Visa
Economic
Empowerment
Institute

Imagining an open
future for payments

Beyond transactions: The social value of payments technology innovation

KALEB NYGAARD & JULIA PARK | DECEMBER 2024

Key points

- The biggest beneficiary of tokenized and contactless payments are the end-users: consumers and merchants. They realize gains through reduced fraud rates, increased authorization rates, lower cart abandonment, and significant time savings at checkout, both online and in-person.
- The overall benefits (i.e., the social benefits captured by the innovators and end-users) are significant: $916 billion for tokenized payments, and $710 billion for contactless payments.
- The social internal rate of return (IRR) on the investment in these technologies is greater than the private IRR for Visa: 39% for contactless and 34% for tokenization, and 26% for contactless and 4% for tokenization respectively.

VISA

Overview

In many parts of the world, digital payments have become so ubiquitous they are often taken for granted. The continued investment needed to prevent fraud, reduce friction in transactions, and improve products and services to meet the needs of consumers, merchants, and other players within the ecosystem is significant yet almost never considered. New research by Garcia-Swartz, Latham, Tzanetaki, Cromier, and Diniz (2024) sheds light on the topic. In their paper, The Social Value of Innovation in Payments, the authors quantify the benefits of two payment technologies – contactless and tokenization – to consumers, merchants, and the innovators that developed and disseminated the technology (defined as Visa, Mastercard, and issuing banks). The study also compares these benefits with the cost of developing and adopting the technologies to calculate the overall benefits to the private sector and society.

Understanding the benefits of technology and innovation is essential because it enables informed decision-making, ensuring resources are invested in solutions that drive growth and address challenges effectively. Additionally, recognizing these benefits fosters a culture of continuous improvement and adaptability, crucial for thriving in a rapidly evolving global landscape.

Quantifying the benefits of innovation

To get a full picture of the costs and benefits to the end-users and innovators, the authors calculate the benefits for both sides of the market – the consumers and merchants – and the innovators. They count as private benefits those that accrue to the innovators themselves, the card networks that invested in developing the technologies and the issuing banks that helped disseminate the technologies. The authors count the social benefits as the sum of private benefits and end-user benefits. The paper finds that tokenization significantly reduces fraud rates, increases authorization rates, saves time at checkout and decreases cart abandonment. Contactless transactions are faster than contact-card or cash transactions (in both traditional brick-and-mortar stores and on public transportation), which produces time-savings for consumers and merchants. The estimated global value of the benefits associated with the technologies are summarized in Figures 1 and 2.[1]

[1] Dollars are expressed in 2021 international dollars.

Figure 1. Tokenization Benefits (millions)

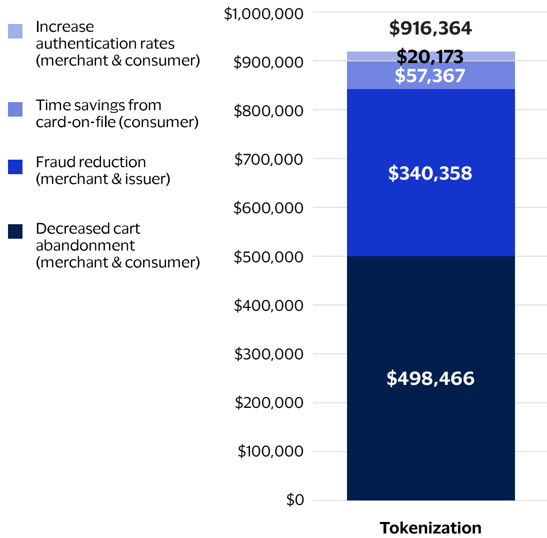
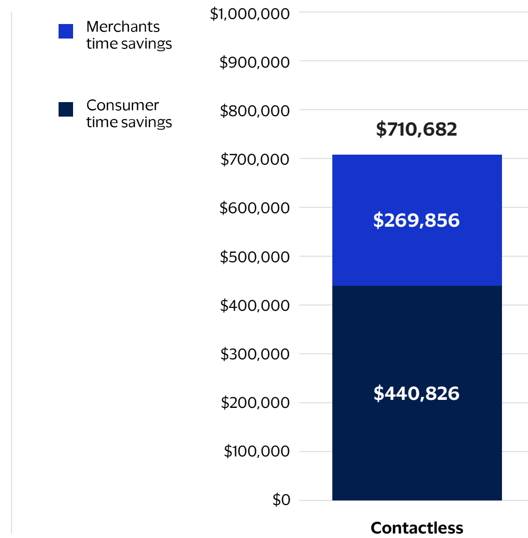


Figure 2. Contactless Benefits (millions)



The authors also calculate the internal rate of return (IRR) for contactless and tokenization and compare the private IRR and social IRR.[2] For the private IRR, the authors calculate the returns for the two largest card networks; Visa and Mastercard. For our purposes we look only at the figures for Visa. Overall, the authors find that the benefits to society are greater than those that accrue to the private sector. Take for example the returns for Visa: the private IRR for contactless is 26% versus a social IRR of 39%. For tokenization, Visa's IRR is 4% versus a social IRR of 34%.

Conclusion

The transformative power of payment technology in society is undeniable. Yet, despite its pervasive influence, the comprehensive study of payment technology's benefits remains surprisingly sparse and challenging to quantify. This gap highlights the need for further study, as a deeper understanding of technology's impacts can inform future private and public sector investments. The paper focuses on tokenization and contactless innovations as they represent some of the latest advancements in payment technology and significantly increase end user benefits. However, these are not the only payment technologies that create social value. Researchers might also apply the paper's methodology to other technologies, such as generative AI, which supports cybersecurity in the payments ecosystem. By identifying where technological advancements offer the most benefits, stakeholders can strategically direct resources to promote innovation, improve societal welfare, and support sustainable development.

[2] The IRR is a financial metric used to evaluate the profitability of an investment. In simple terms, it is the interest rate at which the present value of all future cash flows from an investment equal zero. If the IRR is higher than the cost of capital it suggests the investment is profitable. Generally, a higher IRR indicates a higher potential return on investment.

About the Visa Economic Empowerment Institute

VEEI is a non-partisan center of excellence for research and public-private dialogue established by Visa.

VEEI's overarching mission is to promote public policies that empower individuals, small businesses, and economies. It produces research and insights that inform long-term policy within the global payments ecosystem. Visa established VEEI as the next step in its ongoing work to remove barriers to economic empowerment and to create more inclusive, equitable economic opportunities for everyone, everywhere.

Visit: visaeconomicempowermentinstitute.org

Visa Inc. (NYSE: V) is the world's leader in digital payments. Our mission is to connect the world through the most innovative, reliable, and secure payment network–enabling individuals, businesses, and economies to thrive. Our advanced global processing network, VisaNet, provides secure and reliable payments around the world, and is capable of handling more than 65,000 transaction messages a second. The company's relentless focus on innovation is a catalyst for the rapid growth of digital commerce on any device for everyone, everywhere. As the world moves from analog to digital, Visa is applying our brand, products, people, network, and scale to reshape the future of commerce.

For more information, visit About Visa, visa.com/blog and @VisaNews.