

**Committee: Economic and Social Council (ECOSOC)**

**Issue: Commercialization of data as a new form of capital**

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**Position: Deputy President, President**

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## **INTRODUCTION**

Dear Delegates,

\$10 Trillion; the estimated value of the globe's total data. Capitalising off of data would indefinitely innovate our economy to unrecognisable new heights, however would it be worth it if individuals have to sacrifice their privacy and autonomy?

Through data commercialisation, organisations are able to turn a byproduct of daily activities - data - into an asset. It's an incredibly valuable tool for enterprises, as it can help raise output and productivity by a minimum of 5%, along with a slew of other benefits.

However, as such data practices are still fairly new, nations are yet to put in place global regulations in order to protect individuals from its catastrophic capacity to be misused. Thus, solutions need to be imposed to ensure data commercialisation can be completely utilised by all enterprises alike without ignoring its potential social costs.

This study guide will provide you with an insight to data commercialisation and data capital, however it is essential that you do research of your own regarding your county's policy.

Should you have any questions in regards to the issue or the conference in general, please do not hesitate to contact us via email ([modestimarkou@gmail.com](mailto:modestimarkou@gmail.com), [a.livaniou@acg.edu](mailto:a.livaniou@acg.edu)/ [katerinaliv21@gmail.com](mailto:katerinaliv21@gmail.com), [nicoleea2017@gmail.com](mailto:nicoleea2017@gmail.com)), or Instagram (@modestimarkou, @caterinalivaniou, @nia\_aldaine). With that being said, best of luck with all your preparations. We hope our conference enlightens you! Looking forward to meeting you all!

Kind regards,

Modesti Markou

Caterina Livaniou

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## DEFINITION OF KEY TERMS

### Data Commercialisation

Data commercialisation is the process of taking existing data obtained from business operations and turning it into a new revenue stream through developing new products, personalising existing ones, or improving marketing with its help.

### Capital

Capital is a produced good, as opposed to a natural resource, that is necessary for the production of another good or service or a good that confers value or benefit to its owner.

### Data

Data is information, often in the form of facts, numbers, or statistics collected together to be examined for reference or analysis.

### Algorithm

An algorithm is a process or set of rules to be followed in calculations or other problem-solving operations. Computer programs and software such as AI programs and Machine learning are all made up of algorithms. Data fuels algorithms - they're unable to run without data as data determines the output or the consequence of the algorithm.

### Data Capital

Data capital refers to an intangible, digital asset that contains recorded information necessary to produce a good or service or help work towards an end goal, such as increasing profits or maximising efficiency.



**84% of the  
market value**

of companies in the S&P  
500 come from intangible  
assets<sup>3</sup>

### **Competitive advantage**

Competitive advantage is all the factors that allow a company to produce goods or services better or more cheaply than its rivals, which allows the productive entity to generate more sales or superior margins compared to its market rivals.<sup>1</sup>

### **Internet Of Things (IoT)**

IoT are a network of physical objects that are embedded with sensors, processing ability, software, and other technologies that connect and exchange data with other devices and systems over the Internet or other communications networks. Eg: Alexa devices, smart pacemakers, AR glasses, etc.

### **Artificial Intelligence (AI)**

AI is a simulation of human intelligence processes by machines achieved through using algorithms and data. Eg include: natural language processing, speech recognition and machine vision.<sup>2</sup>

### **Machine Learning**

This is a type of artificial intelligence (AI) that allows software applications to become more accurate at predicting outcomes without being explicitly programmed to do so. They are trained with labelled data sets, which allow the models to learn and grow more accurate over time.<sup>3</sup>

### **Personal Data or Personal Identifiable Information (PII)**

PII refers to any piece of information that permits the identity of an individual to be identified or reasonably inferred.

### **Big Data**

Big Data is a combination of structured, semistructured and unstructured data collected by organisations that can be mined for information and used in machine learning projects, predictive modelling and other advanced analytics applications.

### **Data-driven decision making (DDDM)**

DDDM refers to making strategic decisions based on hard data as opposed to intuition, observation, or guesswork. The value of data-driven decisions is dependent on the

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<sup>1</sup> Twin, Alexandra. "What Is a Competitive Advantage?" *Investopedia*, Investopedia, 3 Aug. 2022, [https://www.investopedia.com/terms/c/competitive\\_advantage.asp](https://www.investopedia.com/terms/c/competitive_advantage.asp).

<sup>2</sup> Carter, Sarah. "Digital Health: Ai Bias & Ethics Resources." PACT, PACT News, 15 June 2022, <https://philadelphiapact.com/digital-health-ai-bias-ethics/>.

<sup>3</sup> Carter, Sarah. "Digital Health: Ai Bias & Ethics Resources." PACT, PACT News, 15 June 2022, <https://philadelphiapact.com/digital-health-ai-bias-ethics/>.

quality of the data and its analysis and interpretation. DDDM is generally used to gain a competitive advantage but can be used to help organisations reduce costs and run more efficiently.<sup>4</sup>

### **Data Brokers**

Data Brokers are companies that collect information to build up a detailed profile of an individual to later sell them. It's been estimated that the data broking industry is worth \$200 billion per year, with up to 4,000 data brokering companies worldwide.

### **Data Privacy**

Data privacy is the branch of data management that deals with handling personal data in compliance with data protection laws, regulations, and general privacy best practices.

### **Data Mining**

Data mining is the process of finding anomalies, patterns and correlations within large data sets to predict outcomes. Using a broad range of techniques, you can use this information to increase revenues, cut costs, improve customer relationships, reduce risks and more.<sup>5</sup>

### **Datafication**

Datafication is the transformation of daily activities and social interactions into online quantifiable data, thus allowing for monitoring, tracking, analysing and optimisation.<sup>6</sup>

### **Digitisation**

Digitisation is the process of turning analogue information into a digital format such as data.

### **Surveillance capitalism**

Surveillance capitalism refers to the commodification and monetization of personal data captured through monitoring people's movements and behaviours online and in the physical world for the sole purpose of profit-making.

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<sup>4</sup> "Data-Driven Decision Making: 5 Essentials." *Ohio University*, 8 Mar. 2021, <https://onlinemasters.ohio.edu/blog/data-driven-decision-making/#:~:text=The%20value%20of%20data%2Ddriven,costs%20and%20run%20more%20efficiently.>

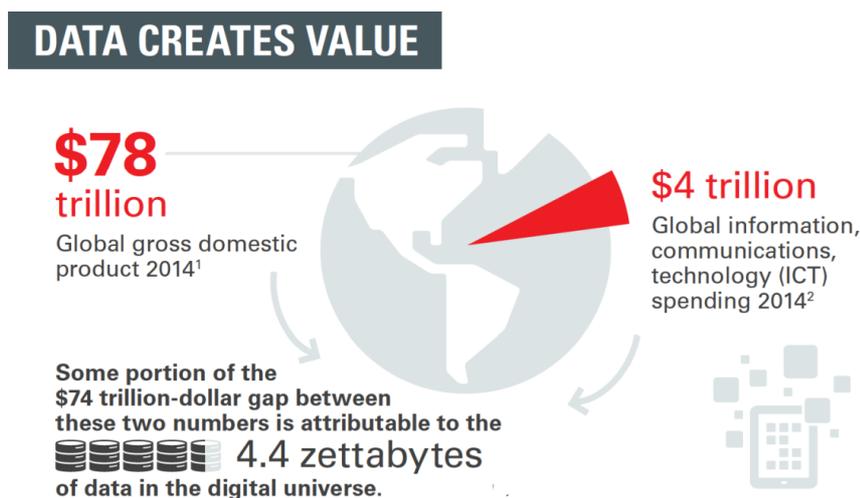
<sup>5</sup> "Data Mining: What It Is and Why It Matters." *What It Is and Why It Matters | SAS India*, [https://www.sas.com/en\\_in/insights/analytics/data-mining.html#:~:text=Data%20mining%20is%20the%20process,relationships%2C%20reduce%20risks%20and%20more.](https://www.sas.com/en_in/insights/analytics/data-mining.html#:~:text=Data%20mining%20is%20the%20process,relationships%2C%20reduce%20risks%20and%20more.)

<sup>6</sup> Shilova, Margarita, and Amelia Matteson. "The Concept of Datafication; Definition & Examples." *Data Science Central, Tech Target*, 2 June 2018, [https://www.datasciencecentral.com/the-concept-of-datafication-definition-amp-examples/.](https://www.datasciencecentral.com/the-concept-of-datafication-definition-amp-examples/)

## BACKGROUND INFORMATION

### What is data commercialisation?

In the days prior to modern technology, stakeholders often had to take bigger risks and make more uninformed decisions due to the lack of publicly available information. However, now, due to the prevalence of technology, stakeholders can leverage data to find out more regarding their target consumer base and the world to ensure the production process is easier. This also guarantees less risk as they're more aware of their consumer base. This is one of the benefits of data commercialization. It turns a byproduct - data - into valuable capital. Valuable being an underestimate, as global data is estimated to have a value of upwards of \$10 Trillion.



Infographics regarding data.

Incumbents can use this data to assist in decision making - this is referred to data-driven decision (DDD) making. According to a study done by Brynjolfsson, MIT, and the University of Pennsylvania, DDD performed highest in terms of output and productivity - typically "5 to 6 percent higher than what would be expected, given their other investments and information technology usage".<sup>7</sup> With DDDM, firms are able to analyse droves of data and

<sup>7</sup> *The Rise of Data Capital*,  
[http://files.technologyreview.com/whitepapers/MIT\\_Oracle+Report-The\\_Rise\\_of\\_Data\\_Capital.pdf](http://files.technologyreview.com/whitepapers/MIT_Oracle+Report-The_Rise_of_Data_Capital.pdf).

stimulate their options to identify all potential risks in order to choose the best option with the least opportunity cost.

Businesses use big data to gain insight on the digital footprint of their target customer base in order to help with customer acquisition or retention as well as innovation. The digital footprint of individuals helps provide insights to businesses about consumer preferences, needs, purchase behaviour, current trends, etc. Businesses can then use this data to tailor their services and products to ensure specific consumer needs are met, which in turn aids in ensuring customer satisfaction, loyalty, and a boost in sales. This is highly important, as in order to grow and maintain their competitiveness, businesses need to grow their customer base to assist with growing their market share, increasing revenue, etc. Businesses also use big data to aid in innovation, as big data analytics facilitates real-time tracking of the market. Data can also be leveraged to improve operational efficiency in an organisation, analytics along with automation can help connect workflows, assess costs, identify inefficiencies in the workplace, and automate tasks to streamline complex procedures and management processes.

#### **How data commercialisation is enabled:**

In order to optimally capitalise on their data, enterprises need to build a steady stream of data, which can easily be done through digitisation and datafication. Fortunately, datafication isn't discriminatory - nearly every enterprise is able to spin their information into data. To achieve this organisations need to realise that data is created through activity - interactions with customers, suppliers, and partners are particularly crucial activities that should be taken advantage of.

Every single activity that's conducted in a business, produces information, however unless digitised that information won't produce valuable data. This is where IoTs (such as devices, sensors, etc) can be of aid - they're able to turn analogue information into digital data which can then be analysed and interpreted. It's forecasted that the market revenue of IoTs will grow to 1.6 trillion by 2025, with over 10 billion IoT devices currently existing in 2022, so needless to say they're a data cow. An example of an organisation capitalising on seemingly useless activity and turning it into data capital is when Google deployed fleets of cars onto the

world's roads to capture imagery, distances, and wireless network IDs, not many understood that the cars were amassing data capital that would be later used to create search, navigation, and ad-placement services.

Additionally, businesses need to keep in mind that through data, more data can be produced. When data is analysed, interpreted, etc by algorithms, the algorithm's performance data can be recorded to produce further insights which can help algorithms improve in the future. The capability to immediately find and access information online reduces consumers' search costs to learn about a new service or product and figure out whether it's worth their time to try. The data produced by consumers' interactions with these services fuels data-driven hypotheses about new features to add, then generates data about the adoption of those capabilities. Amazon did that with its recommendation algorithms, and Facebook did it by inserting news into members' feeds.<sup>8</sup>

Artificial Intelligence and Machine learning tools can be taken advantage of to advance an organisation's data commercialisation strategy. They can help companies better process data and develop innovative products. These tools can process consumer data and actively produce feedback and improve its services based on consumer interactions.

### **Challenges when attempting to leverage data**

Data capital is an experience good - which means its value is only realised after the good has been experienced.<sup>9</sup> This results in enterprises that haven't yet experienced data capital, to be more reluctant to pursue it. However, when pursuing it aids in a firm's growth being a minimum of 5-6% ahead of its competitors, ignoring it is an unwise decision. Firms are advised to always invest in data that improves its own competitive advantage. However, key stakeholders of firms often view data as a liability or an expense that incurs huge storage costs

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<sup>8</sup> *The Rise of Data Capital*,  
[http://files.technologyreview.com/whitepapers/MIT\\_Oracle+Report-The\\_Rise\\_of\\_Data\\_Capital.pdf](http://files.technologyreview.com/whitepapers/MIT_Oracle+Report-The_Rise_of_Data_Capital.pdf).

<sup>9</sup> *The Rise of Data Capital*,  
[http://files.technologyreview.com/whitepapers/MIT\\_Oracle+Report-The\\_Rise\\_of\\_Data\\_Capital.pdf](http://files.technologyreview.com/whitepapers/MIT_Oracle+Report-The_Rise_of_Data_Capital.pdf).

and takes up valuable space. Overcoming this requires educating key stakeholders and raising awareness about the potential of data to evolve an organisation.

For smaller firms, despite the huge potential growth they could face as a result of investing in data, they may be unable to get the financial resources and capital to bear such storage costs. Thus one challenge when attempting to level the playing field, is attempting to reduce the costs of data commercialisation to ensure all firms are able to partake in it.

Data that's in disarray, in an outmoded format, filled with duplications, or otherwise unusable is of no use to an organisation.<sup>10</sup> Another challenge for organisations is ensuring that the data is organised in the form of a data lake - a free-flowing information pathway that's searchable, navigable, and useful.<sup>11</sup> A data lake helps in ensuring the data is easily accessible, of a high quality, accurate, and clearly structured - making sure the data is organised helps ensure that all business operations regarding the data are as efficient and productive as possible. To turn a pool of data into a data lake, data scientists and Big data analysts are required. However, that's where part of the challenge enters. As the field is relatively new and there's a shortage of labour, finding skilled data experts is quite difficult and can be expensive. This may be manageable for larger firms, however may not be as affordable for smaller ones, thus an effort needs to be placed on developing affordable and easier methods to organise the data or in fixing the shortage of labour and perhaps subsidising it for smaller firms.

### **Issues with leveraging data**

When companies attempt to commercialise data, they tend to find that data is an elixir in the creation of digital services (eg: Uber, Netflix, etc.). However, one key characteristic of these digital services is that they're often disruptive innovations - an innovation that either creates a new market or enters at the bottom of an existing market and is able to successfully

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<sup>10</sup> "What Is Data Capital and Why Is It Important?" *Redapt*, <https://www.redapt.com/blog/what-is-data-capital-and-why-is-it-important#:~:text=The%20term%20data%20capital%20refers,increasing%20profits%20or%20maximizing%20efficiency>.

<sup>11</sup> "What Is Data Capital and Why Is It Important?" *Redapt*, <https://www.redapt.com/blog/what-is-data-capital-and-why-is-it-important#:~:text=The%20term%20data%20capital%20refers,increasing%20profits%20or%20maximizing%20efficiency>.

displace established market-leading firms, products, and alliances. While on one hand, this could be seen as a positive characteristic as it creates innovation and competition which can lead to high economic growth. On the other hand, due to the nature of digital services; how explosively quickly they grow (Uber grew to more than a \$50 billion valuation in only six short years) and how volatile their place in the market is (due to Nokia’s inability to keep up with new technology, it was quickly displaced as the leading phone manufacturer) - digital services have the potential to create immense instability in the economy, putting firms out of business and creating a lot of structural unemployment - potentially widening income inequality gaps.

Additionally, data commercialisation can easily act as a gateway for surveillance capitalism. Due to recent global development and trends, the commodification of PII has grown to become an industry worth \$200 billion. Some of the data brokers partaking in this industry are huge multinational businesses, one such firm is Oracle, which is known to mine personal data such as: political views, media usage, net worth, and recent purchases and basic characteristics such as age and gender. They also keep track of individuals who perform web searches for sensitive criteria such as abortion, gay marriage, legalising drugs, protests, and health matters. The mined information provides enough information to apply for a credit card and more than enough information for identities to be cloned, and sold on the black market for as little as \$1.

Full Name	City	State	ZIP	Year of Birth	Country	Price	
MARSHA	ST. PETERSBURG	FL	33706	1985	USA	\$1	
THEODIS	SPRING HILL	FL	34464	1985	USA	\$1	
HATTIE	PANAMA CITY	FL	32404	1985	USA	\$1	
KAREN C	FALM COAST	FL	32430	1985	USA	\$1	
LAVERNE	ORLANDO	FL	32806	1985	USA	\$1	
LEE ANI	MOLINO	FL	32185	1985	USA	\$1	
STACY G	MILTON	FL	32587	1985	USA	\$1	
JACQUEL	MIAMI GARDENS	FL	33156	1985	USA	\$1	
ALFREDA	MIAMI	FL	33136	1985	USA	\$1	
TURNER	MADISON	FL	32909	1985	USA	\$1	
SANDRA	LEHIGH ACRES	FL	33409	1985	USA	\$1	
LE ROOP	LAKELAND	FL	33809	1985	USA	\$1	

Dark web identity sales

Needless to say this data is highly sensitive, and if sold to the wrong hands, can have catastrophic repercussions on the lives of individuals. One such infamous example of this is the Cambridge Analytical scandal in 2018. Cambridge Analytical had harvested the data and

built detailed psychological profiles of approximately 87 million Facebook users, which was sold and used to provide assistance to the 2016 presidential campaigns of Ted Cruz and Donald Trump. These Facebook users were targeted with specific communication to help manipulate their votes in favour of the aforementioned candidates. Microtargeting exploits personal data without informed consent and has become a demographic crisis.<sup>12</sup> If firms can easily interfere with a huge presidential election through data broking, with the advance of technology and the rise of IoTs, it's difficult to tell what can't be manipulated and what hasn't already been manipulated without the public's knowledge. If presidential candidates can manipulate individual's votes through data broking and microtargeting, what's to stop terrorist organisations from using the same tactics to radicalise people?

Although some regional attempts have been made to institute legal frameworks and laws governing an individual's privacy (such as the California Consumer Privacy Act of 2018 and the European General Data Protection Regulation (GDPR) by the EU), these haven't made any dent to the industry, proving that this is incredibly difficult to regulate. One of the reasons they have failed to tackle the issue is because they are regional by nature, and to tackle such a global multi jurisdictional issue, global corporation and a uniform global framework is required.

## **MAJOR COUNTRIES AND ORGANISATIONS INVOLVED**

### **United States of America (USA)**

Unless a state has its own data privacy legislation, many corporations are essentially free to use the data without any constraints because there are no federal privacy rules governing them.

### **China**

On November 1st, 2021, China's Personal Information Protection Law (PIPL) came into force. The PIPL is the third of three Chinese laws—along with the Cybersecurity Law and the Data

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<sup>12</sup> Jahankhani, H., O'Dell, L. M., Bowen, G., Hagan, D., & Jamal, A. (2021). 17: Commodification of consumer privacy and the risk of data mining exposure. In *Strategy, leadership, and ai in the cyber ecosystem: The role of Digital Societies in information governance and decision making*. essay, Academic Press, an imprint of Elsevier.

Security Law—designed to give a holistic approach to cybersecurity, digital security, and data protection. These three laws were all enacted during this decade by the Chinese government and, in the name of national security, aim to increase data protection, data localisation, and cybersecurity. The legislation improves national security legislation.

### **Russia**

Data protection regulations are a fast-evolving area of Russian law that were mostly passed in 2005 and 2006. The foundation of Russian privacy regulations is the Federal Law on Personal Data (No. 152-FZ), which went into effect on July 27, 2006. It requires data operators to apply all necessary organizational and technical safeguards to protect personal data from unauthorized or unintentional access. An amendment was approved on December 20, 2020, and it became effective on March 1 of the following year. The amendment mandates that the subject's consent be obtained before personal information is made publicly available.

### **European Commission**

The Commission[vb1] hopes to increase the amount of data accessible for use and establish guidelines for who may access the data and for what reasons across all EU economic sectors via the European data act, which was first proposed in February 2022. The new regulations are anticipated to increase the GDP of EU Member States by an additional €270 billion by 2028 by resolving the technological, legal, and economic problems that result in underuse of data.

### **Association of Southeast Asian Nations (ASEAN)**

In order to advance and reinforce personal data protection in the area, an ASEAN Framework on Personal Data Protection was approved in November 2016<sup>5</sup>. This framework establishes a set of principles to direct the implementation of actions at both the national and regional levels. In addition to ongoing initiatives to promote regional cyber security cooperation, such as the ASEAN Ministerial Conference on Cybersecurity (AMCC) and the ASEAN Cyber Capacity Programme, the ASEAN leaders released a statement on cyber security cooperation in April 2017. (ACCP). As a result of these platforms, Singapore has set aside S\$10 million for the ACCP to improve the technical proficiency of incident responders and regional operations.

## TIMELINE OF EVENTS

Date	Description of Event
1865	Business intelligence is invented by Richard Devens and it is the process of analyzing data, and then using it to deliver actionable information
1943	One of the first data processing machines is created by the United Kingdom
1955	The official commercialization of the internet is launched.
1979	The first commercial mobile network debuts.
1989-1990	The easy access to data era starts with the creation of HTMLs, URLs etc.
Start of 21 <sup>st</sup> century	The burst of innovation brought on by the arrival of big data cannot be emphasized having a huge impact on everyone.
2013	Big data market reaches 13 million dollars
2019	Big data market reaches 193 million dollars
2021	It is estimated that the data market will reach 420 million dollars by the end of 2027.

## **UN INVOLVEMENT: RELEVANT RESOLUTIONS, TREATIES AND EVENTS**

### **United Nations Conference on Trade and Development (UNCTAD)**

For parliamentarians and the courts to develop informed policies and legislation in the field of data protection and to successfully execute them, UNCTAD conducted surveys of government officials in 48 countries in Africa, Asia, Latin America, and the Caribbean. More than 60% of the participants said they had trouble comprehending the law relating to privacy and data protection.

#### **Resolution A/RES/68/167 Resolution A/HRC/RES/28/16**

On December 18, 2013, the resolution A/RES/68/167 was adopted by the General Assembly as an attempt to protect the right to privacy and personal data in the digital age. The resolution condemns any attempt of data abuse and stresses the responsibility of each member state to protect its citizens, under the international law, from illegal use of an individual's data.

#### **Resolution A/HRC/RES/28/16 Association of Southeast Asian Nations (ASEAN) laws relating to data protection**

On April 1, 2015, the resolution A/HRC/RES/28/16 was adopted by the Human Rights Council to protect the rights of each individual in the digital age by renouncing data overuse. Under this resolution, it requested the Special Rapporteur to ask governments, non-governmental organizations, and any other parties with knowledge of circumstances and cases relevant to privacy for credible and trustworthy information. In March 2018, the mandate was extended for a further three years.

## **PREVIOUS ATTEMPTS TO SOLVE THE ISSUE**

The present issue lacks international response and there have not been many previous attempts to solve this issue. The reason behind the limited previous attempts is that the commercialization of data as a new form of capital is a new issue that has emerged in the last few years as technology advances further. Thus, administrations and organizations have not taken measures to combat the issue.

## **POSSIBLE SOLUTIONS**

As detailed above, there are many caveats that need to be addressed in order to ensure that data can be commercialized safely. The solutions to this issue should mainly tackle the two major sides of data capital: the corporations and the consumer

### **Ensuring proper organization of data**

On the corporation side, states should ensure that all data capital in circulation is properly formatted, organized, and can be used by the purchaser. This can be achieved by means such as government-issued guidelines on proper format, as well as funding education on data science. Ultimately, this will not only contribute to the development of businesses but will prevent sellers from scamming purchasers by selling them unusable data.

### **Protecting the users**

On the consumer side, there should be an adequate legal framework established in order to protect all users' privacies, by preventing corporations from recording and distributing highly sensitive personal data, such as religion, political affiliation, sexual orientation, gender identity etc. The specifics of this arrangement must strike a balance that allows for corporations to gather and use all necessary and appropriate data, without overstepping into users' personal lives and violating their privacy.

### **Government protection**

One way the above can be achieved, save for legal framework of course, would be the establishment of a United Nations or local government backed agency, that will specialize in reviewing and approving all data capital that is in circulation. To be more specific, this agency would be tasked with ensuring that data is properly formatted and does not contain users' personal information. The specifics of their jurisdiction should be such as to foster a fruitful and efficient market, without sacrificing the consumer's right to privacy and safety.

## BIBLIOGRAPHY

"A History and Timeline of Big Data." *WhatIs.com*, [www.techtarget.com/whatis/feature/A-history-and-timeline-of-big-data](http://www.techtarget.com/whatis/feature/A-history-and-timeline-of-big-data).

[files.technologyreview.com/whitepapers/MIT\\_Oracle+Report-The\\_Rise\\_of\\_Data\\_Capital.pdf](http://files.technologyreview.com/whitepapers/MIT_Oracle+Report-The_Rise_of_Data_Capital.pdf).

*Centre De Culture Numérique - CCN - Université De Strasbourg - Accueil*, [ccn.unistra.fr/websites/ccn/documentation/Recherche-Data/CSEM-data-as-a-form-of-capital.pdf](http://ccn.unistra.fr/websites/ccn/documentation/Recherche-Data/CSEM-data-as-a-form-of-capital.pdf).

<https://journals.sagepub.com/doi/full/10.1177/2053951718820549>

<https://ccn.unistra.fr/websites/ccn/documentation/Recherche-Data/CSEM-data-as-a-form-of-capital.pdf>

[http://files.technologyreview.com/whitepapers/MIT\\_Oracle+Report-The\\_Rise\\_of\\_Data\\_Capital.pdf](http://files.technologyreview.com/whitepapers/MIT_Oracle+Report-The_Rise_of_Data_Capital.pdf)

[https://www.researchgate.net/publication/304674108\\_Big\\_data\\_commercialization](https://www.researchgate.net/publication/304674108_Big_data_commercialization)

[https://home.iitk.ac.in/~amman/soc748/bourdieu\\_forms\\_of\\_capital.pdf](https://home.iitk.ac.in/~amman/soc748/bourdieu_forms_of_capital.pdf)

"What Is Capital?" *Investopedia*, 18 Nov. 2003, [www.investopedia.com/terms/c/capital.asp](http://www.investopedia.com/terms/c/capital.asp).  
Duggal, Nikita. "Top 7 Benefits of Big Data & Analytics: Simplilearn." *Simplilearn.com*, Simplilearn, 14 July 2022, <https://www.simplilearn.com/benefits-of-big-data-and-analytics-article#:~:text=One%20of%20the%20most%20compelling,instance%20from%20the%20logistics%20industry>.

Palin, Dave. "Data Commercialisation: How to Get Your Slice of a \$10 Trillion Industry." *SMRTR*, 18 July 2022, <https://smrtr.com.au/news-views/data-commercialisation-how-to-get-your-slice-of-a-10-trillion-industry/>.

"Data Commercialization: What It Is & What Are the Challenges?" *AIMultiple*, <https://research.aimultiple.com/data-commercialization/#how-is-it-different-from-data-monetization>.

Vailshery, Lionel Sujay. "IOT Market Size Worldwide 2017-2025." *Statista*, 22 Jan. 2021, <https://www.statista.com/statistics/976313/global-iot-market-size/>.

"6 Issues That Will Define the Future of Capital Markets." *World Economic Forum*, <https://www.weforum.org/agenda/2021/09/six-issues-to-define-the-future-of-capital-markets/>.

The Rise of Data Capital,

[http://files.technologyreview.com/whitepapers/MIT\\_Oracle+Report-The\\_Rise\\_of\\_Data\\_Capital.pdf](http://files.technologyreview.com/whitepapers/MIT_Oracle+Report-The_Rise_of_Data_Capital.pdf).

When Data Is Capital: Datafication, Accumulation, and Extraction.

<https://journals.sagepub.com/doi/10.1177/2053951718820549>.

“What Is Data Capital and Why Is It Important?” Redapt,

<https://www.redapt.com/blog/what-is-data-capital-and-why-is-it-important#:~:text=The%20term%20data%20capital%20refers,increasing%20profits%20or%20maximizing%20efficiency>.

Dadwal, Sumesh, et al. “Value of Data as a Currency and a Marketing Tool.” Strategy, Leadership, and AI in the Cyber Ecosystem, Academic Press, 29 Jan. 2021,

<https://www.sciencedirect.com/science/article/pii/B9780128214428000173>.

PricewaterhouseCoopers. “Data and Analytics in the Banking and Capital Markets Sector.”

PwC, <https://www.pwc.co.uk/issues/data-analytics/industries/banking-and-capital-markets.html>.

Foote, Keith D. “The Challenges of Leveraging Big Data.” DATAVERSITY, 18 Oct. 2019,

<https://www.dataversity.net/the-challenges-of-leveraging-big-data/>.

The Rise of Big Data Capital - Oracle. <https://www.oracle.com/a/ocom/docs/database/data-capital-infographic.pdf>.

“Internet of Things Statistics for 2022 - Taking Things Apart.” Dataprot,

<https://dataprot.net/statistics/iot-statistics/#:~:text=In%202021%2C%20there%20were%20more,surpass%2025.4%20billion%20in%202030>.

Jahankhani, Hamid, et al. “17: Commodification of Consumer Privacy and the Risk of Data Mining Exposure.” Strategy, Leadership, and AI in the Cyber Ecosystem: The Role of Digital Societies in Information Governance and Decision Making, Academic Press, an Imprint of Elsevier, London, 2021.

Simmons & Simmons, [https://www.simmons-](https://www.simmons-simmons.com/en/publications/ck2khncly0pu0b480rrwmwnz/getting-started-creating-a-data-commercialisation-strategy-that-works)

[simmons.com/en/publications/ck2khncly0pu0b480rrwmwnz/getting-started-creating-a-data-commercialisation-strategy-that-works](https://www.simmons-simmons.com/en/publications/ck2khncly0pu0b480rrwmwnz/getting-started-creating-a-data-commercialisation-strategy-that-works).

Madrigal, Alexis C. "What Facebook Did to American Democracy." The Atlantic, Atlantic Media Company, 16 Nov. 2017,

<https://www.theatlantic.com/technology/archive/2017/10/what-facebook-did/542502/>.

"Data Mining: What It Is and Why It Matters." What It Is and Why It Matters | SAS India,

[https://www.sas.com/en\\_in/insights/analytics/data-mining.html#:~:text=Data%20mining%20is%20the%20process,relationships%2C%20reduce%20risks%20and%20more.](https://www.sas.com/en_in/insights/analytics/data-mining.html#:~:text=Data%20mining%20is%20the%20process,relationships%2C%20reduce%20risks%20and%20more.)

"Data-Driven Decision Making: 5 Essentials." Ohio University, 8 Mar. 2021,

<https://onlinemasters.ohio.edu/blog/data-driven-decision-making/#:~:text=The%20value%20of%20data%2Ddriven, costs%20and%20run%20more%20efficiently.>