Canadian NFC Mobile Payments Reference Model – Summary

This document provides a brief overview of the 130+ page Canadian NFC Mobile Payments Reference Model. This document is intended to provide a synopsis of the full document and the context in which it was created. This document is not comprehensive and is not intended to be standalone. The full text should be referenced for more detail.

Document Background and Context

As a direct outcome of the work of the federally-appointed Payments Systems Task Force, Canada’s financial institutions (FIs) are taking a leadership role in the area of the emerging field of mobile payments. As envisioned by the Task Force, Canada’s banks and credit unions have worked together to develop guidelines for the accelerated adoption of mobile payments in Canada to ensure that Canadians will have access to a secure, efficient and convenient mobile payment tool. The framework and guidelines recognize Canadians’ comfort with mobile phones and take into account the desire to use the Point of Sale (POS) hardware merchants already have in place. The Task Force asked the FIs to develop mobile guidelines and the FIs involved have been working hard since October 2011 to deliver on this request.

Canada needs guidelines that will enable the development of an efficient and safe mobile payment marketplace that is open and accessible to all merchants. Today in Canada merchants are already equipped to accept electronic payments (credit / debit cards) and consumers have access to mobile devices. Many consumers are already engaged in and comfortable with mobile banking. Mobile guidelines will enable the development of software applications that allow consumers to enter into the same transactions that they currently do using payment cards, but do so with their mobile phone. They will allow merchants to accept such payments using their current hardware at the POS. And since the mobile payments system will use an open technology based on standards and guidelines in use elsewhere in the world, other participants, not just banks and credit unions, can also participate in this market by building mobile wallet applications for consumers. For example, a mobile wallet may also contain government-issued identification, library cards, transit passes, and merchant loyalty cards. We expect consumers will benefit from competition among a range of innovative mobile product offerings. The reference model and guidelines do not discuss, prescribe or imply any specific commercial arrangements between payments ecosystem participants, including merchants and consumers.

The Canadian Bankers Association (CBA) has been asked by the FIs to help coordinate the development of the mobile guidelines because of the CBA’s broad membership. The CBA is also coordinating outreach to important stakeholders including payment networks, merchant groups and telecommunications firms.

Document Overview

The purpose of the Canada Mobile Payments: NFC Mobile Payments Reference Model (a.k.a. the mobile payments guidelines) is to establish guidelines for various participants in the Canadian mobile commerce ecosystem. Mobile payments encompass a wide variety of payment forms. To keep the project focused and manageable, the guidelines focus on payments executed using a handheld mobile device through near-field communication (NFC, i.e. “tap-and-go”) technology. NFC based mobile payments, or contactless payments, are transactions that require the mobile device to be in close
proximity to the reader. Unlike other types of mobile payments such as barcodes or peer-to-peer payments, NFC mobile payments require integration of hardware and software on the mobile device. It is for this reason that guidelines are critical – integration of hardware and software is only possible if all parties involved in the payments ecosystem are working together.

The guidelines outline the functional elements, roles and responsibilities, and interaction models needed for the development of an effective, affordable, and consumer and merchant-friendly NFC based mobile payments system in Canada.

**Solution Overview**

To execute an NFC mobile payment, a customer must have the right hardware and software. Hardware in this context includes an NFC enabled mobile device (e.g. a smartphone). Software, in this context, includes a wallet application, payment application and payment credentials (see the Wallet & Payment Applications Features & Functionality section for definitions). Typically, payment credentials and mobile device hardware are managed by different organizations. This creates a unique challenge as it requires multiple parties to work together to successfully deliver NFC mobile payment services. The guidelines seek to address these challenges by providing a framework for the interactions between the different ecosystem participants. Interoperability between the Mobile Network Operators (MNOs, e.g. Rogers, Bell, Telus, Public Mobile, Wind, Videotron) and payment networks (e.g. Visa, MasterCard, Interac) is a key objective for these guidelines.

While the guidelines address both hardware and software issues, the focus is on software; in particular mobile wallet software. The guidelines outline procedures related to mobile wallet design, installation on mobile devices, and execution of mobile payments. The following topics are included in this document:

- **Wallet Features & Functionality**: This document includes a section on wallet and payment application features, functionality and security.

- **Enablement & Lifecycle Management**: The document examines the setup steps needed to install a mobile wallet and payment application on a mobile device, securely bind the applications and manage these applications over customer lifecycle events (e.g. lost or stolen phones).

- **Transactions**: Once the initial setup is complete, an NFC based mobile payment transaction may be performed. The Transaction Processing section examines the steps required to perform an NFC mobile payment. The solution is designed to consider low value, high value and high risk transactions. The solution is characterized by a radio frequency short read range distance that requires the mobile handset to be presented close to the contactless reader to enable a transaction.

- **Loyalty & Rewards**: The document recognizes that Loyalty & Rewards is a rapidly evolving space. Rather than establishing guidelines, this section describes the types of loyalty and reward programs available to consumers (e.g. bonus points and cash-back programs, loyalty rewards redemptions, merchant-funded discount and promotional programs, coupons and vouchers) and sets out guidelines for ensuring that these programs can be integrated with NFC mobile payments.

- **Data & Security**: The final section in this document is dedicated to data and security. This section was designed around the general guideline that each ecosystem participant should only
have access to the minimum information required to perform its primary role. That is to say, the default should be to protect consumer and merchant data.

In all cases, the guidelines draw their inspiration from the Industry Initiative participants’ vision of a convenient, open, safe and secure ecosystem supported by a guidelines-based operating framework. Drawing from the Vision & Guiding Principles, two themes had a significant impact on the definition of the NFC Mobile Payments Reference Model.

• First, both consumer and merchant interests have to be taken into consideration. Wherever possible, processes in this document start from the point of the consumer.

• Second, interoperability with other emerging payment ecosystems is a goal for mobile payments in Canada. In support of this goal, this document makes reference to and draws from documents and decisions from other organizations interested in enabling mobile payments. Where appropriate, citations have been provided for existing standards and guidelines used in this document.

Benefits

Canadians have already embraced mobile banking and online payments, and now mobile payments will provide them with an additional payment choice that is efficient, secure and convenient.

Mobile payments will enable merchants to improve the efficiency of their POS experience, while providing an efficient customer payment experience. Merchants will also be able to use the mobile payments system to manage data.

The Industry Initiative has significantly advanced innovation in the payments sector in Canada, to the benefit of all Canadians and the Canadian economy. The implementation of the guidelines developed by the Industry Initiative participants will help to establish Canada as a “Centre of Excellence” for mobile payments.