

Mobile Payments in Canada

Deloitte.

Vipul Lalka
Consulting
Manager



Direct: + 1 (416) 601-5959
E-mail: vlalka@deloitte.ca

Presentation to the Ontario Bar Association

September 27, 2012



Agenda

- 1 Introduction to Mobile Payments**
- 2 The Changing Customer Experience**
- 3 The Changing Mobile Payments Ecosystem**
- 4 Ecosystem Stakeholder Drivers**
- 5 Potential Business Models**
- 6 Evolution of mobile payments in Canada**

Mobile payments can be categorized under three key segments

Mobile Person to Person (P2P)



Person-to-person money transfers are entered into a software application on the handset

Mobile Commerce (P2B/B2B)



Payments to individuals or merchants are made via SMS, applications, or Web browsers

Mobile POS Payments



Handsets are used at POS terminals to make payments. Technologies include QR codes, NFC, etc.

Description

Examples



 **BARCLAYS**

Barclay's P2P mobile money transfer service in the UK, called Pingit



Paypal Mobile allows users to transfer money or make eBay purchases from their mobile and online Paypal account



Google Wallet supports POS NFC as well as online transactions

In the future, payments will play a minor, albeit important role in a much bigger and more holistic consumer experience that will in turn drive mobile payment adoption

Key drivers will enable the adoption of mobile payments

Changing customer preferences

Technological advances

Increased revenue opportunities

Consumer "Day in the Life"



Jane

Digital Wallet



On smartphone with credit, debit, transit, ID and loyalty cards

Payment & Transit Card Use



8am: Tap to load pre-paid transit tokens into transit card on wallet

Proximity-based Mobile Content



8am: Tap for entry; tap on poster for route info / timings

ID Credentials Use



9am: Tap on the entry pad to enter office

Social Media



11:30am: "Retweet" coupon offer to save on card

Proximity-based Mobile Content



3pm: Tap to access menu & place order

Augmented Reality Application



3pm: Find nearest coffee shop

P2P Transfers



1pm: P2P "bump" TXN between smartphones

Payment & Coupon Use



12pm: Payment and coupon use completed in a single tap

Geo-Location Alert / Targeted Offer



12pm: Geo-location triggered coupon for use in food court

Payment & Loyalty Management



3pm: Tap to pay and log purchase Loyalty program card

Proximity-based Mobile Advertising



6pm: Tap on movie poster to watch trailer & buy tickets

Virtual Comparison in Physical Location



6pm: Scan book's 2D code in store to compare price to other merchants (online and physical)

Virtual Shopping



6pm: Orders book online through same digital wallet on phone

Spend Management

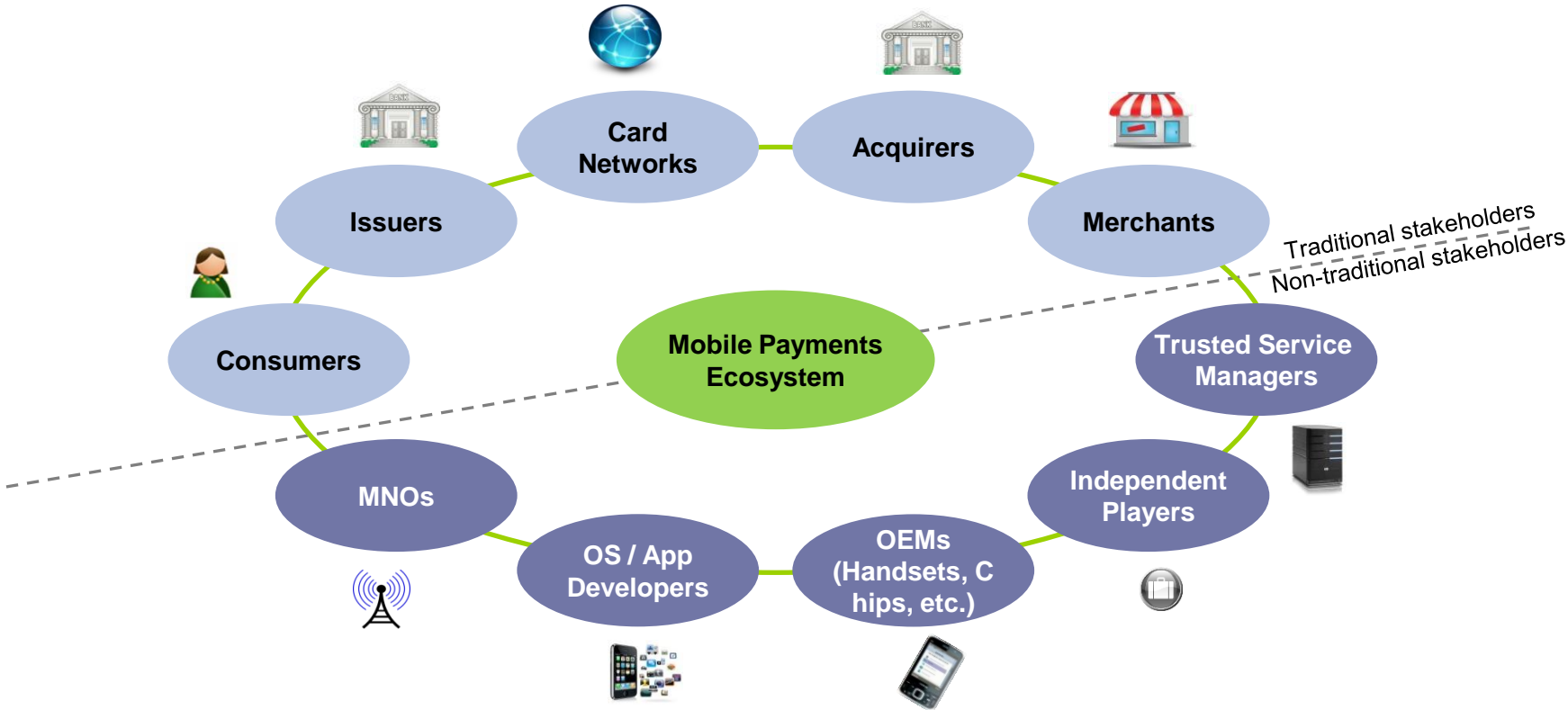


9pm: Logs into account management tool on phone & review spend

The emerging mobile payments ecosystem is significantly more complex than the existing payments model, with traditional and non-traditional stakeholders

Mobile Payments Ecosystem

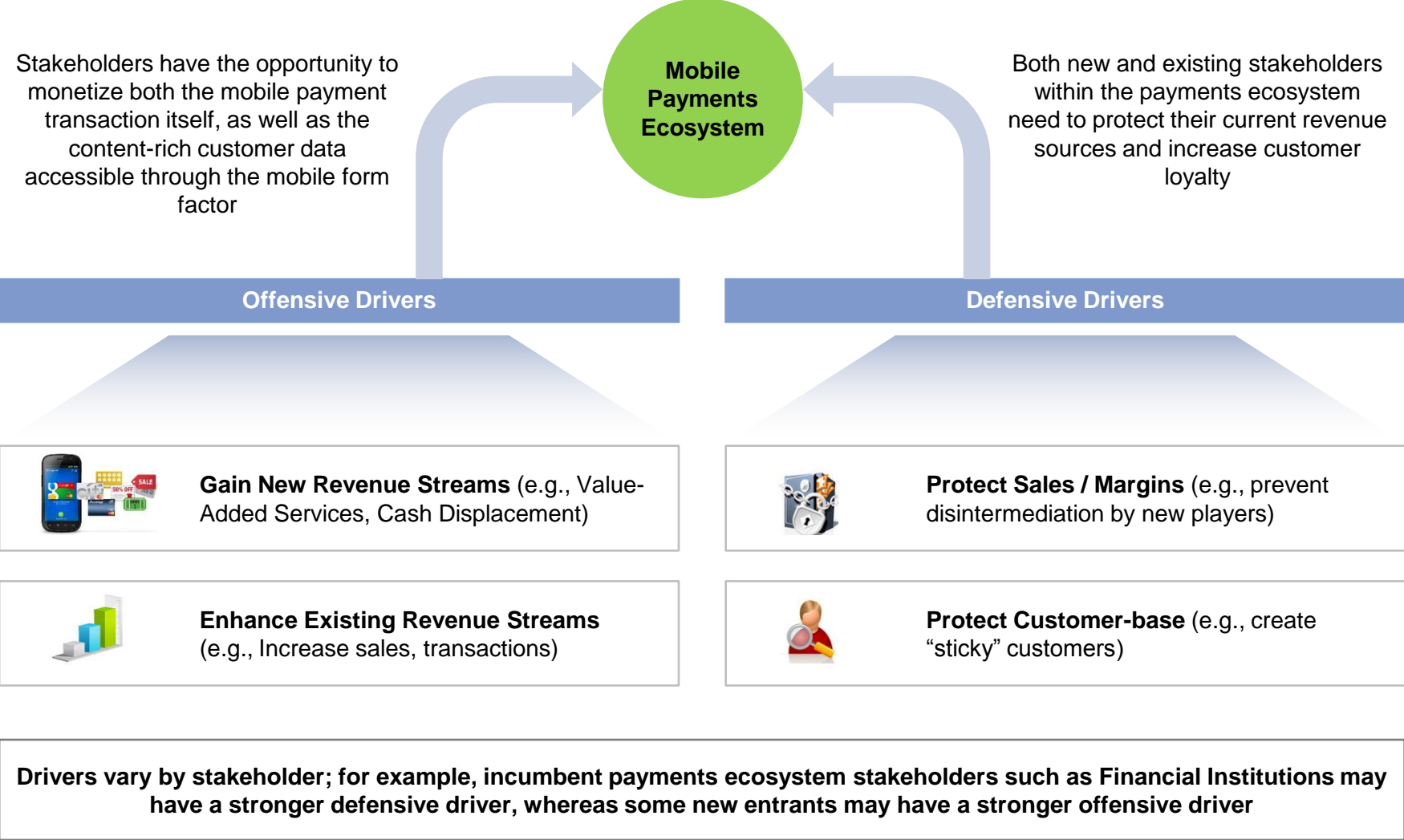
NOT EXHAUSTIVE



The multitude of incumbents and new stakeholders are all trying to establish their dominance in the emerging mobile payments ecosystem

Stakeholders have both offensive and defensive motivations to participate in the mobile payments ecosystem

Mobile Payments Ecosystem – Offensive and Defensive Drivers for Stakeholders



The digital wallet will drive the mobile payments customer experience and dictate how players compete for payments and value added services

Why do Digital Wallets Matter?

1 Control Customer Experience

- The wallet will be a key element of m-payment customer experience as well as the overall “mobile experience”
- The wallet provides an opportunity for the wallet provider to increase customer interactions and reinforce brand
- The wallet will influence amount of data collected on customers and influence who has access to that data (with customer opt-ins)

2 Steer Payment Choices

- Wallet providers have influence over which accounts they permit in their wallets and their influence on the payment choice
- Providers will steer merchant selection and purchasing behavior

3 Steer Merchant Selection

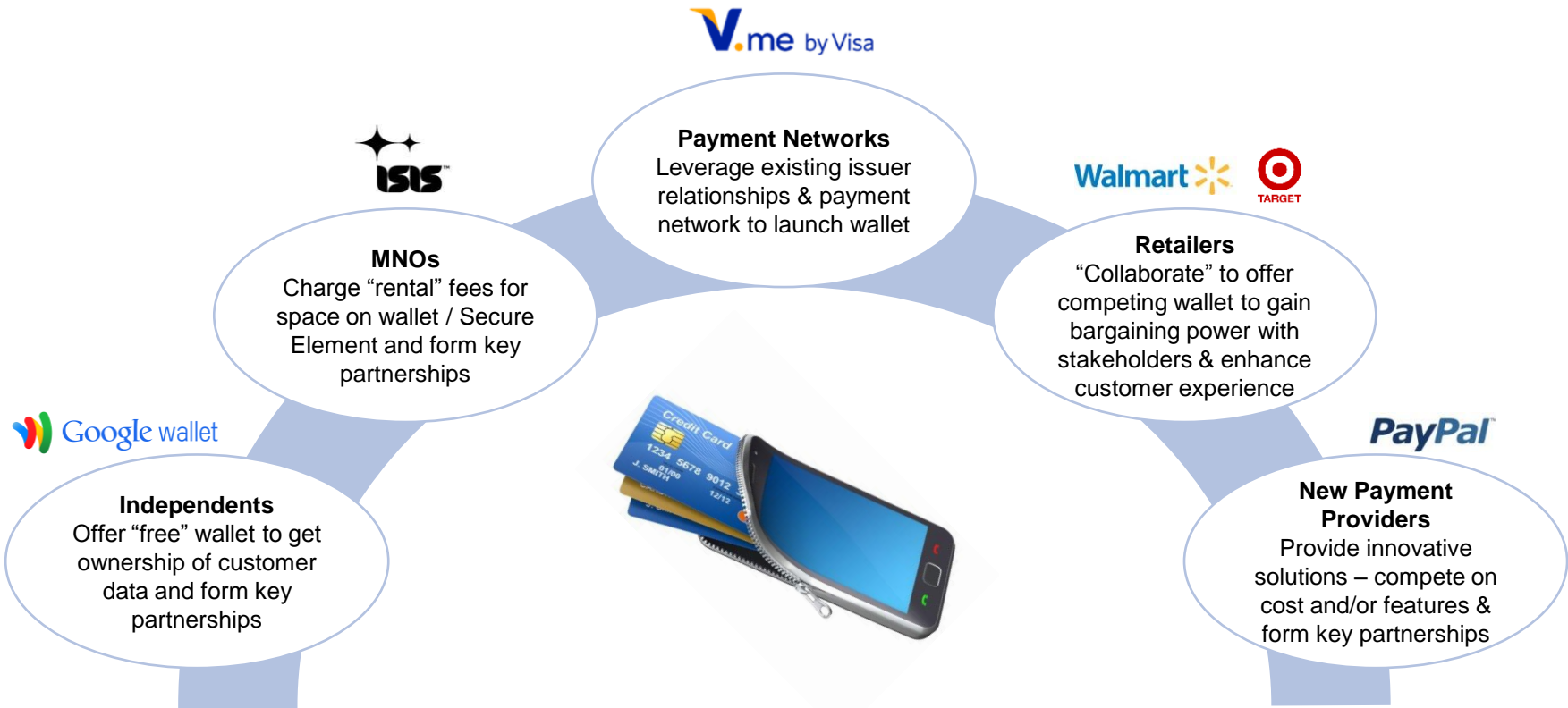
- The data collected through wallets can give insightful information on customer behavior and loyalty for the purposes of leads/offers development
- Providers may steer merchant selection and purchasing behavior

4 Access New Revenue Streams

- Wallet providers control access/delivery to the most important value added services enabled by m-payments
 - Open/close opportunities for others to compete for services
 - Influence over how rich the value to the customer is
- While the wallet won't be the only avenue through which to provide value added services, it will likely be the most prevalent

Stakeholders are thus exploring business models centered around the mobile wallet that promote their individual interests through offensive and/or defensive plays

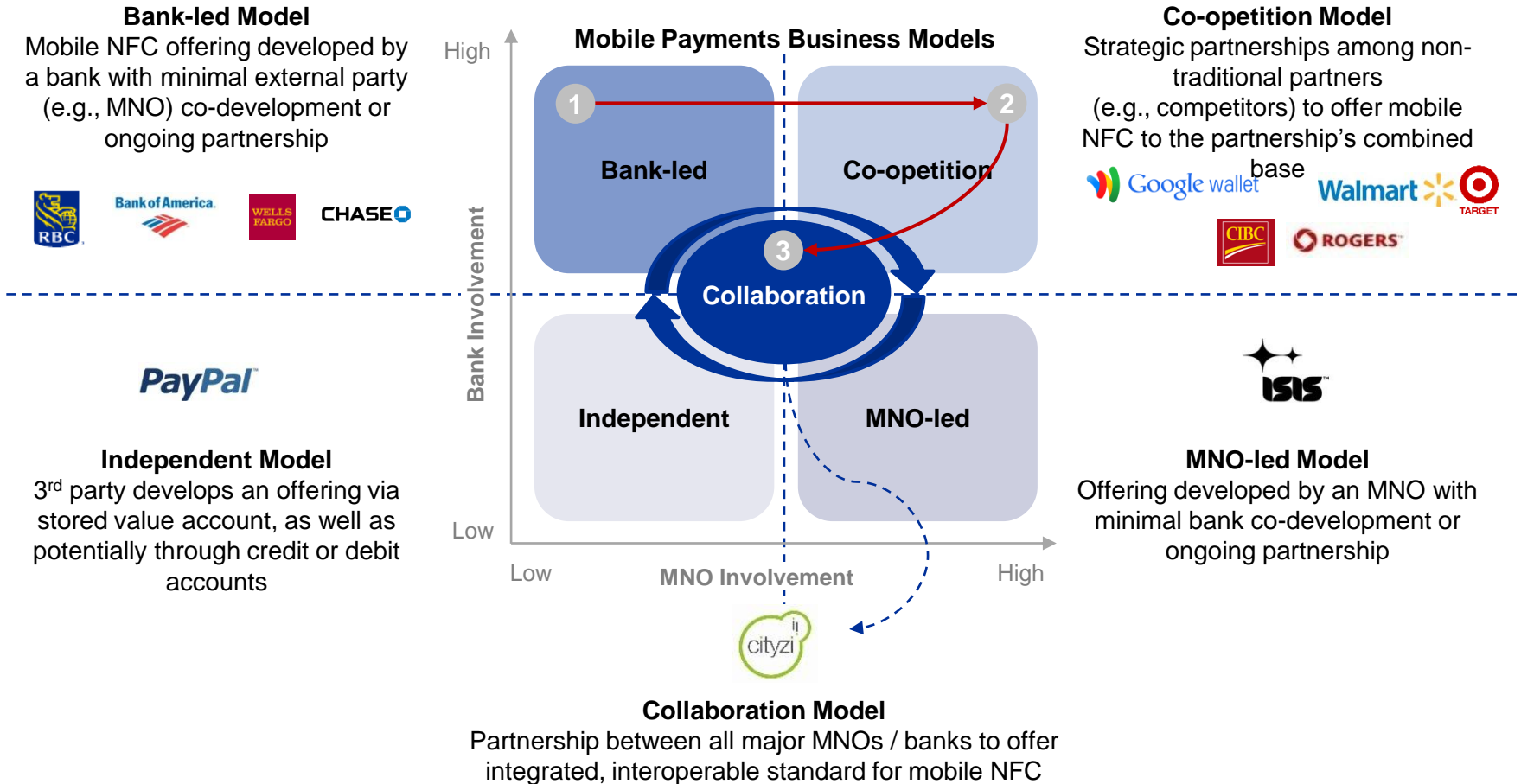
Mobile Payments Ecosystem – Stakeholder Motivations to Own the Mobile Wallet



Control of the mobile wallet provides stakeholders the means to derive benefits from the mobile payments ecosystem; however, partnerships (across the value chain) will be the key to success

In Canada, Deloitte believes that the mobile payments landscape will evolve from a bank-led business model to collaboration, with MNOs playing a supporting role

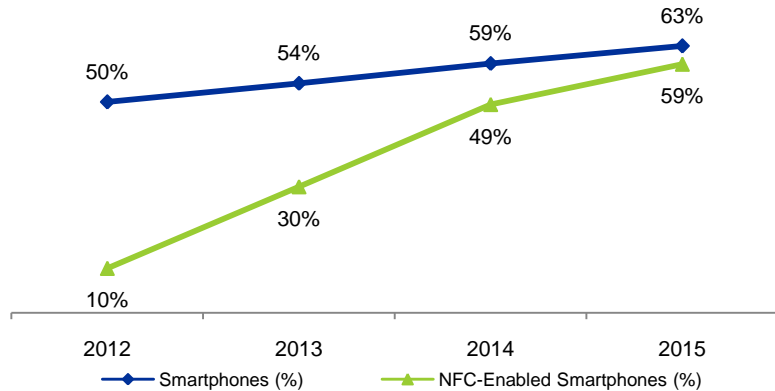
Mobile Payments Business Models



The conditions are being set for mobile payments to become a near term reality in Canada

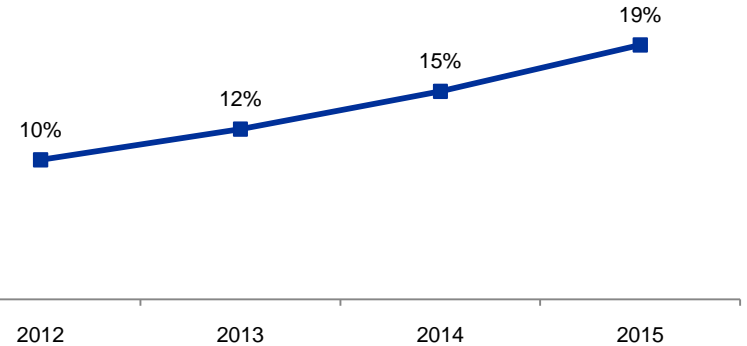
Wide smartphone adoption

Smartphone Penetration in Canada (%)



Growing Merchant Terminalization

Canadian Contactless POS Terminal Penetration (%)



Customers are becoming increasingly reliant on Mobile...



Globally, more people own mobile phones (4.8 B) than toothbrushes (4.2 B)¹

- The mobile channel (phones, smartphones and tablets) is becoming an integral part of a customer's lifestyle

Standards are beginning to take form...



Code of Conduct for the Credit and Debit Card Industry in Canada

- An amendment to the "Code" has been recently proposed to extend it to include the mobile channel

Data is becoming less expensive...



25B pieces of content is created on Facebook monthly

- Technology has now enabled the collection of a much richer set of data – the "content" as well as the "context"

Independents are making aggressive moves...



- Independents such as Google and PayPal have commercial m-payments offerings in the US and will imminently launch in Canada

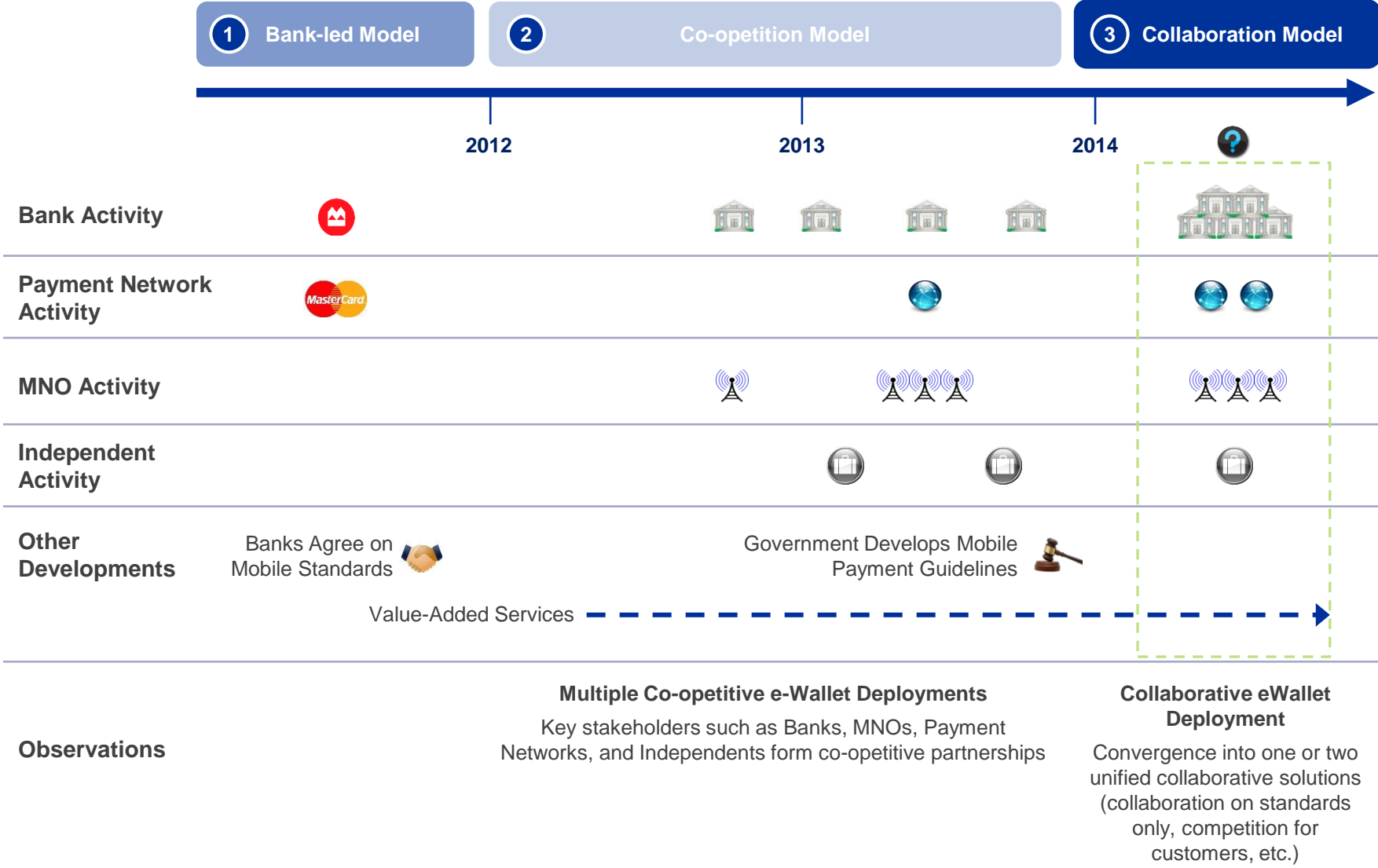
These conditions have resulted in Canada being ranked #2 globally in the Mobile Payments Readiness Index²

¹ Mobile Marketing Association of Asia

² MasterCard Mobile Payments Readiness Index (MPRI)

Given the recent developments in the marketplace, Deloitte believes that 2012 will be the turning point for mobile NFC implementation in Canada

ILLUSTRATIVE



Deloitte.

**Information Technology & E- Commerce
Mobile Computing Part II: Payment Systems**

Mobile Payments in Canada: Emerging Legal Issues

Benjamin Geva
Counsel, Torys LLP
bgeva@torys.com
416.865.7987

- Force Established June 18, 2010
- Report completed in December, 2011 but not released until March 23, 2012

A key recommendation


- Transitioning to the digital economy is essential for Canada to not be left behind and it is essential that the government play a leadership role

....

2. Partner with the private sector to create a mobile ecosystem. The transformative power of a mobile ecosystem that combines payments, commerce and government services can be harnessed to tip the scales toward broad adoption of such a system

•

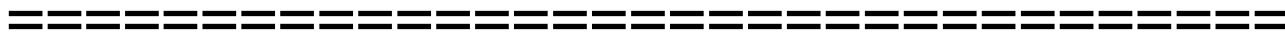
Retail Payment Mechanisms

 E-Money ("SVP")		Access	
'Chip' cards ("electronic purse")	software products	Transfer of value (funds) from one account to another	
Microprocessor chips embodied in plastic card (turning "memory card" into a "smart-card")	"digital cash"(specialized software installed on a standard personal computer		
Public Access Terminal POS/ATM	Home Banking PC Internet	Public Access Terminal POS/ATM	
Value available to consumer is stored on an electronic device in consumer's possession		Value available to consumer is recorded in bank account	

- Single or multi-purpose (closed or open systems)
- Restricted (i.e. geographically) or unrestricted systems
- Single and multi-issue systems

Any payment in which a mobile device is used for the purpose of initiation, activation and/or confirmation of the transaction.

Mobile device: mobile phone; PDA (Personal Digital Assistant).



Use of mobile phones beyond voice calls but rather as digital communication devices facilitating data transfer.

M-Payment: Alternative Definition

“... the process of two parties exchanging financial value using a mobile device for goods and services”

A mobile device is defined as “a wireless communication device, including mobile phones, PDA, wireless tablets, and mobile computers”.

[Source: Mubarik and Pau, Mobile Payments in the Netherlands]

Emerging Mobile Payment Ecosystem

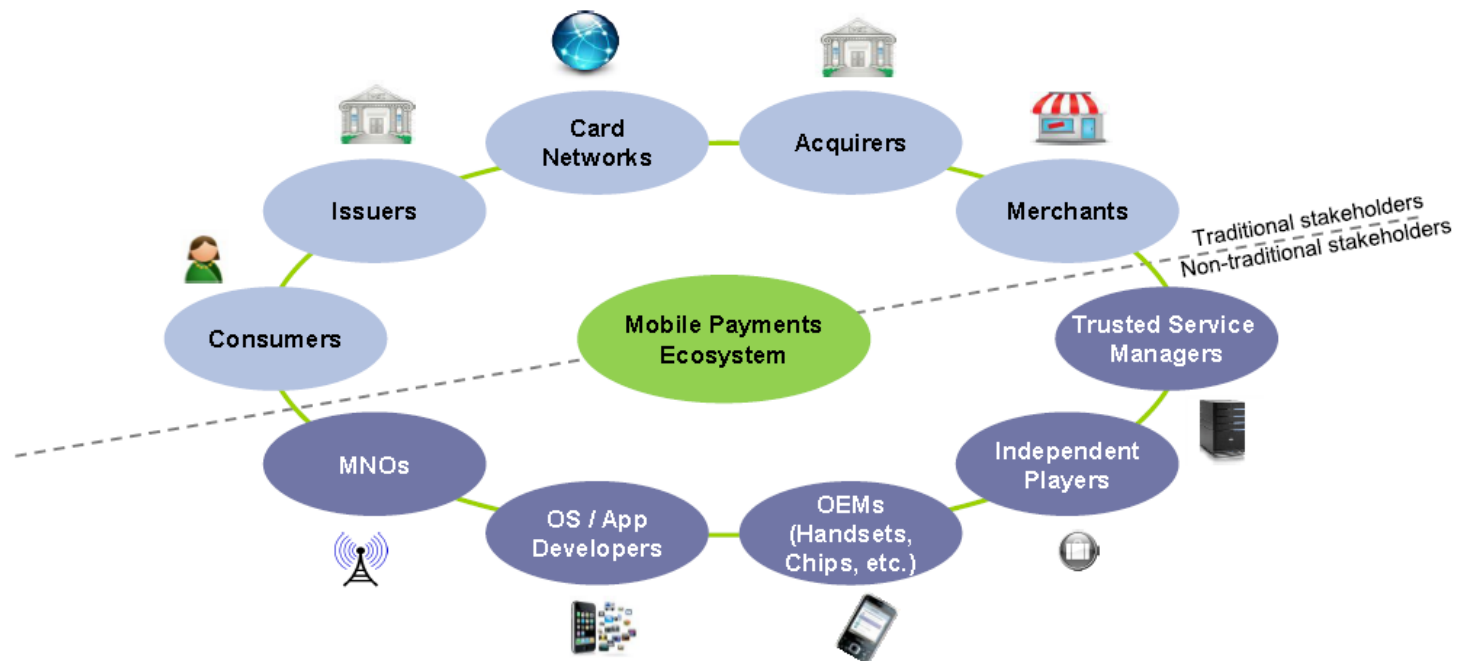
Source: Vilpul Lalka vlalka@deloitte.ca 416 601 5959

DELOITTE

The emerging mobile payments ecosystem is significantly more complex than the existing payments model, with traditional and non-traditional stakeholders

Mobile Payments Ecosystem

NOT EXHAUSTIVE



The multitude of incumbents and new stakeholders are all trying to establish their dominance in the emerging mobile payments ecosystem

M-Payments: Private Law Selected Issues

- Privity: who is liable to whom? who is agent of whom?
- Unauthorized payment
- Mistakes: mistaken payment; payment to the wrong beneficiary; overpayment; under-payment;
- Completion of payment and discharge
- Conditional payment? Paymaster's engagement? who is the paymaster?
- Liability for consequential loss? for system malfunction?
- Choice of law – which law applies?
- Consumer issues: disclosures; information; privacy
- Is payment transactions statute needed?

Mobile Payments – Overview

Source: Canadian NFC Mobile Payments Reference Model, CBA 14 May 2012

In the mobile payments world, a customer (now called the end user) applies for the mobile payment service and requests a Financial Institution (now called the credential issuer) to enable the mobile payments service on a mobile device. The credential issuer instructs its Trusted Service Manager (TSM) (which has replaced the card fulfillment specialist) to transmit payment credentials to the end user's mobile. To do this, the credential issuer's TSM liaises with the mobile network operator. Once credentials are on the mobile device, the end user is validated in a process very similar to the card activation steps. Following verification, the end user may use the phone or other mobile device just as they would a contactless payment card.

Messaging Constructs (Simple Mode)

Source: Canadian NFC Mobile Payments Reference Model, CBA 14 May 2012

In a simple mode, the MNO or the SDM allows the credential issuer to use its secure domain for the payment application. The right to the secure domain remains with the MNO or SDM. Any updates or changes to the payment application must be managed through the Secure Domain Manager or MNO.

- MNO: Mobile Network Operator
- SDM: Secure Domain Manager

Messaging Constructs (Delegated Mode)

Source: Canadian NFC Mobile Payments Reference Model, CBA 14 May 2012

In a delegated mode, the MNO or SDM rents (or gives access) to a portion of the secure element to the credential issuer. The MNO or SDM still has ownership on the secure element and can control what applications are loaded in the secure element. Keys are exchanged between the MNO or SDM and the credential issuer (or the credential loader) to provide that access to the secure element.

- MNO: Mobile Network Operator
- SDM: Secure Domain Manager

Messaging Constructs (Dual Mode)

Source: Canadian NFC Mobile Payments Reference Model, CBA 14 May 2012

In a dual mode, the MNO or SDM has sold a portion of the secure element to the credential issuer. The credential issuer has full ownership and rights to that portion of the secure element. Keys are exchanged between the MNO or SDM and the credential issuer (or credential loader) as a part of the sale. The credential issuer can put any application on the secure element and does not need any permission from the MNO or SDM.

- MNO: Mobile Network Operator
- SDM: Secure Domain Manager

- MNO: Mobile Network Operator
- SDM: Secure Domain Manager
- TSM : Trusted Service Manager
- OEM: Original Equipment Manufacturer
- UICC: Universal Integrated Circuit Card
- SIM: Subscriber Identification Module
- PSP: Payment Service Provider

- Access linking a conventional bank account such as checking, credit card, or debit card.



- “Mobile phone companies ... act as banks and allow ... customers to deposit and withdraw funds using ... mobile accounts”

[Leyva, 2008, 34 Fall Vermont Bar J. 62,63]

- ‘Stored-value product’ (“SVP”)
- A sub-account in a pooled conventional account belonging to the scheme operator (‘prepaid’ product)
- As distinguished from an ‘ordinary’ bank account [that can be accessed by the mobile device]

M-Payments To Third Parties: Communication

- SMS-short messaging (text) service
- NFC- Near field communication*
- WAP-web-based payments using wireless application protocol

*NFC can be used only for ‘proximity payments’ –
SMS and WAP can be used for ‘remote payments’

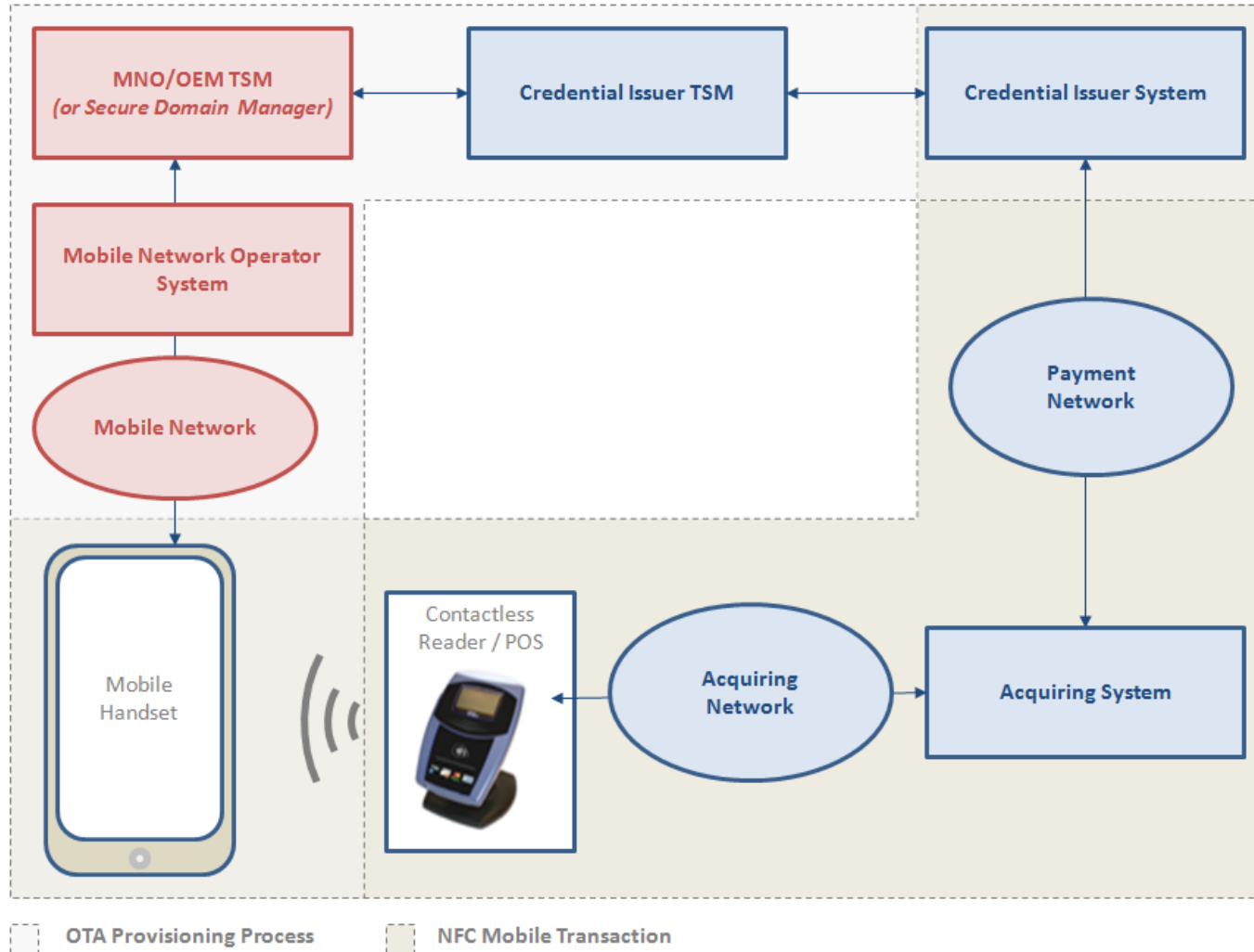
RFID (Radio-Frequency Identification) Technology

Contactless payment models– payment by waving:

1. Contactless payment card– passive RFID technology-- a silicon chips and antenna imbedded in card- passive until it comes with an RFID-enabled reader installed on POS terminal;
2. NFC-enabled mobile cellular phones are able to send and receive data: [i] as passive – like card -- may be tapped in front of an RFID-enabled reader; [ii] as active – may initiate data transfer by being waved over magazine or poster with a passive RFID chips – more robust than contactless cards.

Architectural Overview (NFC Technology)

Source: Canadian NFC Mobile Payments Reference Model, CBA 14 May 2012



Overview of the Purchase Process for Mobile Payments (NFC technology)

Source: Canadian NFC Mobile Payments Reference Model, CBA 14 May 2012



The End User presents a basket of goods or services to the Merchant for payment.



The Merchant calculates the amount due and informs the End User.



The End User opens the mobile wallet, selects a payment credentials to use and taps the phone to the POS.



If the payment exceeds the high value or high risk threshold, the End User will be prompted to enter a pass code.



The Payment Network authorizes the payments, the Merchant and End User are informed and the receipt is transmitted or printed.

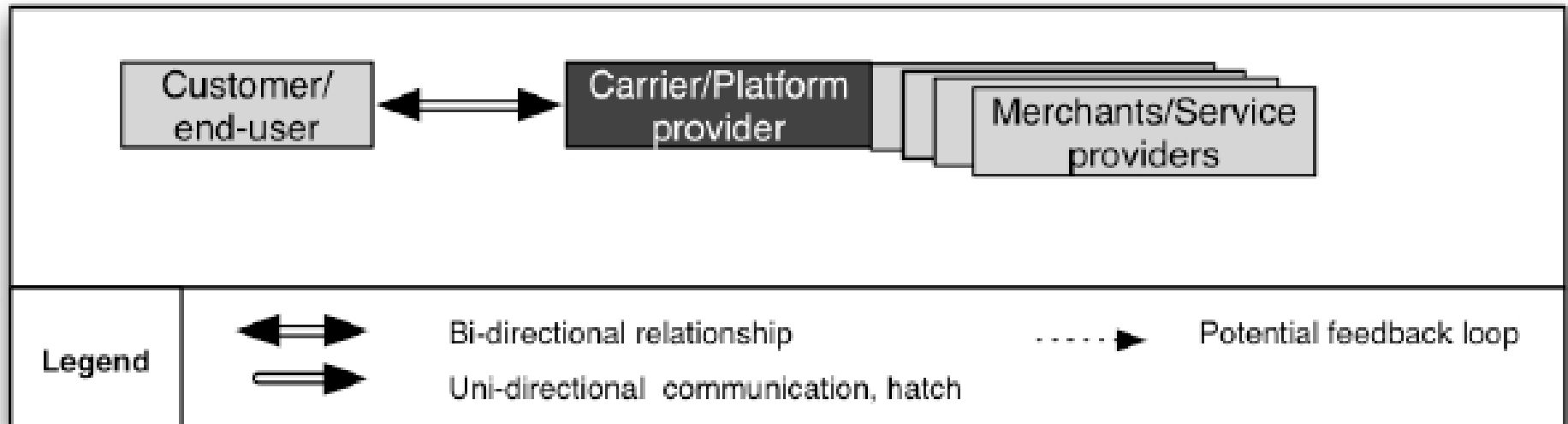
Mobile Payment Services

Source; 2011 KPMG Mobile Payments Outlook

- **M-wallet (mobile wallet):** account and transaction info is stored on a SIM card;
- **M-banking (mobile banking):** direct access to the subscriber's bank services and information via the mobile device;
- **Contactless card systems:** a short-range high frequency wireless communication technology which enables the exchange of data between devices;
- **Specialist online payment systems:** for example, Google checkout or PayPal;
- **Carrier billing:** for example, purchases are billed on the subscriber's mobile phone bill

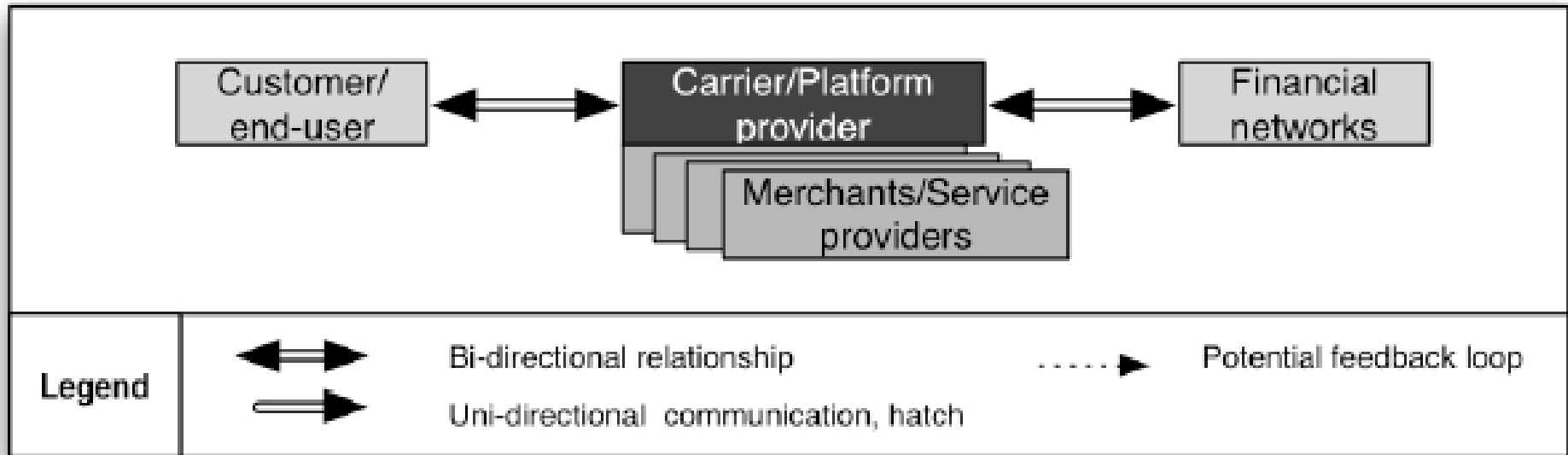
Walled Garden Model

[Carrier-centric model]



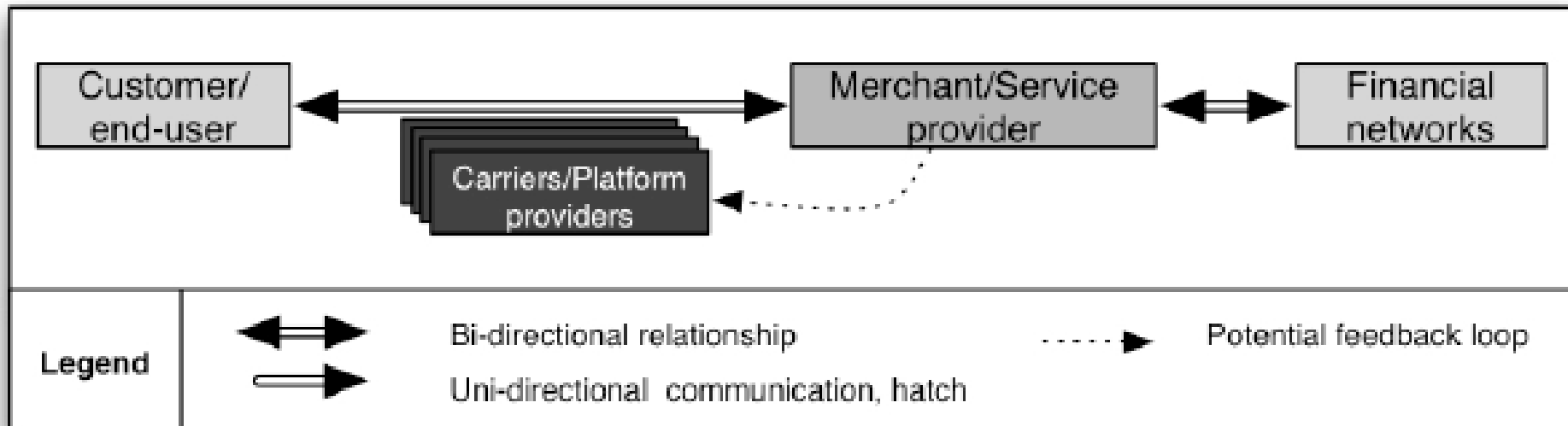
High-Value Garden Model

[Carrier-centric model]



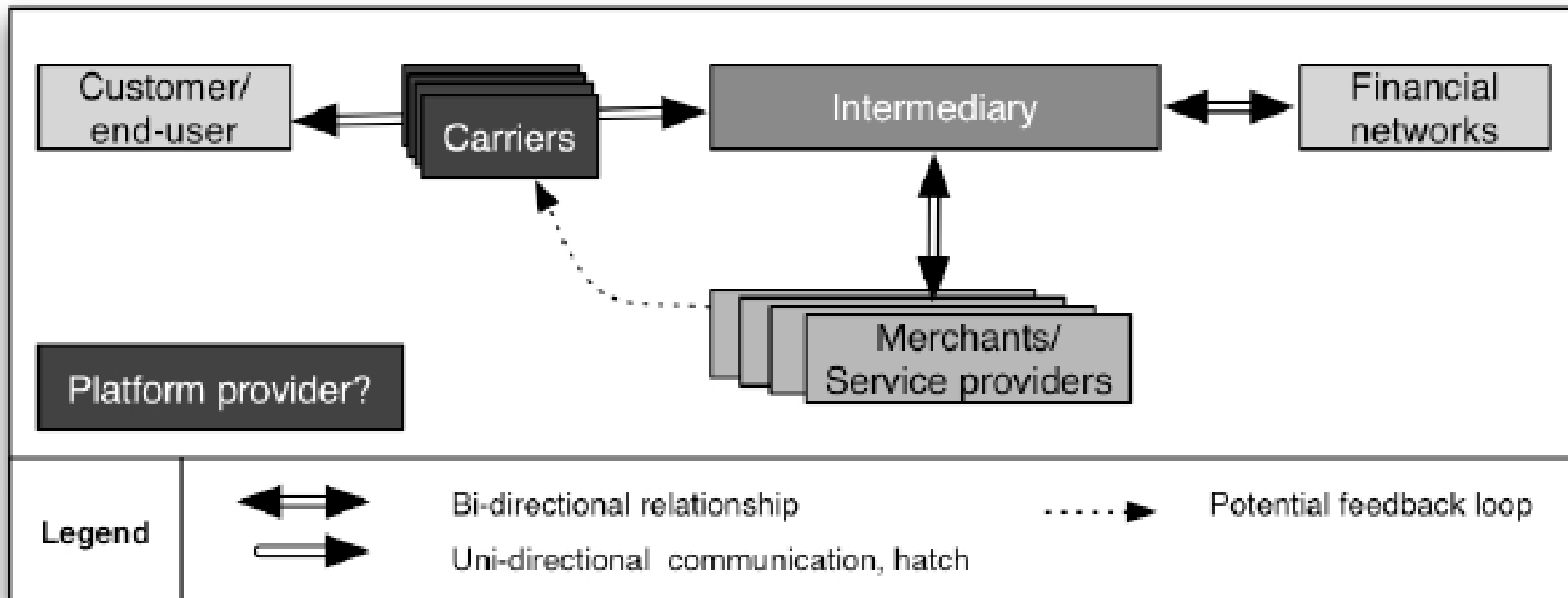
Buy Direct Model

[PSP-centric model]



Mediated Model

[PSP-centric model]



Intermediary: Broker supporting the creation of relations the between all participants [reduces number of merchant-FI agreements]

<Source: Bossuyt and Hove, "Mobile payment models..." JPRS, August 2007>

Payment Card Networks Act

S.C. 2010, c. 12, s. 1834

3. This Act applies to payment card network operators.

4. The following definitions apply in this Act:

“payment card” means a credit or debit card — or any other prescribed device — used to access a credit or debit account on terms specified by the issuer. It does not include a credit card issued for use only with the merchants identified on the card.

Payment Card Networks Act

S.C. 2010, c. 12, s. 1834

Section 3 (definitions)

- “*payment card network*” means an electronic payment system — other than a prescribed payment system — used to accept, transmit or process transactions made by payment card for money, goods or services and to transfer information and funds among issuers, acquirers, merchants and payment card users.
- “*payment card network operator*” means an entity that operates or manages a payment card network, including by establishing standards and procedures for the acceptance, transmission or processing of payment transactions and by facilitating the electronic transfer of information and funds

Canadian Code of Practice for Consumer Debit Card Services Section 1(4)

- The code outlines industry practices and consumer and industry responsibilities, which will help to protect consumers in their use of debit card services in Canada. **It applies only to services that use debit cards and personal identification numbers (PIN) to access point-of-service terminals, such as automated banking machines (ABM), point-of-sale (POS) terminals and debit card terminals in the home.** The code does not cover transactions that take place outside Canada, or that transfer funds into or out of Canada; other arrangements apply to these transactions. Card issuers will also do their best to protect consumers in such transactions and to resolve any problems that may occur.

Canadian Code of Practice for Consumer Debit Card Services

Definitions from Article 9

- **Debit Card:** a card with electronically readable data that is used, in conjunction with a PIN, to confirm the identity of the cardholder and authorize debit card transactions.
- **Debit Card Transactions:** deposits, withdrawals, payments, or other funds transfers made at point-of-service terminals using a debit card.
- **Point-of-service Terminal:** an electronic terminal, incorporating a card reader and PIN pad, used to make debit card transactions. Automated banking machines, point-of-sale terminals and terminals in the home are examples of point-of-service terminals

The Code of Conduct for the Credit and Debit Card Industry in Canada - 2010

Code is designed to demonstrate the industry's commitment to:

- Ensuring that merchants are fully aware of the costs associated with accepting credit and debit card payments thereby allowing merchants to reasonably forecast their monthly costs related to accepting such payments.
- Providing merchants with increased pricing flexibility to encourage consumers to choose lowest-cost payment option.
- Allowing merchants to freely choose which payment options they will accept.

It applies to credit and debit card networks, (referred to herein as payment card networks), and their participants (e.g. card issuers and acquirers and does not expressly address mobile payments).

Newly Proposed Addendum – September 18, 2012

- The newly proposed Addendum to the Code extends it to mobile payments in two ways:
- (i) it provides that all references to "payment card" networks and network rules will include payment applications that can be accessed by consumers using a mobile device; and
- (ii) it provides "clarifications" of specific aspects of the Code, including the following proposed elements: -----
-----→

“Clarifications” of Specific Aspects of the Code – I

1. Payment card network rules will ensure that merchants who accept credit or debit card payments from a particular network through a mobile device will not be obligated to accept all products available in that payment network’s mobile wallet.
2. Competing domestic debit apps can be stored on, or accessed by, the same mobile device, provided that they are shown as separate apps and consumers can select which payment app they want to use for a transaction.

“Clarifications” of Specific Aspects of the Code - II

3. The principle of equal branding will apply to the representation of payment apps available on or through a mobile device.
4. Payment card network rules must ensure that consumers have full discretion to establish including easy processes to change defaults.
5. Credit and debit payment apps can be stored on, or accessed by, the same mobile device provided that they are clearly separate apps, and credit and debit card functions must not co-reside on the same payment app.

M-Payments Selected Legal Issues – Public Law

- Constitutional issue: provincial or federal jurisdiction?
- Regulatory issues:
 - Does ‘prepayment’ constitute “deposit”?
 - Can M-money be issued by non-bank?
 - If yes, ought issuer to be regulated?
 - Is prepayment covered by deposit insurance?
 - who will regulate safety and security?

Privacy and Payments: Data Harvesting for Secondary Marketing

- To what extent can retailers, card suppliers, others in the payments chain, use personal information collected ostensibly to process payments for secondary marketing purposes?
 - > tracking individual shopping habits
 - > tracking movement of card/mobile payment system user
 - > tracking other “consumer-metrics” harvested from mobile payment technology
 - > anonymized data on consumer preferences, practices and demographics

- *Canada Mobile Payments: NFC Mobile Payments Reference Model, May 2012:*

“...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”

- guideline therefore limits access to personal information to those with a “need to know” to process payment and with end user permission explicitly granted
- limited scope for secondary marketing

- The overarching point is that Privacy Regulators in Canada have uniformly taken the position that any kind of undisclosed electronic monitoring of consumers violates privacy laws and thus warned against attempts to use technology to do so without express meaningful consent from consumers. This has resonance in the mobile payments world since the use of NFCs and other chips in devices can generate lots of valuable customer data (consumer preferences, spending power, etc.) that lots of retailers would love to get their hands on in real time to enhance the ability to target market to people.



www.torys.com

Toronto
New York
Calgary

416.865.0040
212.880.6000
403.776.3700