The Story of Payments

How the Industrialization of Trust Created the Modern Payments System

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By Richard Oliver & George Warfel Jr.

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About the Authors

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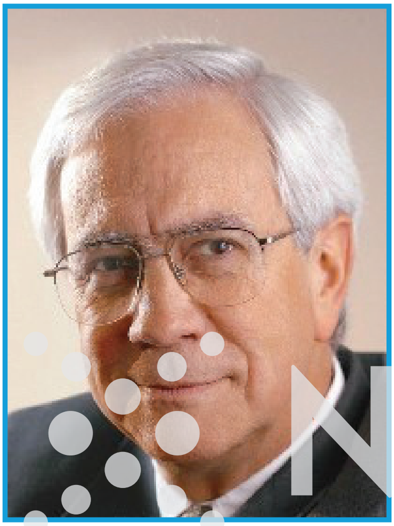

Richard Oliver retired in 2011 as an Executive Vice President of the Federal Reserve Bank of Atlanta, where he spent 38 years overseeing technology and payments system services, including check, ACH, and wire transfer. From 1998 to 2010, he was the Federal Reserve System's Retail Payments Product Manager with profit and loss responsibilities for the Fed's $750 million national check and ACH businesses. During his tenure at the Fed, he led the implementation of the Fed's all-electronic ACH network, initiated the System's triennial Payments System Study, deployed cross border and same-day ACH services, and provided leadership for the team that oversaw the consolidation of the Fed's paper check processing consolidation effort and implementation of Check 21.

During 2010-2011, Oliver established the Retail Payments Risk Forum, where he and his team researched payments system risk issues and wrote weekly blogs about the same. As an outgrowth of that initiative he co-led a mobile payments industry effort to explore and document the evolution of mobile payments in the United States. Since his retirement from the Fed, he has delivered many industry speeches, taught at industry schools, and facilitated nearly a dozen strategic planning initiatives for payments organizations, banks, and universities.

Oliver received an undergraduate degree in Mathematics from the University of Nevada, a Masters in Information and Computer Science from the Georgia Institute of Technology, and an MBA from Georgia State University. He also attended executive development programs at the University of Tennessee and Harvard University. In 2010, he received the George Mitchell Payments System Excellence Award from the National Automated Clearinghouse Association and has received three other regional payments leadership awards. He has authored numerous articles for trade publications and has published a non-payments Christian book. He and his wife Karen reside in Conyers, Georgia and are the parents of two children and grandparents of four girls.

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Introduction

This book is about the U.S. payments system and the role that the industrialization of trust played in its evolution and success. It is based upon the authors' collective 80 years of experience in the payments industry, an industry that is a critical part of the U. S. economy. Strangely, most people have never even heard the term "payments system," few can explain it, and even fewer appreciate its importance. In fact, as witnessed during large-scale disasters and emergencies, the U.S. payments system is a critical piece of this nation's infrastructure. Its reliability and resilience are fundamental to rapid recovery from natural disasters, direct attacks on the system, and internal disruptions. In many respects, the payments system is the engine of commerce for our society and a critical pipeline of the economy.

In its simplest form, a payment is a symbolic, trusted exchange of value between two parties that has evolved in fascinating ways over hundreds of years into the rich array of alternatives we experience today, alternatives that appear simple on their face but are far more complex in both strategic importance and operational detail.

The fact of the matter, however, is that most of us make and receive payments on a daily basis, ranging from using a credit card to pay for dinner at a restaurant, to sending money to someone via one of our mobile devices, to occasionally writing a check, to automatically receiving our wages directly deposited to our bank accounts. How any of these payments that we receive or make actually transpire seems to be mostly unknown to the typical person. Even though payments are so omnipresent in our lives, and every day over 400 million non-cash retail payments are made in the United States[1], many people don't fully understand how the payment system works.

[1] The Federal Reserve 2019 Payments Study, www.federalreserve.gov/paymentsystems

Even among payments specialists at banks and payment processers, as well as those at new or fintech (short for financial technology) payments companies, one often finds that although the staff as a whole has a certain depth of knowledge, the knowledge of each specialist is mostly focused on the one or two payment types that she or he works with every day.

Learning how the concept of paying for something has evolved over time and how multiple payments systems we have today function can help companies and organizations, as well as individual consumers, make better decisions when selecting which payment instruments and systems to use in different circumstances. It can also help individuals and businesses reduce the cost of payments and better understand how to protect against fraudulent payments in today's payments systems.

For consumers, payment system choices often raise such questions as:

- Is there an app for my phone that allows me to make payments easily?
- Is a mobile payment complete when it arrives at the receiver's mobile phone?
- Who is responsible if a payment turns out to be fraudulent?
- Why do people keep writing checks?
- Can someone hack my payments data?
- What is this cybercurrency thing all about?

For businesses and other organizations, there often are questions, too:

- Which type of payment would cost the least in a particular payment situation?
- How long should a payment of a particular type take to clear?
- How well do different types of payment systems function internationally?
- Are there savings or efficiencies to be realized by using one or two payment systems for the majority of payments?
- Can a hacker get into my payment computer files?
- How can I make it easier for my customers to pay me?

Other questions that should get asked more frequently (but probably don't) reflect how opaque the payment system can seem to many:

- How does my paycheck end up in my bank account twice a month with all the taxes, 401(k) or other retirement contributions, union dues and medical insurance premiums deducted and sent to the right places?
- What is the most secure way to make a payment?
- When I wave my mobile phone at a payment terminal in a store, what data gets sent from my mobile device to the store's terminal device? How is it kept secure?
- If I make a payment in a foreign country, how is the currency conversion calculated?
- When I deposit a check at my bank, why is it sent back to the bank of the party making the payment?
- What lies behind the worldwide movement to faster payments systems?
- How does a Letter of Credit payment work?
- What government agencies regulate payments?

In this book we will look into these and many other facets of the payments system. As we will see, all of them are related to something central to payments: *trust*. Without trust in the payments system none of the mechanics would matter, simply because no one would accept a payment from a stranger (after all, each of us is effectively a stranger almost every time we buy something at a store, and especially online.) Without the trust in the payments systems we use every day, some, if not most, people and businesses might hesitate to accept a particularly large payment, even from someone they knew.

Yet, most of us do automatically accept any payment sent to us regularly, usually without giving it a moment's thought. And we expect others to readily accept the payments we make to them. In so doing, we are demonstrating our inherent trust in the payments system. The evolution of trust as a factor in payments systems is what we will be looking at first as we survey the history of payments. What role did trust play in the replacement of barter by payments? How is trust maintained in today's payment systems? And what would happen if people lost trust in the payments system?

Not surprisingly, it took a long time, over 5,000 years[2], for trust in payments instruments to develop. But over time, the capability of payment systems to facilitate trust between payers and payees was an essential factor in creating the complex worldwide economy we live in today. As payments have evolved from shells to mobile phones and blockchain payments, the evolution of payments has brought about the globalization of trust, and with it the global economy we live in today.

It is interesting to note that this trust does not necessarily flow from a rigid regimen of government oversight. In fact, unlike other critical national infrastructure components in our country (such as transportation, defense, commerce, housing, health, etc.), there is no single government agency charged with responsibility for the payments system as a whole, though there are some agencies that do govern certain aspects of the system, such as consumer protection. Instead, the U.S. payments system is a unique public/private partnership that is far different in its composition and governance than the payment systems of most other countries around the globe.

This blend of private sector entrepreneurism and relatively light-handed government oversight has produced a payments system that is ubiquitous, characterized by a wide range of user choices, and which operates with acceptable levels of risk. It is a $500 billion dollar industry[3], larger than the airline industry and only modestly smaller than utilities and agriculture.

To best understand today's payments system, it is helpful to explore its historical origins, which we will do in Chapters 1 and 2. But, before jumping into the history of payments instruments and payment systems, it will be helpful to explore the ways that wealth can be held, the ways that payments can be made, and why the two often co-habit in any given payments instrument. Are nuggets of gold (or $100 bills, or cowry shells, for that matter) a means of storing wealth or a means of making payments? While the obvious (and correct) answer would be that each is both, the fact that some objects like coins are usually seen as payment instruments and others like ingots of gold are seen primarily as ways of storing wealth can sometimes complicate a discussion of either payments or assets. Most

[2] Jonathan Kenoyer, PhD University of California Berkeley, Professor of Anthropology, University of Wisconsin

[3] Global Payments 2018: A Dynamic Industry Continues to Break New Ground, Global Banking 2018, McKinsey&Company

people would probably categorize a debit card as a payments instrument and a $20,000 bond as a wealth storage instrument. But a debit card that is attached to a $20,000 account balance represents $20,000 of wealth. And a $20,000 bearer bond can be signed over to a willing seller of a car as a payment.

The same is true of all of the payments instruments we will be discussing in this book. It is precisely because almost any instrument of wealth storage can be used to make a payment, and almost any payment instrument can be a way of storing wealth, that we say that each instrument fulfills both functions. Often economists try to keep this point clear by referring to *wealth* as the *potential to make a payment* and to a *payment as a transfer of wealth in return for something else*. The same was true of cowry shells millennia in the past before we had economists. If you had more shells than I did, you were wealthier. When you wanted to buy some fish from me, you could make a payment to me by giving me some of your wealth in shells when I gave you the fish.

As a result, while we will be looking specifically at payments, it will be helpful to keep in mind that the act of making a payment is an act of transferring wealth. We could even say that they are "two sides of the same coin."

In the chapters ahead, we will:

1. Unravel the history and evolution of the payment systems as it exists today
2. Explain the complex payments processes and the key characteristics of payments
3. Discuss the vital role and nature of technology in payments
4. Reflect on the critical importance of standards in providing certainty and ubiquity
5. Survey the legal and regulatory environment surrounding payments
6. Reveal the risks inherent in payments, and
7. Discuss the forces of change that will shape the future of payments.

It is our hope that this final point of focus will help readers to be able to separate the signal of significant changes from the noise of new innovations that will come, and many of which will go just as rapidly. Being able to do so has become not just a new discipline to master in a rapidly changing payment world, but for many a business or career survival skill to master. Our sense is that what is essential about payments systems, each of what was a new innovation at the time it was introduced, hasn't really changed much over the long run. But, knowing how to determine if a new payment innovation will be trusted by those who are asked to use it may be the best guide to predicting its longevity.

Ultimately, the authors' goal is that a public well-educated in payments and payments systems can make better choices about using the system, become a more effective participant in guiding its evolution, and help sponsor innovation that leads to a more efficient and secure payments system. To get started, let's see how the whole idea of people making payments to each other got started in the first place.