



White Paper

The Future of Money: A Brief Examination of the Current Economic, Social, Technological and Business Challenges and a New Solution Approach

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In the beginning

Money—as you may think of it today—has had quite a storied history. By definition, money is something of value or something used as a medium of exchange. While this understanding has been constant, the form of money has changed significantly over the millennia.

About 10,000 years ago, cattle and other forms of livestock were used as the first forms of money. Grains, seeds, salt and tea were also used as mediums of exchange. Over 3,000 years ago, cowrie shells (i.e., decorated shells of a mollusk) were first used in China and then were subsequently used as currency by other cultures and lands as recently as the middle of the 20th century. The cowrie is the most widely and longest used currency in history.

Metals were first used as money around 1,000 B.C., and the first coins appeared in Lydia, part of present day Turkey, around 600 B.C. The first paper money came into being around 1,000 A.D. in China, was used until the mid-15th century, and then disappeared for several hundred years before paper money reappeared in Europe. Around 1950, the first credit card the Diners Club card was created by Hamilton Credit Corporation. Although plastic credit cards are a relatively new phenomenon, paper money and coins have continued to proliferate around the world.

In today's digital age, although more and more economic transactions are taking place electronically, cash is still the major medium of exchange for almost all countries in the world. Cash is estimated to be used in 85% of all retail transactions around the world today.

A digital holdout?

While books, music, movies and other traditionally physical goods have made the seemingly inexorable transition to digital, cash seems to be a holdout. Worldwide cash circulation is very difficult to measure precisely, but research indicates that the amount of physical currency (paper and coins) has been increasing consistently over the last 20-30 years.

Notwithstanding the trend toward greater credit and debit card usage, especially in developed countries, there are many reasons—economic, political, technological, social and psychological—why more physical cash is being created. This paper will not go into these reasons. Suffice it to say, physical cash retains many attributes deemed positive by billions of its users around the world: efficient, easy to use, widely accepted, a store of value, anonymous for transactions, and relatively low cost—compared to existing alternatives.



The cost of cash

At first glance, cash appears to have low costs; however, recent studies indicate significant costs for both countries and individuals. Some research indicates the U.S. could save 1 percent of its annual Gross Domestic Product (GDP) if it were to shift from paper/coin to a fully digital monetary system. This means the annual costs of cash for the U.S. are about \$150 billion. Another study, from Tufts University, indicates the use of physical cash costs the U.S. economy at least \$200 billion annually—roughly \$1,739 per household. On average, Americans waste an average of 28 minutes each month just getting to their cash. The costs of physical cash vary significantly by income level; not surprisingly, low-income consumers are the group worst hit by higher fees, along with the lost time.

In India, there is a significant Government-to-person (G2P) payments segment of the economy where subsidies are paid through a complex network of government agencies. A study by the Finance Ministry of India estimated the cost of cash to the economy to be as high as 5-7% of the GDP. More broadly speaking, payments through electronic and mobile channels have the potential to reduce overall costs by a significant amount, and also to avoid leakage due to corruption.

The mobile revolution

Mobile telephones are one technological phenomenon which has been extraordinarily adopted in every country around the world. With over 6 billion mobile telephones in use now, research projects that by 2015, over 900 million people are expected to transact \$1 trillion in the global mobile payment market. Beyond this huge amount projected for economic transactions, mobile technology is poised to have an even more far-reaching impact on the banking and payment industry.

Globally, over 6 billion people have mobile telephones, while only 2 billion people have bank accounts. This huge numerical gap represents an opportunity for forward-thinking financial institutions to extend their services, reaching new customers and participating in the new, mobile economy.

Emerging countries are in a unique situation, generally having a low penetration by traditional bank accounts, but a high adoption of mobile telephones. For example, in Bangladesh, 57% of its 150 million inhabitants have a mobile telephone, but only 13% have bank accounts. India has a population of 1.2 billion people with 900 million mobile telephones, but only 250 million bank accounts.

New mobile telephone services that are typically offered can include using a mobile telephone to store money, make P2P transfers to friends and family members, make mobile payments to merchants, or to make cross-border remittances. For some global perspective, there are over 200 million migrant workers, who send more than \$300 billion per year to their home countries. Currently available options for remittance are either illegal and unreliable, or expensive and slow; a lower cost remittance product leveraging mobile technology offers a potentially ideal solution.

A great opportunity...

Few technologies in the world have created as immediate and widespread an impact as mobile telephones. In the span of approximately a decade, mobile telephones have completely changed how the world communicates. Now they have the opportunity to change how transactions are conducted, how money is used, and much more. Mobile telephone technology offers the potential for more efficient transfers, payments and other new financial services—all with other benefits to the various ecosystem members.



Governments and central banks see mobile telephone technology as a potential vehicle to achieve greater financial inclusion, especially among the rural and poor population of their countries. It is no surprise that developing countries are where most mobile money projects are being deployed.

Financial institutions would like to be able to participate in this new, mobile economy. Mobile devices have already changed the notion of how banking is conducted and, now, there are even more opportunities for banks to generate new revenues, strengthen customer relationships, and increase ROI on their assets.

Wireless operators see an obvious opportunity in mobile payments, because they own the wireless networks and relationships with their customers. Wireless operators can leverage this technology to further monetize their installed base with new revenue opportunities, develop new service offerings to provide greater market differentiation and further strengthen their customer relationships. Merchants can also leverage mobile telephone technologies to grow revenues and increase consumer brand preference, to realize dramatically lower transaction costs, and to increase ROI and business transparency.

Lastly, consumers can benefit from using mobile telephone technology because it offers a superior alternative to physical cash. Digital cash offers the promise of being simple, convenient, safe, and secure, and can save consumers significant money and time. In summary, the opportunity presented by digitized cash, and the corresponding benefits for ALL ecosystem stakeholders, is substantial.

But many existing challenges

Approval by central bank and regulatory compliance

Digital currencies have been discussed in the popular media for many years; however, to date almost all providers have NOT worked to get central bank endorsement within a particular country or to ensure compliance with all applicable laws and regulations. Introduced in 2009, BitCoin has gained notoriety by offering an open source, peer-to-peer virtual currency—as an alternative to traditional currencies and without central bank approval and regulation. Research indicates that some countries, including the U.S., are looking at applying money-laundering rules to virtual currencies amid growing concern that new forms of cash bought on the Internet are being used to fund illicit activities.

Leverage existing core banking and payment infrastructure

Ideally, new types of digital cash solutions would leverage existing core banking systems and retail Point-Of-Sale (POS) infrastructure. This would speed adoption, since no additional technology infrastructure investments would be necessary to accept retail payments or for broader usage. Near Field Communications (NFC) is one example of a new mobile technology, required by some mobile wallet solutions, which has not received broad-based usage because of its disruptive nature and lack of compatibility with existing infrastructure.

Scalable, highly available and future-proof platform

Most digital cash solutions traditionally have been developed in-house within a particular country and/or have not been architected for the extreme scalability which will be required over time. Next-generation, cloud-based digital cash platforms must be simple to interface with existing core systems to ensure time-to-market goals are reached. Only recently have the robustness and other required technical capabilities of cloud-based platforms been achieved.

Accessible by anyone with a mobile phone number

For reasons of fairness, and in order to make the broadest market impact, digital currency should be accessible by anyone with a mobile telephone number, not just those individuals wealthy enough to own smartphones. The well-accepted technology adoption life cycle points to increasing smartphone penetration rates around the world; however, research indicates that smartphones have only recently passed the 1 billion mark—out of 6 billion total mobile telephones. This penetration rate varies significantly by country, but smartphone-only digital cash solutions will miss the huge bulk of the market. In addition, since in some developing countries families or friends share mobile telephones by using different SIM cards, everyone with a mobile telephone number—not just those with mobile telephones—is the right objective for access to digital money.

Bank-grade security and data privacy protections

It is obvious from the consumer's perspective that digital cash solutions not only need to be safe, but also must ensure that any personal information is kept private. While it is bad enough to lose one's mobile telephone, if that means you also risk losing your digital money, this is entirely unacceptable. Appropriate security safeguards must be implemented on the consumer side, the merchant side and on the back-end bank side. While physical cash has one traditional advantage of enabling complete anonymity, digital cash solutions must also ensure that no personal information is sent to any entity without the consumer's expressed approval. Lastly, viable digital cash solutions must adhere to ALL consumer data privacy laws in every jurisdiction where used.

Choice of alternative payment options

Viable digital cash and mobile payment solutions should provide choice to consumers regarding the funding source—that is, what type of account will be used as the source of funds. Many current mobile wallet solutions only provide “wrappers” around credit cards or a PayPal account; however, credit card usage involves significant fees both for consumers and for merchants. In addition, for a variety of cultural and historical reasons, several countries around the world do not utilize credit cards. An ideal digital cash solution would leverage your existing bank for payment and enable financial institutions to sign up new customers with a new type of all-digital bank/payment account. Choice and market forces often lead to the optimal solution, as long as there is appropriate government regulation and the consumer is not overwhelmed by the choices.

Simple and compelling consumer experience

While cool technology may get media headlines, often the solution which best meets consumer needs wins the day. Leonardo da Vinci said “Simplicity is the ultimate sophistication.” Viable digital cash solutions must definitely be simple for everyone to use. They must be able to be used with any type of mobile telephone and any carrier, and utilize any user interface technology (e.g., NFC, biometrics, etc.) that may become dominant. A wide number of merchants must accept the digital cash solution for payment. The consumer should automatically gain reward/loyalty points for its usage if the merchant or financial institution so desires—no need for the consumer to remember to use different reward/loyalty cards. Consumers must recognize digital cash as safer and more secure than physical cash. Lastly, successful solutions must be used broadly for consumers to realize the benefits of the “network effect.”

A new approach is needed

Now there is a solution: Quisk. This Silicon Valley-based global technology company partners with financial institutions and other organizations to deliver digitized cash, a new type of bank account for payments and more. The Quisk platform leverages existing banking infrastructure and retail POS equipment, embraces multiple technologies including ALL mobile telephones and carriers, and is easy, convenient and valuable for consumers.



With patent-pending, cloud-based technology, Quisk empowers financial institutions and others to prosper in the new, mobile economy. Quisk provides a digital services and transaction processing platform for integrated mobile payments and digital marketing and loyalty programs.



For financial institutions, Quisk drives value by delivering a solution which offers to:

- Generate new revenues
- Strengthen customer relationships
- Increase ROI

For wireless operators, Quisk enables you to partner with financial institutions to:

- Monetize your customer base with new revenue opportunities
- Differentiate your service to new customers
- Strengthen your customer relationships

For merchants, Quisk drives value by delivering a solution which offers to:

- Grow revenues and increase customer loyalty
- Dramatically lower your costs
- Increase ROI and transparency

For consumers, Quisk delivers an alternative to cash and credit cards which is:

- Simple and easy
- Secure
- Saves money

Quisk's mission is to provide safe, simple and secure financial services and cash-less transactions for anyone with a mobile phone number. Learn more at www.quisk.co.

Bibliography

1. Wolman, David. *The End of Money: Counterfeiters, Preachers, Techies, Dreamers—and the Coming Cashless Society*. Cambridge: Da Capo Press, 2012
2. The Institute for Business in the Global Context. "The Cost of Cash in the United States". Tufts University: September 2013
3. Swift white paper, entitled "Mobile Payments: Three winning strategies for banks," 2012
4. European Financial Review article, entitled "The Mobile Banking and Payment Revolution," by Sunil Gupta, March, 2013
5. Capgemini white paper, entitled "Mobile Payments: How Can Banks Seize the Opportunity?" 2011
6. Center for Financial Services Innovation white paper, entitled "Financial Technology Trends in the Underbanked Market," May, 2013
7. The Banker special report, entitled "The Future of Mobile Money: Successful models emerge" May, 2013
8. U.S. Federal Trade Commission staff report, entitled "Paper, Plastic... or Mobile?" March, 2013
9. McKinsey Quarterly article, entitled "The Evolving Mobile Payments Consumer: Strategic Insights from Around the Globe" June, 2012
10. Accenture report, entitled "Driving Value and Adoption of Mobile Payments—Consumers Want More" 2013
11. GSMA report, entitled "State of the Industry: Results from the 2012 Global Mobile Money Adoption Survey" 2013
12. McKinsey on Society article, entitled "Mobile Money: Getting to Scale in Emerging Markets" February, 2012
13. KPMG 2011 Mobile Payments Outlook report "The Opportunity is Rich: The Greatest Gains will Come from Cross-Industry Partnerships" July 2011
14. GSMA report, entitled "Platforms for Successful Mobile Money Services" 2013
15. Yankee Group report, entitled "What's Next for Mobile Money" October, 2012
16. The Banker special report, entitled "The Future of Mobile Money: Successful Models Emerge" May, 2013
17. Future Foundation report, entitled "mCommerce: What Consumers Want from Financial Institutions" 2013
18. Forrester Research report, entitled "Building Next-Generation Mobile Banking" January, 2013
19. CGAP paper, entitled "The Power of Social Networks to Drive Mobile Money Adoption" March, 2013
20. PWC report, entitled "Dialing up a Storm: How Mobile Payments will Create the Most Significant Revenue Opportunities of the Decade for Financial Institutions" 2011



Quisk is a global technology company that digitizes cash and empowers financial institutions and others to prosper in the new, mobile economy. We provide a digital services and transaction processing platform for integrated mobile payments and digital marketing and loyalty programs.

Deploying patent-pending, cloud-based technology, the Quisk platform not only works with any mobile telephone number on any type of mobile telephone, but also leverages existing infrastructure. Quisk headquarters are in Silicon Valley, with additional offices in Louisville, KY; Dubai; U.A.E.; and Kingston, Jamaica.

Learn more at www.quisk.co