




The Current Mobile Payment Ecosystem of North America

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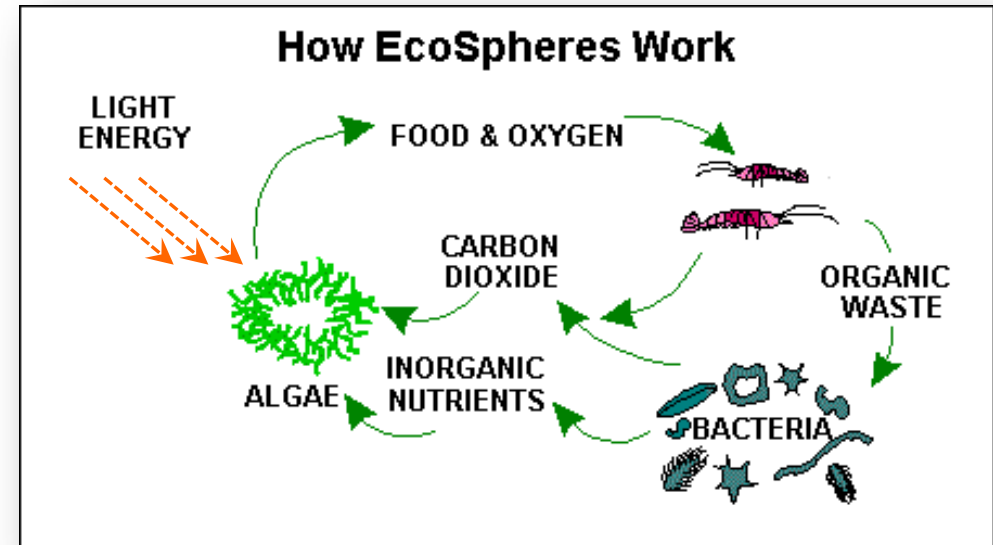
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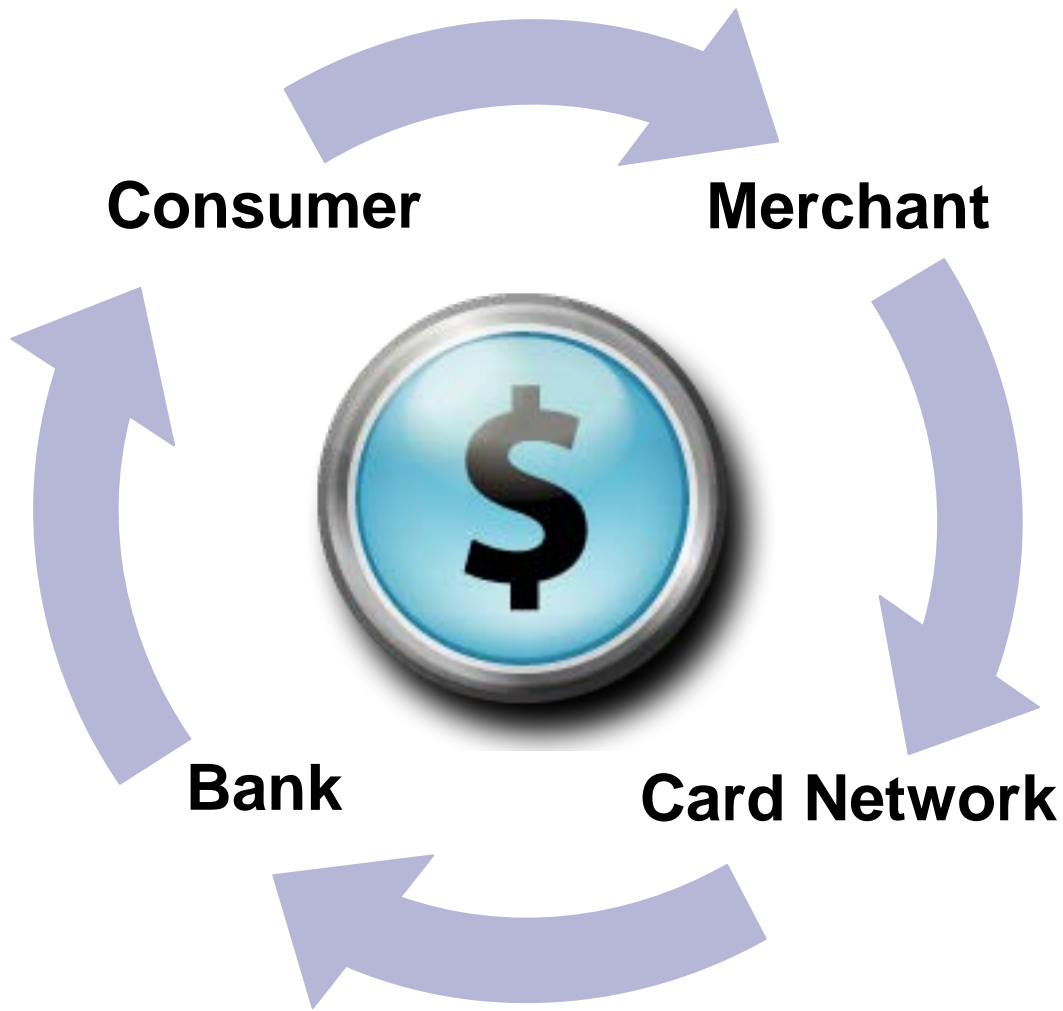
**What is an
Ecosystem?**

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Credit Cards



Credit Card Ecosystem

Entity	Cost	Value
Consumer	<ul style="list-style-type: none">• Annual fee (sometimes waived)• Interest (avoided if balance is paid in full each month)• Increase in price for goods (hidden)	<ul style="list-style-type: none">• Convenience• Access to credit• Loyalty rewards (cash back)• Reimbursement for fraud loss
Merchant	<ul style="list-style-type: none">• Transaction fees (included in price for goods)• Fraud	<ul style="list-style-type: none">• Consistent cash flow• Revenue from increased sales
Card Network	<ul style="list-style-type: none">• Infrastructure maintenance• Customer service• Fraud	<ul style="list-style-type: none">• Revenue from transaction fees
Bank	<ul style="list-style-type: none">• Card management• Customer service• Fraud	<ul style="list-style-type: none">• Revenue from transaction fees• Revenue from cardholder fees and interest

What is the current state of Mobile Payments in North America

- The major Mobile payment technologies being used are
 - Softcard (formerly ISIS) – A partnership between ATT, T-Mobile, Verizon to enable mobile transactions
 - Starbucks (Custom app that uses barcodes)
 - Apple's ApplePay
- Based on current reports there are 220,000 merchant locations or approximately 2% of the merchants able to accept contactless payments
- This number is expected to grow rapidly over the next 18 months
- The US migration to EMV is causing merchants to replace their current card terminals with new equipment that usually includes NFC capability which will help to further promote the use of mobile
- Merchant Customer Exchange is a merchant-owned mobile commerce network built to streamline the customer shopping experience, merchants include Walmart, Target, Dunkin Donuts, Sears

An 800 pound apple has just entered the Mobile Payments space

On November 6, Apple will launch Apple Pay in North America, what does that mean to us

- The new iPhone 6, iPhone 6+, Apple Watch and potentially the new iPads (announced on 10/16) will be able to complete NFC based payments
- Apple's solution is based on current EMV standards and does not require new payment infrastructures to be built
- There finally exists a marketing engine (Apple) that will help to promote and advance the use of NFC based payments
- Think about what happened when they introduced the iPod, it may take 18 months to realize the change but it is coming

What about other forms of mobile payments?

- Paypal has been working with retailers to deploy a Point of Sale solution. The pilot's did not show significant adoption because of the user experience.
- Facebook has just announced they are looking to provide user to user money transfer capabilities, it sounds like they may be attempting to develop a similar solution to PayPal.
- Since the Apple Pay announcement it seems that every week one or more new payment solutions are announced

Form Factors and basic solutions - Software / GSM

Software based solutions include:

- Software Based
 - Brand Specific solutions (Custom applications)
 - Starbucks Barcode based solution
 - Dunkin Doughnuts – Barcode based
 - Merchant Customer Exchange – QSR based
- GSM
 - Unstructured Supplementary Service Data (USDD)
 - Application can be tied to the UICC
 - Controlled by the MNO
- Host Card Emulation
 - Multiple solutions are being developed
 - Moves the risk to the HCE provider
 - Requires the device to be online to complete the transaction

Hardware based Form Factors and basic information

- Hardware Based
 - UICC (SIM)
 - Mobile Network Operator (MNO) owned / controlled
 - Inherently difficult for other institutions to gain access to put applications on the UICC
 - MNOs have expected to be compensated for the use of the UICC
 - MicroSD
 - Can be issued by the Financial Institution to the consumer
 - Many devices lack the support such a device
 - Requires applications to be allowed to interact with
 - Near Field Communications
 - Google wallet only accepted at locations that accept Paywave & Paypass
 - Apple Pay Stores the information in a Secure Element

The challenges for mobile payments

- The greatest challenge to mobile payment adoption is the user experience
 - It has to be simple
 - It has to be quick
 - What does a consumer get from using a mobile phone versus a plastic card
 - Novelty only lasts for a short period of time
- Consumers are more likely to forget their keys than their mobile, but if you want them to pay with the mobile then it has to be easy. Point and Pay, If I have to unlock the mobile, select an app, put the device near the receiver and press a button, why don't I just carry my card with the phone and I am done
- It is all about the User Experience, what will cause the consumer to use it everyday
- Mobile Network Operator – They want to make money on each transaction, they view this as a potential revenue stream as their profit margins are driven down in the basic service model
- NFC low adoption rate can point directly to the MNOs desire to be in control of the NFC functions so that they were getting their “Share”