market platform dynamics

PAYMENTS INNOVATION ON STEROIDS

How Software Development Platforms Will Transform the Payments Industry

David S. Evans
Market Platform Dynamics
University of Chicago and University College London

May 20, 2010

Federal Reserve Bank of Chicago Conference on Payments Innovation in the Wake of the Financial Crisis, May 20-21, Chicago, IL

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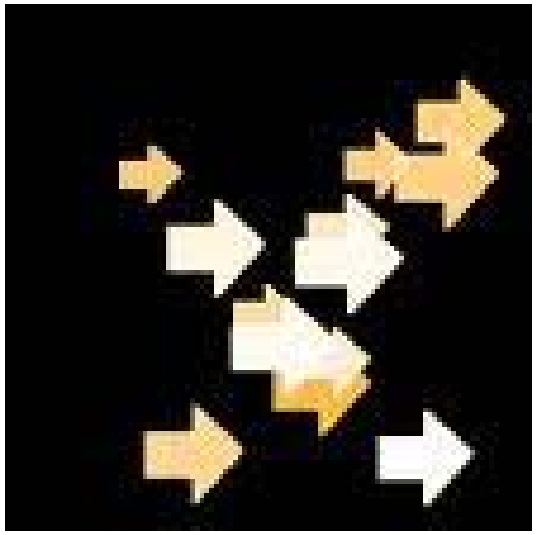

The Acceleration of Innovation and the Reasons Behind It

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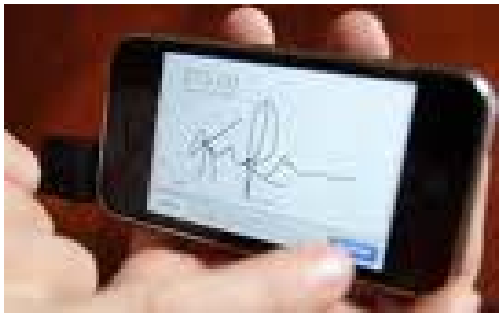
INNOVATION IN PAYMENTS IS ACCELERATING

YOU SEE IT IN THE PRODUCTS

Square:

A New Way For Merchants to Accept Payments Using Smartphones



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INNOVATION IN PAYMENTS IS ACCELERATING

YOU SEE IT IN THE BUYOUTS

Big Transactions … Even During the Financial Crisis

PayPal Buys Online Credit Provider BillMeLater for Almost $1 Billion

October 6, 2008

Visa Buys Payments Gateway CyberSource for nearly $2 Billion

April 21, 2010

American Express Buys New Payment Player Revolution Money for $300 Million

November 18, 2009

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INNOVATION IN PAYMENTS IS ACCELERATING

YOU SEE IT IN THE PRESS RELEASES

About Five New (Big) Innovations Announced Each Month

MasterCard Joins Forces with Next Jump
April 9, 2010

Chase Rolls out New Card Offerings to Help Mid-Size Companies
May 12, 2010

TSYS INTRODUCES THE HYBRID CARD
February 11, 2010

Visa and DeviceFidelity Collaborate to Accelerate Adoption of Mobile Contactless Payments
February 11, 2010

PayPal's New iPhone App Sends Money with a "Bump"
March 17, 2010

MasterCard Makes Payment Innovation Move with MasterCard Labs
April 15, 2010

mFoundry: Power to the People at the Point of Sale
November 18, 2009

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PAYMENTS INNOVATION GRADUAL IN PAST
SO BURST OF ACTIVITY SURPRISING

Rapid innovation not the norm

- Payments industry unlike IT or pharma
- System interdependencies and chicken-egg problems create inertia

Innovation has occurred very slowly

- Paper check going strong after 700 years
- Plastic card for half century, mag stripe for 30 years

Banks and innovation not exactly synonymous

- Payment products (credit/debit/checks) commodities
- Heavy on marketing, light on innovation (see Amex Blue)

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PAYMENTS INNOVATION INFLECTION POINT

INTERNET AND MOBILE HAVE IGNITED INNOVATION

Mobile devices are ubiquitous	• Rapid increase in super smart phones (great UI+computer+wireless)
Online is everywhere	• All devices become connected to internet so “off-line” disappears
Software moves to cloud	• Software applications move from local devices to cloud
Payments bundled with transaction-related services	• Technologies make mashups cheaper and better
Payments data more valuable for behavioral targeting	• Online advertising/data analytic technologies make result in premium value for payments data and opportunities for mashups
“App Stores for Payments”	• Square is a free app for the iPhone/iPad but there are many more

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How Software Platforms Will Help Spawn Innovative "Payments Apps"

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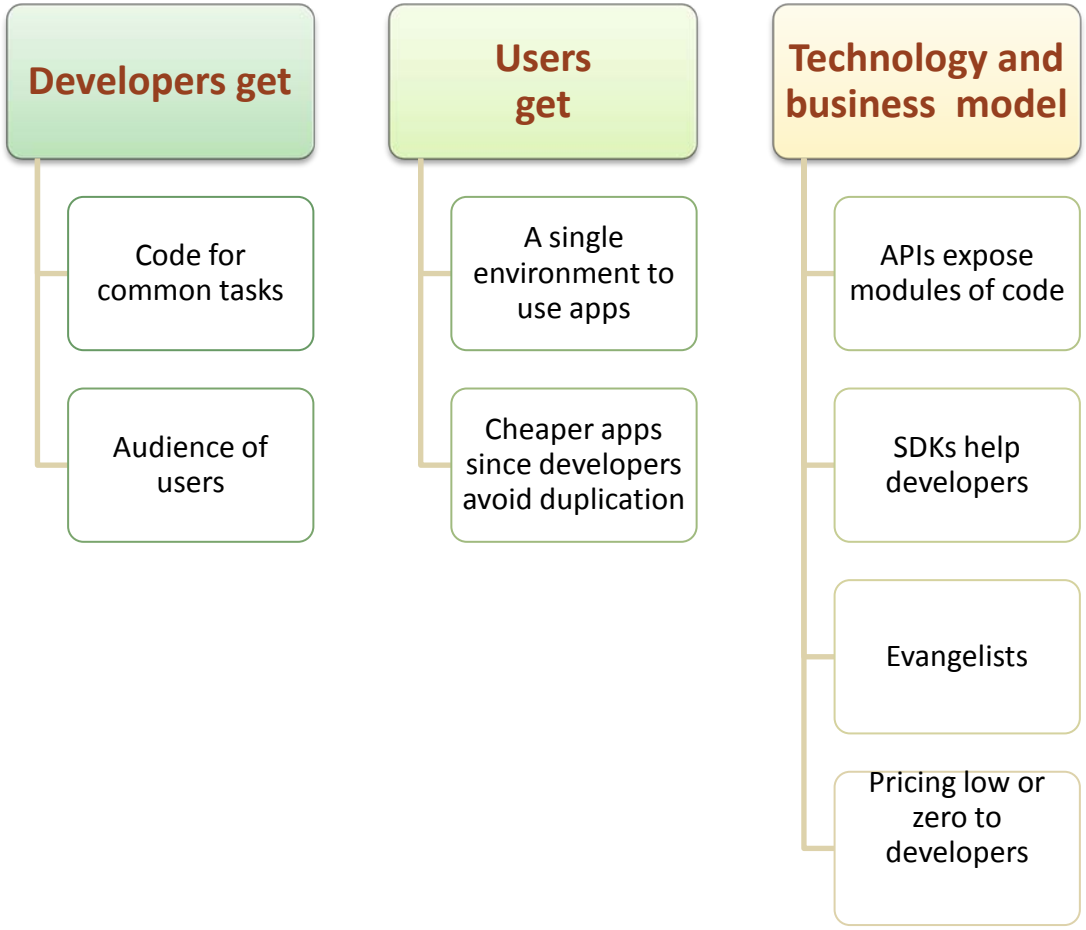
INVISIBLE ENGINES

INNOVATION AT THE EDGE BY EMPOWERING DEVELOPERS

Software platforms put users and app developers together



Successful Models:

- Windows
- Facebook Connect
- Android

New Building Blocks:

- Web 2.0
- Connectivity
- Cloud Computing

Cloud Computing:

- Applications on "server frarm" connected through Internet (e.g. iPhone)
- Software platform may be in cloud too (FaceBook Connect, PayPalX)
- Software changes in cloud, not on device

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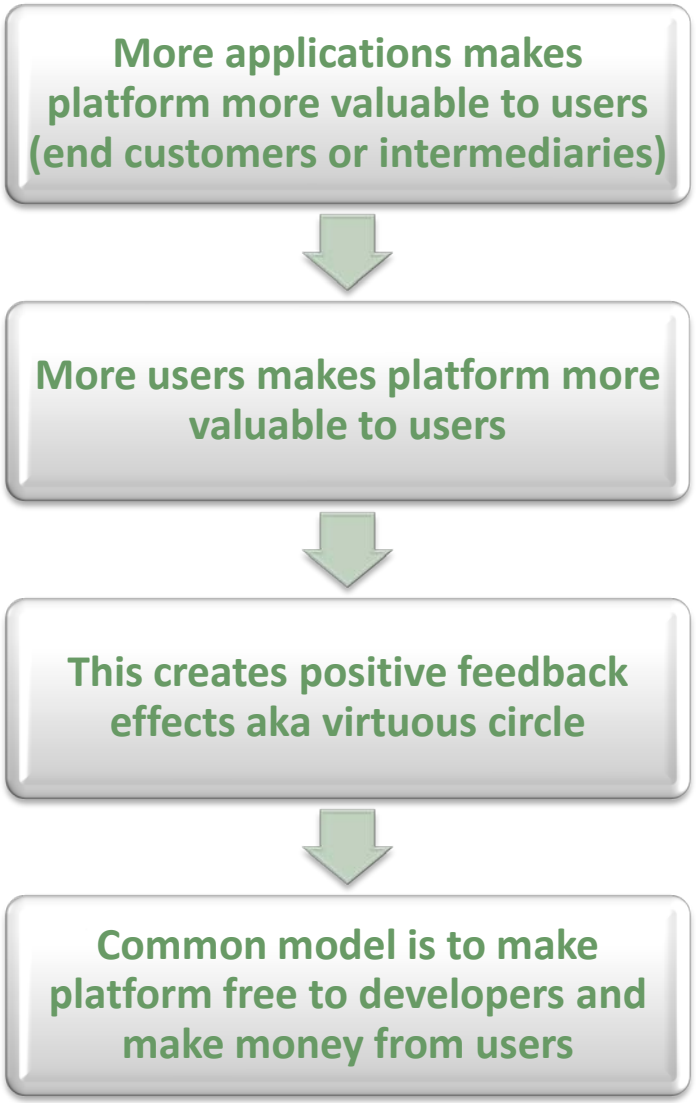
EXPLOSIVE GROWTH FOR SOFTWARE PLATFORMS

SUCCESSFUL ONES SECURE POWERFUL NETWORK EFFECTS



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IPHONE SOFTWARE PLATFORM FOR DEVELOPERS
HAS RESULTED IN MORE 100,000 APPLICATIONS

Apple – iPhone – Download thousands of iPhone applications. 5/15/10 10:51 AM

Features Why iPhone Apps for iPhone Gallery How To Tech Specs Buy iPhone

Your iPhone gets better with every new app.

Applications for iPhone are like nothing you've ever seen on a mobile phone. Explore some of our favorite apps here and see how they allow iPhone to do even more.

Apps for Everything

Apps for Cooks
12 Featured Apps
iPhone knows its way around the kitchen. And wine cellar.
View all the featured apps

Apps for Keeping Current
24 Featured Apps
If it's in the news, it's on your iPhone.
View all the featured apps

Apps for the Great Outdoors
15 Featured Apps
Lewis had Clark. You've got iPhone. Ready to explore?
View all the featured apps

Apps for Music
11 Featured Apps
iPhone makes beautiful music wherever you go.
View all the featured apps

Browse Staff Picks View all Staff Picks

PICK OF THE WEEK

Jobs — Business — Add clients, track your time, and export invoices.

Aera — Games — Fly classic biplanes through 3D skyscapes.

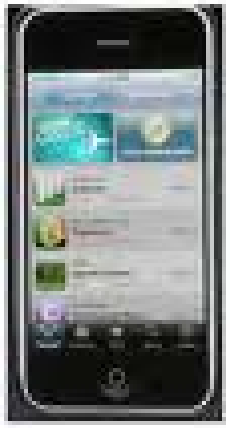
CNN Mobile — News — Catch up on the news and submit your own.

Zipcar — Lifestyle — Find and reserve Zipcars on the go.

Zombie Pizza — Games — Race to feed ravenous, organ-loving Zombies.

Shop the App Store.
Browse the App Store in categories from games to business, education

http://www.apple.com/iphone/apps-for-iphone/ Page 1 of 2



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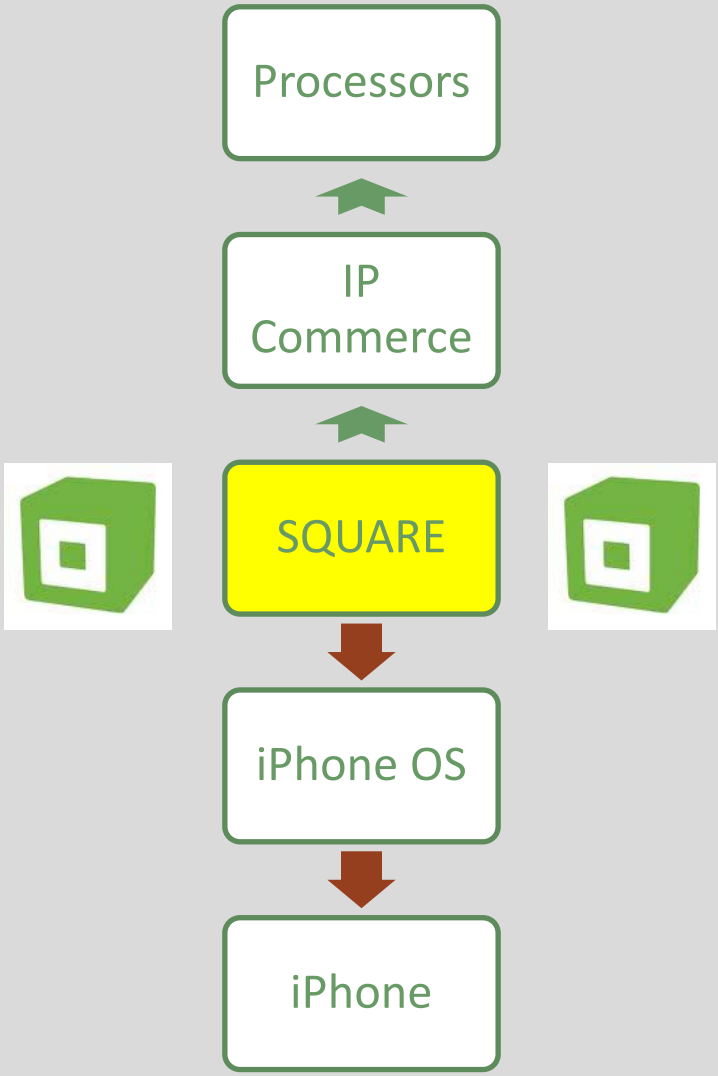
SQUARE INNOVATED FAST USING SOFTWARE PLATFORMS

QUICK ROLLOUT USING IPHONE OS AND IP COMMERCE

Square enables merchants to sign up to take cards quickly and accept cards using **an iPhone**

Square wrote an application that runs on **the iPhone operating system**

Square connects to processors using **the IP Commerce payments software platform**



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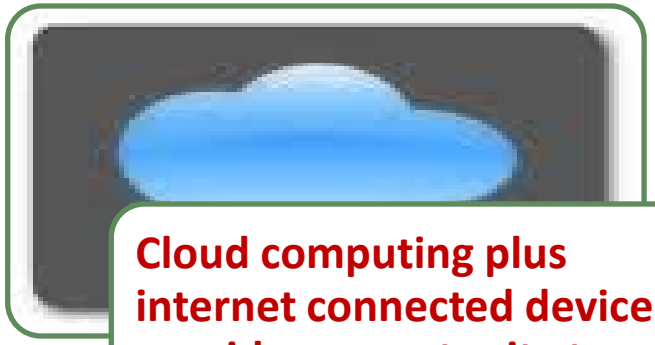
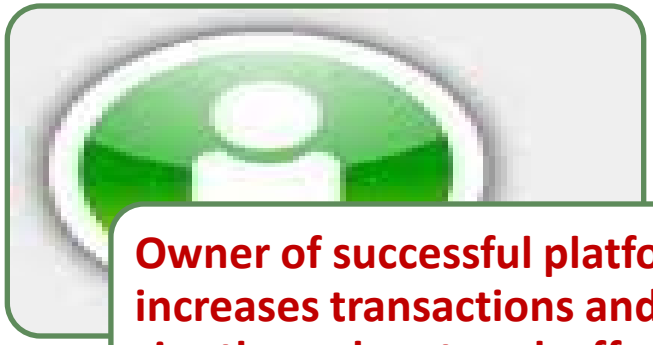
THE RACE TO OWN THE PAYMENTS SOFTWARE PLATFORM

WHOEVER OWNS THE "APP STORE" WILL GET NETWORK EFFECTS



Cloud computing plus internet connected devices provides opportunity to move innovation "to the edge



Owner of successful platform increases transactions and size through network effects

- **Away from** innovation within devices or within proprietary software applications run by firms
- **Towards the** edge where "platform" can connect to payments plumbing (devices, processors, networks, etc.)

- **More applications** generates more transactions from more uses
- **Grows customers** through network effects

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PAYPAL X

NEW PAYMENTS PLATFORM WITH APIS, SDKS, AND EVANGELISTS

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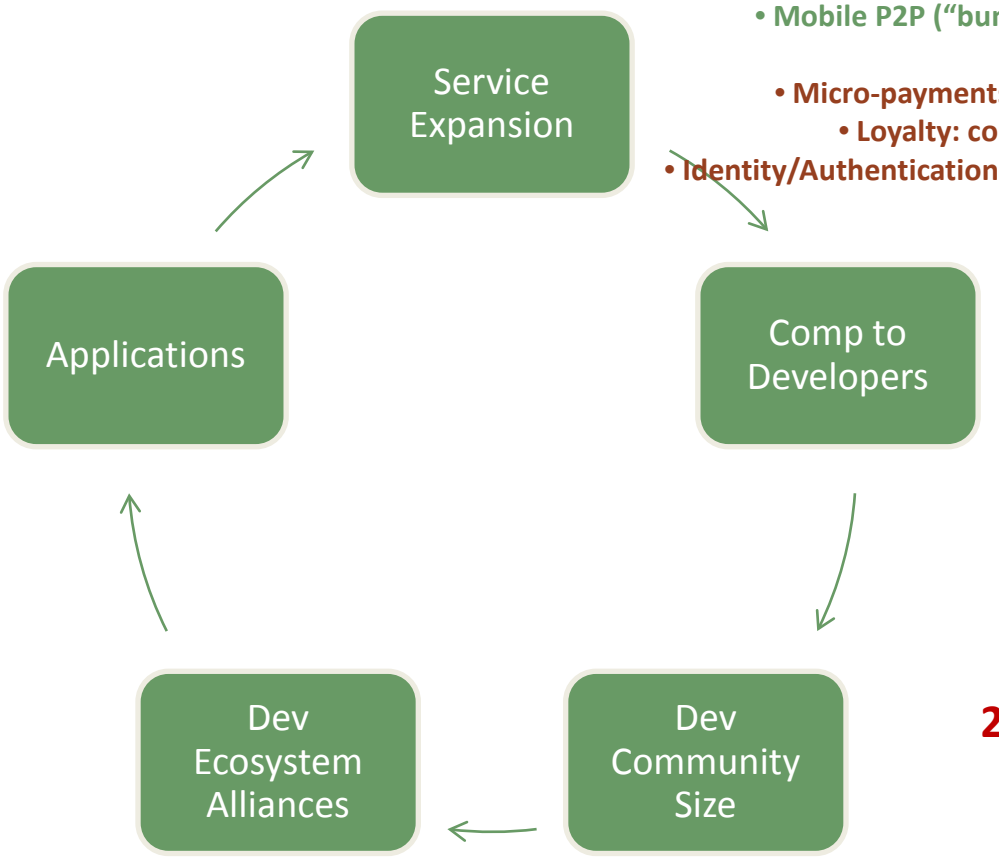
PAYPAL X HAS CREATED NEW ECOSYSTEM QUICKLY

25,000 APPS AFTER SIX MONTHS



- PayPal Global P2P (push & accept): done
- Unbundled Card, ACH, Account-to-Account (within PayPal): done 4Q09
- Enrollment & Boarding API: done 4Q09
- Mobile P2P ("bump"): done 1Q10

- Micro-payments: coming 2Q10
- Loyalty: coming 2010
- Identity/Authentication Provider: coming 2010

- Spiff & Residuals; done 4Q10
- Developer Sweepstakes ($500K+) done 4Q10
- VC Network for app funding: done 4Q10

25,000 Apps after six months

- Microsoft: 4Q09
- RIM: 4Q09
- Magento: 1Q10
- Facebook: 1Q10
- IBM: 1Q10
- SalesForce: 1Q10

- Lab equivalent with sandbox: done
- Announced forthcoming Marketplace (date TBD)

Note: SPECIAL THANKS TO CHIP KAHN, IP COMMERCE FOR THE DATA ON THIS SLIDE

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PAYPAL X LETS DEVELOPERS PAYMENT-ENABLE APPS
SPURS INNOVATION FOR BOTH SIDES OF THE PLATFORM

Rentalics wins PayPal X 2009 Best Application Contest

- Rentalics is an eBay for renting things like your lawnmower
- Winning bidder gets code they give person they are renting from
- After they inspect item the renter gives code to owner and then a deposit is charged to the renter's PayPal account
- Rentalics involves an online payment system being used for offline transaction—***that's the future!***

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IP COMMERCE

A SOFTWARE PLATFORM THAT SITS ON TOP OF PAYMENT PLUMBING

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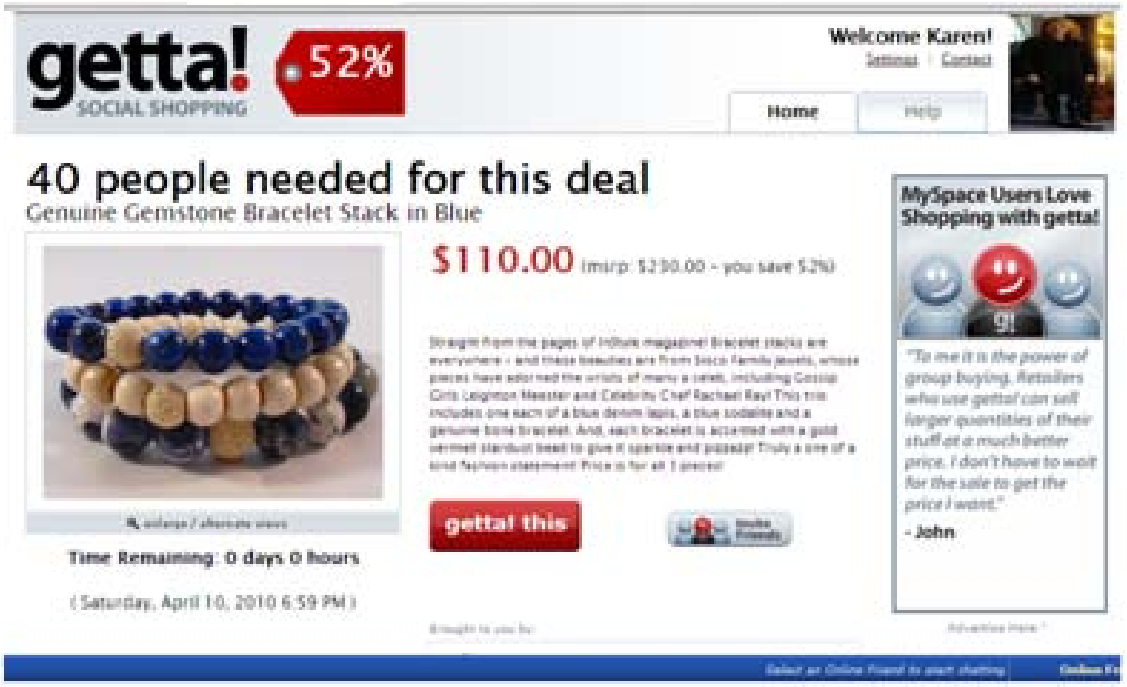
ENABLING SOCIAL COMMERCE IN LESS THAN 60 DAYS

getta! OPENS NEW MERCHANT-FRIENDLY CHANNEL ONLINE



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Software Platforms Will Drive Innovation and Transform the Payments Industry

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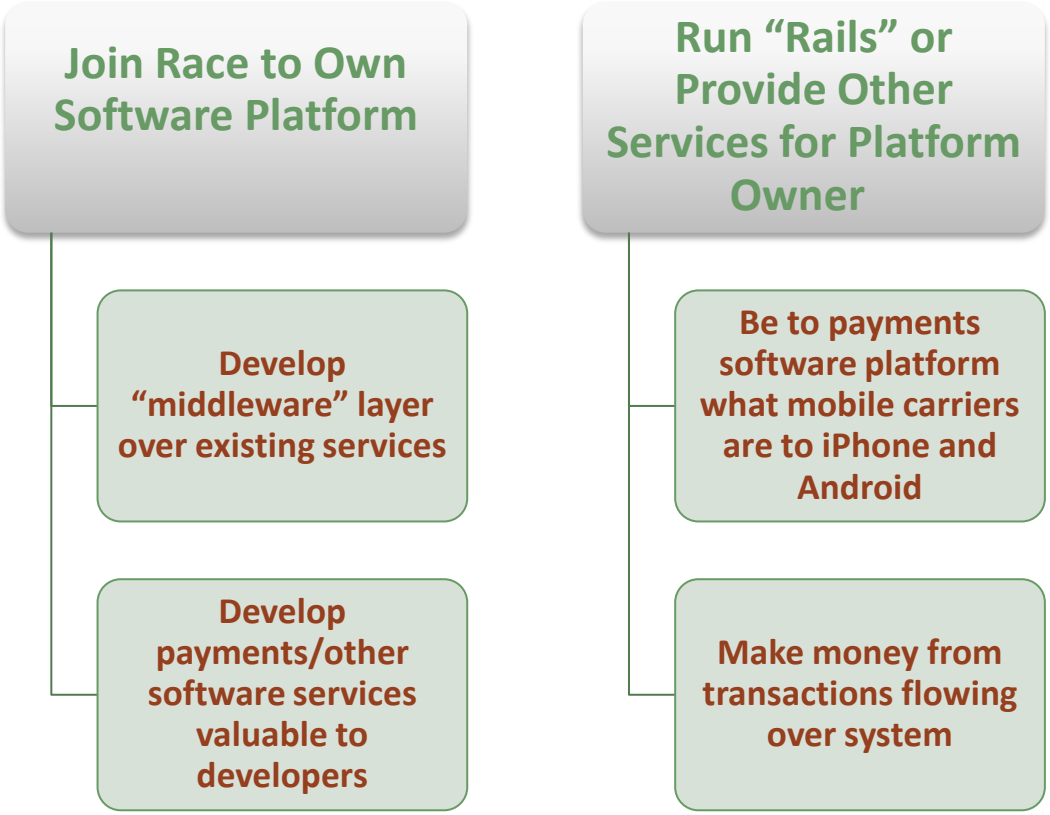
THE ROLE OF INCUMBENT PAYMENTS FIRMS

SOFTWARE PLATFORMS WILL HELP SOME, CHALLENGE OTHERS



Risks and Rewards

- Network effects and desire for standards will limit number of successful platforms. Only some will succeed and they will win big.

- Business power could move to platform owner. See iPhone which moved power in mobile ecosystem from carriers to software platform providers.

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PAYMENTS TO BE TRANSFORMED BY APPS ON PLATFORMS

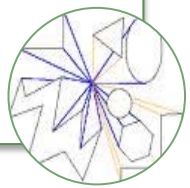
INNOVATION ENGINE THAT WILL SPEED CHANGE

- Already many developers working on PayPal X
- Significant apps already out there like Square and Bump

Rapid increase in innovation

- Payments platforms most useful to developers focused on applications that need payments
- Advertising/marketing
- Location-based services

Mashups of payments and other services



- Could lead to significant differentiation among existing networks
- He who controls the app store controls innovation

Change in competitive dynamics

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PAYMENTS IN 2020

IT'S ALL ONLINE

Massive increase in value of payments to consumers and merchants as a result of decade of innovation

All devices internet connected. No such thing as "offline". Bricks and mortar stores have web-based POS devices.

Payments innovation driven by applications that work with major payments software development platforms.

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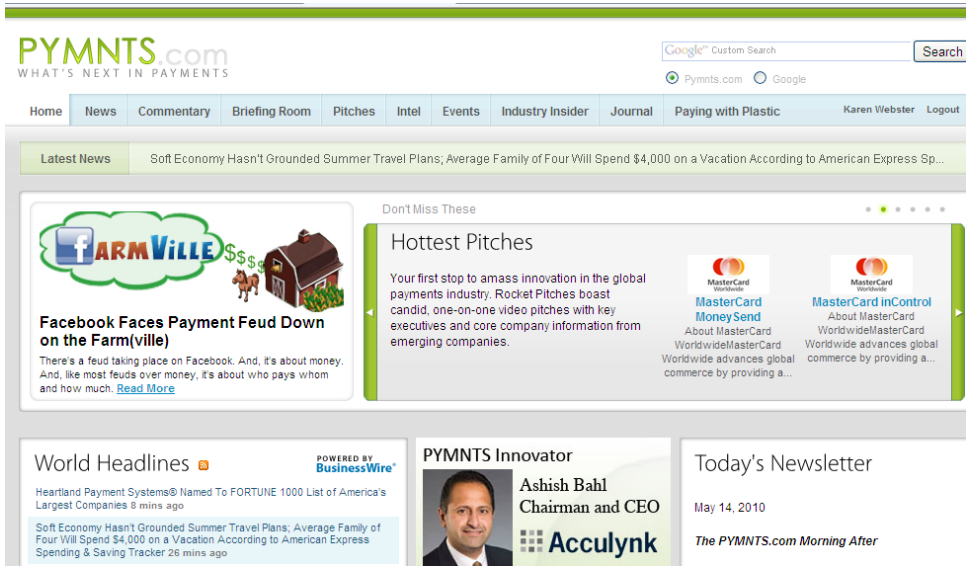
Thank you.

david.evans@marketplatforms.com



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pymnts.com/how-software-development-platforms-will-drive-innovation-and-transform-payments

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