



The Market That (Finally) Was: A Brief History of NFC Mobile Payments

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A few quotes

- ❑ *“Mobile payments are the next big thing!” 2002*
- ❑ *“By 2006, we should see commercialization.” 2004*
- ❑ *“By 2008, we will have a very solid infrastructure” 2006*
- ❑ *“Mobile payments is still half-baked...” 2009*
- ❑ *“Shall we all just pack up and go home?” 2010*
- ❑ *“We won’t invest in NFC due to lack of market infrastructure” 2014*
- ❑ *“Raise your hands and thank the Lord – it is finally here!” 2015...*



The Study

- ❑ Global Emergence of NFC Mobile Payments
- ❑ W/ Prof. Filipe Santos (INSEAD)
- ❑ Over 100 in-depth semi-structured interviews (from 2006 on)
- ❑ Observations from conferences and industry events (20 hrs of audio and over 100 pages of notes from presentations and interfirm discussions)
- ❑ Extensive archival data including business publications, Internet sources, and corporate materials (From 1999 on)



Types of Firms in the Market

Handset MFC
Nokia

Mobile Operators
AT&T, KPN

NFC Chip Makers
Gemalto

Banks, FI
Citibank, VISA

Vendors
McDonald's

POS Terminals
CCV Holland

Software
Vivotech



Interdependence

- Mobile operators were dependent on banks for two reasons.
 - Access to bank accounts
 - Financial licenses to handle purchases larger than approximately \$20 (exact amount varied by country).
- Banks needed mobile operators to integrate the financial info into the mobile service of the user.



Development of Market Architecture

- Day 1, Disagreement 1 between banks and operators:

Who owns the customer?

- Question has technology implications
 - Putting the NFC chip inside or outside the SIM card
- Inside the SIM Card:
 - *“This makes us the landlord of the NFC chip.”* Operator Exec
- Outside the SIM Card:
 - Banks, less dependent on operators, gain ability to brand the service
 - *“We will not let them make the phone look like a Nascar!”* Operator Exec



No Resolution

- ❑ Discussions between 2004-2007
- ❑ February 2007, mobile operators announced:
 - NFC chip next to the SIM card, with direct communication with the SIM
 - “Same face, different make-up...”
- ❑ Banks stopped negotiations and rolled out contactless VISA and debit cards instead



Development of Market Architecture

□ Day 2, Disagreement 2:

Who deals with transaction security?

- Mobile operators preferred the security platform on the SIM card
- Banks wanted higher security
 - *“Banks like to have control and thus face emotional problems putting applications on the neck of a telco”* Operator Exec



No Resolution

- In 2007, parties call for a third party to come between them:
 - *“The bank doesn’t trust the operator, the operator doesn’t let the bank handle security. And neither the operator nor the bank can be the front desk for NFC because they would not accept each other, so a TSM could be the front / help desk.”*
- But who will be the TSM?
 - One single firm or a group of firms?
 - Who is really neutral?
 - No agreement...



Take-Away from Earlier Days of Mobile Payments

Prominent firms have a lower likelihood of agreeing on a market architecture for a nascent market if they have a history of dominance in their respective industries.



Why?

- 1) Their limited joint working experience causes these firms to be uninformed about their counterpart's profile and approach to interfirm collaboration.
- 1) Their history of dominance gives them a tendency to insist on dictating the terms for the nascent market.



Path to Market (non) Emergence

Emergence of Mobile Payments at Convergence of Finance and Telco

Agreement on Market Architecture among Interdependent Firms

Market Emergence

Disagreement on Market Architecture due to Bank and MNO's History of Dominance

Vicious Cycle of Resource Allocation Deferment

Unwillingness of These Firms to Invest in Market

Unwillingness of Others (Handsets, Chip makers) to Invest in Market

Lack of Infrastructure for Global Market Prevents Emergence

Successful Launch of Regional Markets (e.g. Japan, Kenya) if Local Players Solve Interdependences. However with Low Growth when Competing with Global Architecture...

Investment of Global Players into Alternative Paths within their Own Industry (e.g. SMS, Contactless Cards)



Investment into Substitute Products

- Banks launching contacless credit cards
 - US (from 2007 on)
 - Europe (from 2008 on)
- Mobile Operators launching SMS payments
 - US (from 2007 on)
 - England (from 2008 on)
 - India (from 2006 on)
- Entrepreneurial firms launching NFC stickers
- Merchants launching 2-D Barcodes (e.g. Starbucks)

THE CONVERSATION

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Why it took 15 years for Apple Pay to roll out

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They got there in the end. EPA/Monica Davey

Apple Pay has launched to much fanfare. People with the iPhone 6 or 6 Plus are now able to make credit card payments at certain shops and restaurants in the US. But Apple Pay isn't the first of its kind and the technology it uses has actually been around for the past 15 years.

The story continues today...



What happened since?

- ❑ In 2010, we all hoped that Apple would include NFC in iPhone 5...
- ❑ However, Apple announced in mid 2011 that “the lack of a clear industry standard” dissuaded the company from launching NFC payments.
- ❑ In 2015, finally, third parties whose resources could kickstart the market (Apple, Google, Paypal, Samsung) entered the market.



Path to Market Emergence

Emergence of Mobile Payments at Convergence of Finance and Telco

Agreement on Market Architecture among Interdependent Firms

Market Emergence (Lost Opportunity for Banks and Telcos)

Disagreement on Market Architecture due to Bank and MNO's History of Dominance

Unwillingness of These Firms to Invest in Market

Willingness of Others (Handsets, Chip makers) to Invest in Market

Infrastructure for Global Market

Successful Launch of Regional Markets (e.g. Japan, Kenya) if Local Players Solve Interdependences . However with Low Growth when Competing with Global Architecture...

Investment of Global Players into Alternative Paths within their Own Industry (e.g. SMS, Contactless Cards)

Resource Allocation Into Market



What about the future?

□ NFC:

- Merchants are gaining power (CommerC – Paypal)
- Question of who will move fastest to outside US
- Apple – as usual – plays to dominate (UK, China...)

□ New services:

- Coin Card / White Card – LG
- Virtual Cards – FreeCharge
- Sound waves – Kotak Mahindra Bank
- One touch pay – PayU



What about the future?

- ❑ In-app payments, the sharing economy
- ❑ The Question is:

Who will build the largest ecosystem fastest?



Rise of the Sharing Economy in the UK and beyond...



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Thank you for your attention

