Centre for International Governance Innovation

Digital Policy Hub

Digital Policy Hub – Working Paper

Who Benefits Most from Data? Levelling Accessibility in Vital Markets

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About the Hub

The Digital Policy Hub at CIGI is a collaborative space for emerging scholars and innovative thinkers from the social, natural and applied sciences. It provides opportunities for undergraduate and graduate students and post-doctoral and visiting fellows to share and develop research on the rapid evolution and governance of transformative technologies. The Hub is founded on transdisciplinary approaches that seek to increase understanding of the socio-economic and technological impacts of digitalization and improve the quality and relevance of related research. Core research areas include data, economy and society; artificial intelligence; outer space; digitalization, security and democracy; and the environment and natural resources.

The Digital Policy Hub working papers are the product of research related to the Hub's identified themes prepared by participants during their fellowship.

About CIGI

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Partners

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Key Points

- The unaffordability of basic goods and services is of growing concern for individuals and policy makers around the world.
- As talent in big data management and analytics becomes more heavily concentrated in global corporations, there is a widening gap between the real-time analytical capabilities of large corporations and those of citizen groups and governments, causing corporations to disproportionally benefit from the use of citizens' data.
- Limitations in the capacity of modern-day legal systems, particularly with regard to timeliness and accessibility to consumer groups, make legal solutions largely impractical in addressing data governance issues.
- In the midst of systemic challenges and rapidly advancing software development technologies, governments may find value in increasing data disclosure policies and launching in-house digital infrastructure projects targeted at making data access more equitable.
- An example of consumer-empowering digital infrastructure is a price comparison website (PCW); this technology allows consumers to compare a range of competitors' products with a uniquely designed search engine, thus simplifying the purchase decision process.

The Growing Gap in Behavioural Data

Moving into 2025, a Global News poll showed that the top issues on the minds of Canadians were (in order of importance) inflation and the cost of living, health care, housing, immigration, and the economy and jobs (Lord 2024).

These issues are also among the top concerns for citizens of most countries around the world today (Gebrekal 2025). Despite the implementation of long-term projects, such as infrastructure development and medical training programs, accessibility is limited and delivery is fragmented (Froonjian and Garnett 2013).

Equitable access to information is key to ensuring equitable distribution of public resources and the availability of the first step to competitive consumer prices. In traditional, commonly taught academic models of perfect competition for economics and public policy, a key underlying assumption is that users have equal access to flawless information, which is seldom true.

The massive expansion and popularity of the internet, for example, has broadened and increased the availability of data sources, but that alone does not ensure that information is accessible to individuals. Private industries, meanwhile, have leveraged search engines, online marketplaces and social media platforms to harness vast quantities of information for their own purposes and, where expedient, rendered it useful to ordinary people at the expense of their behavioural insights.

With the rise of digitalization, consumer data has become a key component in the construction of profit models. In business literature, consumer data is in effect a "currency" and a "commodity," and the emphasis is on its potential for profit, especially to large firms with high levels of information technology (IT) talent (Brynjolfsson and McElheran 2016; Dadwal et al. 2021; Ducuing 2024).

Businesses (especially large ones with concentrated IT talent) know their customers better than ever before, and make profit-maximizing decisions based on the behavioural insights gleaned from the data they collect. This is contrary to the aforementioned assumption behind perfect competition, whereby consumers' independent, rational decisions drive markets to price efficiency. If the market is indeed designed to maximize the revenue generated from consumers, businesses are encouraged to exert monopoly power, despite the illusion of choice for consumers.

The discrepancy in big-data accessibility between corporations, consumer groups and policy makers is widening with each technological revolution; this is particularly concerning in industries associated with goods and services vital to people's survival, such as food, housing and health care. Unaffordability of these necessities results in greater levels of poverty, domestic violence and civil unrest; it also hinders progress in health, education and child welfare (Attanasio, Cattan and Meghir 2022; Wilkinson 2004). Policy makers around the world have criticized the monopolization of data by big business as being undemocratic, yet these policy makers have nonetheless struggled to impose limits on them, and the lack of agility, speed and functionality of the legal system in redressing abuses has exacerbated the situation (Safadi and Watson 2023).

Legal Competition Reform

Liberal democracies have long prided themselves on building competitive markets by passing robust antitrust laws, by inhibiting rent-seeking behaviour and by advocating for small businesses. Different measures have been taken to proactively protect consumers' rights, through consumer protection laws and merger oversight, and retroactively, through litigation, but the effectiveness of many of these measures has been called into question (Baer 2020; Rigertas 2014).

Consumer-level legal disputes require a heavy investment of time and resources, and thus many such disputes are ultimately never heard in court (Everson 2024). And although the opportunity for legal redress is crucial to reform, there is also a pressing need for policy makers to step outside of the legal mindset when considering proactive solutions to address monopoly power.

Today, more than 100 years after the creation of the first antitrust legislation, the top issues facing liberal democracies are deeply intertwined with power struggles over the control of data (Frick 2018). Privacy laws rightly limit access to personal data, yet there are non-personal metrics, such as real-time pricing, that can be mined for a variety of purposes, including as evidence in anti-trust investigations, with limited risk to consumers. By and large, however, governments have stood back and simply accepted that they are unable to measure and manipulate data with the speed and agility of

corporations; thus they have been unable, or unwilling, to transfer much, if any, of the value of real-time analytics to the public.

The value of public data is being captured almost entirely by private businesses; much of this is accomplished through targeted advertisements and price segregation, the social cost of which is felt most deeply by the most vulnerable members of society. As well, aspects of government budgetary processes are increasingly being consigned to private consultancies, many of whom provide data collection, aggregation and decision-making services that public servants feel incapable of performing in house (Thompson 2023).

Alternative Paths for Governance

This raises questions about the evolving role of government in the twenty-first century, and its ability to adjust to rapid technological change. If asymmetries and discrepancies in the availability and use of data create power imbalances that harm consumers in vital markets, to what extent should the government be involved in addressing those discrepancies in real time?

In discussions on data governance, policy makers tend to approach questions of corporate data use in one of three ways: ban it, regulate it, or allow it to be left unchecked. The problem with these types of regulatory approaches, though, is that they assume that compliance will come from fear of enforcement, while in reality the situation is much more complex. There are many barriers to consumers seeking legal redress, and companies keep that in mind when planning corporate strategies. Knowledge and social power are weighted in favour of big data collectors, and data laws favour private interests (Wong, Duncan and Lake 2024). But there is another, often overlooked, option: to create and promote competition in the collection of data itself.

In practice, this looks like data disclosure policies and intuitively designed public digital infrastructure to help democratize information asymmetries online. A timely example includes wage transparency laws, growing in popularity globally, which require businesses to disclose salary information previously inaccessible to the public (Cullen 2024).

In Canada, there are significant opportunities to be derived from governments taking a lead in market regulation, data collection and consumer protection, and including some benefits could be realized by reorganizing information already accessible to the public. This is especially relevant today as consumers' greatest challenge in the information economy is not often an insufficient quantity of information, but direction in how to best sort through it.

Advances in artificial intelligence (AI) have made the building of software cheaper and more accessible to non-technical designers, thus giving low-budget public enterprises greater opportunity to build an interactive presence online (Sauvola et al. 2024). Additionally, if government organizations had greater stake in building digital infrastructure, that would also increase their capacity to use in-house experts and to inform regulatory decisions independently, with less corporate

interference. Over the long term, the cultivation of agile technical talent in the public sector would also attract policy makers with the mindset, knowledge and practical ability to govern data collection and distribution in the future.

Case Study: Publicly Run Price Comparison Websites

A PCW is a website that simplifies consumers' search processes by enabling them to easily compare similar products and their various features by price. PCWs are widely used in the airline industry, for example, to allow consumers to easily find the best price within a range of flights to the same destination on the same day.

Easy access to this comparison information saves consumers time, reduces power imbalances built into algorithmic search engines and increases competitive pressure on corporations in their pricing of both online and in-person purchases (Kavoura, Sakas and Tomaras 2017). PCWs are particularly effective for goods and services involving high-complexity decisions or for those for which consumers tend not to "shop around," such as energy and financial services (Competition and Markets Authority 2017).

PCWs have been used for consumer protection, notably demonstrated in several studies on the FuelWatch and FuelCheck platforms run by the Australian state governments of Western Australia and New South Wales. The public benefit of access to this type of data is reflected across multiple stakeholder groups:

- Consumers can use the platform's mapping software to display the prices at gas stations near their current location, so they can do comparisons before leaving home.
- Policy makers at all levels can leverage real-time, locally pinpointed gas pricing data for a variety of purposes, for example, to track the prevalence of monopolistic behaviours or to inform decisions on macroeconomic policy.
- Independent researchers, academics and civil litigation attorneys can easily download data on all gas pricing history recorded on the platforms, enabling them to uncover long-term trends, including collusion and price discrimination (Eckert 2011).
- Individual companies and groups of companies are discouraged from engaging in pricing practices that are not in the public interest.

David P. Byrne, Jia Sheen Nah and Peng Xue (2018) provide a detailed breakdown of the Australian states' data collection practices; these include requiring that oil companies report prices several times per day and placing restrictions on price changes between such reports.

Despite the significant public benefits of transparent PCWs, economic research points to consumer risks associated with businesses running them. Miklós Antal (2020) and David Ronayne (2021) independently concluded that the existence of profit-seeking price consumer websites raises prices for all consumers. These sites often take some form of commission on every purchase, promote certain brands and spread pricing misinformation.

Limited work has been done on public sector PCWs, though the World Bank published a detailed report of best-practice case studies in 2013 for government-run PCWs in the financial services sector. They found evidence from Canada, Hungary, Ireland, Malaysia, Mexico, Norway and the United Kingdom that publicly managed PCWs "increase market competition" through "lower prices and improve[d] product offerings" (World Bank 2013). Among the examples was a Canadian PCW, a version of which is still available for use today.[1] The Canadian government spent US$300,000 on designing and building the tool in house, a significant one-time investment in consumer protection that has stood the test of time.

Potential Directions for Price Comparison Technology in Canada

Many of the above-mentioned studies concluded that there are strong benefits to the use of PCWs in complex industries and/or those involving frequently purchased products, such as insurance and gasoline. None, however, mentioned small-purchase or fragmented industries, such as grocery retailing (Competition and Markets Authority 2017; Eckert 2011). Notably, the recommendations were made before the widespread use of AI, for instance, as a means of front-end engineering, data scraping and user-experience design. Access to these technologies, and the data needed to power them, enables governments to test consumer software, including PCWs, at costs far lower than in the past.

Additionally, consumer items such as groceries make up a significant portion of household budgets and are implicated in the cost-of-living crisis facing families across Canada today (Lord 2024). In recent years, the grocery industry has received widespread criticism from the Competition Bureau and think tanks alike, which have noted that, owing to mergers, only five corporate entities control nearly 80 percent of the Canadian market share (Bester and Nixon 2024).[2] While there are limits to the usefulness of information, however robust, for consumers in a physically monopolized market, websites for consumers, policy makers and researchers to track pricing data are valuable tools for a variety of purposes, including to determine collusion among retailers and/or producers.

Consumers can already see the prices of items on grocery shelves in individual stores and manually collect and compare the prices of those items, but that is hardly practical for most people. Meanwhile, grocery chain executives are free to use whatever customer, location and behavioural data they can gather from consumers — buying the food they need to survive — to build their profit strategies.

In light of that power imbalance, and recent stresses in the food supply chain, the government of Canada should consider information disclosure enforcements and digital products to increase price transparency for public benefit. PCWs may have

1 See https://itools-ioutils.fcac-acfc.gc.ca/ACT-OCC/SearchFilter-eng.aspx.

2 See https://competition-bureau.canada.ca/en/how-we-foster-competition/education-and-outreach/canada-needs-more-grocery-competition.

never been tested on food pricing in a public context before, but their potential to proactively cut consumer costs in the long run, either through market pressure or data support for antitrust legislation and litigation, should not be overlooked.

Conclusion

The number one issue for Canadians (and people in many other countries) going into 2025 was "inflation and the cost of living," the effects of which are felt acutely by the most vulnerable (Lord 2024; Gebrekal 2025). As the cost of living has risen to crisis levels, so has the discrepancy between the data power of citizens and firms. Yet there are many ways that publicly managed data platforms could shift the power of big data in citizens' direction, and movement in that direction is urgently needed.

Recommendations

- **Embrace the democratization of public information:** Profit-seeking firms should not be allowed to capture most of the social value created by data aggregation. It is the responsibility of policy makers to assess and mandate data disclosures where relevant so that citizens can make use of it for the common good.
- **Increase public software building capacity:** The concentration of tech talent in the private sector not only impacts the technical capacity of governments to conduct day-to-day operations, it also hinders their ability to craft relevant legislation without corporate interference.
- **Build, test and diversify public PCWs:** There is strong evidence supporting their social value, and the rapidly dropping cost of web development tools would encourage new approaches to building public software, and create more opportunities for experimentation and discovery in development processes.
- **Continuously evaluate potential uses for new public software:** Since the role of government is to serve the public good (however that may be defined), government bodies need to be actively involved in the development of digital infrastructure that prioritizes citizens' welfare over corporate interests.

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