NEW SCIENCE
TRANSACTION SECURITY
CASE STUDY

NFC
IMPLEMENTATION
MODEL

SPRING 2013
UL.COM/NEWSCIENCE
NEW SCIENCE
TRANSACTION SECURITY
OVERVIEW

Technological advances in payments, mobile commerce and identity management are rapidly transforming Transaction Security. While these innovations enhance convenience, speed and security, they have also created new risks related to reliability, interoperability and cybercrime. Consumers, merchants, third-party processors, wireless carriers, financial institutions and governments all are affected.

Through New Science, UL is working with customers across the industry, conducting state-of-the-art experiments; analyzing and assessing the security, functionality and interoperability of new and existing technologies; and enhancing implementation processes and developing unique migration architectures to help transition disparate systems to a new platform.
WHY AN NFC IMPLEMENTATION MODEL MATTERS

Near Field Communication (NFC) technology makes life easier and more convenient for consumers around the world by making it simpler to complete transactions, exchange digital content and connect electronic devices. Because of NFC’s inherent business benefits — including security advantages, interoperability with existing contactless card technologies, applicability to a broad variety of industries and uses, and ease of use — NFC is a vitally important technology helping to drive the burgeoning mobile commerce (M-Commerce) space. In working across the NFC ecosystem for the past five years, UL has employed its unique NFC implementation model to help companies successfully bring this technology to market.

CONTEXT

NFC technology enables a smartphone to transfer data directly to another NFC compatible device without making physical contact or having to go through multiple steps to set up a connection. Specifically, the technology allows smartphone users to share information with another person’s smartphone or to make a payment with an NFC-compatible point-of-sale (POS) terminal. With this technology, all the contents of an individual’s wallet or purse can be moved to his or her phone. Credit and debit cards, loyalty and transport cards, the access card for a workplace and even cash money — everything can be safely stored in a “Secure Element” in a smartphone, which will simplify and add convenience to consumers’ everyday lives.

The NFC market is still in its infancy, but analysts project rapid growth, and several hundred NFC initiatives are under way. The total market value of NFC globally is projected to increase by a 118 percent compound annual growth rate over five years, reaching $145 billion in 2015. By then, 863 million NFC-enabled mobile phones are projected to be in use, representing more than 53 percent of the total mobile phone market.

For NFC-powered M-commerce to achieve its full market potential, complex technical and business challenges must be addressed. While new standards have been developed for NFC, there is a need to bring parties together that previously inhabited separate worlds, such as mobile network operators and banks, because an efficient and secure NFC ecosystem must accommodate the systems and needs of all participants.
WHAT DID UL DO?

UL has almost two decades of relevant experience in payments, mobile communications, electronic ticketing in public transportation and electronic identification, and helping clients with the functionality, interoperability and security of their systems. From the outset, we saw that M-commerce was about much more than technology. Over the last five years, UL has been involved in a large number of M-commerce projects all over the world, working with Mobile Network Operators (MNOs), Service Providers (SPs) and Trusted Service Managers (TSMs). Based on our extensive experience, we developed an innovative, comprehensive model for implementing NFC technology and M-Commerce that comprises four stages:

• Phase 0 is the decision-making phase. During a nine-day on-site workshop, we lead a team of experts and stakeholders from all fields within the client’s organization — both technical and strategic — through a unique process that helps them understand the perspectives of the other players in the NFC ecosystem, provides them with technical knowledge and guides them through decision making. This phase results in a clear vision of the goals of introducing M-commerce for this particular customer and the way in which these goals will be achieved. This vision, shared with and endorsed by all stakeholders, becomes the strategic foundation for the company’s approach to NFC implementation.

• Phase 1 of our unique process covers “define, design and procure.” In this phase, UL helps the client design the new system’s architecture, specify the business requirements and create detailed and comprehensive technical requirements. These will serve as the basis for procuring a TSM and other components of the NFC ecosystem. Helping our customer develop clear requirements and a shared understanding of their implications significantly reduces the risk of unexpected problems during later stages of the NFC implementation, thus minimizing time to market.

• Phase 2 is about developing and implementing the new system. Crucial in this phase is the integration of all components into a working ecosystem. UL provides test tools and experienced testing experts who manage the complete test process. We also organize a soft launch, if required, and perform certification testing of components in our Mobile Test Centers.
UL’s New Science, embedding unique end-to-end knowledge and experience in an innovative model, helps customers reduce time to market and implement NFC in a robust and scalable way. UL advises on B2B marketing messages and helps create onboarding plans for new NFC ecosystem participants. In addition, UL offers dedicated Mobile Test Centers around the globe, where the testing and certification of new products and services are combined across different ecosystems. We have developed automated test tools and simulators to execute the testing in a short period. Using a UL Mobile Test Center reduces risk and investment costs for individual players in the ecosystem.2

In Norway, UL applied its implementation model to bring together DNB — Norway’s largest financial services group — and Telenor — a Norwegian mobile operator with operations in 29 markets — in a unique collaboration that is on track to launch its NFC solution in Norway in mid-2013.3

For the first significant pilot of an NFC-powered mobile wallet in the U.S., UL was brought in to conduct security, interoperability and quality testing of the ecosystem. With help from UL, this wallet was the first to bring together competing carriers; truly embed VISA, American Express and MasterCard; and integrate with multiple banks. In addition, this is the first mobile wallet initiative to deliver on more than 10 types of devices, a number that will quickly expand. UL is currently providing services similar to those in Phase 3, and a regional or national rollout is expected in 2013.4

IMPACT
UL’s New Science helps customers reduce time to market and implement NFC in a robust and scalable way. Using our model, UL is establishing a growing track record of successful NFC implementations around the world.
SOURCES


TRANSACTION SECURITY JOURNALS AND CASE STUDIES

JOURNAL ISSUE 1

VULNERABILITY ANALYSIS

BRAND TEST TOOL

SMARTWAVE BOX

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CASE STUDIES

BIOMETRICS

NFC IMPLEMENTATION MODEL
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