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 <u>lower likelihood of agreeing on</u> <u>a market architecture</u> for a nascent market <u>if they have a history of dominance in their respective industries.</u>

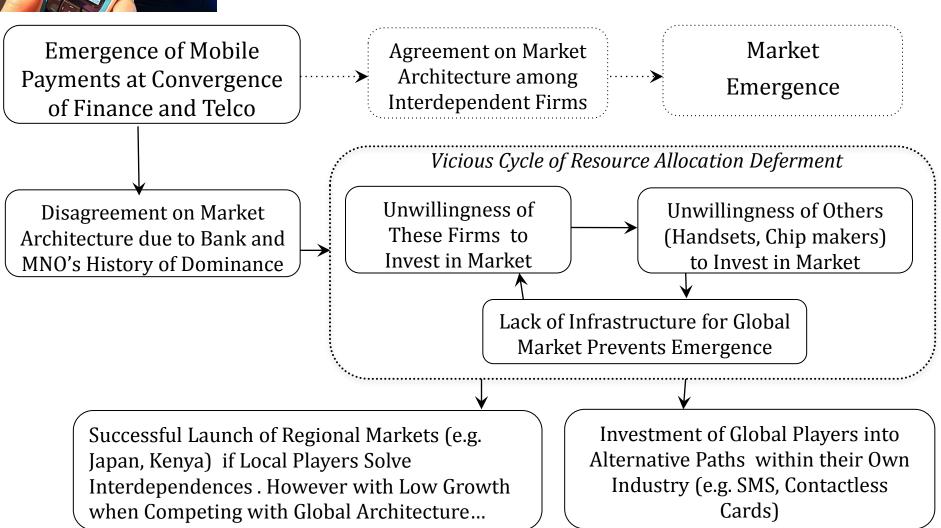


Why?

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



Path to Market (non) Emergence





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.

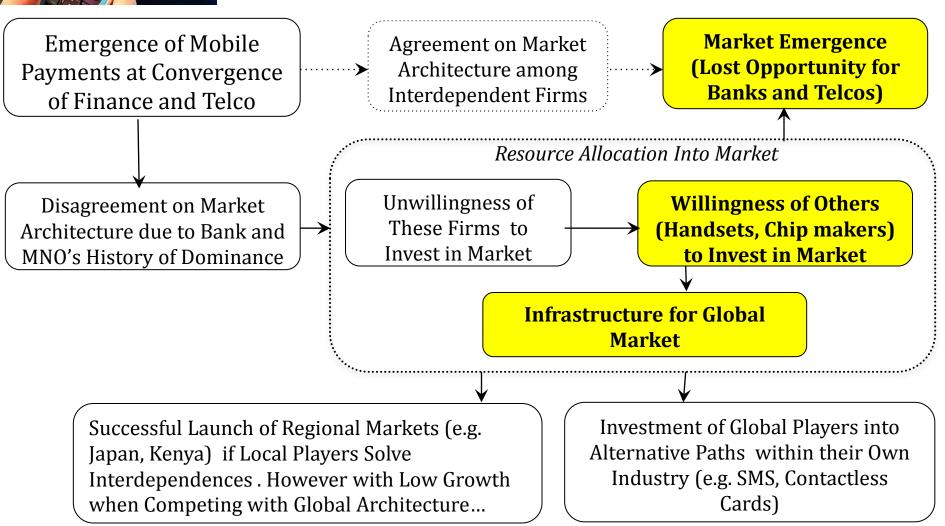


What happened since?

- □ 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





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

