Cofece
Comisión Federal de Competencia Económica

DATA AND COMPETITION IN THE DIGITAL ENVIRONMENT

Data and competition in the digital environment

General Directorate of Digital Markets

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Comisión Federal de Competencia Económica

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CONTENT

GLOSSARY

Advertisers

Any company or business that promotes its products or services through digital advertising, whether to increase brand awareness or to boost sales.

Source: OECD (2020), *Digital advertising markets – Background note by the Secretariat*, p. 17. Available here.

Algorithms

Sequence of clear and precise instructions that must be followed in a specific order, mechanically and systematically, to complete a task or activity. Instruction manuals for assembling objects (such as furniture, toys, and others) and cooking recipes are examples of algorithms.

In the digital environment, algorithms are fed with data and transform it into a response or output, through a sequence of computational steps. For example, Google uses algorithms to display information as the result of a user's search or query.

Sources: OECD (2017), *Algorithms and Collusion: Competition Policy in the Digital Age*, p. 8. Available here.
OECD (2023), *Algorithmic Competition, OECD Competition Policy Roundtable Background Note*, p. 8. Available here.

Application Programming Interface (API)

A set of rules (definitions and protocols) that allows different applications or computer systems to communicate with each other. APIs typically provide a set of functions or methods that software developers can use to perform specific tasks, such as exchanging data or executing processes in the system they are connected to. Communication between systems via an API typically occurs through requests and responses. For example, a program may send a request to the API for information, and the API will respond with the requested data.

Sources: Goodwin, M. (2024), *What is an API (application programming interface)?* Available here.
AWS (n.d.), *¿Qué es una interfaz de programación de aplicaciones (API)?* Available here.

Apps

Computer programs or software designed for a particular purpose that can be downloaded to a phone or any other device.

Source: *Cambridge Dictionary, App*. Available here.

Artificial Intelligence (AI)

A broad definition refers to AI as a branch of computer science that studies and designs computers capable of performing specific tasks in a way that is perceived as "intelligent." A narrow definition views AI as the discipline of creating algorithms that can learn. Virtual assistants like Siri are an example of AI.

Sources: OECD (2017), *Algorithms and Collusion: Competition Policy in the Digital Age*, p. 9. Available here.
OECD (2019), *Hello World: Artificial Intelligence and its use in the public sector*, p. 11. Available here.

Big Data

Data sets so vast that they require a system capable of scaling and adapting as the volume of data increases, allowing for efficient storage, manipulation, and analysis. Its four main characteristics, known as the "4 V's of Big Data," are: (i) volume, referring to the size of a dataset; (ii) variety, as a dataset may consist of different types of data; (iii) velocity, referring to the speed at which data is created, collected, stored, analyzed, and visualized; and (iv) value, meaning the benefits that can be derived from the data, as the more diverse the dataset and faster its creation, collection, analysis, and visualization, the more valuable it becomes, and vice versa.

Sources: NIST (2019), *NIST Big Data Interoperability Framework: Volume 1, Definitions*, p. 6. Available here.
OECD (2016), *Big Data: Bringing Competition Policy to the Digital Era. Background Note by the Secretariat*, pp. 5-6. Available here.

Cloud Services

Digital services that provide access to a set of computing resources (computing, storage, and connectivity) in a flexible, elastic manner, as needed, with minimal management effort and over a remote network (either public internet or a private connection) rather than relying on a local computer or server that is not part of the cloud.

Sources: OECD (2014), *Cloud Computing: The Concept, Impacts and the Role of Government Policy*, pp. 4, 8. Available here.
Ofcom (2023), *Cloud services market study. Final report*, p. 20. Available here.
DCMS (2022), *Data storage and processing infrastructure security and resilience – call for views*. Available here.

Competition Policy

The set of laws, economic principles, rules, regulations, institutions, and other tools that the Mexican State has at its disposal to ensure that companies compete, which benefits consumers.

Through its enforcement, authorities prevent, deter, correct, regulate, and/or sanction behaviors by economic agents that reduce or eliminate competition, such as collusion or abuse of dominance.

Source: Cofece (2020). *¿Qué es la política de competencia?* Available here.

Cookies

A file stored in a computer's memory to help store preferences and other relevant information from visited webpages. Cookies can save users' settings on certain websites and can sometimes be used to track visitors' access and interaction with internet pages.

Source: Glosario del Centro de ayuda, Ayuda de Google Ads, Available here.

Data Brokers

Companies that gather information about individuals from various sources, including public sources (e.g. public records), commercial sources (e.g. data on website visits and app usage), or primary research (e.g. surveys administered directly to consumers). Once they collect this data, they analyze and combine it to make inferences about individuals, which they sell or license to advertisers, advertising agencies, or other data brokers.

Source: CMA (2020), *Appendix G: the role of tracking in digital advertising*, pp. 72-73. Available here.

Digital Economy

All economic activities that depend on digital resources or significantly benefit from them. These resources include technologies, infrastructure, digital services, and data. The digital economy encompasses both traditional markets that have adopted digital technologies and markets that operate entirely in a digital environment.

Sources: Cofece (2024), *Basic Concepts of Competition in the Digital Economy*, p. 6. Available here.
OECD (2020), *A roadmap toward a common framework for measuring the Digital Economy*, p. 35. Available here.
OECD (2022), *OECD Handbook on Competition Policy in the Digital Age*, p. 8. Available here.

Digital Markets

The environment in which producers and consumers interact to exchange goods and services within the digital economy, accessible via websites or applications.

Sources: Cofece (2024), *Basic Concepts of Competition in the Digital Economy*, p. 7. Available here.
OECD (2022), *OECD Handbook on Competition Policy in the Digital Age*, p. 8. Available here.

Digital Platforms

Services or infrastructures that facilitate interaction between two or more interdependent user groups through services or applications, adding economic and social value. The user groups connected by the platform are often referred to as the platforms' "sides".

Sources: OECD (2019), *An Introduction to Online platforms and their role in the Digital Transformation*, p. 22. Available here.
Cofece (2024), *Basic Concepts of Competition in the Digital Economy*, p. 7. Available here.

E-commerce

The activities of buying and selling products online. A narrower definition encompasses the provision of consumer goods and services through online sales channels.

Source: OECD (2019), *Implications of e-commerce for Competition Policy*, p. 8. Available here.

Economic Competition

The effort made by two or more individuals, businesses, or companies to increase their market share by offering a wider variety of higher-quality products and services at lower prices. Competition enhances purchasing power and consumer welfare, while also allowing companies to access inputs under competitive conditions, encouraging innovation and boosting productivity.

Source: Cofece (2016) *Herramientas de Competencia Económica*, p. 5. Available here.

Editors

Any digital platform or website that sells space for digital advertising, including search engines, news websites, social media platforms, video platforms, apps, GPS browsers, among others.

Source: OECD (2020), *Digital advertising markets – Background note by the Secretariat*, p. 15. Available here.

Internet Protocol (IP)

Set of numbers that uniquely identifies each device connected to a network using the Internet to communicate. This system ensures that information sent over the network reaches its intended destination, much like how postal addresses ensure letters and packages are delivered to the correct location.

Source: Fortinet (n.d.), *What Is an IP Address?* How Does It Work? Available here.

Machine Learning

The design of intelligent machines that use algorithms to learn from data and experience through repetition.

Source: OECD (2017), *Algorithms and Collusion: Competition Policy in the Digital Age*, p. 9. Available here.

Marketplaces

Digital platforms that intermediate in the sales of goods and services between customers and multiple retailers. Unlike a traditional online store where only one company sells its products, a marketplace acts as an intermediary, connecting various sellers with potential buyers in one place. The platform operator does not necessarily own any inventory, as their business may only involve presenting third-party inventory to users and facilitate transactions.

Sources: OECD (2020), *Abuse of Dominance in Digital Markets – Contribution from Romania*, p. 3. Available here.
Forbes (2017), *What are Online Marketplaces and What Is Their Future?* Available here.
Cofece (2024), *Basic Concepts of Competition in the Digital Economy*, p. 8. Available here.

Podcasts

A series of audio content, and sometimes audio and video, that can be downloaded to a device or streamed online.

Sources: Merriam-Webster Dictionary, Definition of podcast. Available here.
FundéuRAE, *Pódcast, adaptación al español*. Available here.

Profile Creation

Any form of assessing specific personal aspects of an individual, particularly to analyze or predict aspects related to professional performance, economic situation, health, personal preferences, interests, reliability, behavior, location, or movements.

Source: Article 4, Section 4 of the General Data Protection Regulation (GDPR) of the European Union. Available here.

Streaming

A type of technology that allows the transmission and playback of audio and video content over the Internet without needing to download the entire file before it can be viewed or heard. Streaming provides access to a wide range of digital content (from TV shows and movies to music, video games, and more) at any time, on any device that can connect to the Internet.

Source: Poor, A. (2019), *¿Qué es el streaming y cómo funciona?* Available here.

Switching costs in the digital environment

The cost, in terms of time and effort, that users face when switching platforms, applications, or ecosystems. This includes, among other things, migrating personal data, rebuilding social networks, learning new interfaces, and recovering purchase history and subscriptions.

Sources: Cofece (2024), *Basic Concepts of Competition in the Digital Economy*, p. 35. Available here.
OECD (2022), *The Evolving Concept of Market Power in the Digital Economy – Note by Brazil*, p. 4. Available here.

Virtual Private Network (VPN)

A service that allows creating a secure and encrypted connection between a device (computer, phone, or other) and an internet network. It enables "anonymous" browsing, keeping private and confidential data such as passwords, credit card information, and browsing history.

Source: AWS (2023), *¿Qué es una red privada virtual (VPN)?* Available here.

INTRODUCTION

When conducting searches on the Internet, sharing content on social media, using cloud services, watching movies or TV shows, and listening to podcasts, you generate data that allows various companies to collect, store, analyze, and use it to offer you digital goods and services.

Under certain circumstances, some companies with significant market power, which have a large number of active users, gather vast amounts of data that other companies cannot access. These companies may strategically use the data they collect to exclude current or potential competitors in various markets, reducing the options available to you.

For this reason, competition policy plays a crucial role in analyzing the behavior of companies when collecting and using your data to ensure that they do so in a manner that is not anti-competitive. In a competitive environment, you can access innovative, high-quality products at better prices, offered by different providers under optimal conditions.

However, the use of your data goes beyond improving products or services; it also affects other relevant aspects related to the privacy of your information. Often, free access to digital goods and services comes at the cost of collecting and using your personal information. Therefore, it's vital to understand your rights as a user of these services and the tools available to protect your privacy, ensuring that your participation in the digital economy remains secure.

In this notebook, we will explore the significance of data in digital markets and its implications for competition, free market dynamics, and your privacy. The goal is for you to understand what data is, how it is used and valued in the digital economy, how it is collected, stored, analyzed, and utilized, and how it impacts competition in digital markets. We will also discuss the associated risks and offer recommendations to mitigate them.

1. Data in the digital economy and its characteristics. Collection, storage, analysis and use of data in the digital economy

You may have never considered the value of your Google search history, the accounts you follow on Instagram, or the movies you watch on Netflix. Each day, often without realizing it, you generate data and provide information about your tastes and preferences through your digital activity. Companies operating in the digital environment collect, store, analyze, and in some cases, commercialize your information for various purposes.

1.1. Data and its characteristics

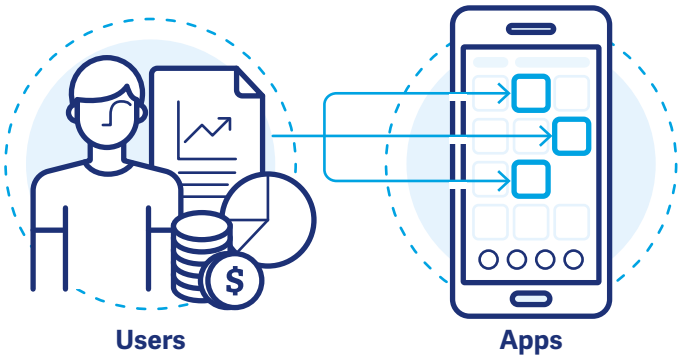
"Data" refers to the information produced after observing a phenomenon, which is then recorded, stored, and organized in a digital format that can be accessed electronically.[1] Data can take various forms, such as numbers, texts, images, sounds, among others. On their own, data may lack meaning or full context. However, when properly processed and organized, they can be transformed into useful information. Below, we outline their key characteristics.

1. This definition was originally used in 2021 by the Task Force of representatives from various secretariats on national accounts (ISWGNA) in the document Issues Paper: *Recording Observable Phenomena and Data in the National Accounts*, whose updated version was published in 2023 and is available here. The same definition was adopted in 2022 by the OECD in the document *Going Digital Toolkit Note: Measuring the Economic Value of Data*, p. 6, available here.

1.1.1. Non-Rivalry of Data

Data is **non-rival**, meaning that multiple individuals or companies can use it simultaneously for various purposes without depleting its availability for others. For instance, every time you browse the internet, you generate a search history (data) that can be simultaneously used by a digital advertising company (to deliver targeted ads) and by firms specializing in generating statistical insights.[2]

Box 1. Examples of non-rivalry of data



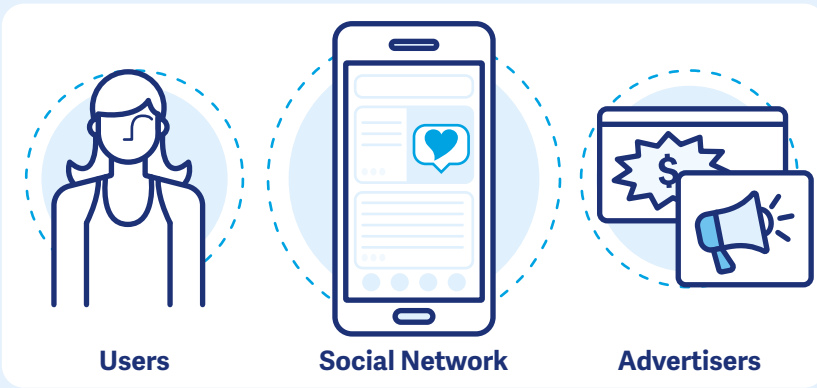
There are applications known as Personal Finance Managers in which a user's financial data is simultaneously utilized by multiple financial service providers and analysts to offer personalized investment recommendations or strategies.

1.1.2. Data is non-depletable

Data is **non-depletable** because it can be used repeatedly for various purposes, unlike other goods, such as a barrel of oil, which is consumed once it is used to produce plastic or generate energy.[3]

2. Tucker, C. (2019), *Digital Data, Platforms and the Usual [Antitrust] Suspects: Network Effects, Switching Costs, Essential Facility*, p. 13. Available here y Martens, B., *et. al.* (2020), *Business-to-Business data sharing: An economic and legal analysis*, p. 12. Available here.
3. Antuca, A. (2021), *If data is so valuable, how much should you pay to access it?* Available here.

Box 2. Examples of non-depletable data



When using a social network, you generate data about your behavior, interests, consumption habits, age, location, among other aspects. A social network can utilize this data indefinitely to provide you with personalized products or targeted advertising, without the information being depleted.

1.1.3. Data is excludable

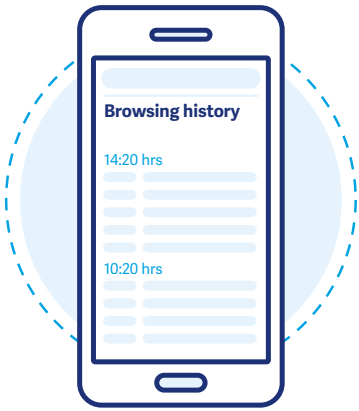
Data is **excludable** in that access to it can be restricted by the owner, preventing third parties from using or benefiting from it. In some cases, access to databases requires payment or the acquisition of a license.[4]

1.1.4. Data depreciates over time

Over time, data may **lose its value** at varying rates depending on the context or how it is used.[5] For instance, information such as your name, gender, or date of birth retains its value, as it remains constant throughout your life and is used for numerous activities in the digital economy. In contrast, data such as your browsing history, location, or the content of messages sent via WhatsApp depreciates rapidly.[6]

4. Digital Public Goods Alliance, *et. al.* (n.d.), *Exploring Data as and in Service of the Public Good*, p. 7. Available here y Coyle, D., *et. al.* (2020), *The Value of Data. Policy Implications*, pp. 4-5. Available here.
5. Coyle, D., *et. al.* (2020), *The Value of Data. Policy Implications*, p. 6. Available here.
6. Antuca, A. (2021), *If data is so valuable, how much should you pay to access it?* Available here.

Box 3. Examples of data depreciation



Your browsing history loses value quickly as trends and your preferences change over time.

Your real-time location is valuable while using navigation apps like Waze, as it helps other users identify whether a street is heavily congested, allowing them to take alternative routes. However, this data loses value quickly, as traffic conditions change constantly.

1.1.5. Data Quality

The **quality of data** is typically measured along three dimensions: accuracy, timeliness, and granularity. Data is **accurate** when it precisely represents values or events, with accuracy depending on the method used to collect it (e.g., automated mechanisms tend to yield more accurate data). Data is **timely** when it is up-to-date and relevant for analysis or decision-making processes. **Granularity**, on the other hand, refers to the level of detail in the data.[7]

7. See CERRE (2019), *The Role of Data for Digital Markets Contestability*, pp. 64-66. Available here; Jones, E. (2023), *6 Pillars of Data Quality and How to Improve Your Data*. Available here, and Coyle, D., *et. al.* (2020), *The Value of Data. Policy Implications*, p. 10. Available here.

1.1.6. Interdependence

The value of a dataset often increases when combined with another set of information. The combination of databases is inherently linked to their **interdependence**, which involves using common standards to identify and link data from one database with additional data from another. This process allows information to connect and enrich each other.[8]

1.1.7. Structure

Data may be either structured or unstructured. **Structured data** is organized and easily processed, making it suitable for commercial purposes, as it follows a model that defines the number of fields, the types of data contained in those fields, and the relationships between them. For instance, a consumer address database may include details such as names, surnames, addresses, ages, and phone numbers.

On the other hand, **unstructured data** does not follow a specific model or order, making it unsuitable for traditional analytical methods and tools. Instead, it requires advanced tools, such as algorithms, to derive commercial value.[9] Examples of unstructured data include audio and video files, as well as extensive text documents.[10]

The characteristics outlined are significant from a competitive perspective, as they influence how data can either foster the growth of a company or hinder the participation of multiple competitors in a specific market. Additionally, they explain the rationale behind the strategies companies use to collect and analyze data. Depending on the characteristics of the products or services offered and the data gathered from them, companies prioritize collecting the most valuable information that impacts the success of their business model in relation to their competitors.

1.2. The role of data in the digital economy

Data is a key asset in the digital economy, serving as a critical input that drives the development of new digital goods, benefiting us all. Furthermore, certain features of the digital economy shape the value of data. Network effects, data-driven economies of scale and scope, as well as

8. Coyle, D., *et. al.* (2020), *The Value of Data. Policy Implications*, p. 10. Available here.
9. See Autorité de la Concurrence & Bundeskartellamt (2016), *Competition Law and Data*, p. 6. Available here and IBM Cloud Education (2021), *Structured vs. Unstructured Data: What's the Difference?* Available here.
10. AWS (n.d.), *¿Cuál es la diferencia entre datos estructurados y datos no estructurados?* Available here.

feedback loops,[11] not only make data inherently valuable but also essential for the success of digital products and services. Companies can leverage your information in various ways, depending on the characteristics of the digital economy being analyzed. These uses can yield benefits for specific businesses. Below, we explore how these features enhance the value of data and their impact on the digital environment.

1.2.1. Network Effects

Network effects occur when a product or service becomes more useful and valuable as more people use it.[12] Data plays a crucial role in generating network effects,[13] which, in turn, provide various benefits, such as improving the quality of goods, services,[14] and user experience.

Under strong network effects, you derive greater benefits when your information is combined with that of others. For instance, in navigation apps like Google Maps and Waze, traffic estimation accuracy improves with data from more users.[15] Specifically, Google Maps collects large volumes of information from Android users, and as more people use Android devices, traffic predictions become increasingly accurate, enhancing the value of the service through data-driven network effects.

1.2.2. Data-driven economies of scope and economies of scale

Data-driven economies of scope enable companies to expand into new businesses or services by leveraging the data they collect to diversify and optimize operations.[16] Through these economies of scope, firms can reuse the collected data for various purposes, such as training algorithms, refining recommendations and profiles, or developing new products and services.[17]

11. To gain a better understanding of the concept of feedback loops, you can refer to *Basic Concepts of Competition in the Digital Economy*, published by Cofece in 2024, available here.
12. This notion of network effects was referenced by Cofece in *Basic Concepts of Competition in the Digital Economy*, p. 19, available here, based on Chicago Booth (2019), *Stigler Committee on Digital Platforms Final Report*, p. 38, available here.
13. See Martens, B. (2021), *An economic perspective on data and platform market power*, p. 10. Available here.
14. OECD (2016), *Big Data: Bringing Competition Policy to the Digital Era*, p. 8. Available here.
15. See Martens, B. (2021), *An economic perspective on data and platform market power*, p. 12. Available here.
16. OECD (2020), *Competition Economics of Digital Ecosystems – Note by Georgios Petropoulos*, p. 3. Available here.
17. See Martens, B. (2021), *An economic perspective on data and market power*, pp. 6-7. Available here.

Data-driven economies of scale imply that, despite significant initial investments in hardware, software, and the development of specific capabilities, the cost of processing an additional unit of data is minimal.[18] Economies of scale become increasingly significant with the use of artificial intelligence (AI) and machine learning, as these technologies yield better results when trained on larger datasets.

The combination of economies of scope and scale allows companies to enter new markets at a lower unitary cost as their sales volume grows.[19] For instance, e-commerce platforms utilize your behavioral and consumption data not only to improve the recommendations they provide but also to enhance their logistics services and inventory management systems.

Box 4. Examples of expansion into new markets

Some console and video game companies leverage economies of scale and scope to expand their offerings into video game streaming services with personalized recommendations, utilizing data about the games you purchase or play.

After making significant investments to establish their presence in the market, these companies have access to a customer base and detailed insights into their preferences, gaming habits, playtime, and more. By using this data for their streaming services, they can offer larger game catalogs and personalized experiences for each user, all without incurring substantial additional costs.

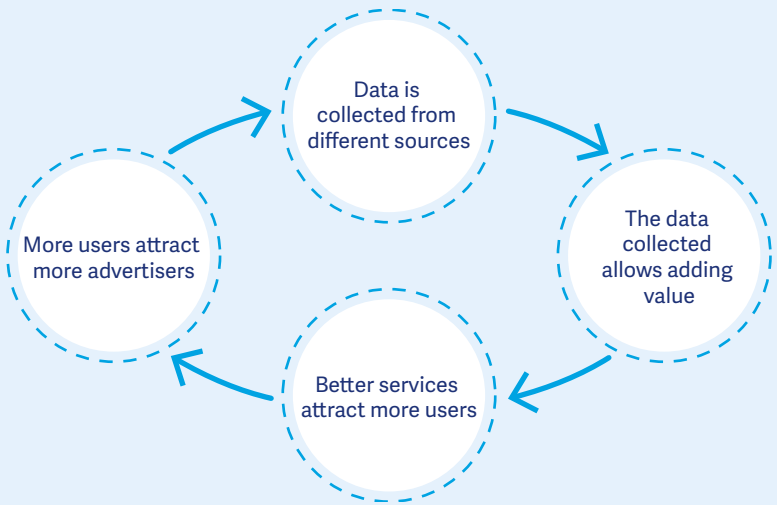
18. See Coyle, D., *et. al.* (2020), *The Value of Data. Policy Implications*, pp. 6-7. Available here and Martens, B. (2021), *An economic perspective on data and market power*, p. 7. Available here.
19. Chicago Booth (2019), *Stigler committee on Digital Platforms Final Report*, p. 7. Available here.

1.2.3. Feedback loops

Feedback loops are created when companies use the information they collect, store, and analyze from their users to improve their goods and services. As these companies gather data from their customers, they can accelerate learning and refine their algorithms. This enables them to develop better products and services, which, in turn, helps attract more customers and gather even more user data.[20]

Companies such as Google and Meta, for instance, base their businesses models on attracting a large user base and building valuable databases about them. These companies operate across multiple activities and markets, which allows them to collect information from various sources and enrich their databases. This, in turn, enables them to offer online advertisers the ability to place highly personalized or targeted ads. The profits generated from advertising sales can be reinvested to enhance the functionality and services offered by Google and Meta, further improving the user experience and helping these companies to attract even more customers, refining their data collection techniques.[21]

Box 5. Feedback loops from data



20. OECD (2020), Consumer Data Rights and Competition - Background note by the Secretariat, p. 20. Available here.
21. ACCC (2019), *Digital platforms inquiry. Final Report*, p. 7. Available here.

1.3. Data collection, storage, analysis and use

Companies collect and process your information through various stages to offer you new and improved products and services. To assess the impact of these phases on competition, the OECD has noted that they can be simplified into (i) generation and collection, and (ii) analysis and use of data. For the purposes of this notebook, we divide the process into four stages: (i) collection; (ii) storage; (iii) analysis; and (iv) use of data. However, depending on their business models, companies may have variations in the data value cycles.[22]

Box 6. Data utilization process

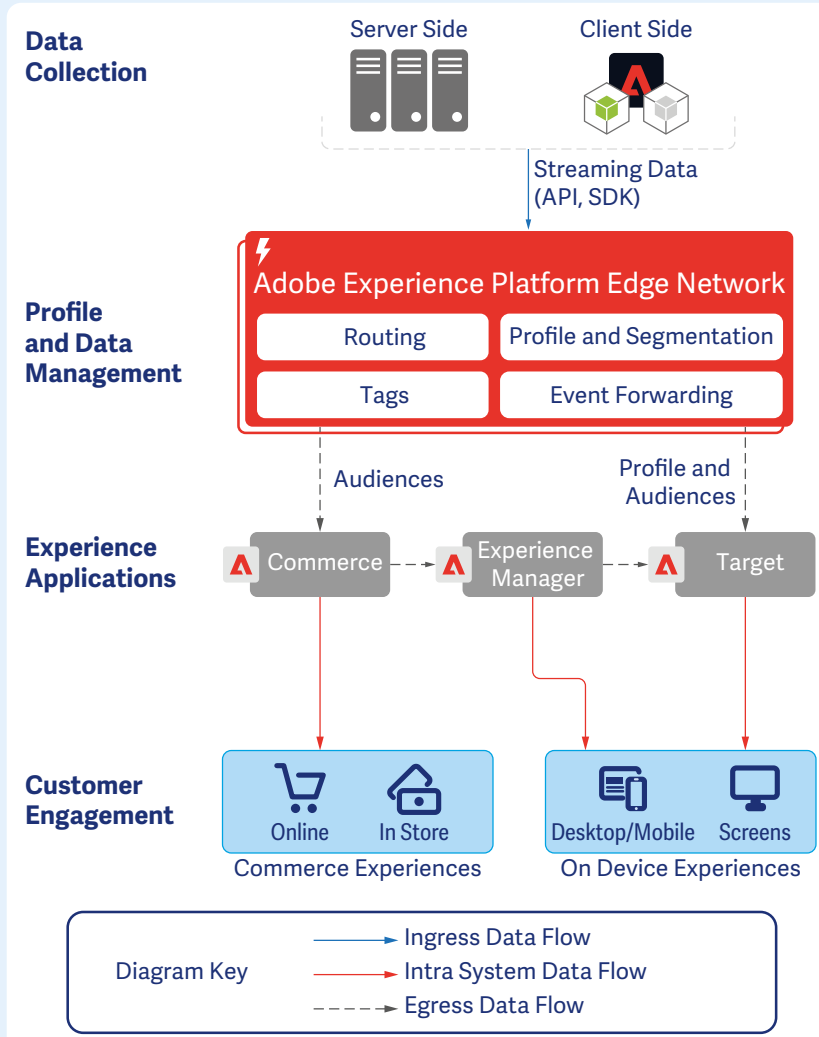
1.3.1. Data collection

It is common to see adds for airline tickets or shoes you recently searched for when you open a social media platform. Have you ever wondered how the social network knows you are interested in those products? The digitalization of the economy has allowed companies to gather your information from various sources, such as your browsing history, IP address, past purchases, cookies, and more.[23] This information enables them to offer you new and/or improved products, make personalized recommendations, or find innovative ways to generate more revenue for their businesses.[24]

22. The OECD illustrated the process by which data is transformed into innovative goods and services through a data value cycle that involves feedback loops at various stages: (i) the "ratification" and collection of data; (ii) big data; (iii) data analysis; (iv) the knowledge base; (v) decision-making; and (vi) value generation. See OECD (2015), *Data-Driven Innovation*, pp. 32-33. Available here and OECD (2020), *Consumer Data Rights and Competition – Background Note by the Secretariat*, pp. 14-15, available here.
23. Da silva, F., y Núñez, G. (2021), *La era de las plataformas digitales y el desarrollo de los mercados de datos en un contexto de libre competencia*, p. 12. Available here.
24. de Cornière, A., y Taylor, G. (2023), *Data and Competition: A Simple Framework*, p. 2. Available here.

Box 7. Example of data cycle in a digital platform

Specialized data analysis services, such as *Adobe Experience Platform Edge Network*, collect, store, analyze, and utilize customer data with AI tools for various purposes, including e-commerce, enhancing user experiences, and business planning, to name a few.



Source: Own elaboration based on *Adobe Experience Platform Edge Network*. Original version available here.
Note: The image is used solely for illustrative purposes to demonstrate a part of the data collection and management process for personalizing experiences.

Box 8. What data do major tech companies have?

	Google	Facebook	Amazon	Apple	X
PERSONAL DATA					
Name	✓	✓	✓	✓	✓
Phone number	✓	✓	✓	✓	✓
Payment information	✓	✓	✓	✓	✗
Address	✗	✗	✓	✓	✗
Email address	✓	✓	✓	✗	✗
Emails you write and receive	✓	✗	✗	✓	✓
UNIQUE IDENTIFIERS					
IP Address	✓	✓	✓	✓	✓
Browser type	✓	✗	✓	✗	✓
Device type	✓	✗	✗	✓	✓
Operating system	✓	✗	✓	✓	✓
ACTIVITY					
Search terms	✓	✗	✓	✓	✗
Messages	✗	✓	✗	✗	✓
Content	✗	✓	✗	✗	✓
Interactions with content and ads	✓	✓	✗	✗	✓
Time, frequency and duration of activity	✓	✓	✗	✓	✓
Purchase activity	✓	✗	✓	✗	✗
Browsing history	✓	✗	✓	✗	✓

Source: Own elaboration based on Vigderman, A., Turner, G. (2024), *The Data Big Tech Companies Have On You*. Available here.

Your information can be collected by multiple participants in digital markets, including digital platforms, advertisers, publishers, and data brokers.[25] This can occur in several ways: (i) directly through first-party data collection; (ii) indirectly via third-party data collection; or (iii) from external sources.

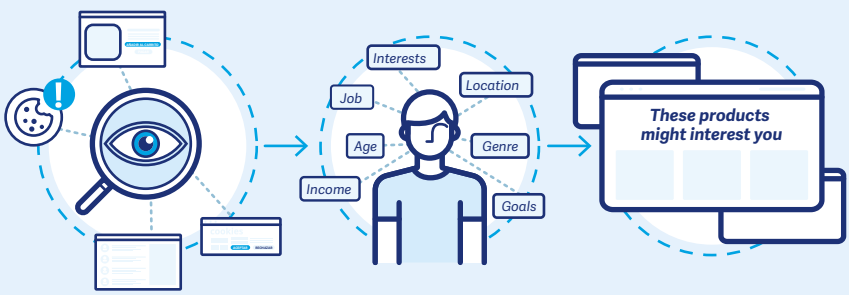
First-party data collection occurs when a company gathers your information directly while you use its services. This includes data such as your name, the type of device and operating system you use, activity information (e.g. clicks or mouse movements), browsing history, location data, and more. The more digital goods and services a company offers,

25. CMA (2020), *Online platforms and digital advertising*, p. 155. Available here.

the greater its ability to collect your information directly.[26] For instance, Google gathers data about a user's activity across its services, such as Gmail, Google Search, and Google Photos.

Third-party data collection happens when a company collects your information through websites or apps not owned by them, often using tracking mechanisms.[27] Various technologies enable such tracking, with cookies being one of the most common.[28]

Box 9. Monitoring information to offer personalized services

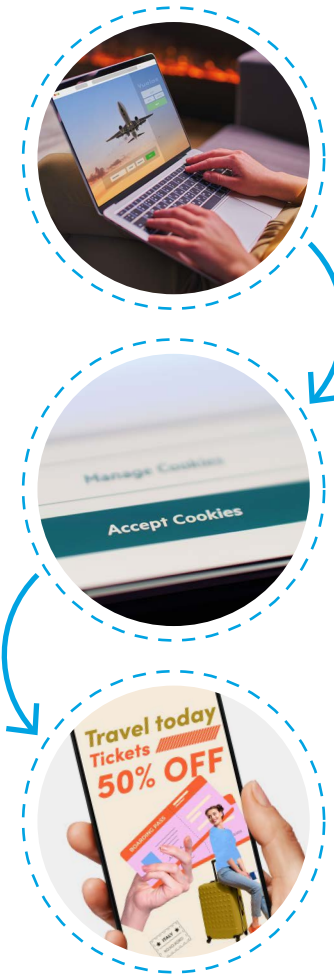


Companies link your interactions across different websites, applications, and devices to build a more detailed profile of you as a consumer.[29] For instance, Google collects and monitors your information not only when you use its applications but also when you visit websites and use apps owned by other companies.[30] This information can be used to create a consumer profile, which is then sold to advertisers who use it to display ads more effectively tailored to your preferences.[31]

26. OECD (2020), *Consumer Data Rights and Competition - Background note by the Secretariat*, p. 16. Available here and CMA (2020), *Online platforms and digital advertising*, p. 155. Available here.
27. Barker, A. (2021), *Consumer data and competition: A new balancing act for online markets?*, p. 7. Available here.
28. OECD (2020), *Consumer Data Rights and Competition - Background note by the Secretariat*, p. 16. Available here.
29. CMA (2020), *Appendix G: the role of tracking in digital advertising*, p. 1. Available here.
30. OECD (2020), *Consumer Data Rights and Competition - Background note by the Secretariat*, p. 16. Available here.
31. CMA (2020), *Appendix G: the role of tracking in digital advertising*, pp. 77-78. Available here.

Box 10. First party and third-party data collection

Facebook collects first-party data through your direct interactions with its platform. This includes information provided in your profile, the posts you share, the "likes" you give, and data about your interactions with other users. This information is used to personalize your news feed, suggest new friends and groups, and deliver targeted advertisements.



Google can track your activity on various tourism websites using third-party cookies. It then uses this data to display personalized ads for vacation packages on websites and apps unrelated to the tourism sites you initially visited.

Data collection from external sources occurs when companies purchase information from data brokers who gather, combine, analyze, and share your information obtained from various sources. This information typically includes contact details (e.g., name and address), personal characteristics (e.g., age and marital status), and attributes of commercial interest (e.g., income level and purchase history). Data brokers often make inferences about specific consumers, such as classifying them as someone who likes cars, someone who only shops during sales, or someone who avoids buying generic medications.[32]

1.3.2. Storage

Once companies collect your information, they store it, either locally on their own devices (e.g., on a computer) or externally (e.g., on a cloud service like OneDrive). To illustrate this, consider automated vehicles that generate data about their operation, traffic, weather, location, and the owners' navigation preferences, among other things. This data could be stored solely within the vehicle's system (local storage) or transmitted in real-time to other companies for external storage. These companies may use the data for complementary services like insurance or navigation services.[33]

Cloud storage benefits both you and companies. When you store your information in the cloud, you can access it from any device, anywhere. Similarly, when companies use cloud storage services to save their data, they can access it from multiple locations and quickly, easily, and cost-effectively scale their storage capacity.[34]

1.3.3. Analysis

Before companies use the information they collect and store, they perform data analysis, which involves systematically applying statistical and/or logical techniques to describe, illustrate, condense, summarize, and evaluate the data. This process includes the processing and manipulation of data to extract additional insights, answer questions, or confirm

32. See CERRE (2019), *The Role of Data for Digital Markets Contestability*, p. 59. Available here and FTC (2014), *Data Brokers A call for Transparency and Accountability*, p. 3. Available here.
33. OECD (2020), *Consumer Data Rights and Competition - Background note by the Secretariat*, p. 18. Available here.
34. Strohbach, M. *et. al.* (2016), *New Horizons for a Data-Driven Economy*, p. 126. Available here.

hypotheses.[35] Today, it is common for data collectors to use algorithms to analyze large datasets and even combine them with other data processing technologies to analyze the information in real time.[36]

1.3.4. Use and Combination of Data

After analyzing the data, companies use it for various purposes, such as personalizing the products or services they offer, training algorithms to improve accuracy, and marketing targeted advertising and other services.[37]

To offer personalized products or services and targeted ads, companies combine the information they obtain and use data analysis techniques to display online ads for products and services based on your preferences.[38] For instance, platforms like Spotify use algorithms to process data on the content you've listened to, as well as your "likes" and behavior on the platform, to offer personalized music or podcast recommendations. A similar process occurs when you search for something on Google and see ads for products you've previously searched for on other webpages.

Did you know that Facebook is the digital platform with the largest advertising reach among the Mexican population, reaching with 70%? It is followed by YouTube at 64.5%, TikTok at 57.5%, Instagram at 34.8%, and X (formerly Twitter) at 14%.[39]

1.4. Benefits and risks for users regarding the collection and use of their data

As a consumer of digital goods and services, you directly experience the benefits of companies using your data. In your daily life, you rely on multiple digital services that simplify tasks and address everyday challenges. However, there are less obvious effects that could pose risks or harm you in some way.

35. Scheetz, A. (2024), *Data Analysis*. Available here.
36. Domingue, J., *et. al.*, *Big Data Analysis*, pp. 63, 67. Available here.
37. OECD (2020), *Consumer Data Rights and Competition - Background note by the Secretariat*, p. 19. Available here.
38. ACCC (2019), *Digital platforms inquiry. Final Report*, pp. 7, 387. Available here.
39. The percentages were calculated based on Mexico's total population as of January 2024 (128.9 million people). See the report *Digital 2024: Mexico*. Available here.

1.4.1. Benefits for consumers

Targeted advertising and personalized offers. Based on the information derived from your interactions with platforms, applications, or websites, companies can target you with specific advertisements. By analyzing your interests, preferences, or other characteristics, they can present you with products that are relevant to you, which helps increase their sales. As a consumer, you also benefit from time savings and receive recommendations for goods and services tailored to your needs.[40]

Improved products and services. Companies can leverage the information they collect to enhance the quality of their products and services.[41] One way to achieve this is through learning mechanisms. For instance, certain websites collect data about your behavior on the page to identify the frequently accessed sections or to resolve technical issues, thus enhancing and expanding the parts of the site that are most frequently visited.[42]

Free services. Data enables you to access services like email, search engines, and social networks without having to pay money for them.[43]

1.4.2. Risks for consumers

Privacy. One of the most controversial aspects of data collection relates to your privacy, as it can be undermined and diminished.[44] The more data companies collect, the greater the risks to your privacy, including potential identity theft. Often, your data is collected, used, and shared without your knowledge. Even when you consent to a specific use, companies may employ your data in other contexts.[45] Also, as a consumer, you typically have limited control over halting the collection of your information, verifying its accuracy, or maintaining your privacy. Later, we will discuss some tools that can help you manage these concerns.

40. CMA (2015), *The commercial use of consumer data*, pp. 51, 56-57. Avaialble here.
41. de Cornière, A., y Taylor, G. (2023), *Data and Competition: A Simple Framework*, p. 2. Avaialble here.
42. Autorité de la Concurrence y Bundeskartellamt (2016), *Competition Law and Data*, p. 9. Available here.
43. OECD (2020), *Consumer Data Rights and Competition - Background note by the Secretariat*, p. 21. Available here. CMA (2015), *The commercial use of consumer data*, p. 59. Available here
44. de Cornière, A., y Taylor, G. (2023), *Data and Competition: A Simple Framework*, p. 22. Available here
45. OECD (2020), *Consumer Data Rights and Competition - Background note by the Secretariat*, p. 22. Available here.

A common privacy issue is the use of facial recognition technologies to unlock your mobile phone, authorize payments, or grant access to certain locations, etc. While these tools simplify the processes, they pose risks to your privacy, such as loss of anonymity or unauthorized implementation.[46] These risks are compounded when companies fail to implement robust safeguards to protect your data.

Lack of transparency in data handling. When using data-driven services, you often do not know how much of your information is being collected and used by companies to generate profits. Moreover, it's not always clear how they obtain, analyze, and commercialize your data. This lack of transparency often arises from the terms and conditions that companies require you to accept, which are often complex, lengthy or hard to understand, making it unlikely that you will read them in their entirety. As a result, it is challenging for you to fully grasp the risks of sharing your information.[47]

Did you know that 97% of people aged 18 to 34 accept the terms and conditions of the most popular digital platforms without reading them?[48]

Discrimination, manipulation, or exclusion. Companies can use your consumption data to offer personalized prices, tailor product recommendations, or make exclusive offers. While this can incentivize efficiency, it can also harm you in certain situations. This is particularly true if the company has significant market power and uses data to hinder competition or prevent new market entrants. In such cases, you may find your options reduced, as the dominant company eliminates potential competitors, leaving you with fewer choices.[49]

46. GAO (2022), *Consumer Data: Increasing Use Poses Risks to Privacy*. Available here.
47. European Parliament (2015), *Challenges for Competition Policy in Digitalised Economy*, p. 34. Available here and Chicago Booth (2019), *Stigler committee on Digital Platforms Final Report*, p. 53. Available here.
48. Mena, M. (2021), *¿Cuánto tardaríamos en leer los términos de servicio de las apps más populares?* Available here.
49. OECD (2020), *Consumer Data Rights and Competition - Background note by the Secretariat*, p. 22. Available here.

2. Data and competition

2.1. Why is data necessary to compete?

In digital markets, companies typically rely on timely access to data and the ability to use it to develop innovative applications, products, and services, in order to compete.[50] An example of this is generative AI,[51] which depends on vast amounts of information, highlighting the importance of having timely access to data for innovation and competition.[52]

Lack of data access can be a barrier for new companies entering the market, resulting in fewer competitors and slowing both expansion and innovation.[53] Established companies are usually better positioned to gather large datasets, which enables them to improve their products and expand into new areas,[54] helping consolidate their market dominance.[55] Therefore, the ability to collect, store, analyze, and use data can provide certain companies with a competitive advantage, hindering the entry or growth of new firms.

As with the benefits and risks to you as a consumer, the role of data can present both advantages and challenges for competition and innovation.

2.1.1. Benefits for competition and innovation

Greater innovation and quality. Data drives innovation when companies use it to enhance existing products and develop new ones. Some services may become even more useful when companies use collected data

50. Crémer, J., *et. al.* (2019), *Competition policy for the digital era*, p. 7. Available here.
51. Algorithms, artificial intelligence, and their relationship with economic competition will be addressed in future digital notebooks.
52. G7 (2023), *2023 Updated compendium of approaches to improving competition in digital markets*, p. 8. Available here.
53. Chicago Booth (2019), *Stigler committee on Digital Platforms Final Report*, p. 40. Available here.
54. OECD (2020), *Competition Economics of Digital Ecosystems – Note by Georgios Petropoulos*, p. 3. Available here.
55. OECD (2018), *Plataformas digitales y competencia en México*, pp. 47-48. Available here.

to refine the algorithms that power them.[56] In data-rich markets, competition and innovation can lead to the development of new, functional products or improvements to existing services.[57] Data analysis also encourages innovation by reducing the cost of experimentation and facilitating the rapid exchange of ideas.[58]

More efficient production processes. Companies benefit from data by optimizing production processes, improving productivity, forecasting market trends, making informed business decisions, enhancing consumer segmentation through targeted advertising, offering personalized recommendations, creating unique customer experiences, and enhancing their social and environmental impact.[59]

2.1.2. Challenges for competition and innovation

Strategies to gain and maintain a data advantage. Your information and that of other users is a critical parameter for competition, as the volume of data companies can access provides a competitive edge. Consequently, some companies adopt business models that use personal data as a key input to offer "free" services, aiming to gather valuable information to generate profit, increase market share, and gain a lasting competitive advantage, which could lead to market dominance.

On the other hand, companies with significant databases may impose discriminatory conditions on other companies seeking to access and use that data. This could limit the ability of other companies to offer you innovative or high-quality digital goods and services.[60] Later, we will explain how interoperability, portability, and regulation can help address these issues.

Feedback loops and user dependence. Companies with large user bases can consolidate their market position through feedback loops, allowing them to collect more data, improve their products, attract more users and reinforce their market dominance. While this can be positive, relying on a single company offering personalized and tailored options may prevent you from exploring better alternatives.[61]

56. OECD (2016), *Big Data: Bringing Competition Policy to the Digital Era*, pp. 7-8. Available here.
57. CMA (2015), *The commercial use of consumer data*, p. 80. Available here
58. OECD (2022), *Data Shaping Firms and Markets*, p. 12. Available here.
59. OECD (2016), *Big Data: Bringing Competition Policy to the Digital Era*, p. 8. Available here and World Economic Forum (2022), *The future of manufacturing is powered by data and analytics. Here's why*. Available here.
60. OECD (2016), *Big Data: Bringing Competition Policy to the Digital Era*, p. 9. Available here; ACCC (2019), *Digital platforms inquiry. Final Report*, p. 58. Available here and CMA (2015), *The commercial use of consumer data*, p. 80. Available here.
61. CMA (2015), *The commercial use of consumer data*, p. 15. Available here and OECD (2016), *Big Data: Bringing Competition Policy to the Digital Era*, p. 10. Available here.

For instance, take navigation apps: even if a new app with superior features emerges, you might continue using the dominant app because it benefits from a larger user base providing more accurate traffic data. While this is not inherently anticompetitive, feedback loops can make it challenging for new apps to accumulate the necessary user base and data to become competitive.[62]

2.2. Competition concerns surrounding data

The way certain digital platforms use data rises significant concerns. For instance, companies with access to large databases may become overly concentrated, or certain firms could abuse their market power.

2.2.1. Mergers

When a technology company or digital platform that collects, accumulates, or analyzes data acquires or merges with another company, this is referred to as a merger or acquisition. These transactions can help companies become more efficient by leveraging synergies, potentially benefiting you through lower prices, improved quality, increased variety, and innovation.[63]

However, such operations can also create entities with greater market power or massive datasets, which could potentially distort the competitive landscape. For this reason, competition authorities closely examine the strategic implications of data management following a merger or acquisition. This evaluation ensures that the resulting entity doesn't dominate the market, displace competitors, or block new entrants. Authorities may approve the merger, impose conditions or reject the transaction if it threatens competition.[64]

In recent years, mergers involving companies with significant datasets have come under scrutiny in Mexico and other countries. Competition authorities assess whether the merger would enhance the resulting company's position to displace competitors or prevent the entry of new firms.

62. OECD (2016), *Big Data: Bringing Competition Policy to the Digital Era*, pp. 10-11. Available here.
63. Cofece (2019), *Concentraciones, Competencia y Bienestar: Un Panorama Global*. Available here.
64. Article 86 of the Federal Economic Competition Law (LFCE, for its acronym in Spanish) establishes the circumstances under which it is mandatory to notify a concentration.

Walmart-Cornershop

In 2018, Walmart[65] announced its intention to acquire Cornershop.[66] For the analysis of the transaction, Cofece focused on the potential impact on competition, particularly regarding the use of user data by the companies involved. Cofece's analysis concluded that:

- If authorized, Walmart could displace its competitors by gaining the ability to improperly use the information collected by Cornershop from its users.
- Walmart could use the data it would gain access to make personalized offers to customers of its competitors or to position its products more favorably within Cornershop.
- The transaction could lead to the departure of Walmart's competitors from the platform due to a loss of trust and uncertainty regarding how Cornershop might use the data gathered on its platform.

Ultimately, Cofece decided not to authorize the merger, concluding that it would pose risks to the competitive process and hinder free market entry.

Source: Public version of the resolution from file CNT-161-2018 (Resolution CNT-161-2018). Available here.

Google-Fitbit analyzed by the European Commission (EC)

In 2020, the EC analyzed the proposed merger between Google[67] and Fitbit[68]. Its analysis focused on the potential consequences of Google using the data collected by Fitbit in relation to its advertising services, search engines, and digital health offerings.

The EC observed that Fitbit collects user data through its devices, including weight, steps taken, calories burned, heart rate, age, height, geographic location, among others, along with inferred data about users.

Regarding the advertising market, the EC estimated that the merger would provide Google with additional data to offer personalized ad opportunities. This would give Google a competitive advantage, as its rivals without access to Fitbit's data would need to invest more to obtain similar insights.

Although the EC acknowledged the value of Fitbit's data, it concluded that the transaction would not significantly increase Google's competitive advantage in these markets. Therefore, the EC approved the merger, contingent on Google's commitments[69] to mitigate potential harm to economic competition.

Source: European Commission (2020). *Case M.9660 – Google/Fitbit*. Available here.

65. A company that operates self-service stores, supermarkets, membership-based price clubs, warehouses, pharmacies, and online stores (via the internet or apps).
66. A logistics service company for the display, purchase, and delivery of products offered by various self-service stores, price clubs, and other retailers to end users, through a website and a mobile app.
67. Company that globally participates in online advertising markets, internet search, cloud computing, licensed development of operating systems for smartphones and smartwatches, application development, and information technology services for health.
68. Company that participates in the market for the development, manufacturing, and distribution of smart devices used as bracelets or watches (smartwatches and fitness tracking wristbands).
69. Among the commitments offered by Google were: not to use the health and wellness data collected from Fitbit's wearable devices for Google Ads, including search ads, display ads, and advertising intermediation; storing the data in a "data silo" separate from other Google data used for advertising; giving European users the option to allow or deny the use of their health and wellness data; maintaining access to user health and fitness data for software applications through APIs free of charge and subject to user consent; and licensing the necessary public APIs for wearable devices to interact with Android smartphones for free. See EC (2020), *Mergers: Commission clears acquisition of Fitbit by Google, subject to conditions*. Available here.

Google-Fitbit analyzed by the Australian Competition and Consumer Commission (ACCC)

Unlike the EC, the ACCC rejected the proposed commitments and considered that the merger could lead to the exclusion of Fitbit's competitors from the mobile device market, as they rely on Google's Android operating system and other services from the company. The ACCC also pointed out that the operation could further strengthen Google's leadership position in data collection from its users, thereby consolidating its power in the online advertising market.

Source: ACCC (2020), *ACCC rejects Google behavioural undertakings for Fitbit acquisition*. Available here.

2.2.2. Abuse of dominance: essential facility, denial of access, and discrimination

A company holds **substantial market power** when it can set prices and/or restrict the supply of goods and services without another company being able to counteract that ability. Substantial market power itself is not inherently harmful unless it is used to exclude competitors, without providing any benefits to consumers.[70]

In this context, the term "data-opoly" refers to large tech companies that exercise significant power in the markets they participate in, by leveraging vast amounts of consumer data.[71] These companies tend to exhibit strong network effects, which can lead to market concentration in the hands of one or a few players.[72]

However, it is not enough for a company to simply possess a significant database or have timely access to it to be seen as detrimental to competition. To determine whether access to data contributes to substantial market power, it is necessary to analyze the specific characteristics of that market, the type of data involved, how it is used, and its importance for competition.[73]

If the harms of a company's business strategy outweigh its benefits, it is likely that the company is abusing its market power for anticompetitive purposes. In such cases, companies with substantial market power can use data to implement strategies that unfairly maintain their dominance, thus harming competition.[74]

70. Cofece (2018), *¿Qué es poder sustancial de mercado?* Available here.
71. Fischer, B. (2022), *The Rise of the Data-Opoly: Consumer Harm in the Digital Economy*. Available here.
72. Stucke, M., & Grunes, A. (2017), *Data-opolies*, p. 5. Available here.
73. OECD (2022), *The Evolving Concept of Market Power in the Digital Economy*, pp. 14-15 Available here.
74. Stucke, M., & Grunes, A. (2017), *Data-opolies*, p. 6. Available here.

Essential facilities doctrine. An **essential facility** is an asset or infrastructure that a third party needs access to, to offer their own product or service in a market. To be considered essential, it must be demonstrated that the facility is controlled by a company with substantial market power, is indispensable for the provision of goods and services, has no available alternatives, and cannot be replicated due to legal, economic, or technical barriers.[75] If the company controlling access to an essential facility implements certain strategies to prevent competitors from obtaining it, it deprives them of the ability to compete, ultimately harming consumers.[76]

When a resource like data is considered an essential facility, **denying access** to it may constitute an anticompetitive practice, especially when the company exercising control holds market power.[77] In such cases, the competition authority may require the company to provide its competitors with access to certain parts of its databases.[78]

Microsoft v. EC

In 2004, the EC determined that Microsoft abused its dominant position in the market for personal computer operating systems by refusing to provide essential interoperability information that would allow other companies to offer their services on computers running the Windows operating system.[79] The EC's analysis concluded that the requested information was essential for competition, and Microsoft's refusal to share it hindered competition in the market and the entry of new competitors.

As a result, the EC's decision required Microsoft to provide the necessary information to third parties to enable interoperability under reasonable and non-discriminatory conditions.

Source: EC, Case COMP/C-3/37.792 Microsoft Available here.

On the other hand, **access** to data can be deemed anticompetitive if it's provided under **discriminatory conditions**. For instance, when a company participates in several stages of the supply chain for a good or service, it may grant discriminatory access to strategic information, thereby harming competition.[80] A situation like this occurred with Amazon in the European Union.

75. See Article 60 of the LFCE.
76. OECD (2022), *The Value of Data in Digital-Based Business Models: Measurement and Economic Policy Implications*, p. 22-23. Available here.
77. When we talk about the denial of access to data as an essential input, we refer to section XII of the LFCE. Available aquí.
78. Graux, H. (2022), *Sharing Data (Anti-) Competitively*, p. 9. Available here, Autorité de la Concurrence & Bundeskartellamt (2016), *Competition Law and Data*, p. 17. Available here and Martens, B., *et. al.* (2020), *Business-to-Business data sharing: An economic and legal analysis*, p. 35. Available here
79. Microsoft withheld access to information that certain software products for network computing (known as workgroup server operating systems) need in order to fully interoperate with Microsoft's PC operating systems. This information is essential to compete effectively as a provider of workgroup server operating systems.
80. Autorité de la Concurrence & Bundeskartellamt (2016), *Competition Law and Data*, pp. 18-19. Available here.

Box 11. Amazon's participation in several links of the supply chain

Amazon Retail is Amazon's retail business, which, along with other independent sellers, displays their products on Amazon Marketplace, Amazon's online marketplace.

Independent sellers have two options for home delivery to their customers: they can use independent courier services, or they can opt for Amazon's logistics and home delivery services, known as "Fulfillment by Amazon" (FBA).

Amazon operates in several stages of the supply chain: it acts as a retailer through Amazon Retail, as an intermediary and operator of a digital platform via Amazon Marketplace and provides logistics and home delivery services through FBA.

Cegedim Case

Pharmaceutical laboratories rely on two tools to optimize the work of their sales teams: (i) databases containing medical information, including doctors' names, contact details, addresses, conditions, and visit schedules; and (ii) customer management software that enables efficient use of this data.

In 2008, Euris[81] filed a complaint against Cegedim[82] before the Autorité de la Concurrence (France's competition authority) for abusing its dominant position. Cegedim had allegedly refused to sell its database to laboratories using (or attempting to use) Euris' software, while selling it to those using other software solutions. During the proceedings, multiple laboratories, including Cegedim itself, confirmed that access was granted under discriminatory conditions.

The Autorité de la Concurrence concluded that this discriminatory practice hindered Euris' expansion in the customer management software market. Laboratories using, or interested in using, Euris' software were unable to access Cegedim's database—the most critical in the market—leading them to drop Euris as their provider. Between 2008 and 2012, Euris lost 70% of its clients, and laboratories faced fewer options for management software.

In 2014, the Autorité de la Concurrence fined Cegedim and ordered it to cease discrimination based on the software used by its customers.

Sources:
Autorité de la Concurrence (2014), *Decision 14-D-06 of July 08, 2014*. Available here.
Autorité de la Concurrence (2014), *Decisión n° 14-D-06 du 8 juillet 2014 relative à des pratiques mises en œuvre par la société Cegedim dans le secteur des bases de données d'informations médicales*. Available here.
Autorité de la Concurrence (2014), *8 July 2014 : Health/Medical information databases*. Available here.

81. Producer of customer management software.
82. Leader in the medical database information market, holding a dominant position. It provides both databases and management software to medical laboratories.

Anticompetitive practices harm you and other consumers by limiting the entry of new competitors into markets, reducing product variety, stifling innovation, and creating less favorable pricing conditions. Ensuring a level playing field for companies to compete, including equitable access to your data, strengthens competition and enhances consumer welfare.

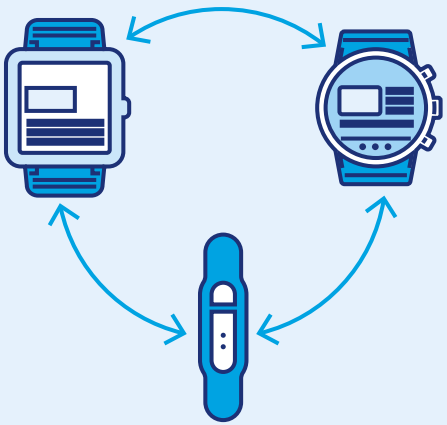
2.2.3. Solutions to foster competition in data

Given the nature and characteristics of digital platforms, competition authorities worldwide have explored ways to promote competition within and across digital platforms. This would involve implementing corrective measures or remedies in cases where competition is distorted, though such measures have yet to be widely adopted.

Additionally, some countries have enacted specific laws and regulations aimed at both protecting you as a consumer and fostering better competitive conditions concerning data use. Examples of these measures include portability, interoperability, and regulation.

Data portability. This refers to the ability to decide who can transfer or access your data in a structured, commonly used, and machine-readable format.[83] It emphasizes granting you the right to share your information if you choose to do so.

Box 12. How does data portability work?



When you decide to switch product models, such as moving to a new smartwatch, data portability allows the information from your previous device to be transferred to the new one. This empowers you to choose the device that offers the best price or quality without the disadvantage of losing your information when changing brands.

83. OECD (2021), *Data portability, interoperability and digital platform competition*, OECD Competition Committee Discussion Paper. p. 10. Available here.

As the data subject, the right to data portability allows you to obtain and reuse your data for any purpose you choose. It also enables you to securely move, copy, or transfer your data without compromising its utility. This gives you the opportunity to take advantage of applications and services that utilize your data to help you find better deals in the market.[84]

Facilitating the migration of your data from one platform to another is an effective measure to reduce the high switching costs you face when attempting to use a competing platform, thereby countering the market power of dominant platforms.[85]

Interoperability

Interoperability refers to the ability of different digital services to work together, enabling data exchange and the integration of multiple complementary services.[86] Achieving interoperability requires a common technical interface, typically provided through a web service or an API, that allows such interactions.

Interoperability is achieved by defining standards that enable communication between various service providers. For instance, in the United Kingdom, Open Banking introduced a standard API that allows banking institutions and other financial services to access consumer data with their consent.

The UK authority determined that Open Banking could enhance competition by enabling prices and quality comparisons across various financial services, making it easier to make informed decisions when choosing a provider.[87] Such initiatives encourage the entry of new competitors, foster innovation, and improve the quality of services for you as a consumer.

Regulation

In terms of regulatory solutions, the European Union is implementing the Data Act,[88] which establishes rules governing access to and use of data by various companies. Key aspects of this law include measures allowing users of connected devices to access data generated by these devices

84. Information Commissioner´s Office. *Right to data Portability*. Available here.
85. Report of the House of Representatives, p. 386.
86. OECD (2021), *Data portability, interoperability and digital platform competition, OECD Competition Committee Discussion Paper*. pp. 10-12. Available here
87. CMA. (2016). *Retail banking market investigation. Final Report, Competition and Markets Authority*. Available here.
88. Regulation on harmonized rules for fair access to and use of data, known as the Data Act. Available here.

and related services; protections for users against abusive clauses unilaterally imposed by companies; and rules facilitating customers' ability to switch between data processing providers, thereby fostering competition in the cloud market. Furthermore, the law promotes the development of interoperability standards.[89]

This type of legislation illustrates how the risks posed by data usage to competition can be addressed, aiming to create a level playing field that fosters fair competition and innovation.

89. European Commission (2023), *Data Act: Commission welcomes political agreement on rules for a fair and innovative data economy*. Available here.

3. Privacy and competition

As time goes by, the consumption of data-based goods and services continues to grow, whether through sharing content on social media or using various apps on your mobile phone. It is likely that your mobile devices are configured to unlock with your fingerprint or facial recognition. You may also wear a smartwatch that tracks your physical activity, share your location when leaving home, listen to music on a platform while travelling, and even use a virtual assistant to check the weather or set reminders on your calendar.

To fully enjoy innovative products and services while considering their implications regarding your personal information, it is important to understand your rights as a user, where to find them, and which authority is responsible for ensuring their protection.

3.1. The relationship between competition and privacy

As we saw, under certain circumstances, your data -and that of all participants in the digital economy- can represent a competitive advantage for companies that are able to access and process it in ways that benefit their businesses.[90]

As a consumer, you benefit from having more and better services, at lower prices, and from a wider range of providers (which indicates a competitive market). However, the way companies use your data also raises concerns related to your privacy. In an ideal scenario, a competitive

90. Sepúlveda, J. (2023), *Convergencia de la protección de datos y la libre competencia en la economía digital*, p. 3. Available here.

market could bring positive effects on your privacy, as it would allow you to choose products and services that offer varying levels of protection for your personal data, giving you greater control over it. However, for this to happen, you must be aware of the rights you have over your information.[91]

Additionally, the use of algorithms and AI technologies, along with companies' need for large amounts of data, directly affects your life and could even impact your dignity and freedom if not used responsibly, fairly, and transparently. For instance, profiling[92] could perpetuate negative stereotypes, social segregation, pigeonhole individuals into specific categories, limit their choices to suggested preferences, lead to inaccurate predictions, result in the denial of goods and services, and even lead to unjust discrimination.[93]

Competition authorities can consider privacy-related aspects in their analyses. For instance, privacy concerns could be a factor in merger reviews, influencing service quality and allowing companies to compete beyond just price.[94]

3.2. User Rights

Due to the risks posed to your privacy by the growth of digital markets, an increasing number of countries are taking action to ensure you have greater security and control over the use of your information. In recent years, there has been a global trend to create laws that protect your privacy and that of all consumers. These laws recognize a series of rights to give you more control over your data while imposing certain obligations on those who use your information for commercial purposes.

An example from the European Union is the GDPR,[95] which contains rules related to data and privacy rights. The GDPR is a reference framework for companies about the rules they must follow to handle data responsibly when they use it as input for their operations. Among its key provisions, companies are required to obtain explicit consent from users to collect and process personal data, and to implement security and transparency measures to protect this information.

91. OECD (2020), *Consumer Data Rights and Competition - Background note by the Secretariat*, p. 2. Available here.
92. Article 4, chapter 4 of the GDPR.
93. Article 29 Working Party on Data Protection, (2017), *Directrices sobre decisiones individuales automatizadas y elaboración de perfiles a los efectos del Reglamento 2016/679*. Available here.
94. Sepúlveda, J. (2023), Convergencia de la protección de datos y la libre competencia en la economía digital, pp. 4-5. Available here.
95. General Data Protection Regulation. Available here.

The GDPR also grants users a series of rights, such as the right to limit the purposes for which their information is collected and prevent its use for any other purposes than those agreed upon.[96] It also gives users the right to allow the use of their data and grant free, specific, informed, and unequivocal consent;[97] the right to access, to know if companies are using their data and for what purposes;[98] and the right to data portability.[99]

Although the GDPR only applies to companies handling personal data within the European Union, it is a good reference framework that has influenced the creation of similar regulations in other countries.[100]

In Mexico, the Federal Law on the Protection of Personal Data Held by Private Parties (LFPDPPP, for its acronym in Spanish)[101] regulates the use of personal data by private entities. Several secondary regulations arise from this law, collectively forming the framework for personal data protection in the private sector.

These regulations define personal data as "any information related to an identified or identifiable natural person,"[102] which can be expressed "in numerical, alphabetical, graphic, photographic, acoustic, or any other form".[103]

In particular, your human right to the protection of personal data is recognized in Article 16, second paragraph,[104] of the Political Constitution of the United Mexican States (CPEUM, for its acronym in Spanish).[105] This article outlines additional rights, known as the ARCO rights:[106]

96. Article 5(b) of the GDPR.
97. Article 6 of the GDPR.
98. Article 15 of the GDPR.
99. Article 20 of the GDPR.
100. Keane, J. (2021), *From California to Brazil: Europe's privacy laws have created a recipe for the world.* Available here.
101. Federal Law on the Protection of Personal Data Held by Private Parties. Available here.
102. Article 3, fraction V of the LFPDPPP.
103. Last paragraph of article 3 of the LFPDPPP. Available here.
104. "Everyone has the right to the protection of personal data, access, rectification, and cancellation of such data, as well as the right to object."
105. Political Constitution of the United Mexican States (CPEUM, for its acronym in Spanish). Available here.
106. INAI (2021), *Normativa y legislación en PDP. Leyes en México para la protección de datos personales.* Available here.

Box 13. ARCO Rights

Access

This is your right you access your personal data held by a data controller,[107] whether in databases, files, records, documents, or systems. It also includes the right to know the conditions and details of how your data is processed.

Rectification

This is your right to request the correction of your data when it is inaccurate, incomplete, or outdated.

Cancellation

This is your right to request the deletion of your personal data from the data controller's files, records, documents, databases, or systems, ensuring that it is no longer processed. Before deletion, the data must first be blocked.[108]

Opposition

This is your right to request that the data controller either refrain from using your personal data or stops using it, whenever there is a legitimate cause under applicable legal provisions (for instance, when you buy a movie ticket from your phone or computer and the company subsequently starts sending you numerous promotional or advertisement emails, you can exercise your right of opposition to stop the company from sending you further advertisements).[109]

107. The data controller is the natural or legal person of a private nature who decides on the processing of personal data.
108. In not all cases is the deletion of personal data appropriate, as there may be a legal issue that prevents its cancellation, or the personal data may be necessary for fulfilling a responsibility arising from its processing.
109. In not all cases is opposition to the processing of personal data appropriate, as the data may be required for legal purposes or for fulfilling certain obligations.

In addition to ensuring the enforcement of ARCO rights, those subject to the LFPDPPP must adhere to principles of legality, consent, information, quality, purpose, fairness, proportionality, and accountability,[110] along with the duties of security[111] and confidentiality,[112] which translate into specific obligations to ensure the lawful use of your personal data.

In Mexico, the National Institute for Transparency, Access to Information, and Protection of Personal Data (INAI, for its acronym in Spanish) is the authority responsible for ensuring compliance with and respect for the fundamental right to personal data protection. This autonomous constitutional body is tasked with guaranteeing the proper use of your personal data, as well as the exercise and protection of the ARCO rights you hold regarding your information.[113]

Knowing your personal data protection rights is important so that, as a user, you can identify how your data is being used. If you disagree with its use, you can exercise your ARCO rights. Additionally, the more informed you are, the better positioned you will be to demand minimum standards for data protection, which could lead companies to compete in providing better data security.

110. Article 6 of the LFPDPPP.
111. The data controllers must establish administrative, technical, and physical security measures to protect personal data against damage, loss, alteration, destruction, or unauthorized use, access, or processing. See Article 19 of the LFPDPPP.
112. The controller or third parties involved in any phase of the personal data processing must maintain confidentiality regarding the data, an obligation that will persist even after their relationship with the data subject or, where applicable, with the controller ends. See Article 21 of the LFPDPPP.
113. INAI (2021), *Normativa y legislación en PDP. Leyes en México para la protección de datos personales*. Available here.

4. Final thoughts

Data is fundamental in the digital economy. Its use by companies not only facilitates the offering of innovative products and services but also presents significant challenges. While data enables companies to compete effectively, those dominating the markets may abuse their position to distort competition, harming both you as a consumer and emerging companies.

This power in digital markets, sometimes referred to as "data-opoly," can limit your options as a consumer by concentrating control in the hands of a few companies. Furthermore, anti-competitive strategies, such as denying access to essential data or discriminating against users, can reinforce these companies' dominance in the market, harming competition and innovation, thus reducing your alternatives.

In this context, economic competition plays a crucial role. A competitive market ensures high-quality products and services at reasonable prices, offering a wide variety and promoting innovation. Additionally, effective competition provides you with more options to find products that better suit your needs.

However, the management of your data also presents privacy challenges. Every time you use digital services, your personal data is at risk of being used in ways that could compromise your privacy. In Mexico, your rights over your data are protected by law, ensuring that companies respect privacy principles when handling your information.

Frequently, companies impose terms and conditions that can be unclear, overly complex, or lengthy, and you may feel compelled to accept them in order to use a service. Therefore, it is essential to be informed about how your data is used and to take proactive measures to protect your privacy.

Consequently, the relationship between competition policies and personal data protection is crucial in the digital economy. Cofece and INAI, through their work and existing cooperation mechanisms, are responsible for ensuring comprehensive protection for users in digital markets. The goal is to achieve competitive and secure markets that respect data and privacy. Similarly, measures could be considered to inform users about how their information is used, or to regulate how companies obtain consent to collect and use data.

Your role as a consumer is vital. Recognizing the value of your information in the digital economy and taking measures to protect it is essential. Here are four practical tips for managing your data securely:

1. **Cookies:** When browsing the Internet, you'll find websites that use cookies to personalize your experience. These sites should give you options to accept, reject, or customize cookies based on your preferences. Take advantage of these options to control how your data is used.
2. **App settings on smartphones:** Review and adjust the permissions of the apps on your phone to control access to your personal information and decide what data you want to share.
3. **Safe browsing:** Use incognito mode on browsers or a virtual private network (VPN) to protect your data while browsing the internet.
4. **Opt for privacy-friendly services:** Choose digital services, such as search engines and messaging platforms, that prioritize privacy and offer secure handling of your data.

Remembering that your data is valuable in digital markets, using it responsibly allows you to influence how companies compete and improve their offerings. By staying informed, you can make decisions that promote competition and benefit both other consumers and new businesses.

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