

**Statement of**  
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**before the**  
**Committee on Banking, Housing, and Urban Affairs**  
**U.S. Senate**  
**Washington, D.C.**  
**July 10, 2012**

1. Chairman Johnson, Ranking Member Shelby, and members of the Committee, thank you for inviting me to appear before you today to talk about mobile payments.
2. America's consumers are increasingly connected via smart phones, tablet computers, and other mobile devices. Many people have predicted that the use of near-field communications (or NFC), a technology which allows consumers to pay by swiping their phones rather than their credit or debit cards, will revolutionize consumer payments at bricks-and-mortar merchants. I disagree. I believe the changes associated with NFC and so-called digital wallets will be evolutionary, not revolutionary. There *will* be a revolution resulting from the ubiquity of smart phones and tablets, but that revolution will manifest itself in the ways merchants manage their relationships with their customers.
3. Today, merchants and consumers already have access to a wide range of payment options, including cash, checks, and various payment cards. These options are easy to use, widely accepted, and trusted. Moreover, most consumers already have established relationships with payment service providers, and merchants have made significant investments in equipment, systems, and employee training to utilize these payment services. In order for new payment services based on smart phones and tablets to compete successfully, these services will have to offer merchants and consumers additional value in comparison with current options. Cool technology alone will not be enough.
4. Merchants will be attracted to mobile payments if those services either lower the merchants' costs of completing transactions or attract additional consumer patronage. How will mobile payment services attract customers to bricks-and-mortar merchants? Surveys

demonstrate that consumers want payment services that are widely accepted, easy to use, and trustworthy. So how do mobile payments stack up against the competition?

5. When it comes to paying at bricks-and-mortar merchants, the extent of acceptance is a weakness, rather than strength. Indeed, mobile payment services face a chicken-and-egg problem. Specifically, a merchant does not want to bear the expense of changing its checkout process to accommodate a new payment service if there are few consumers who use that service. Similarly, a consumer does not want to sign up for the payment service if there are few merchants who accept it. But if everyone waits for everyone else to join first, the new service will never get off of the ground. There are several potential solutions to the chicken-and-egg problem but all of them rely on a common underlying factor: there has to be some source of benefit that makes it worthwhile to invest in overcoming the chicken-and-egg problem. So we are back to looking for the source of consumer value.

6. An NFC-enabled digital wallet can be more convenient and possibly easier to use than a conventional wallet filled with multiple payment cards. It is worth observing, however, that most of us are going to have to carry conventional wallets anyway, at least until drivers' licenses and insurance cards and the like also go digital. Moreover, is it really that much easier to swipe your phone than a smart card? In the short run, ease-of-use benefits appear to be too limited to be a significant driver of adoption.

7. That leaves trust as a source of value. Security and privacy are two critical elements of trust. Consumer surveys reveal that many consumers question the security of mobile payments, and indeed mobile payment systems do have points of vulnerability, such as the radio interface, that card-based systems do not. Moreover, through the use of malicious code

downloaded through apps or web browsing, a smart phone can be compromised without the attacker's having to attain physical proximity. Consequently, security is not going to be a positive driver of mobile payment adoption any time soon. Things do not look more promising in terms of privacy. Consumer surveys reveal that many consumers worry that mobile payment companies will collect too much personal information and that that information will be misused.

8. If ubiquity, ease of use, and trust all create too little value to drive widespread adoption of mobile payments, what will? I believe the answer lies in the very information that consumers worry will be misused. The widespread adoption of smart phones and other mobile devices with increasing capabilities has made it possible to collect detailed data about where consumers are and what they are doing. This information can be analyzed to predict consumer behavior and used to generate personalized, context-specific, merchant-to-consumer communication delivered in real time. The ability to predict consumer behavior and send such targeted messages is a very powerful marketing tool that will be worth tens of billions of dollars annually to merchants.

9. A hypothetical example illustrates some of the possibilities. A mobile payment app might alert a coffee retailer at 10:45 a.m. that a person who on most days purchases a cup of coffee by 10:30 is just leaving her office and has yet to visit a coffee shop today. Taking into account the summer heat and the fact that the retailer is not very crowded right now, the retailer could send an email or text message to the consumer offering a 20-percent discount on an iced coffee if she comes into the store three blocks away in the next 30 minutes. In summary, information and communication lie at the heart of the coming mobile payment revolution.

10. Mobile payments represent the convergence of three industries: telecommunications, banking, and web services. This industry convergence is going to lead to complex regulatory convergence as well. The interplay of economy-wide antitrust policy and privacy regulation with the sector-specific regulatory regimes for banking and telecommunications is going to be problematical for the industry. It may also confuse consumers and give them false senses of security and/or risk. However, properly implemented, regulation could foster well-placed consumer trust and, thus, promote the adoption of mobile payments. Given the importance of information and the complexity of the issues involved in regulating the collection and handling of it, public-policy concerns regarding privacy will loom large for years to come.

11. Thank you again for inviting me to appear before you today. I would be happy to answer any questions you might have.