THE CAPCO INSTITUTE **JOURNAL** OF FINANCIAL TRANSFORMATION **GOVERNANCE OF TECHNOLOGY** "Data entrepreneurs of the world, unite!" How business leaders should react to the emergence of data cooperatives JOSÉ PARRA-MOYANO BALANCING INNOVATION & CONTROL #59 JUNE 2024

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DEAR READER,

In my new role as CEO of Capco, I am very pleased to welcome you to the latest edition of the Capco Journal, titled **Balancing Innovation and Control**.

The financial services and energy sectors are poised for another transformative year. At Capco, we recognize that this is a new era where innovation, expertise, adaptability, and speed of execution will be valued as never before.

Success will be determined based on exceptional strategic thinking, and the ability to leverage innovative new technology, including GenAl, while balancing a laser focus on risk and resilience. Leaders across the financial services and energy industries recognize the transformative benefits of strong governance while needing to find the optimal balance between innovation and control.

This edition of the Capco Journal thus examines the critical role of balancing innovation and control in technology, with a particular focus on data, Al, and sustainability, with wider corporate governance considerations. As always, our authors include leading academics, senior financial services executives, and Capco's own subject matter experts.

I hope that you will find the articles in this edition truly thought provoking, and that our contributors' insights prove valuable, as you consider your institution's future approach to managing innovation in a controlled environment.

My thanks and appreciation to our contributors and our readers.

Annie Rowland, Capco CEO

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"DATA ENTREPRENEURS OF THE WORLD, UNITE!" HOW BUSINESS LEADERS SHOULD REACT TO THE EMERGENCE OF DATA COOPERATIVES

JOSÉ PARRA-MOYANO | Professor of Digital Strategy, IMD

ARSTRACT

Data cooperatives, entities that allow individuals to pool together their personal data to gain collective bargaining power and enable them to monetize their data, are emerging. This article describes the economic mechanisms that motivate the emergence of data cooperatives and analyzes the challenges and opportunities that the existence of these cooperatives implies for business leaders.

1. INTRODUCTION

Over the past few decades, the emergence of social media and digital platforms has catalyzed an exponential increase in the creation and accumulation of personal data. This surge originates predominantly from the seamless integration of these platforms into daily life as they capture a myriad of data points ranging from consumer behaviors and preferences to social interactions and personal interests. The extensive and diverse nature of this data has made it a treasure trove for businesses aiming to derive value, innovate, and gain a competitive edge.

Because of that, data has become a factor of production, just like capital and labor (i.e., an input that is required for companies to develop and market their products and services). This fact has been further magnified by the "artificial intelligence" (Al) and data science revolution. Al and "machine learning" (ML) technologies thrive on large datasets, often revealing valuable insights that can optimize operations, predict market trends, personalize customer experiences, and drive strategic decisions, thereby cementing data's role as a foundational element of modern economic production.

2. DATA IS ECONOMICALLY UNDERUTILIZED

Interestingly, personal data is being underutilized. To understand why, we need to recognize that data as a factor of production differs significantly from traditional factors of production like labor and capital. It is unique because of its multi-user nature: data can be used by multiple entities at the same time without being depleted. For example, a single dataset about consumer preferences can simultaneously benefit an advertising firm, a market research company, and a product development team, thus implying that a person's personal data can create value for several organizations at the same time.

Setting aside two issues for a short moment, namely, who should earn the profits from the analysis of personal data and what are the privacy implications of an increased analysis of personal data by many organizations simultaneously, from a purely economic perspective, having personal data utilized by several companies at the same time would be economically beneficial. The multi-user nature of this (new) factor of production would create a parallelization of the value-generation process resulting in increased value for organizations.

3. INCREASED VALUE REQUIRES VOLUME

Since data belongs to the people to whom it refers, it would be quite natural for individuals to join associations, cooperatives, or companies that would gather their data from various sources and then offer this data to other organizations in exchange for a fee. Individuals would need to pool their data together to create a large enough dataset so that the data analysis will result in the valuable insights to which we refer.

4. DATA COOPERATIVES: POTENTIAL TO RESHUFFLE THE DECK IN THE DIGITAL ECONOMY

Amidst this backdrop, data cooperatives have emerged as a revolutionary concept. These entities allow individuals to pool their personal data, thus creating collective bargaining power. This pooling enables individuals to monetize their data, allowing entities other than the platforms on which the data was created to access and derive value from it.

Examples of data cooperatives include Swash (swashapp. io), MIDATA (midata.coop), Driver's Seat (driversseat.coop), SalusCoop (saluscoop.org) and the Data Worker's Union (dataworkers.org). Swash was conceived as a way to enable users to earn income from their browsing data and it offers a simple yet effective way for individuals surfing the internet to gain from the digital footprint they leave. Meanwhile, MIDATA focuses on health data, creating opportunities for individuals to contribute to medical research and healthcare improvements while maintaining control over their personal health information. Also in the area of healthcare, SalusCoop operates on the principle of voluntary, non-profit sharing of health information by its members. The cooperative emphasizes the ethical use of this data for research purposes, ensuring that the data is used to benefit individual and public health outcomes while respecting the privacy and rights of the data providers.

Driver's Seat caters to gig economy drivers, providing them with insights and tools to better manage and benefit from their work-related data. Finally, the Data Worker's Union advocates for the rights of data producers across various sectors, emphasizing fair treatment and use of data.

Each cooperative offers unique ways for individuals to monetize and control their data, reshaping how personal data is viewed and utilized in the digital economy.

4.1 Learning from the past to better understand the future

In the late 18th century, Adam Smith helped define the concept of labor as a factor of production. This new concept then contributed to the emergence of the labor unions shortly after, which were formalized and legally recognized by the early 19th century.

Interestingly, the notion that data is a factor of production only emerged over the last 10 to 15 years. There is an analogy to be made between data cooperatives and labor unions in the context of data as a form of digital labor. Just as labor unions collectivized the workforce to negotiate better terms and protections for workers, data cooperatives aggregate individual data contributions in the hope that citizens could participate in the profits that emerge from the analysis of their data. This aggregation strengthens the negotiating power of individuals over their data, much like unions do for labor rights and wages. In unions, the collective bargaining power helps to secure fairer terms of employment; similarly, in data cooperatives, this collective strength ensures better control and potential monetization of personal data. Both institutions serve to balance power dynamics – unions between workers and employers, and data cooperatives between individual data providers and data-using entities.

The key difference between data cooperatives and labor unions is that data cooperatives facilitate the creation of new wealth (rather than a distribution) and empower citizens to become "data entrepreneurs" that monetize a "product" they own. In this sense, data cooperatives help liberalize data as a factor of production, increase competition, and enable citizens to participate in the free market.

4.2 Possible consequences of the adoption of data cooperatives

The emergence of data cooperatives may mark a pivotal shift in the digital economy, resulting in a more efficient utilization of data, the democratization of its monetary benefits, and the creation of novel income streams in an Al-transformed society.

Efficient utilization of data in the economy: data
cooperatives streamline the aggregation and application
of data. By pooling data from numerous individuals, these
cooperatives amass a rich, diverse dataset that is more
reflective of the broader population. This aggregation

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Data cooperatives can offer a novel approach to managing privacy concerns in the digital age by embracing the concept of "sending the algorithm to the data".

enhances the data's utility for a range of applications, from healthcare research to consumer behavior analysis. Such comprehensive datasets are invaluable for training Al models, leading to more accurate and effective Al solutions. As a result, the economy benefits from a more precise understanding of trends, behaviors, and needs, driving innovation and progress across various sectors.

- Monetization and passive income for citizens: data
 cooperatives empower individuals to monetize
 their personal data. In an era in which data is a critical
 asset, individuals contributing to these cooperatives can
 receive compensation for their data, creating a new
 stream of passive income. This model offers a unique
 opportunity for individuals to capitalize on the digital
 footprints they naturally create, turning a routine activity
 into a financial asset. This not only provides economic
 benefits to the data contributors but also encourages
 a more equitable distribution of the wealth generated
 from data-driven activities.
- Supporting retirement and alternative income sources: the passive income generated through data cooperatives can be a significant support for individuals, especially during retirement. As traditional retirement funds face challenges, the additional income from data monetization can provide a much-needed financial buffer. Also, this approach is particularly potent in offsetting the economic impacts of Al and automation, which may displace traditional jobs. By monetizing their data, individuals can supplement their income, providing financial resilience in a rapidly changing job market.

Consequently, data cooperatives may represent a transformative approach to data management and utilization in the digital age. They facilitate efficient data use across industries, enable individuals to benefit financially from their personal data, and offer a novel solution to some of the economic challenges posed by Al and technological advancements. This model heralds a new era of data democracy, where the value generated from data is shared more broadly across society.

4.3 Privacy-preserving data cooperatives

Naturally, one concern that emerges with the rise of data cooperatives is privacy. It is easy to see how citizens' privacy would be (even more) depleted when an additional number of firms are able to access their data. However, there do exist privacy-preserving techniques that enable the conditional use of data so that insights from data can emerge in a privacy-preserving manner. Data cooperatives can offer a novel approach to managing privacy concerns in the digital age by embracing the concept of "sending the algorithm to the data". This method ensures that personal data remains within the cooperative's secure environment while still being useful for external Al applications.

The core of this approach lies in the cooperative receiving queries or Al models from third-parties. Instead of transferring the data out, the cooperative runs the analysis or trains the Al within its secure system. This allows the Al to learn from the data or for queries to be answered without the data ever leaving the cooperative's secure environment. And what is more important, the members of the cooperative can approve or decline the use of their data on a case-by-case basis. Hence, if very few members of the cooperative agree to use their data for a particular purpose at a given price, then the price to access that data would increase. This would result in a de-facto market-driven pricing structure that would reveal the actual value of data.

Additionally, this approach has several advantages:

 Enhanced data security: since the data never leaves the cooperative, the risk of breaches and unauthorized access is significantly reduced. This is crucial, especially for sensitive data like health or financial information.

- Compliance with privacy regulations: this method aligns with global data privacy regulations like GDPR, which emphasize data minimization and the principle of processing data within the entity that owns it.
- Maintaining data integrity: by keeping data within the cooperative, the integrity of the data is maintained. There is less risk of data being tampered with or mishandled when it is not being transferred across different platforms or networks.

In practical terms, a health data cooperative could receive an AI model designed to identify patterns in medical imaging. Instead of sending out the medical images, the cooperative would run the AI model on its internal servers. The AI learns from the data, but the data itself remains securely within the cooperative. Only the insights or results from the AI analysis are then shared with the external party.

4.4 Challenges

Data cooperatives, employing the concept of "sending the algorithm to the data", offer a forward-thinking resolution to privacy concerns in Al and data analytics. However, this model also involves its own set of challenges that would need to be addressed before its effective implementation.

- Technical complexity: the infrastructure required to handle sophisticated AI models and queries in-house is substantial. Cooperatives must invest in high-powered computing resources and develop robust data processing frameworks. Ensuring the seamless integration of external AI models with internal systems can also be technically challenging.
- Ensuring Al model security: Al models sent to cooperatives for training could potentially be designed in ways that extract or infer sensitive information. Rigorous evaluation and testing of these models for privacy compliance are critical.
- Data quality assurance: as cooperatives aggregate data from various sources, ensuring the consistency, accuracy, and quality of this data becomes essential.
 Poor data quality can lead to inaccurate Al training and unreliable results.
- Scalability issues: as the amount of data and the complexity of Al models increase, scaling the infrastructure while maintaining data privacy and processing efficiency can be challenging for cooperatives.



 Legal and regulatory compliance: navigating the evolving landscape of data privacy laws and ensuring compliance with multiple jurisdictions' regulations is a complex task, requiring constant vigilance and adaptation.

In addressing these challenges, data cooperatives need to develop comprehensive strategies that include investing in technology, training personnel, and establishing robust data governance frameworks. This involves not only technological investments but also fostering a culture of data privacy and security within the cooperative.

5. IMPLICATIONS FOR BUSINESS LEADERS

The increasing emergence of data cooperatives has significant implications for leaders in the financial services sector, offering many opportunities as well as specific challenges. Understanding and embracing these changes is crucial for staying competitive and innovative.

- Insights into consumer behavior: data cooperatives
 provide access to rich, diversified consumer data. Financial
 leaders can gain deeper insights into customer behaviors,
 preferences, and needs. This data can inform product
 development, marketing strategies, and customer service
 improvements, leading to more tailored financial services.
- Enhanced risk assessment: the detailed data from cooperatives can improve risk assessment models.
 By accessing more comprehensive datasets, financial institutions can refine their credit scoring systems, detect fraud more effectively, and manage risks better.
- Regulatory compliance: data cooperatives operate
 within stringent privacy and data protection frameworks.
 Financial leaders can leverage these cooperatives to
 ensure compliance with regulations like GDPR while
 utilizing essential data for business operations.
- New business models: the cooperative model opens avenues for new business models. Financial institutions can collaborate with these cooperatives, offering financial services tailored to the cooperative members, such as loans, insurance, or investment products based on the aggregated data.

- Competitive advantage: early adopters of this model in the financial services sector could gain a significant competitive edge. By accessing a broader range of data, financial institutions can offer more personalized services, enhancing customer satisfaction and loyalty.
- Data-driven innovation: the cooperative model encourages innovation. Leaders of financial services organizations can use the diverse data to develop new financial products and services, leveraging Al and machine learning for better financial forecasting and decision making.
- Building customer trust: by partnering with data cooperatives that prioritize data privacy and user control, financial institutions can build greater trust with their customers. This approach demonstrates a commitment to ethical data use and customer-centric practices.
- Strategic partnerships: the financial services sector can establish strategic partnerships with data cooperatives.
 These partnerships can lead to shared initiatives, joint ventures, or co-developed financial products, benefiting both parties.

Despite these many opportunities, adapting to this new model requires overcoming certain challenges as well, including integrating cooperative data with existing systems, ensuring data security, and navigating the cooperative's governance structure.

For leaders of financial services organizations, the rise of data cooperatives is not just a trend to observe but a strategic opportunity to harness. By understanding and integrating this model into their data strategy, financial institutions can enhance their services, innovate more effectively, and build stronger customer relationships in the data-driven era.

6. CONCLUSION

The potential of data cooperatives to transform how data is utilized in the economy is immense. By offering a fairer use of personal data, they pave the way for more innovative and personalized Al-driven solutions across industries. The model they propose harmonizes the need for data-driven insights with the critical importance of maintaining individual privacy.

Moreover, the successful implementation of data cooperatives could lead to a more equitable digital economy. By enabling individuals to monetize their data and become data entrepreneurs, these cooperatives provide a means for people to benefit directly from the digital economy, potentially offsetting job losses in other sectors due to Al and automation.¹

The data cooperative model, therefore, is not just a step towards a more inclusive and balanced digital future, but also a potential solution to the loss of work caused by the increasing implementation of Al. As this model gains traction, it could set a new standard for data handling and utilization, fostering a more competitive and diverse market and empowering individuals as key stakeholders in the data economy. This shift promises to catalyze innovation while upholding the principles of privacy and ethical data use, heralding a new era in the data-driven digital economy.

¹ Ito, A., 2023, "The Al heretic," Business Insider, September 23, http://tinyurl.com/27svrvmn

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Capco, a Wipro company, is a global technology and management consultancy focused in the financial services industry. Capco operates at the intersection of business and technology by combining innovative thinking with unrivalled industry knowledge to fast-track digital initiatives for banking and payments, capital markets, wealth and asset management, insurance, and the energy sector. Capco's cutting-edge ingenuity is brought to life through its award-winning Be Yourself At Work culture and diverse talent.

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