

“Mobile, Debit, and the Coming Crisis”

Breakfast Briefing



PAYMENTS BUSINESS

The National Club, Toronto

DECEMBER 16, 2010

Presented by:

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Emerging Payments Consulting Inc.



Canadian Payments Landscape

Noteworthy Changes

- *EMV Migration**
- *Interac e-Transfer**
- *Move to IP**
- *Wireless Terminals**
- *Gift Card Adoption**
- *Contactless Payments**
- *Interac Online*
- *Premium Cards*
- *Visa Debit**
- *Code of Conduct*
- *Mobile Banking*
- *Interac Flash**

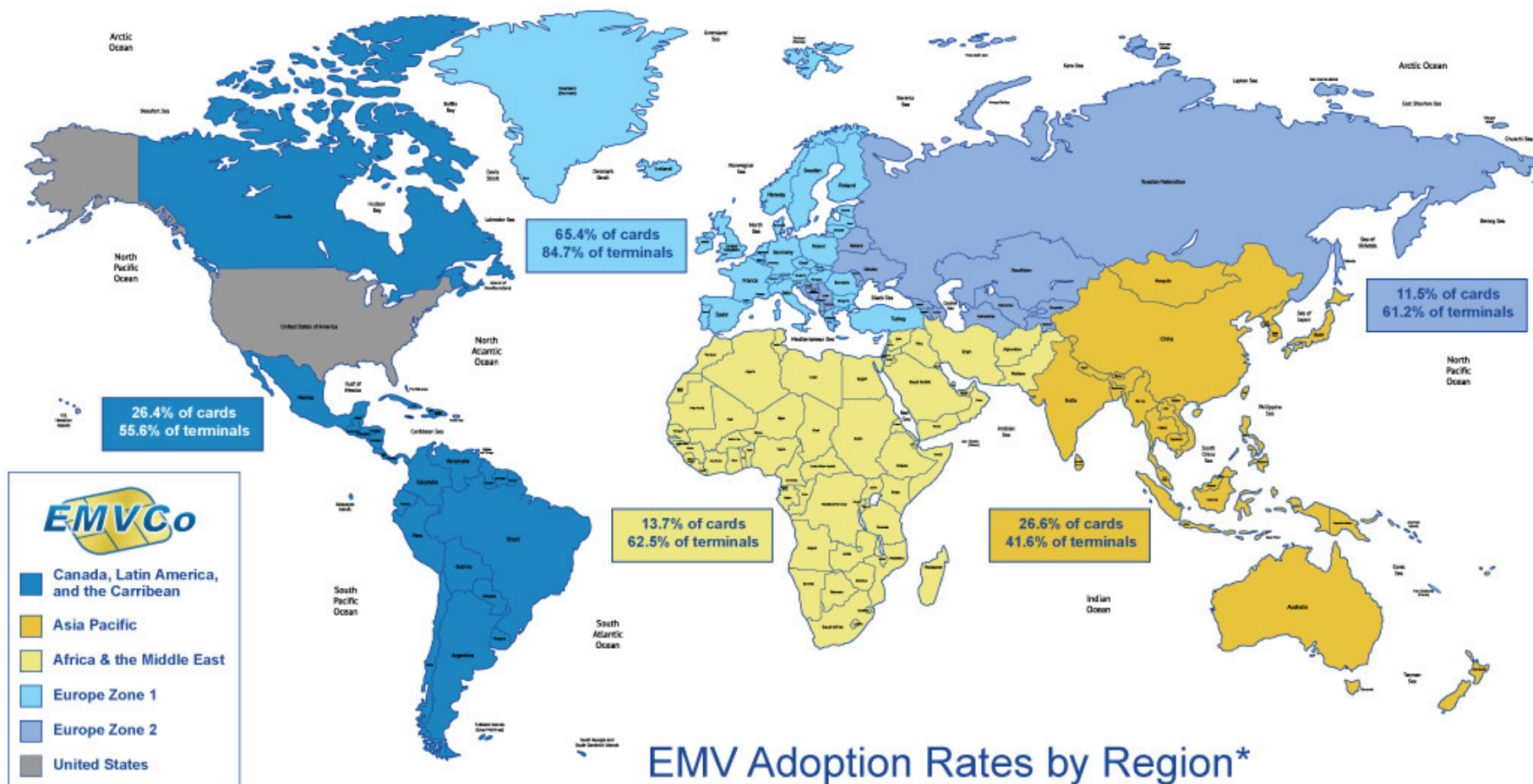
EMV Migration

“Are We There Yet?”





Worldwide EMV Deployment Sept 2010



*Figures reported as of September 2010 and represent the latest statistics from American Express, JCB, MasterCard, and Visa, as reported by their member financial institutions globally. Figures do not include data from the United States.



Worldwide EMV Deployment

Sept 2010

Source: EMVCo

The figures represent the latest statistics from American Express, JCB, MasterCard and Visa, as reported by their member financial institutions globally.

Region	EMV Cards	Adoption Rate	EMV Terminals	Adoption Rate
Canada, Latin America, and the Caribbean	182,185,043	26.4%	2,000,000	55.6%
Asia Pacific	305,126,927	26.6%	3,200,000	41.6%
Africa & the Middle East	16,841,874	13.7%	348,000	62.5%
Europe Zone 1	555,688,434	65.4%	9,400,000	84.7%
Europe Zone 2	22,817,271	11.5%	457,800	61.2%
United States†				
TOTALS	1,082,659,549	36.0%	15,405,800	65.0%



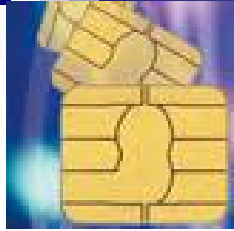
Worldwide EMV Deployment

Newsflash from Finextra.com

06/OCT/2010

OVER ONE BILLION EMV CARDS NOW ACTIVE

- Over a third of the world's payments cards - around one billion - are now EMV
- 2 / 3 of terminals - 15.4 million upgraded to secure transactions at the point-of-sale



Canadian EMV Migration Milestones

- 2003** Visa Canada commits to EMV migration
- 2004** EMVCo 4.0 specification standards comes into effect
- 2005** MasterCard Canada and Interac commit to EMV migration
- 2007** Industry announcement of planned Chip and PIN market trial
- 2008** Kitchener / Waterloo March to October
 - Visa, MasterCard, Interac
 - All major card issuing financial institutions
 - All major acquirers
 - National roll-out to commence immediately following end of trial



Canadian EMV Migration

Milestones

2010

Visa and MasterCard move liability shift for non converted POS

- Merchants responsible for losses associated with fraud
- Moved from October 2010 to March 31, 2011 to ensure stable holiday shopping environment

2011

Liability for fraud at POS moves to merchant if support for EMV not fully implemented by March 31

2012

Interac ABM migration to EMV deadline December 31

- magnetic stripe transactions will no longer be accepted

2015

Interac POS migration to EMV deadline December 31

- magnetic stripe transactions will no longer be accepted



EMV Impact on Canadian Debit and Credit Card Fraud 2008 to 2009

Canada shows how EMV migration can impact fraud

09/09/2010 15:05:09 FINEXTRA

Criminal Intelligence Service Canada 2010 Report on Organized Crime:

- Credit card fraud decreased from \$512.2M in 2008 to \$500.7M in 2009
 - small reduction but positive indicator

- Debit card fraud losses spiked in 2009, increasing by 36% from \$104.5M in 2008 to \$142.3M
 - Interac EMV migration behind credit card upgrades at POS

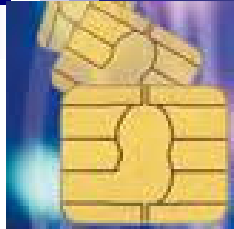


EMV Impact on Canadian Debit and Credit Card Fraud

Criminal Intelligence Service Canada 2010 Report on Organized Crime:

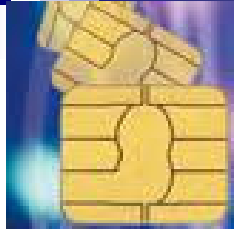
- Expect decline in skimming and counterfeit card activity at POS and ATMs as EMV adoption progresses

- Payment card fraud will migrate:
 - Canadian card data will be used in regions that have not implemented Chip and PIN
 - Walmart, T-Mobile, Federal Reserve all calling for US migration to EMV
 - Card not present environments (e-commerce, MOTO) will also be vulnerable underscoring the need for Verified by Visa, Secure Code and PCI compliance



EMV Impact on Canadian Debit and Credit Card Fraud Uncertainty at POS

- Transitional period presents a unique window for fraudulent activity
 - Many PIN pads had chip readers and look operational
 - but software has not been upgraded to meet the industry's security requirements
 - inconsistent customer payment experience from retailer to retailer
 - merchant acceptance challenges
 - not all customers have Chip cards
 - POS may not be ready for all payment card types



Canadians and EMV Initial Feedback Is Positive

Source: Visa Canada

Consumer research indicates:

- 75% customers surveyed said they had encountered NO problems with EMV
- 4 to 6 % indicate not enough EMV terminals deployed
 - Working actively with petro and table dining verticals to expand Chip and PIN acceptance
- 4% have difficulty remembering PIN



Debit Card Controversy

Debit Card Products



Who?

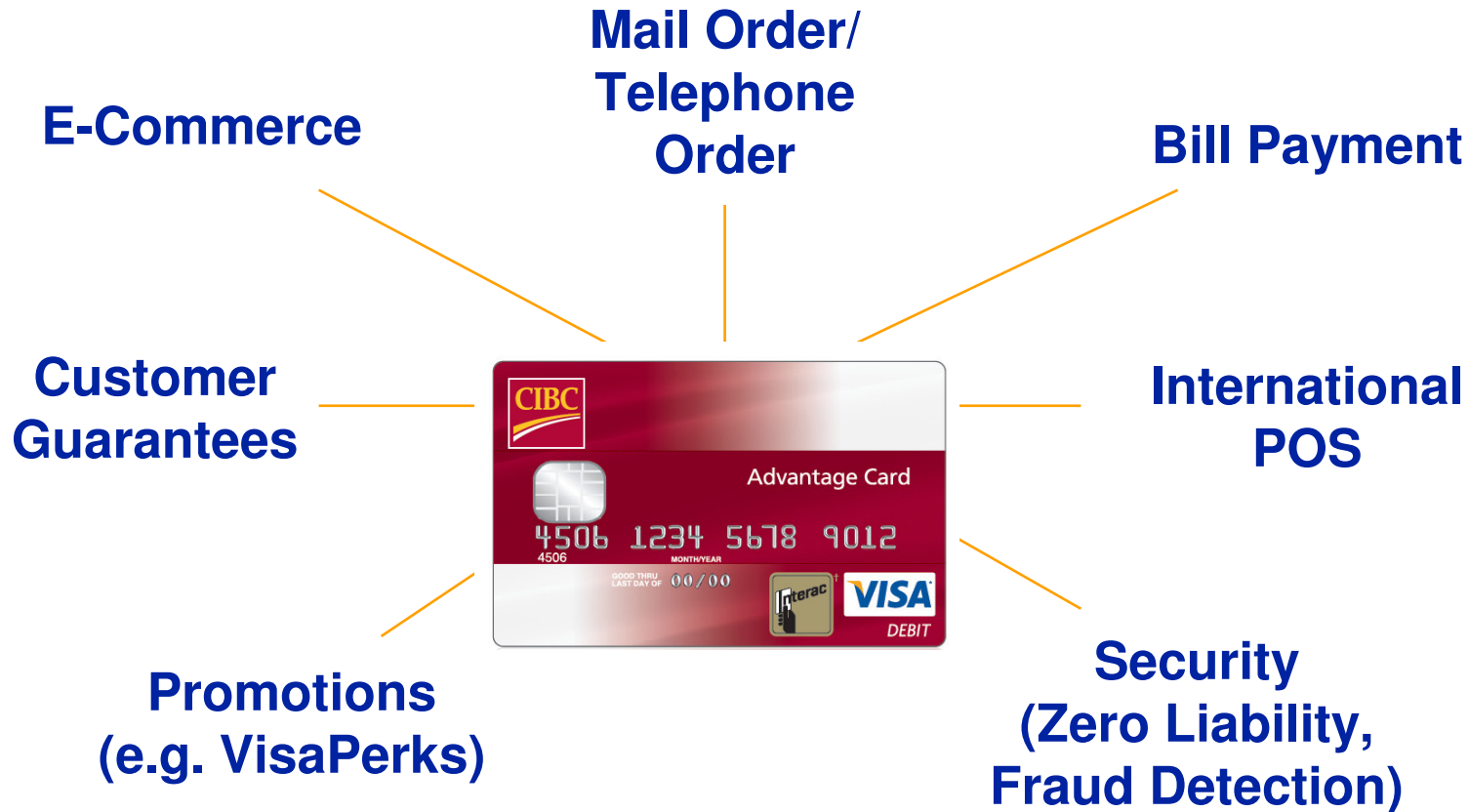
- **Credit adverse**
 - Economic crisis has caused many to rethink the use of credit cards
 - Others just don't like to owe for anything
- **Credit unworthy**
 - Poor credit score
 - No track record
- **Youth**
 - Not yet eligible for credit card product
 - Need spending tool that is widely accepted over the Internet

What?

- **Provide direct access to funds in bank account**
 - domestically and while travelling abroad
 - available for Card Not Present (ecommerce, MOTO, recurring payment environments)
 - online authorization provides real-time approval versus lengthy time required for EFTs to clear
- **Higher acceptance cost to the retailer than Interac**



Visa Debit allows consumers and merchants to do more





Visa Debit Controversy

Transmitted by CNW Group on : October 18, 2010 10:05

Visa Launches First Debit Product in Canada

- *Debit card issued by CIBC offers consumers more choice, greater acceptance and enhanced security*

[Visa under fire for new *debit card* - thestar.com](http://thestar.com)

- 5 Nov 2010 ... The Consumers Association of Canada said consumers are confused about whether **CIBC's** new **Visa**-branded Advantage Card is a **debit card** or ...



Visa Debit Controversy

- Caught by POS not upgraded to EMV
 - Oct launch appeared to coincide with the original date when merchants should have completed migration
 - Processed using magnetic stripe (not Chip and PIN)
 - EMV application selection process would prevent such an error
 - Wrong tender selected at cash register
 - proceeded in error as “credit”
 - routed to Visa network
 - Steps taken to block future transactions
 - Less than 1,000 transactions processed incorrectly
 - Merchants have been reimbursed for MDR

Contactless Payments



MasterCard PayPass



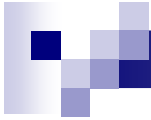
SOURCE: MasterCard Canada

- First to introduce contactless payment technology in Canada
 - 2005 - first payment trial
 - 2007 – Tim Hortons accepts MasterCard and *PayPass*
- Q2 2010 - Worldwide:
 - 78 million MasterCard *PayPass* cards
 - more than 245,000 devices in use at merchants

MasterCard PayPass Merchants

SOURCE:: MasterCard Canada





Visa
payWave 

Visa payWave





Visa payWave

Launched in 2007

2008

- TD Merchant Service was first Canadian acquirer certified
 - payWave cards issued to select TD Visa cardholders
 - added to Kitchener / Waterloo EMV pilot

2010

- Vancouver Winter Olympics and Paralympic Winter Games
 - Coke vending machines equipped with contactless readers
 - Royal Bank issued prepaid contactless cards the shape of Coke bottles to athletes
- TD Canada Trust and RBC Royal Bank are actively issuing Visa payWave cards
 - By the end of 2010, several million Visa payWave cards will be in the Canadian market

VISA Visa payWave delivers acceptance

Leading merchants in key segments are rolling out Visa payWave acceptance



Several million Visa payWave cards in market by end-2010

Interac Flash

“Naturally positioned for the evolution to a mobile payments environment”



Interac Flash



June 2010

Successful field trial announced



- EMV based contactless technology
- First Canadian contactless debit solution
- Scotiabank (card issuer)
 - cards issued to select Scotiabank and Interac staff
- TD Merchant Services
 - Selected NBS Payment Solutions NBSPS 1200 contactless reader
 - NBSPS was first to develop and certify Interac Flash
 - worked closely with Interac and certification / test lab in migrating the test environment from pre-production to production
 - Will add functionality to other NBSPS products in 2011
- Trial was a technical implementation
 - No performance issues were encountered in the field





Interac Flash

November 2010

Market launch scheduled for summer 2011

- Targets \$90B opportunity to displace cash payments for purchases under \$20
- Scotiabank and RBC have already confirmed participation in the launch
 - dual interface cards (i.e. contact and contactless)
- Several acquirers and contactless reader manufacturers are currently undergoing industry certification



Interac Flash

- Enhancement to Interac Chip Debit
 - no PIN required
 - cardholders are protected from unauthorized transactions under existing Zero Liability Policy
 - merchants continue to receive the benefits of secure and non-refutable transactions
 - maximum transaction \$100
 - card issuers free to establish lower cap if desired
 - infield activation by issuer through scripting
 - with consumer consent
 - pricing to merchant unchanged



Interac Flash

- TD Merchant Services is proceeding with POS upgrades early in 2011 Source: Robert Hayhow VP Product, TD Merchant Services
 - all new “stand alone” contactless deployments will be ready for Interac Flash cards once in market
 - Standard offering – will be a component on all POS products going forward
 - expect to be first of all acquirers to certify with the leading hardware vendors
 - plan to upgrade all current TD contactless merchants to support Interac Flash by 2012
 - Integrated (cash register) solutions are also planned for 2011

Interac Flash Technology Providers (at December 2010)

Disclaimer: This slide does not intend to reflect ALL industry participants or companies that plan to participate in the 2011 launch of Interac Flash - simply a subset at the time of this presentation, nor is any direct or indirect relationship between the parties below suggested or implied.. Contact your payments provider partner for more information.



RBC Royal Bank

CHASE  Paymentech™



flash





Social Networking

facebook

The Facebook logo, consisting of the word "facebook" in white lowercase letters on a dark blue rectangular background.

Social Networking

Source: WIKIPEDIA

- Facebook launched February 4, 2004
 - Website operated and privately owned by Facebook, Inc.
 - Multilingual service

- Founders: Mark Zuckerberg, Eduardo Saverin, Dustin Moskovita and Chris Hughes
 - College roommates and fellow computer science students at Harvard

- Users create a personal profile, add other users as friends and exchange messages, including automatic notifications when friends update their profiles
 - Common interest user groups,
 - Organized by workplace, school, or college, or other characteristics
 - Share pictures and videos
 - Play online games
 - Send virtual gifts

The Facebook logo, consisting of the word "facebook" in white lowercase letters on a dark blue rectangular background.

Social Networking

Source: WIKIPEDIA

- September 2009, turned cash flow positive for first time
- November 2010, Facebook value estimated at \$41B
 - Slightly surpassing EBay
 - became 3rd largest U.S. web company after Google and Amazon
- Revenue increased to \$1.1B in 2010 from \$52M in 2006
 - Advertising generates most revenue
 - Microsoft is exclusive partner for serving banner advertising
- Mark your calendars:
2013: Facebook is a possible candidate for IPO

The Facebook logo, consisting of the word "facebook" in white lowercase letters on a dark blue rectangular background.

Social Networking

Source: WIKIPEDIA

- **November 15, 2010, “Facebook Messages” service is announced**
 - Users will be able to have an @facebook.com email address
 - Mark Zuckerberg said, “It's not just email”
 - Combines text messaging, instant messaging, email and regular FB messages
 - Will include privacy settings similar to those of other Facebook services

The Facebook logo, consisting of the word "facebook" in white lowercase letters on a dark blue rectangular background.

Social Networking

Source: WIKIPEDIA

■ Relevant why?

- Official Facebook application for:
 - iPhone OS
 - Android OS
 - WebOS
- Nokia and Research In Motion provide FB apps for their own mobile devices
- 150 million + active mobile users
 - across 200 mobile operators
 - 60 countries

The Facebook logo, consisting of the word "facebook" in white lowercase letters on a blue rectangular background.

Social Networking

Source: FINEXTRA.COM

■ Relevant why?

□ **27 October, 2010 - PayPal unveils micropayments system; Facebook on board to use a new micropayments system for digital goods and services.**

- lets users pay for virtual goods and content in as little as two clicks, without having to leave a publisher's game, news, music, video or media site

The Facebook logo, consisting of the word "facebook" in white lowercase letters on a dark blue rectangular background.

Social Networking

■ Relevant why?

- Diverse age of users youth to elderly
 - July 2010 - 500 million registered “friends”
- Technology adopters
- Unlimited social networking packages now available from most mobile network operators
- Website accessible through smart phone web browser
- Emerging payment options

The Facebook logo, consisting of the word "facebook" in white lowercase letters on a dark blue rectangular background.

Social Networking

Source: WIKIPEDIA and FORBES.COM



■ Mark Zuckerberg

Mission: Open flow of information

- Born: 1984, May 14
- 2004: Left Harvard before completing a computer science degree; founded Facebook
- 2008: Youngest (self made) billionaire; \$1.5B age 23
- 2010: Net worth = \$6.9B
- Nov 2010: half of his wealth pledged to charity
- Dec 2010:
 - named Time Magazine's Person of the Year
 - Facebook voted the best place to work in 2011

Social Gaming





Social Gaming

Source: WIKIPEDIA

Zynga, Inc.

- Founded: 2007
- Headquarters: San Francisco, CA
- Video games, social networking service
- Revenue: \$600 million (2010)
- 320 million registers users
- 225 million active users per month
- Employees: 1300
- Browser based games
- Applications available for iPods
- Games available through Social Networking sites like Facebook, MySpace



Social Gaming

Source: WIKIPEDIA

- **Several Zynga games require an "Energy" characteristic to play**
 - Energy is slowly replenished to maximum limit
 - can take minutes or several hours
 - energy replenishes whether or not players are logged into the game
 - after energy is replenished, players can engage in additional missions
 - Waiting to play isn't fun or convenient
 - If you don't want to wait, you can buy more energy now



Social Gaming

Source: WIKIPEDIA and FINEXTRA

- Credit card and PayPal payments accepted
 - transaction amounts from \$50 to \$200

- March 2010 - “prepaid cards” for virtual currency available at 12,800+ U.S. retail locations



Social Gaming

Source: WIKIPEDIA and FINEXTRA

- September 2010 - "Platinum Purchase Program"
 - virtual currency purchases for \$500 +
 - preferred pricing – volume discount for sizeable prepayment
 - wire transfers accepted

- November, 2010 - American Express reward points can be redeemed for virtual goods and game credits
 - 2500 American Express points = \$25 game card
 - \$1 spend on Amex Card earns 1 point
 - first time that virtual goods are available for purchase with rewards points



Social Gaming

Source: ZYNGA.ORG

Fundraising campaigns through the sale of “special offers” or “limited edition” virtual items via popular games:

- Farmville
- YoVille
- Treasure Isle
- zingapoker
- Frontierville
- Fishville
- Mafia Wars

- Strategy For Sustainability
 - Various Haiti initiatives
 - Since October 2009, \$ millions have been raised to provide water, food, education, shelter
 - \$1.5M was raised in 5 days following the earthquake
- SF/SPCA
- UN’s World Food Programme
- UCSF Benioff Children’s Hospital

Case Study

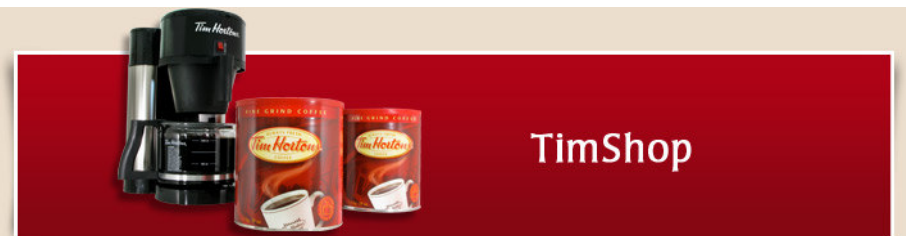
Tim Hortons[®]

Tim Hortons®

Case Study:

SOURCE: timhortons.com

- 4th largest publically-traded restaurant company in North America
- 40% traffic (4 of 10 QSR visits)
- 40% + visit four or more times per week
- 2009 Revenue: \$2.24B (67% from sales)
- 3015 locations in Canada
- active contributor to the community



Tim Hortons®

Case Study:

SOURCE: timhortons.com

2007

- Quickpay Tim Card
- MasterCard
- PayPass



paypass™

2010

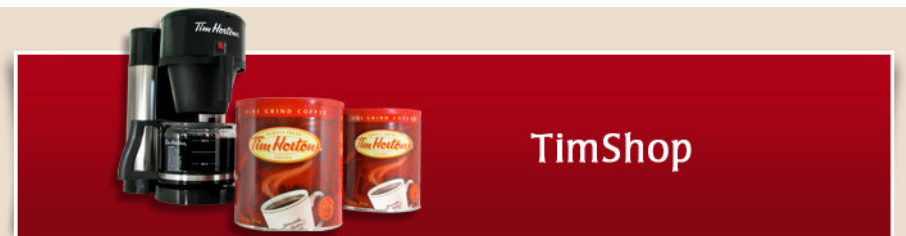
- Interac Debit



Everyday Simply™



Tim Card®



TimShop



Case Study:

SOURCE: timhortons.com

Quickpay Tim Card

- Replaced gift cards / gift certificates
- \$100 maximum balance
- Reloadable in store or online
 - In store: Cash, MasterCard, Interac Debit
 - Online: card must be registered; option to reload now or auto reload
 - Visa, MasterCard
 - Security tools: CVD, AVS, Verified by Visa, SecureCode
 - Email alerts with each load





Tim Hortons®

Case Study:

SOURCE: timhortons.com

Quickpay Tim Card

- Tim Card balances mark success of program:
 - Dec 30, 2007 \$37.8M
 - Dec 28, 2008 \$62.3M
 - Jan 03, 2010 \$80.8M





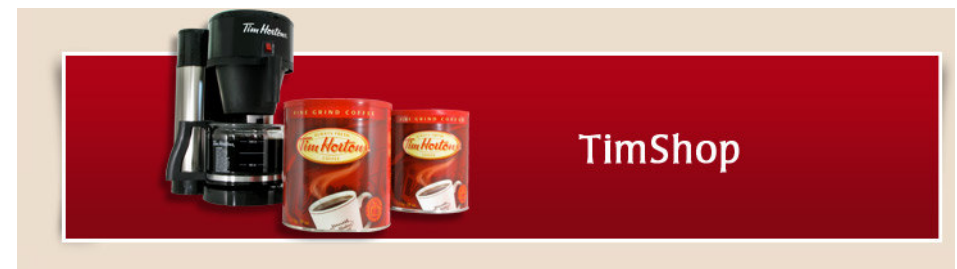
Tim Hortons®

Case Study:

SOURCE: timhortons.com

TimShop (eStore)

- Canadian and US shipments
- International shipments “coming soon”
- Visa & MasterCard accepted
 - Security tools: CVD, AVS, Verified by Visa, SecureCode





Tim Hortons®

Case Study:

SOURCE: timhortons.com

On Facebook

- 1,324,840 people “like” Tim Hortons
- Application allows friends to share virtual Tim’s products



Tim Hortons®

Case Study:

SOURCE: timhortons.com

TimmyME

- Mobile application for:
 - iPhone, iPod Touch
 - Blackberry

- GPS function
 - Wi-Fi or cellular network
 - finds the closest Tim Hortons locations, if drive-through, distance and how to get there (anywhere in North America)
 - notepad to store coffee orders

- Free download
 - iTunes App Store
 - BlackBerry App World





Tim Hortons[®]

Mobile Payments?

Is this next?

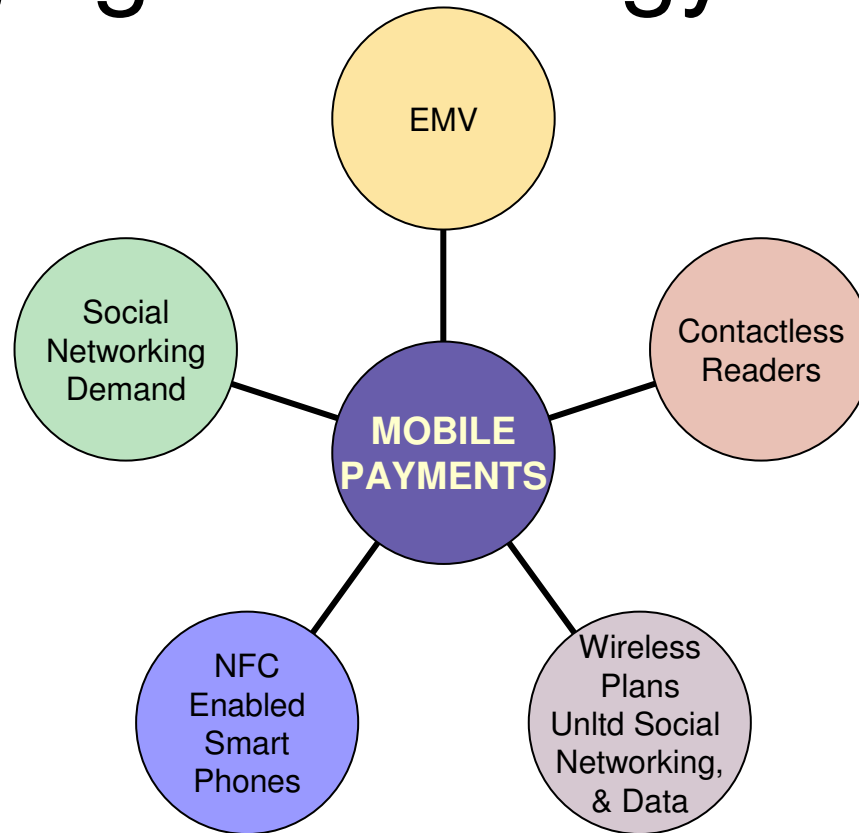


Mobile Payments



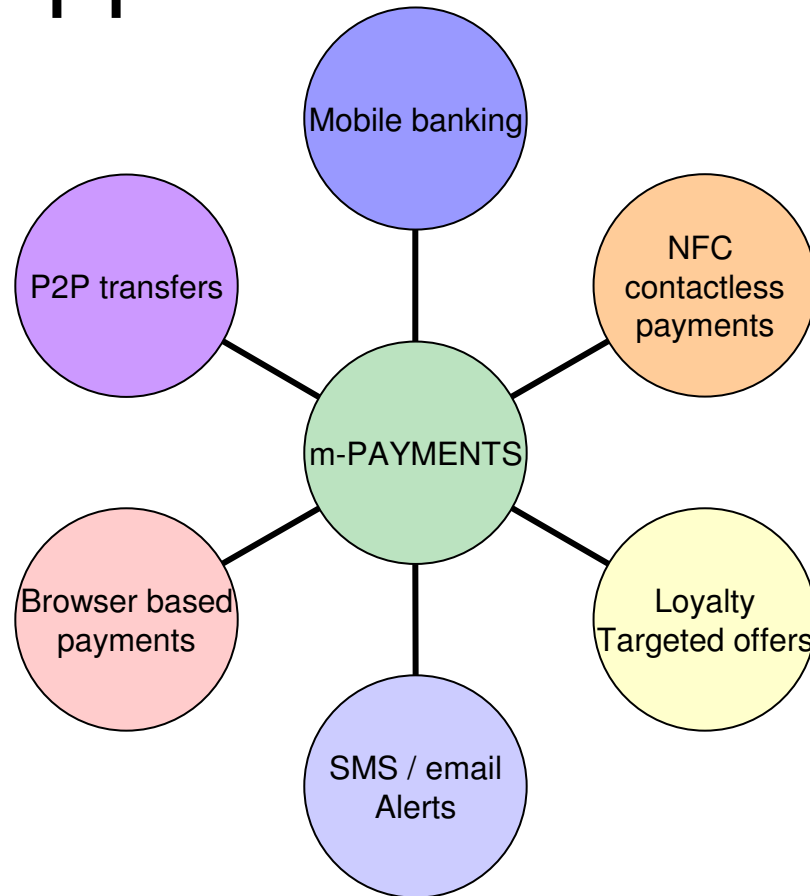
Mobile Payments

Converging Technology



Mobile Payments

Multiple Applications



MasterCard PayPass



SOURCE:: MasterCard Canada



*“As a global payments leader,
MasterCard is at the heart of commerce
and has led the way in the on-going
development of new payment technologies
including mobile payments technology.”*

First mobile payment trial applications took place in
Dallas, Texas, over 7 years ago in 2003



Visa Mobile Payments

Taking on a leadership role

- Enabled by technologies, such as chip and Near Field Communication
 - turn a cell phone into an electronic wallet
 - leverage Visa payWave
- In a recent survey, over half of those surveyed said that they would be interested in a phone with mobile payment capabilities
- Working actively with FIs and telecommunications companies



MasterCard Mobile Pilot



April 2009:

- MasterCard Canada, Citi Cards Canada and Bell Mobility first near-field communications (NFC) trial of Mobile *PayPass* in Canada.
 - first trial in Canada to use Bell Mobility's wireless network for over-the-air (OTA) provisioning of card credentials
 - trial validated the technology's ability to meet high expectations for security, simplicity and convenience
 - planned to share the findings with the other wireless carriers
 - four-month closed trial was a major step towards bringing mobile payments to Canadian mobile phone users

RBC/Rogers/Visa Mobile POS Pilot

Objective of the pilot was to understand consumer and merchant behavior, and track transaction trends

Spring 2009

- RBC Visa cardholders download account through Rogers' network
- Cardholders wave and pay with select merchants in downtown Toronto
- 500 participants
- Exciting, Fast and Easy to Use



RBC Royal Bank



Motorola SLVR

MasterCard Mobile Pilot



SOURCE: MASTERCARD CANADA AND FINEXTRA

November 2009:

- MasterCard Canada announced a partnership with Bank of Montreal and Research in Motion Ltd., to bring mobile payments to BlackBerry smartphones through its MasterCard *PayPass* tap and go contactless payment technology
 - four-month trial
 - Blackberry's were equipped with *PayPass* mobile tags
 - Participants could transaction at any one of the 8,500 Canadian merchant locations that accept *PayPass* (*at the time*)
 - After each transaction, an e-mail was sent to the Blackberry that provided purchase amount, retailer and date

Interac e-Transfer



Person-to-Person Payments go Mobile with Interac e-Transfer™

New functionality is now available through Central 1 at two of its member credit unions
December 7, 2010 (Toronto, ON) –

- Interac e-Transfer (formerly known as Interac® Email Money Transfer)
 - Customers of participating financial institutions can send or receive money almost instantaneously with their by either using a mobile phone number or an email address
 - Central 1, in partnership with BC's Prospera Credit Union, and Teachers Credit Union of Ontario, are the first financial institutions to offer this new functionality
- Interac e-Transfer is a fast, secure and convenient way to send and receive money in near real time across the country, from one bank account to another through online or mobile banking. Importantly, money never travels by email or text message; this is used only to notify the recipient and to provide the recipient with instructions on how to deposit the money
- See full media release and fact sheets: http://www.interac.ca/media/press_40.php



EnStream's Mission

To enable every mobile device user to access their electronic money, identification and other personal information for transacting – at any time and any place





About EnStream LP

EnStream is developing transformational mobile payment solutions for carriers, financial institutions and merchants

- Joint venture company owned equally by Bell, Rogers, and TELUS
 - Direct access to 95% of mobile market, 23 million wireless subscribers
 - Includes sub-brands/affiliates (Fido, Koodo, PC Mobile, Solo, Virgin)
- Trusted provider of secure, scalable and reliable mobile commerce solutions centered around a secure mobile wallet
- Technology company and mobile payments processor focused on enabling mobile money transfers, remote (over the air) payments and proximity (NFC) payments
- Mandate is to enable mobile commerce services across carriers, financial institutions, payment networks and merchants
- Headquartered in Toronto, Canada

Zoompass is The Beginning of Mobile Cash

Zoompass is a money transfer and payment service that can be accessed via mobile phone, web, and e-cash card

Mobile Application



“Zoom” or request money, load funds, access transaction history – anywhere, anytime

Website



Online tools for managing the account and transferring funds

E-Cash Card



Provides immediate liquidity and access to a global retail payments and ATM network. E-Cash CARD will work with NFC phones

One platform – 3 easy ways to access





Zoompass “Open Wallet” Vision

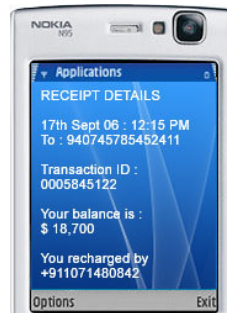
The Zoompass Wallet will provide mobile users direct access to bank, credit, stored value, transit, loyalty and other accounts through one interface. Zoompass recently launched Western Union® Money Transfers™ allowing all Zoompass users the ability to send money internationally, directly from their mobile phones. The recipient can pick up the funds at any participating Western Union Agent location, worldwide. For more information, visit www.zoompass.com/westernunion .

Money Transfers



Transfer money domestically and internationally to mobile subscribers using a mobile number

Remote Payments



Make purchases over-the-air for things like prepaid minutes, digital content, tickets, etc.

Proximity Payments



Pay for things at the point-of-sale using contactless technology embedded in the phone



One application – 3 ways to transact



Mobile Payments

What are we waiting for?

- NFC enabled smart phones
- More contactless readers in market
- Definition of business model and R&R between carriers, banks, trusted service managers and handset manufacturers



Mobile Payments

16 November, 2010 - FINEXTRA

Google Android gets NFC

- **Google CEO Eric Schmidt says the latest upgrade to the firm's Android mobile phone operating system will include near field communication technology, enabling users to make contactless payments with their handsets.**
- Latest version of Android operating system, code-named Gingerbread would be released in a "few weeks"
 - No clue as to which manufacturer handset would be used
- Google appears to have beaten to the punch its rival Apple, which has long been expected to add NFC capability to the iPhone 5



Mobile Payments

What can we expect?

- 2 NFC enabled handsets expected to be available in Canada by Q2/11
 - Blackberry
 - Samsung
 - Will be available in US and Europe by end of year running Gingerbread 2.3 operating system
- Despite our aptitude to accept new technology, Canadian market size does not have enough buying power to influence handset manufacturers development and delivery schedules
 - Canadian carriers have buying/technical relationships and collaborate with U.S. carrier for volume/scale
- More attention from regulators to protect the consumer and to fight against money laundering



Mobile Payments

What can we expect?

Newsflash from Finextra.com

7/11/2010 12:14:00

CALL FOR REGULATORS TO ACT ON M-PAYMENTS MONEY
LAUNDERING RISKS

- With mobile person-to-person money transfer services gaining traction, regulators need to act to address associated risks such as money laundering, according to the Federal Reserve Bank of Atlanta.
- More on this story: <http://www.finextra.com/news/fullstory.aspx?newsitemid=22012>



Mobile Payments

What can we expect?

Collaborative Canadian environment

- Financial industry has repeatedly worked together to bring new innovative services to market
- Carriers
 - Canada was first country to support inter carrier SMS messages with 3 large network operators working together

2012

- Major advancements in mobile payments
- Transit prominent emerging market

2013

- Well established



Mobile Payments

What can we expect?

- Enhanced user experience
 - Consumer choice of card(s) in mobile wallet
 - Electronic receipt (no paper)
 - Maintained by m-wallet or mobile banking application
 - Date, time, retailer name, amount
 - Loyalty & Couponing
 - Targeted offers can be triggered based on location data
 - Redemption could be seamlessly integrated



Mobile Payments

What can we do to prepare?

- Focus on infrastructure to allow mobile payments to ride the existing payment network rails
 - Phone is simply an advanced form factor
 - More contactless readers needed
 - Interac Flash could prove to be a significant driver

- POS needs to be standardized to improve the customer experience
 - Readers need to be placed more strategically so that customers can see them and use them easily
 - POS software should ensure that all readers (i.e. mag stripe reader, contact and contactless chip readers) are ready to accept card info
 - Integration needs to be improved
 - Many implementations need sales clerk to “press a button” on the cash register to activate contactless reader
 - Cashier training
 - Generic NFC acceptance mark



Mobile Payments

What is happening around the world?

- Countless m-payments pilots and trials
 - Alternate form factors – watches, fobs, tags
 - Discover to trial contactless stickers

- 2012
 - Transport For London (TFL) plan on supporting PayPass in addition to Oyster on buses and underground about 1 year later
 - Calling for a European Standard for mass transit contactless payments
 - Moving towards global standard so that travelers could use public transportation seamlessly

- Prepaid products flourishing in emerging markets (e.g. China, India)
 - Unbanked
 - Underserved

Mobile Payments

The World Wide Investment in Online and Mobile Payment Technologies

SOURCE: <http://excapite.wordpress.com/2009/11/20/mastercard-shows-its-hand-in-the-high-stakes-game-of-mobile-payments/>





Crisis?

.....what crisis!?!?!



“The Coming Crisis”

IP Address Shortage

Just when you thought EMV migration was done and the contactless readers were deployed...

....it is possible that every single IP enabled device will need to be replaced!



“The Coming Crisis”

SOURCE: WIKIPEDIA

IP Address Shortage

- Why?
- IPv4 allowed for 4.3 billion unique IP addresses but a critical shortage could be reached as early as July 2011.
 - rapidly emerging markets like China and India where cell phone usage is more popular than landlines coupled with the pervasiveness of the internet
 - each device requires a unique IP address
 - further exasperated by emerging wireless applications:
 - Retail, defense, security, traffic, seismic, oil, wildlife, weather, climate modeling, smart refrigerators, where each device requires a unique IP address
- More than half of all households in the developed world (hundreds of millions) have persistent broadband connections



“The Coming Crisis”

IP Address Shortage

- Solution?

IPv6

- Provides for trillions and trillions and trillions of unique addresses (went from 32 bit to 128-bit)
- IPv4 and IPv6 protocols are not interoperable
 - there is doubt in technical community that the two networks could co-exist without huge availability issues
- Problem is as large as Y2K
- Has been in active deployment since 2006 but concentrated testing and implementation efforts dropped off
- Rumours that Google, Facebook, Verizon are either well underway or have completed work for IPv6



“The Coming Crisis” IP Address Shortage

What should you do?

- No one really knows how soon all IP addresses will be depleted
- Ask your IT team about their conversion strategy
 - Have a fall back plan
 - Can you operate for a short time in both IP “worlds”
 - How dependent is your business on the Internet? IF there are outages, how will you manage to operate?
- Check with your ISP and MNO about their readiness
- What’s your plan for IPv6?



“The Coming Crisis” IP Address Shortage

What should you do?

- Maintain a complete inventory of all modems or IP enabled devices (PCs, printers, servers, PIN pads, cash registers, POS terminals, routers, mobile devices, VOIP phones, wireless security cameras, wireless network mobile “sticks”)
 - Determine which devices (if any) can be upgraded; identify budget requirements for equipment that must be replaced and costs for upgrading



“The Coming Crisis” IP Address Shortage

What should you do?

- Be prepared to say a temporary goodbye to iTunes, YouTube and PS3 online when your ISP reduces your bandwidth while you share an IP address with another party in an effort to delay the conversion!

“Mobile, Debit and the Coming Crisis”

Breakfast Briefing

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Emerging Payments Consulting Inc.

“Mobile, Debit and the Coming Crisis”

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Season's Greetings

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