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Trading Up: Exchanging our Data for a Better Life

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Trading Up

Exchanging Our Data for a Better Life

By Nathan Turner

Our data can drive innovation. That's right—personal data collected from you and me can influence new technologies that will improve our lives. This should excite us, but our fear of losing data privacy can quell our excitement for progress and even restrict innovation.

Take this *New York Times* article from June 2019 with the headline, "Why Is America So Far Behind Europe on Digital Privacy?"—it asserts that we are "far too vulnerable" online and that tech companies are seeking to "strip away what few [data] privacy rights we now enjoy."[i] However, the article—along with the media—does not address how companies are using data to make consumers' lives better; rather, it focuses on reinforcing our natural fear of surveillance.

According to a 2018 poll, a majority of American adults believe that the government should more heavily regulate big tech companies. This even includes a large portion of Republicans, who are typically against government regulation of the economy (see Figure 1). These sentiments are dangerous to technological progress. Adam Thierer, a senior researcher at George Mason University, said that "heavy-handed regulatory approaches to data management will likely derail our data-driven economy and all the benefits it brings us."[ii] If we are going to be afraid, then we should instead be afraid of the loss of innovation that comes as a result of measures to preserve privacy.

This is where the idea of "trading up" comes into play. Trading up implies sacrificing something good for something better. We can understand how trading our data privacy can improve our quality of life if we understand data collection and why it matters, why we shouldn't fear it, and how it drives innovation.

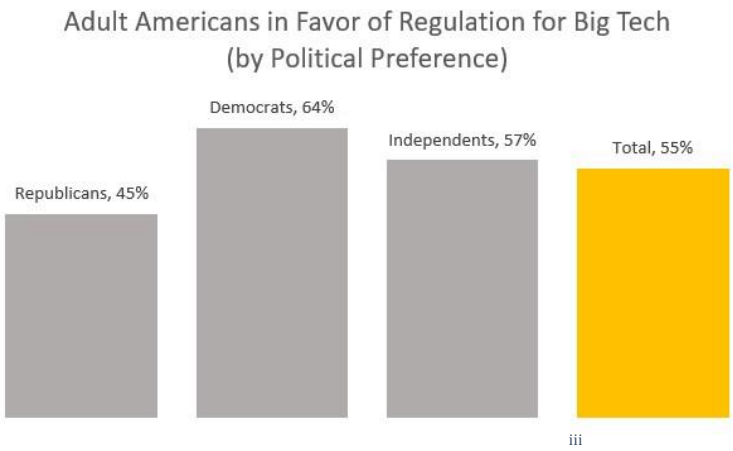

Figure 1. Statistics from poll on Axios.com.[iii]

Why Data Collection Matters

Why should companies collect data? Is it all for a nefarious plot to control as many aspects of our lives as possible? Some people might say yes, but the real reason is more practical.

Before understanding why data collection is so necessary, we first need to distinguish between structured and unstructured data. Structured data is generally well defined and easy for both computers and people to process. It is what most of us would think of when picturing an Excel spreadsheet: numbers, dates, names, email addresses, etc. Unstructured data includes audio files, voice, photos, and videos. Though simple for humans to process, this type of data is far more complex for computers. It is also invaluable for the sake of innovation.

The method computers use to process unstructured data is called deep learning, which is a form of artificial intelligence (AI). Basically, deep learning helps a computer to "think" like a human. To achieve these aims, advanced statistical models train a computer, enabling it to be more accurate in processing unstructured data.[iv] For example, when processing an image of a dog, a trained computer will be able to identify where the animal is in the picture, what breed it is, and what it is doing.

So, where does data collection fit in to all of this? Without large amounts of structured and unstructured data, deep learning is not possible. Training computers requires accurate and complete data; in order to process future data, a computer must have had "seen" old data. Just like a person who has never seen or heard of a dog could not be expected to identify dog breeds by images, a computer cannot be expected to accurately process data without having processed similar data before. When a computer has more data to train with, it becomes better at identifying similarities.

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Why Data Collection isn't Scary

Many of us have legitimate concerns about data collection. However,

understanding more details about these concerns can help us more fully embrace the innovation that comes from sharing our data with companies. (To clarify, this article is meant to address *commercial* data collection, not government surveillance.)

Commercial data collection is not in opposition to good personal security practices. Identity theft is a real danger, so when sharing data for the purpose of collection, we must be somewhat selective. Sensitive data like our social security numbers, bank accounts, credit card numbers, and web passwords should never be shared. These data points do not help drive innovation but can be used to steal our identities. On the other hand, some personal data will not assist in identity theft. Names, birth dates, email addresses, and phone numbers, for example, do not constitute sensitive information, but are meant to be used by the people with whom we associate as a type of "social currency," and can therefore be shared more freely.[v]

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Some would argue that we should still protect our contact information to avoid "robo callers" and various phishing attempts. However, avoiding these annoyances would require a much greater shift than refusing to give tech giants our information. We would have to assume that no one at all (even our own families) could be trusted with our data and we could never give our contact information to anyone, thereby defeating the purpose of having contact information.

These concerns deal primarily with structured data, but what about unstructured data? What about the potential for surveillance and stalking? This used to be a big concern of mine until I realized: tech giants, such as Google or Facebook, have a lot of incentives to use my data wisely, and— for the most part— they do. I own a Google Home assistant, and it has helped to improve my quality of life with its simple, straightforward voice interface. Though this device could potentially be used to spy on me, Google instead provides me with a valuable service that I have come to rely upon in many ways. Google may want to use my voice data to continue providing similar benefits to me and others, and that's a good thing. Instead of lingering on the unlikely ways that tech giants could abuse their power, we should instead focus on how they can use our data to positively impact our lives.

How Data Collection Drives Innovation

The end goal of data collection is innovation, and innovation is all about improving the quality of life. Our lives will be better if we share our data.

Data-driven innovation is changing the way we interface with computers. Voice assistants, touch screens, and self-driving cars are innovations that have emerged in the last 15 years and have changed how we interact not only with technology, but also with the world at large. These innovations are amazing; human-

computer interaction becomes more mind-blowing each year. For example, this year, German researchers used deep learning to create a robotic interface that humans could operate by *thought*.[vi]

Innovative, data-driven technologies can solve real-world problems. The thought interface was conceived to help physically disabled people perform basic tasks with the assistance of a robot, which would not be possible with any other interface. Though rudimentary, the impact of this technology could be massive. Augmented reality, virtual reality, advanced prosthetics, arts and music creation, and more are possible via thought interfaces. However, if we want these incredible benefits, we will have to allow our data to be collected. Insufficient data will restrict companies from creating robust and viable interfaces.

Why We Should Be Excited

We live in a data-driven economy. Many people feel like consumers are on the losing end of an economic data-battle with tech giants, but this is simply not true. Adam Thierer stated the following:

> The harms that are sometimes alleged about commercial data collection and use are almost never substantiated. No one is being excluded from the information economy because of these practices. To the contrary, data collection means all consumers enjoy a fuller range of goods and services, usually at a very low price.

We are not losing when our data is collected, even if we do not feel the immediate benefits. "Positive impacts [of data-driven innovation] are often one or two steps down the chain from the original decision, event, or policy," stated Jess Hemerly, a senior analyst at Google.[vii]

Our quality of life has already begun to improve through data driven innovation, and technological progress is not slowing down. If we let our fear of losing data privacy slow us down, we may get left behind. We should instead support those companies that are innovating for our benefit. Choose to define your perception of data collection by your desire for progress instead of your fear, and you will find that you really are trading up.

[i] The Editorial Board, "Why Is America So Far Behind Europe on Digital Privacy?" *New York Times*, June 8, 2019, https://www.nytimes.com/2019/06/08/opinion/sunday/privacy-congress-facebook-google.html. [ii] Adam Thierer, "Relax and Learn to Love Big Data," *US News*, September 16, 2013, https://www.usnews.com/opinion/blogs/economicintelligence/2013/09/16/big-data-collection-hasmany-benefits-for-internet-users. [iii] Kim Hart, "Exclusive: Public wants Big Tech Regulated," February 28, 2018, https://www.axios.com/axios-surveymonkey-public-wants-big-tech-regulated-5f60af4b-4faa-4f45-bc45018c5d2b360f.html.

[iv] Tom Austin, Alexander Linden, Svetlana Sicular, "Innovation Insight for Deep Learning," *Gartner*, January 24, 2017, https://www.gartner.com/document/3579022. [v] Cameron F. Kerry, John B. Morris Jr., "Why data ownership is the wrong approach to protecting privacy," *Brookings*, June 26, 2019, https://www.brookings.edu/blog/techtank/2019/06/26/why-data-ownership-is-the-wrong-approach-toprotecting-privacy/.

[vi] Daniel Kuhner et al., "A service assistant combining autonomous robotics, flexible goal formulation, and deep-learning-based brain–

computer interfacing," *Robotics and Autonomous Systems* 116 (June 2019): 98-113, https://doi.org/10.1016/j.robot.2019.02.015. [vii] Jess Hemerly, "Public Policy Considerations for Data-Driven Innovation," *IEEE*, https://ieeexplore.ieee.org/abstract/document/6515480.