



Smart Card Alliance

Contactless Payment and the Retail Point of Sale: Applications, Technologies and Transaction Models

A Smart Card Alliance Report

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About the Smart Card Alliance

The Smart Card Alliance is the leading not-for-profit, multi-industry association of member firms working to accelerate the widespread acceptance of multiple applications for smart card technology. The Alliance membership includes leading companies in banking, financial services, computer, telecommunications, technology, health care, retail and entertainment industries, as well as a number of government agencies. Through specific projects such as education programs, market research, advocacy, industry relations and open forums, the Alliance keeps its members connected to industry leaders and innovative thought. The Alliance is the single industry voice for smart cards, leading industry discussion on the impact and value of smart cards in the U.S. For more information, visit www.smartcardalliance.org.

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Executive Summary

Contactless Payment Represents a Growing Market

The latest trend in retail payment applications is contactless payment. Contactless payment systems are used successfully in Asia, Europe and North America and offer a number of advantages to issuers, retailers, and consumers. Contactless payment allows issuers to penetrate the cash payment market, enjoy increased customer transaction volume, and improve customer retention and loyalty. Retailers realize benefits due to faster transaction times, increased revenue, improved operational efficiency, and lower operating costs. Consumers enjoy the convenience of hands-free payment, the ability to pay for multiple services using one device, and the security of not having to display a card for payment.

Contactless payment applications are particularly attractive to retail segments where speed and convenience of payment are essential (for example, quick service restaurants, gas stations, convenience stores, parking facilities, transit services, entertainment venues and unstaffed vending locations).

Multiple Technologies Support Contactless Payment

Multiple technologies may be used to implement a contactless payment system. Candidate technologies include radio frequency, infrared, carrier-based mobile and Bluetooth technologies. Three types of radio frequency technologies are currently used, including: high-frequency 13.56 MHz contactless smart cards, low-frequency (100 to 300 KHz) devices and ultra-high-frequency (900+ MHz) transponders.

The choice of an appropriate technology is driven by issues such as what types of payment mechanisms the technology supports, whether the technology is commercially available and governed by international standards, what regulatory issues apply, how much investment is required, and how well the technology protects customer data and guards against erroneous transactions.

Various Transaction Models Support Contactless Payment

A contactless payment system can follow a variety of transaction models. Candidates include account-based payment, traditional credit or debit card payment, and stored-value payment. Each transaction model requires a different infrastructure investment and different participation by the consumer, retailer, acquiring processor, and issuing bank. Which transaction model is appropriate depends on the approach chosen to implement the system.

Contactless Smart Cards Offer an Excellent Choice for Retailers

Smart cards are being used for payment throughout the world, with Visa, MasterCard and JCB leading initiatives to extend the use of smart cards for contactless payment. The combination of standards-based technology, enhanced security features, availability of products and services from multiple vendors, potential to use the existing payments infrastructure, and

support from major financial industry players offer compelling benefits for payment implementations based on contactless smart cards.

About This Report

This report was developed by the Smart Card Alliance to describe contactless payment applications, technology options and transaction model alternatives. This report provides answers to commonly asked questions about contactless payment systems, such as

- What retail sectors can benefit most from contactless payment?
- What are example implementations of contactless payment and how successful have they been?
- What are the technologies that can support contactless payment?
- What are the business drivers for adopting contactless payment?
- Are there advantages to using contactless smart cards in contactless payment systems?

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