

BACKGROUND

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Saskatchewan! Connected?

Why “free” public Wi-Fi may be
the silliest public policy we have

By David Seymour

Introduction

“...the act of governments giving away private goods eventually erodes the quality of what is given and leads to shortages.”

Free wireless internet is available at a coffee shop, business, restaurant, study hall, hotel lobby (even a park bench) near you!

Saskatchewan! Connected links residents and visitors to the internet free of charge in the downtown and other select business districts and post-secondary institutions of Moose Jaw, Prince Albert, Regina and Saskatoon.

The service is now available in all four centres.¹

Saskatchewan! Connected is a provincial government program provided by contractor Cisco Systems under the auspices of the Information Technology Office (ITO). It originated in the 2007 Youth Summit, where Cisco reported that youth expressed a desire to be online at all times.² The ITO claims that the network is the largest in Canada, while Cisco claims it is one of the largest in North America.³

These boasts seem impressive. Saskatchewan is embracing the 21st century with mobile public internet access and, best of all, it is free at the point of consumption. While the cost of the service is practically inconsequential in the broader context of the government of Saskatchewan's budget, the service offers several lessons in public policy. In this *Frontier Backgrounder*, it will be argued that offering such a service may be one of the silliest public policies Saskatchewan has. It shows that governments ignore the role of prices at their peril, or at least the peril of their citizens, and it shows that governments should be aware of the distinction between public and private goods when launching new programs. It demonstrates that the act of governments giving away private goods eventually erodes the quality of what is given and leads to shortages. These outcomes mean that once the cost of providing the service is accounted for, a government giving away private goods can be worse than a government doing nothing. (See sidebar, page 7, for a discussion of private versus public goods.)

While neither costs nor performance data for the service are available from the provincial government budget,⁴ the public accounts,⁵ the Information Technology Office's website,⁶ its annual report⁷ or its otherwise rigorous performance plans,⁸ the practices of other public and private institutions within the area where Saskatchewan! Con-

1. Information Technology Office Web site (2009). Emphasis in original. Available online at <http://www.ito.gov.sk.ca/wireless-internet/>.

2. Cisco Media Release (2007). Available online at http://newsroom.cisco.com/dlls/global/canada/news/2007/pr_07-26.html.

3. Ibid.

4. Government of Saskatchewan (2010). 2010-11 Estimates, pp103-106.

Available online at <http://www.finance.gov.sk.ca/default.aspx?DN=edffb244-348a-4aa8-9d32-3940437923c6>.

nected wireless coverage is ostensibly available are a strong indictment of the service's quality. They do not buy into the promise of Saskatchewan! Connected, instead offering their own wireless internet services.

The public libraries of Regina and Saskatoon offer wireless internet services, as do the universities of Regina and Saskatchewan and numerous private businesses in the zones. (The Public Library of Saskatoon even goes to the trouble of listing private wireless sites in Saskatoon on its website.)⁹ Clearly, these organizations do not have as much confidence in the free public wireless service as the ITO suggests they should.

The reason free public wireless internet fails is easy to understand. If Saskatchewan! Connected really did offer reliable high speed internet in the most densely populated areas of the province, every business and resident in the area would abandon their paid connection and take advantage of it. With each additional user, the service would have to expand its bandwidth capacity until it had effectively nationalized Internet provision in its areas of operation. This is obviously not a viable option; the cost to taxpayers would be prohibitive.

Instead, there has to be some disincentive for more people to use more and more of the service, and in the absence of any kind of price mechanism, the only remaining rationing mechanism is inconvenience. While no performance data is publicly available, anecdotal evidence suggests the service is slow and unreliable. To sum up, the only way that the service can work economically is if it does not work technically.

The main purpose of this paper is to use Saskatchewan! Connected as a case study in public policy, stressing the importance of prices, the difference between public and private goods, and the role of government. In so doing, it examines in detail the economics of a government providing a service. It recommends that this particular service be reformed by having better performance reporting, charging a fee for access, and by being privatized.

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5. Government of Saskatchewan (2010). Public Accounts 2009-10 Volume 2, pp166-170. Available online at <http://www.finance.gov.sk.ca/paccts/paccts10/compendium/reports/200910Volume2.pdf>.
6. Province of Saskatchewan Information Technology Office website. Available at <http://www.ito.gov.sk.ca/wireless-internet/>.
7. Province of Saskatchewan Information Technology Office (2010). 09-10 Annual Report. Available online at [http://www.ito.gov.sk.ca/documents/ITO-Annual-Report\(2009-10\).pdf](http://www.ito.gov.sk.ca/documents/ITO-Annual-Report(2009-10).pdf).
8. Province of Saskatchewan Information Technology Office (2010). Plan for 2010-11. Available online at <http://www.finance.gov.sk.ca/PlanningAndReporting/2010-11/ITOPlan1011.pdf>.
9. Saskatoon Public Library website. Available at http://www.saskatoonlibrary.ca/index.php?option=com_content&task=view&id=414&Itemid=69.

“Free” Means Abandoning the Price System

“
[It’s] advertised as free public wireless internet, but nothing is actually free.
”

Saskatchewan! Connected is advertised as free public wireless internet, but nothing is actually free. It would be more accurate to describe the service as free at the point of consumption, which means that the end user does not pay a fee to use it. This creates a worst of all world’s situation. On the one hand, there are costs to the service. Someone, somewhere, must give up something to provide the service. At the same time, there is a total absence of price signals to co-ordinate this pattern of sacrifice and consumption. With the normal relationship between prices paid and costs incurred broken, shortages occur in the form of long waiting times for downloads and in unreliable coverage.

Figure 1. The economics of supplying free wireless internet

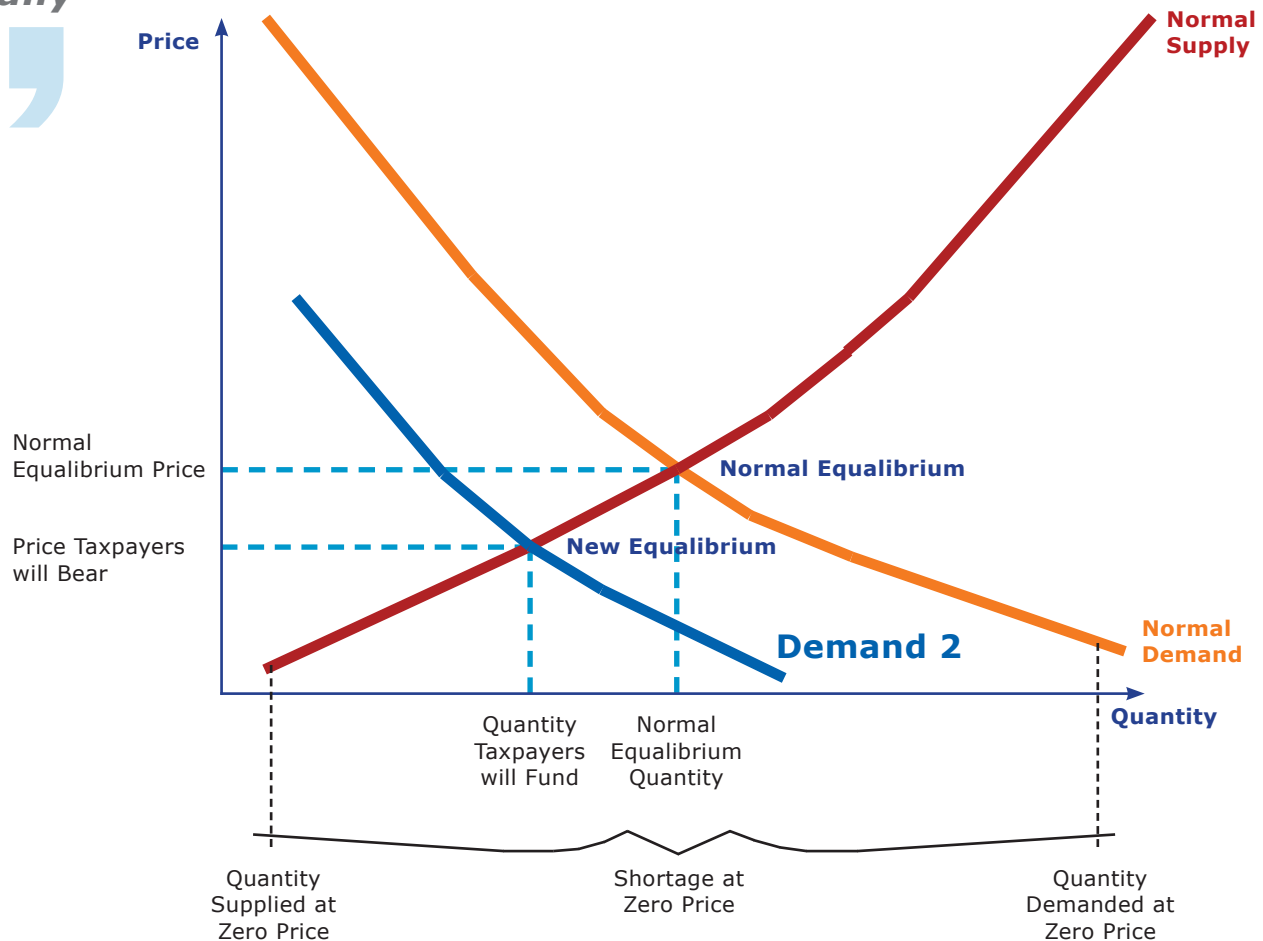


Figure 1 shows the problem with offering a service that is free at the point of consumption. The Normal Supply curve represents the normal relationship between aggregate supply and the price offered per unit for the service. As this price (vertical axis, in this case the price per unit of internet bandwidth) increases, the quantity of the service (in this case the amount of internet bandwidth) that suppliers will offer increases. Initially this price is low, but the line slopes upward as the difficulties of securing more and more of the service to bring to market increase. In the case of public wireless internet, the first few units are cheap, but as the possible locations for servers, cables and wireless terminals become scarcer, more and more expensive options must be taken to produce each extra unit of bandwidth. Without direct payment from the user, the producer has no means (a price signal) by which to decide what quantity of bandwidth to supply.

The demand curve represents the quantity of the service that consumers will demand. When the price is high, a very low quantity is demanded; as the price reaches infinity, nobody will buy any of the service. Conversely, as the price approaches zero, people will move toward demanding an infinite quantity of the service. Without making a direct payment to the producer, the user has no means (price signal) through which to understand what it costs to provide the service.

Normally, markets reach equilibrium where the supply and demand curves cross. At equilibrium, the price that consumers will pay is the same as what producers will accept, and the quantity they demand is the same as what producers will supply.

In the case of “free” wireless internet, there is a fixed quantity of bandwidth supplied at zero price.

Other Infamous Price System Abandonments and their Consequences

In essence, Saskatchewan! Connected is a price control aiming to hold artificially the price of wireless internet in certain areas at zero. Here we look at some other examples of failed price controls.

Rent control sets a maximum price for rental rates for property in a given area. It inevitably results in a price at which renters will demand a greater-than-equilibrium quantity of rental property (consumers always demand more at lower prices) and landlords will offer a lower-than-equilibrium quantity of rental property (producers always supply less at lower prices). The result is a shortage of rental housing, the exact opposite of the policy intention. It also has the adverse consequence of starving the landlords of revenue for property maintenance, leading to rundown neighbourhoods. This led one Swedish economist to comment, “In many cases rent control appears to be the most efficient technique presently known to destroy a city—except for bombing.”

Gas price controls in the mid 1970s exacerbated the 1973 oil shock. With prices artificially held down by government regulation, shortages occurred and led to long lines and occasional violence at gas stations across the United States.

Commodity subsidies in Europe in the 1970s led to the opposite effect of trying to hold prices low. By using taxpayer funds to keep prices high, surpluses of many commodities were produced, leading to massive storage facilities that people referred to with names such as the “wine lake” and the “butter mountain.”

At this price, however, the quantity that consumers will demand is practically infinite, giving rise to a shortage in the marketplace where people cannot get what they expect, even if they are prepared to pay for it.

**“Offering
any service
for free is
an illusion.**

**All services
cost some-
thing...”**

The only solution to the unhappy situation where there is not enough of the service to meet everyone’s expectations is for some other factor to ration it, to control its consumption. Although there is no performance data available for the service, anecdotal evidence suggests that the poor quality of the service drives consumers away from using it while public and private institutions in the serviced zone provide their own alternatives.

In order for supply and demand to match, the demand curve has to shift left and down until it intersects the actual quantity of internet supplied. The curve Demand 2 demonstrates this effect. It represents the prices that people would pay (if there were a price to pay) for the inferior service offered by the Saskatchewan! Connected network.

Offering any service for free is an illusion. All services cost something because all services require that resources that could be used for something else be given up for the service at hand. There really is no such a thing as a free lunch. When governments, or any other institution, attempt to give something away they do not generate wealth; they merely abandon the price mechanism and make the market inefficient.

The Problem with Governments Supplying Private Goods

Aside from being an abandonment of the price mechanism, the provision of free internet services can be seen as government providing a private good while pretending it is a public good. The economic concepts of public and private goods require another digression into economic theory, which is contained in the side bar at right.

The essential problem with governments providing internet access that is funded out of taxation revenue is that it is a rivalrous good. Once one internet user has used a certain amount of bandwidth, that bandwidth is no longer available for others. This creates a sharing problem that, as discussed in the previous section, cannot be resolved by the price mechanism because taxpayer-funded services are free at the point of consumption.

The second and related property that makes wireless internet a private good is the property of exclusion. This means that it is practically feasible for the provider to exclude non-payers from consuming the service. Wireless internet providers in airports, cafés, hotels and public

Public and private good theory holds that all goods and services have inherent properties of being either rivalrous or non-rivalrous and either excludable or non-excludable.

Rivalrous goods are goods where one person's consumption takes away from another's, so food is a rivalrous good because once a piece of food is eaten it is no longer available for anyone else. Conversely, radio transmissions are non-rivalrous because many people can tune into a transmission without affecting its availability to others.

Excludable goods are goods that can be excluded from people who refuse to pay for them or their benefits. It is easy to exclude people from consuming household electronics (theft aside) that cannot be accessed without payment. It is very difficult, however, to exclude people from the benefits of lighthouses.

When putting rivalry and exclusion together, there are two logical combinations:

- Private Goods—excludable and rivalrous (e.g., food)
- Public Goods—non-excludable and non-rivalrous (e.g., lighthouses)

No real-life goods are quite 100 per cent, or 0 per cent, rivalrous or excludable. (Passing your cursor over the map at <http://goods.fcpp.org> will reveal examples of real goods.)

These classifications have important public policy implications such as the following:

- Governments should not be involved in private goods because their excludability means they can be funded privately, and their rivalry creates sharing problems if governments try to allocate them politically.
- Governments may have a role in providing public goods because their non-rivalry makes them easy to share, and their non-excludability means people may take the benefits and refuse to pay unless they are taxed. (However, economist Ronald Coase famously pointed out that many lighthouses have been built privately so government action is not essential to provide public goods).

areas the world over make use of software that collects payment in return for the use of their network.

By contrast, national defence is a public good, and governments play a constructive role in providing it. Unlike internet access, national defence is a non-rivalrous good because one person's enjoyment of it does not take away from another's. National defence is also non-excludable because a secure country benefits everyone equally, making it fair to make all people pay for defence through their taxes.

“As a private good, wireless internet is the worst possible candidate for government provision.”

As a private good, wireless internet is the worst possible candidate for government provision. Its property of rivalry generates a sharing problem, while its property of exclusion allows for direct charges for its usage, making it unnecessary for governments to fund the service through general taxation.

One objection to treating wireless internet access as a private good and charging for it is that low-income people might be prevented from accessing it because of its prohibitive cost. The answer to this objection is that, first, accessing wireless internet requires the possession of a wireless device, which suggests the user is not disadvantaged to begin with. Free wireless internet, even if it were practical, would be better described as middle-class welfare because it is a government benefit that requires recipients to have a non-trivial amount of wealth before they can access it. As free wireless is currently practised, it is already an inequitable situation because people without the means to pay other providers are left with an inferior service. Finally, if there are inequality issues, it is more efficient to solve them at a higher level through the tax and benefit system, rather than distort a large number of small markets such as the wireless internet market. This last observation is supported by economist Gregory Mankiw's survey of economists, which found that 84 per cent of professional economists agree with the proposition, "Cash payments increase the welfare of recipients to a greater degree than do transfers-in-kind of equal cash value."¹⁰

10. Mankiw, G. (2008). Principles of Economics: Fifth Edition, South-Western Cengage Learning, Mason, OH, p.35.

Figure 2. How the properties of rivalry and exclusion combine to give public and private goods¹¹



Exit Strategies

This paper has argued that the current policy of providing free wireless internet in the downtown areas and major tertiary campuses of Saskatchewan is a policy folly. It has as of yet unknown but very likely poor results at a cost to the taxpayer. That cost is also unknown. Even the most basic economic analysis has shown that the market for wireless internet cannot function efficiently without prices and that wireless internet, as a private good consumed by wealthier Canadians, is not a suitable candidate for taxpayer-funded provision. The government should see the Saskatchewan! Connected initiative as a policy failure and seek to rectify it.

11. An interactive version of this graphic is available online at <http://goods.fcpp.org>.

What follows are three suggestions in the order of the increased benefit they would provide and the political will required to bring them about.

“Privatization would also introduce the profit motive... to serve customers better... to expand service...”

First, the government should demand network performance data from the ITO. This data should be easily obtainable from a technical perspective. Simply measuring the number of connections made, the amount of data transmitted, and the average bit rates (internet speed) along with the costs of providing the service would be a big improvement on the current absence of any publicly available information about the performance of this policy. It would allow the government to compare the cost and quality of the service to what consumers normally expect from modern internet access.

Second, the government should acknowledge that it is technically feasible to charge for wireless access, that doing so would better align supply and demand and reduce shortages and poor service and would be a more-just policy than requiring all Saskatchewan taxpayers (including those who already purchase wireless internet from cafés, hotels and cellular networks) to fund this service.

Third, the government should look at removing the network from the ITO, making it a separate entity or entities and privatizing it (or them). Doing so would remove an expense from the government’s books, which have been under pressure and which have narrowly avoided deficits in recent years. Privatization would also reintroduce the profit motive to wireless internet, motivate the provider(s) to serve customers better, and to expand service in capacity and/or coverage area if warranted.

Conclusion

Saskatchewan! Connected is not a material policy issue for Saskatchewan. The total appropriation to the ITO is \$18,348,000 in the 2010-2011 budget, or around \$18 per resident or \$30 per taxpayer.¹² The free public wireless component of this budget is not even listed in the ITO accounts, which suggests it is likely trivially small. Nevertheless, mediocre public policy should not be tolerated on any scale. Government should implement the best and most efficient policy decisions at all times, and this paper recommends that the government apply performance measurement, pricing and, ultimately, privatization to the network.

However, beyond material considerations, there are several lessons in principle that can be taken from this policy analysis.

Prices are essential to the functioning of any market. Without prices, supply and demand can only be matched by lineups, corruption and the tolerance of inferior service levels, all of which have deadweight losses and make the economy less efficient at producing the wealth we desire from it. Income equality concerns are better met by using the tax and transfer system to equalize income rather than by distorting a multitude of markets such as the market for wireless internet in public places.

Governments have a useful role to play in providing public goods because all citizens evenly share the benefits of such goods, and it is impractical to target any particular individual for payment of such goods. However, when goods are rivalrous and excludable, they are private goods. Governments should not attempt to provide such goods with taxpayer funding, as the rivalrous nature of such goods will lead to sharing problems where it is not clear who should get how much of a finite good. In addition, because it is practical for private producers to charge consumers based on their use of a private good, it is not necessary to fund such goods out of general taxation.

Limiting its activity to providing public goods and acknowledging the importance of price signals are two courses that would have better served the people of Saskatchewan had government considered them when implementing public wireless internet policy. Following these courses will lead to better public policy in the future.

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12. Government of Saskatchewan (2010). 2010-11 Estimates, pp103-106. Available online at <http://www.finance.gov.sk.ca/default.aspx?DN=edffb244-348a-4aa8-9d32-3940437923c6>.

FURTHER READING

June 2010

Saskatchewan's Commercial Crown Corporation Dividend Policy<http://www.fcpp.org/publication.php/3309>

November 2010

Having It Three Ways<http://www.fcpp.org/publication.php/3480>

About the author

David Seymour directs the Centre's Saskatchewan office. He holds degrees in Electrical Engineering and Philosophy from the University of Auckland, where he also tutored Economics. After working as an engineer in New Zealand, he is applying his passion for sound policy analysis to policy issues on the Prairies. In his first two years working for the Frontier Centre, David has carried out extensive media work, presenting policy analysis through local and national television, newspapers, and radio. His policy columns have been published in newspapers in every province as well as the *Globe and Mail* and the *National Post*. David has produced policy research papers on telecommunications privatization, education, environmental policy, fiscal policy, poverty, and taxi deregulation. However, his major project with the Frontier Centre is the annual Local Government Performance Index (LGPI). The inaugural LGPI was released in November 2007 and comes at a time when municipal accounting standards in Canada must improve if the municipal government sector is to reach its potential as an economic growth engine for Canada.


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