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CAN BUSINESS-TO-GOVERNMENT DATA SHARING SERVE THE PUBLIC GOOD?

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Abstract

Data is considered to be the world's biggest business, leading some to affirm that it can be considered a commodity. Access to data has been essential to promote competition and innovation between different stakeholders, including the public sector. The European Union has enacted a series of Regulations that overlap and interconnect with the main objective of enhancing the sharing of data from all parties. In this context, this research aims to explore them and analyze if they indeed assist business-to-government data sharing.

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Keywords

Data sharing– Business-to-government (B2G) – Competition and innovation – European Union regulations – Data as a commodity

1. Introduction

In recent years, data has become one of the most valuable assets in the world, driving innovation and competition. For example, tech giants like Alphabet and Facebook have user data that accounts for $1.4 trillion of their combined market value (European Parliament, 2021). When multiple entities can use data at the same time (known as non-rivalry), its value increases without losing quality, but this often benefits big firms more. This creates an imbalance in the market as these firms hold onto large amounts of data and share very little with others, such as the public sector.

One big thing about data sharing is when companies and governments exchange info, known as business-to-government (B2G) data sharing. It's not new, but now it's more about sharing cool new datasets from business operations, not just dealing with rules

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and taxes. This kind of sharing could make markets fairer and help new ideas and competition. The European Union's 2019 report on "Competition Policy for the Digital Era" talked about how sharing data with smaller firms could help them compete with the big data companies (EU Commission, 2019).

In this context, sharing data between companies and governments has typically been about following rules and paying taxes. But now, it's about sharing new types of data gathered through business activities. This could level the playing field in the market, encouraging more competition and new ideas by giving data to other businesses and consumers. According to the 2019 European Union report on "Competition Policy for the Digital Era," sharing data with smaller firms could make the market more competitive (EU Commission, 2019). And it's not just about making money and being competitive. The OECD says that using and sharing data could boost the economy by 0.1% to 2.5% of GDP, showing how it could change public services and decision-making, from improving healthcare and finance to making transportation, education, and infrastructure more efficient (OECD, 2019).

It's important to find a balance between protecting data and citizens' privacy and recognizing that private companies collect tons of data that often can't be used publicly, even though it's really relevant. The European Union has put in place rules to help with sharing data across different areas. These rules are still evolving, and we're still figuring out how they'll affect personal data protection. This article aims to dig into these complexities and see how the new rules will impact how data is shared and protected in the future.

2. The Evolution and Impact of Data: From Historical Burden to Modern Asset

The word "data" comes from the Latin word "datum," which was first used in mathematics in the 17th century. It wasn't until the 18th century that "data" started to be commonly used to talk about the results of investigations, setting the stage for its modern meaning: a mix of number info that forms the basis for arguments and analyses (Rosenberg, 2013).

Throughout history, people have been collecting, storing, and analyzing data to keep track of things. For example, way back in the day, folks in the Nile Basin kept records about farming to figure out how the river's tides worked and predict future crop

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amounts. But for a long time, governments and companies thought dealing with data was a hassle and didn't see much economic benefit. That all changed when computers and the internet came around in the late 20th century. This made it possible to create interactive and responsive information setups that blurred the lines between physical and digital.

The way technology has evolved, data isn't just a hassle anymore – it's become a valuable resource with many uses: as information, an economic asset, and a public good. This change could be as groundbreaking as the agricultural and industrial revolutions (Floridi, 2014). By looking at different sets of data, we can uncover detailed information about individual behaviors and predict future events like climate changes and disease outbreaks, which can improve and personalize services. With the increase in digital information, private companies have started to gather and process large amounts of data, gaining insights into consumer preferences and making big profits. This has changed the way we see data – from a hassle to a valuable asset (De Gregorio & Ranchordas, 2020).

Back in the day, people didn't think data was worth much. Storing data was seen as a hassle with little payoff. But with the rise of digital tech, data has become a valuable asset, like oil in driving economies. Just like oil, raw data needs processing to create valuable insights. For example, tech companies gather and analyze loads of user data (like preferences for leather shoes) to make profits, leading to more targeted advertising and personalized services. Another comparison likens data to capital, representing the resources that companies and technologies require to operate. Data capital is highly adaptable and can be processed by machines to power business models and technological progress. For instance, a strawberry farm might use data on weather and machinery to improve harvesting, showing the value of data in different industries.

The process of gathering, processing, and getting useful insights from data has led to big tech companies having a ton of data all to themselves. According to a report from the European Parliament, user data made up $1.4 trillion of the combined $1.9 trillion market value of Alphabet and Facebook (European Parliament, 2021). Different industries value different kinds of data based on what they need it for. For example, data about machinery, transportation, and environmental factors can be super valuable for a company that grows strawberries, helping them figure out how

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machines can make fruit collection more efficient. The more diverse and extensive the data collection, the more insights and applications can come out of it. Even though one person's data might not be worth much on its own, data from millions of people can be super valuable, especially for marketing (Sadowski, 2019).

Data monopolies rely on a data-driven network effect, meaning that the more data a company has, the better its products and services become, like behavior-based advertisements, thanks to improved recommendation systems. This creates a situation where businesses and users depend on a particular company's data collection, leading to lock-in effects that affect data distribution for the public good. Think of data monopolies as medieval fortresses hoarding data behind thick walls. Only those inside benefit, while smaller companies and public institutions struggle to access this valuable resource. Data functions as a form of capital—many technologies and organizations couldn't operate or generate value without it. Data capital, with its digital record, machine-processability, and high mobility, can be converted into economic capital and is crucial for data collection, storage, and processing infrastructure, including smart devices, online platforms, data analytics, and server farms. Driven by the logic of capital accumulation, data collection continually increases in scope and scale (Sadowski, 2019).

In this context, sharing data is a powerful way to spread the benefits of data across society. Once data is created, it can be shared and used by different people for various purposes in both the public and private sectors (Apráez, 2021). A 2019 OECD report points out several benefits of data sharing, such as making how companies work more transparent, increasing accountability, empowering users, creating new business opportunities, and improving efficiency (OECD, 2019).

This second point highlights the idea of data as a common good, which the EU has been promoting recently. This perspective sees data as a valuable resource that can benefit society, so it should be shared for further use to create new and innovative solutions for common challenges, like dealing with the COVID-19 pandemic. However, viewing data as both an economic resource and a common good that should be shared may create challenges, especially in today's data-dependent economy. This requires careful management to prevent potential misuse of shared data and calls for strong data protection measures.

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3. What is business-to-government data sharing?

Data sharing" is a term that's a bit fuzzy in its definition. The European Commission defines it as "any form of data flow or access between governments, companies, and individuals." However, scholars have their own takes on it. Some emphasize sharing of big, high-quality datasets across different industries, while excluding business-to-government (B2G) data sharing or consumer data portability (Richter, 2019). Others focus on continuous access to specific data categories, differentiating it from one-off data transfers (Feasey and de Streel, 2020). On the other hand, some take a broader approach, similar to the Commission's, encompassing any data transfer between organizations or individuals.

It's important to know that "data sharing" is different from "data access" and "data portability." Article 15 of the GDPR gives people the right to access their personal data, which empowers them. Article 20 of the GDPR, which introduced the right to data portability, was meant to boost competition by letting users switch services easily, but it's actually given more power to data subjects. In short, this study defines "data sharing" as the exchange of data to create a fairer and more efficient data environment, leading to significant economic and societal benefits. Expanding on this, we can break down data sharing into different types, such as between businesses (B2B), between governments and businesses (G2B), and from businesses to governments (B2G).

The idea behind data sharing is that it's a win-win for both the economy and society. Data is seen as something that doesn't get used up when you use it, so the more people who use and share data, the more valuable it becomes. Sharing data can break down big data monopolies, boost innovation, and help the economy grow by letting more data move through different businesses and people. According to the European Parliament, data sharing can create up to 20-50 times more value in the economy, potentially making up 0.1% to 2.5% of the European Union's GDP, depending on the type of data involved. Sharing data can also help businesses directly by expanding their market reach, giving them insights into their performance, and improving their supply chains. But it's not just about money. Sharing data can also have a big impact on the public good. For example, the World Bank showed how mobile phone location data helped trace COVID-19, predict Ebola outbreaks, and track dengue fever. Plus,

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sharing data can help expose fraud, corruption, and criminal activity through advanced data analysis.

Data sharing can be split into two main groups: voluntary and compulsory sharing. Voluntary sharing happens when entities willingly exchange data without being forced. This includes entities sharing data directly with each other through mutual agreements, as well as platforms that help with data sharing using standardized protocols and agreements (Rukanova, 2023). It also includes cases where entities donate data willingly for public or scientific use and collaborative agreements to achieve common goals. On the other hand, compulsory sharing occurs when entities are required to share data due to regulatory or legal obligations. This includes laws or regulations that mandate data sharing to ensure transparency or competition, as well as agreements enforced by regulatory bodies requiring entities to share data with specified parties. Third parties are often tasked with managing and facilitating data sharing between entities, and legal or regulatory frameworks compel entities to share data to correct market imbalances or ensure public safety, such as the Data Act.

4. Understanding the Drivers and Obstacles of Data Sharing

The existing research has looked at what makes data sharing work or not work. Most of the attention has been on scientific and government situations, but lately people are starting to look more at businesses. But lots of studies forget about outside stuff like politics, society, and money, which leads to messy research across different areas. So, we want to check out the things that stop data sharing, splitting them into three groups: organizational, technological, and environmental. Even though we look at these things one by one, they often mix together in real life.

Organizational factors are like the internal aspects that shapes how a company or organization works. This includes things like how big the organization is, its history, the relationships between people there, and the overall culture. Self-interest, the way people see the company from the inside, and what they know about the organization also really matter. Data is like the money and the connection inside an organization. So, deciding whether to share data is all about the habits and ways of thinking in the organization. If sharing data isn't a big part of how the organization works, then trying to make it happen can be tough. Also, if different groups inside the same organization,

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like bosses and regular workers, have different ways of doing things, it can make sharing data even more complicated.

One big barrier is the lack of trust between organizations. When there's no trust, they might not want to share data because they're worried it could be used for other stuff without their permission. Also, competition in the market can stop them from working together, making them think it's every man for himself and they should keep all their data to themselves.

When it comes to data sharing, technological factors like hardware and software play a big role. It's super important for organizations to have compatible systems, because different tech setups can cause a lot of issues. If organizations collect and process data in different ways, it can lead to all sorts of problems like incompatible formats, standards, and databases. Some organizations even use their own unique systems to make it hard for others to share data. It's like everyone speaking different languages and not being able to understand each other. Just like interpreters are needed to bridge language gaps, we need technological solutions (like data standards) to overcome data sharing barriers. Plus, keeping data safe during sharing is a big challenge, and it can cost a lot to make sure systems and data formats are all aligned. This cost can sometimes outweigh the financial benefits of sharing.

Environmental factors include legal, socioeconomic, and political influences. These factors are connected to organizational and technological aspects, impacting data sharing in different ways. Socioeconomic factors include societal structures, trust among citizens, and community interest. For example, in a cultural environment with more trust between citizens, data sharing will be more common. Political factors also impact data sharing, with political preferences influencing the willingness of governments and stakeholders to share data. Legislation is important, but balancing data-sharing regulations is tough. Over-regulation can create rigid conditions, while under-regulation can leave gaps that hinder data sharing. Economic factors, like market failures and a business model that makes companies depend on resources offered by other companies, can also hinder data sharing. Data monopolies and information asymmetry create a competitive environment where "data-rich" organizations are hesitant to share with "data-poor" ones. The high costs of ensuring technical compatibility and the risks associated with sharing data further discourage organizations from sharing.

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5. The European Data Strategy and the sharing of data for the public good

When it comes to businesses sharing data with the government (B2G), the EU has been working on rules to make it easier for public and private parties to exchange data. For example, they've got this thing called the EU Free Flow of Non-Personal Data Regulation, which is meant to get rid of unfair national barriers and stop non-personal data from getting locked in.

In 2020, the European Commission introduced the "European Data Strategy" to tackle the problem of companies holding back data due to trade secrets and proprietary measures. The aim is to create a single market for data, making it easier for data to flow across the EU among businesses and consumers. The plan includes legislative acts to break data monopolies and ensure that data can be used for the public good while complying with European values and regulations.

The Data Governance Act (DGA), which came into effect in June 2022, is a big part of the data strategy. It sets up a framework for private companies to use public sector data. The main goal is to build trust in data transactions, covering public and private non-personal data and personal data that's shared voluntarily. The DGA regulates data intermediation service providers, public sector bodies, and data altruism organizations, encouraging the wide reuse of public sector data for both commercial and non-commercial purposes. Data intermediation service providers act as neutral third parties that connect data providers (individuals and companies) with data users. Their aim is to make the exchange of data, especially personal data, secure and trustworthy. Data altruism organizations are like charity donation centers but for data. Instead of donating clothes or food, people and companies can donate their data to help solve societal challenges like public health or urban planning. These tools aim to build trust in voluntary data sharing, bridging the gap between the public and private sectors while protecting individual rights as outlined by the General Data Protection Regulation (GDPR).

The Open Data Directive, which came into effect in July 2019, is all about promoting digital innovation by making it easier to reuse public sector data. It mandates that important datasets should be available in machine-readable formats, so that both businesses and non-commercial organizations can use the data for creating new and

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cool solutions. However, there have been some issues with getting it up and running. Progress has been slow in member states, and like the Data Governance Act, it mainly focuses on making public data available to the private sector without requiring them to share their own data in return. This one-sided approach limits the potential benefits of data sharing for the public good.

The Data Act, which started in January 2024, aims to make sure that data is shared fairly among different companies. It encourages sharing data between small and big companies, including personal and non-personal info. For example, Article 5 lets users share data with other companies if they ask, but big tech companies can't get this data. The shared data has to be given under fair conditions. Article 4 also says that users can access and use data from their own products for free. The Act also makes it necessary for companies to share data with the public sector in special situations, which is a big change from the old rules that mainly focused on public-to-business and B2B data sharing.

Another recent regulation targets collecting and sharing data related to short-term accommodation rental services, such as Airbnb. This proposal is all about setting up a way for hosts and platforms to share data more easily. The idea is to make it simpler for local governments to put their rules into action, cut down on red tape, and help with city planning by getting all the data to line up. The rules are meant to deal with the issues that short-term rentals are causing in European cities, like higher rents and the impact on tourism. It also aims to sort out the uncertainties in the rules and the lack of data that local governments are dealing with (Scassa, 2017; Ranchordás, 2018). The proposal says that platforms have to gather and share info like hosts' names, ID numbers, addresses, and contact details. Platforms also have to let hosts say where they're renting out, so it's easier to make maps that show where short-term rentals aren't allowed. With these rules, the EU wants to find a balance between promoting data sharing and protecting competition and people's privacy, and build a strong data economy that helps society.

Despite the progress in the laws, the European Commission still needs to do more to make sure that everybody can easily share and reuse data. Right now, they're mainly focused on letting private companies use public sector data, but we need to think about making private companies share some of their data too, especially data related to connected objects. It's important for the European lawmakers to really think about

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the power balance between private and public sectors. We need strong rules to stop private companies from keeping all the data to themselves and to give the public sector access to that data. This way, we can make sure that data sharing is fair and safe for everyone, and that it benefits society as a whole.

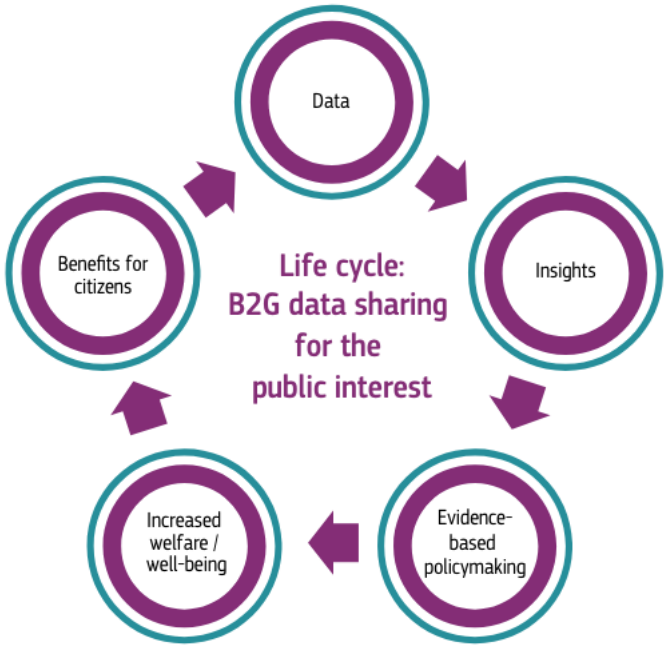

Figure 1. B2G Data Sharing For The Public Interest source: Alemanno A. Towards a European strategy on business-to-government data sharing for the public interest. Final report prepared by the High-Level Expert Group on Business-to-Government Data Sharing European Commission. 2020 Oct 16.

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6. Case Study: Business-to-Government Data Sharing in Smart Cities

Data is relevant for smart cities because it helps with decision-making, makes public administration more efficient, and tackles urban challenges effectively. It powers the cool technologies that make urban areas more efficient, sustainable, and responsive. With this in mind, this section will look into how sharing data from businesses to government can help build smart cities.

Cities are getting more and more important, with about 55% of the world's population expected to live in urban areas by 2050. As cities grow, governments are realizing that using data can help them do a better job and come up with new and targeted policies. Data from private companies like phone companies, online platforms, transportation services, and energy providers can be really useful for solving urban problems using technology. The term "smart city" is used a lot, but it means different things depending on who you ask. For this case study, we're saying smart cities are a mix of physical, digital, and human systems that are all about finding new ways to deal with the challenges of growing urban areas.

The European Data Strategy Regulations haven't shown their effectiveness yet, especially with the recent enforcement of the Data Act. The Data Governance Act introduced ways for the private sector to share data voluntarily, which could help smart city initiatives. However, there's a risk that tech companies could get access to even more data without reciprocating, creating imbalances between the public and private sectors. The Open Data Directive requires public high-value datasets to be available in machine-readable formats, allowing both businesses and non-commercial entities to use the data for smart city solutions. But the directive has been slow to implement across member states and focuses mainly on making public data accessible to the private sector without requiring them to share data in return. This one-sided approach limits the potential benefits of data sharing for the public good in smart cities.

The Data Act is the latest law that might help smart cities. It allows government bodies to ask private companies for data in specific situations, which is the first time this kind of sharing has been required by law. It also says that data must be shared during public emergencies, which could help smart city projects by giving them more

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data to manage things like climate crises. The rules for businesses sharing data with the government are pretty strict and limited. They only say that data has to be shared in emergencies or when it's really important for dealing with emergencies. This means the Data Act isn't trying to make a big system for sharing business data with the government, instead it's just for special situations. At first, the law said that government bodies could ask businesses for data for any good reason, but they took that out of the final version. This change might be because the law was made after the peak of the COVID-19 pandemic, when there was a lot of sharing data between businesses and the government in the EU. But the law still lets the government get data in other ways, like buying it, getting it for free, or working with businesses, which are things that smart cities often do (Lazarotto, 2022).

7. Conclusion

In conclusion, it is crucial for European lawmakers to really look into and deal with the power dynamics between private and public sectors. We need some solid rules to stop private companies from hoarding data and to make them share it with others, including the public sector. This will create a fair and balanced setup for sharing data, which will be good for everyone. The European Union's efforts to share data are making smart cities more efficient and responsive to public needs, but it's too early to say if it will really benefit sharing data between public and private sectors in smart cities. We need to keep working on fixing power imbalances and making sure data benefits everyone. With the right laws and collaboration between public and private sectors, we can make the vision of smart cities powered by shared data a reality.

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