dialogue — a foundation of the academy?

As a WiFi early adopter, the U of T community prefigures some of the new communicative and social practices and effects that, with the arrival of OneZone, may soon become more generalized across the city. Many will no doubt enjoy the added convenience of connectivity. Other potential benefits include the repopulation and revival of public spaces. One wonders, though, about how WiFi might compound the deficits of attention towards those directly in front of us — family, friends, neighbours — already brought about by cell phones, BlackBerries and the like. As with all new technologies, we need to attend to what we stand to lose, as well as what we gain by them.

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