8-5-2016

No, broadband and garbage collection aren't public goods. Here's why they might require regulation anyway

Louis D. Johnston
College of Saint Benedict/Saint John's University, ljohnston@csbsju.edu

Recommended Citation

Johnston, L.D. 2016. "No, broadband and garbage collection aren't public goods. Here's why they might require regulation anyway." *MinnPost,* August 5, 2016. https://www.minnpost.com/macro-micro-minnesota/2016/08/no-broadband-and-garbage-collection-aren-t-public-goods-here-s-why-the.

MINNPOST

No, broadband and garbage collection aren't public goods. Here's why they might require regulation anyway

By Louis D. Johnston | 08/05/16

MinnPost photo by Corey Anderson

In an unregulated market, too many providers will enter the business since it's easy to get a truck and start hauling refuse — clogged alleyways could be the result.

"It's been an interesting summer for an amateur economist, watching government decide to supply things that pretty clearly aren't public goods," wrote Lee Schafer in Wednesday's Star Tribune. The column, titled "It's Amazing What We Now Call A Public Good," listed the new Vikings stadium, garbage collection in St. Paul and Bloomington, and subsidies for broadband service as examples.

Schafer noted, "I may have missed it when I went looking through the list of 'market failures' published in my handy economics reference book, but it was hard to come up with one that seemed to apply here."

Unfortunately, Shafer's book *is* out of date — economists no longer make a sharp distinction between private and public goods and their relation to market failure. Rather than being separated by a bright line, private and public goods lie on extremes of a spectrum, with many varieties of goods in between that involve both markets and collective action of other kinds — including government policies.

This shift in economists' thinking is important when we discuss public policy issues such as subsidizing broadband for rural Minnesota or setting up garbage collection in Minnesota's metropolitan areas. (I'll leave stadiums aside; they are in a category of their own and there is a gigantic economic literature on this topic.)

Rivalry and excludability

Economists no longer make a clear distinction between public goods and private goods. Rather, they are extremes on a continuum of goods that is determined by two concepts: **excludability** and **rivalry**.

Excludability measures the extent to which it is easy to prevent nonpayers from consuming a particular good. For example, if someone is selling slices of chocolate cake, then only those who pay for a slice can eat it and thus the cake has a high degree of excludability.

Rivalry refers to the degree to which the consumption of a good by one person diminishes its availability for others. A slice of cake, for instance, is rival since if I eat some of it that leaves less for someone else to enjoy. By contrast, the *recipe* for the cake is a non-rival good. I could use the recipe to make the cake and so could you — as well as your neighbor Mabel. One person (or a thousand people) making the recipe does not use it up.

Neither of these concepts is absolute; rather they lie on a spectrum of excludability and rivalry ranging from completely excludable and rival to not excludable or rival at all. By putting these concepts together, we can more clearly think about the variety of goods that societies must provide and allocate among their members. The chart below does this:

		Degree of rivalry	
		High	**Low**
Degree of excludability	**High**	Private goods *(Smartphone)*	Club goods *(Copyrighted computer software)*
	Low	Commons goods *(Radio spectrum)*	Public goods *(National defense)*

Let's start in the upper left corner of the picture. Private goods have both a high degree of excludability and a high degree of rivalry. This describes most of the stuff you and I purchase such as smartphones, sandwiches, and shirts.

Markets work well for private goods. But, as soon as we move away from private goods we start to see market failures that vary widely in the degree of the failure and the need for collective action.

So, let's move to the lower left corner and consider an old technology, radio. Radio broadcasts and reception rely on electromagnetic spectrum, and there is a limited range of spectrum within which broadcasters can operate. In the early 1920s, radio stations clashed over who could use particular bands of spectrum — resulting in overlapping transmissions and garbled broadcasts. In other words, there was a high degree of rivalry in use of the spectrum, but since anyone with a transmitter could broadcast there was a low degree of excludability.

The result was market failure. Rather than taking over broadcasting (as was done, for example, in Great Britain), Congress responded by creating the Federal Radio Commission in 1926; this became today's Federal Communications Commission (FCC) in 1934. The FCC continues to allocate spectrum among private radio broadcasters, cell phone service providers, and anyone else who wants to use it.

It's a similar problem for garbage collection. In an unregulated market, too many providers will enter the business since it's easy to get a truck and start hauling refuse — clogged alleyways could be the result. One option would be for a town to set up a municipal garbage service (the British route from the radio example above), but another option is to carefully regulate the number of haulers and the conditions under which they operate.

Now, let's return to the private goods area of the diagram and move to right. Here we have what economists call club goods. These are goods that have a high degree of excludability and a low degree of rivalry. For instance, consider copyrighted computer software. If you want to use Microsoft Windows, you must purchase a license from Microsoft and therefore this is good has a high degree of excludability. However, if you use the program that doesn't affect my ability to use it or anyone else's. Thus, Windows has a low degree of rivalry.

This situation generates its own type of market failure. In the radio example, too many providers start jumping in and the market can't handle it. Here, the opposite happens: the number of providers shrinks, often to a single provider. And, in these types of monopoly situations, sellers tend to charge higher prices and provide less of the good than would a competitive market.

Broadband internet is another good example of a club good. Fiber optic cable has virtually limitless capacity, so there's a very low degree of rivalry in providing broadband. However, there are high fixed costs to set up such a network, and so a single provider (or perhaps a small number) will provide the service. The price charged to consumers will need to be high enough to cover these costs, leaving many customers without the service even though it might be socially beneficial for them to be connected.

Here we go again: one possibility would be for the government to step in and build its own broadband network, or they could subsidize private providers to extend broadband beyond the limits of what private markets deem profitable.

Over in the bottom right corner are public goods. These are goods that are neither excludable nor rival. National defense is the classic example of a public good. There's no incentive for the private market to provide protection to everyone; rather, you'd probably observe private militias protecting enclaves whose residents pay for the privilege. (If you want to see how this might work, take a look at this Fry and Laurie sketch.) So, as a society, we collect taxes and provide defense to everyone regardless of how much they pay in taxes.

This is the challenge for public policymakers. There are few bright lines to differentiate the public, the private, the commons, and the club goods our society needs and wants. When markets do not provide needed goods, citizens must act through mechanisms outside of markets, such as private organizations (for instance, non-profits) or through their local, state, or federal governments. These are the choices our communities face, not a simple distinction between public and private.

I thank Susan Riley for extensive help with this column.

ABOUT THE AUTHOR:

Louis D. Johnston

Louis Johnston writes Macro, Micro, Minnesota for MinnPost, reporting on economic developments in the news and what those developments mean to Minnesota. He is Joseph P. Farry professor in the Eugene J. McCarthy Center for Public Policy and Civic Engagement at Saint John's University. He is also a professor of economics at the university.

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