Boston University Questrom School of Business

Platform Shift: How New Biz Models Are Changing the Shape of Industry

Marshall Van Alstyne
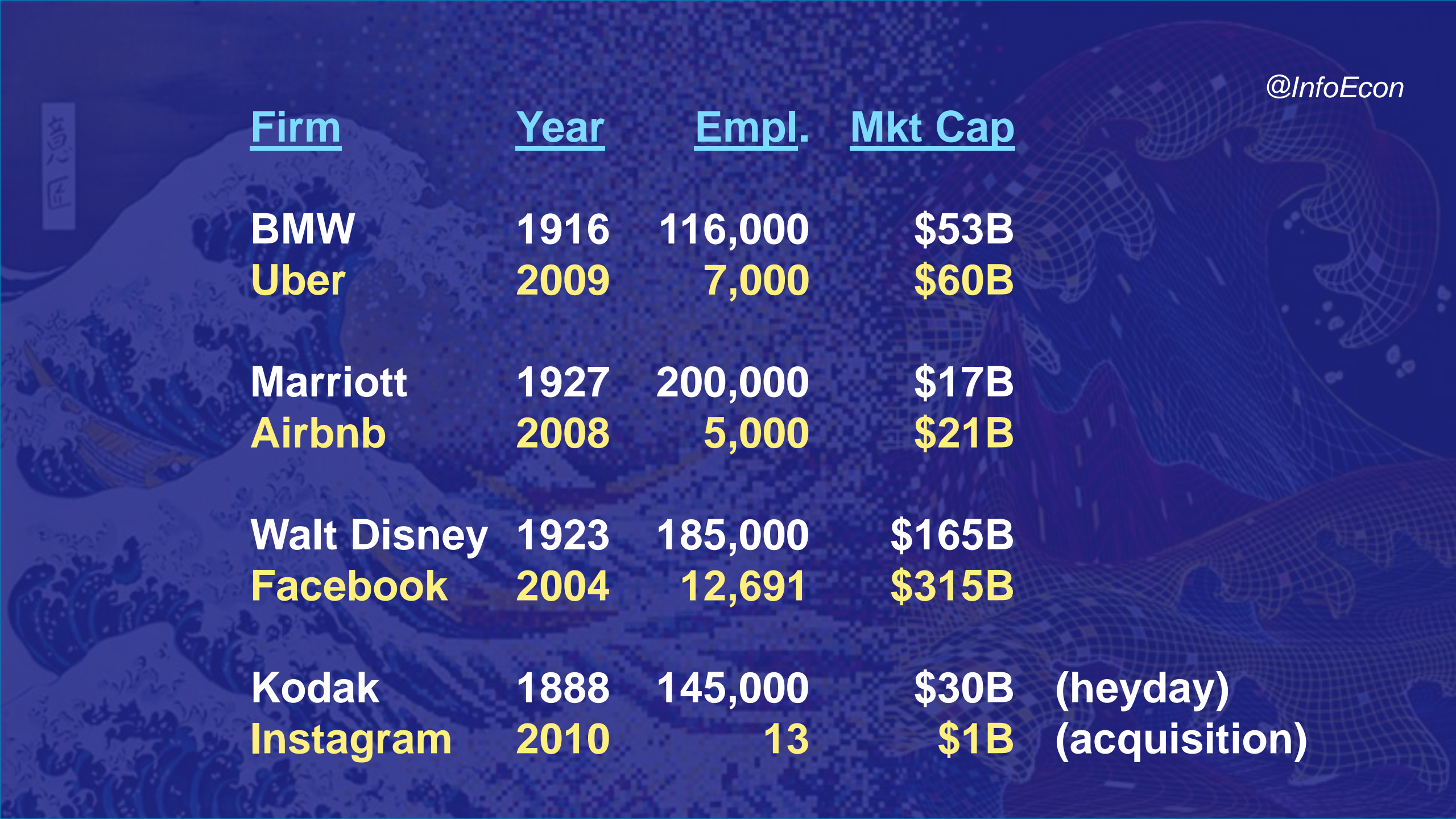Boston University
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InfoEcon@twitter.com

MIT Leading Disruption

Firm	Year	Empl.	Mkt Cap	
BMW	1916	116,000	$53B	
Uber	2009	7,000	$60B	
Marriott	1927	200,000	$17B	
Airbnb	2008	5,000	$21B	
Walt Disney	1923	185,000	$165B	
Facebook	2004	12,691	$315B	
Kodak	1888	145,000	$30B	(heyday)
Instagram	2010	13	$1B	(acquisition)

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The transition to Internet era firms resembles the transition to Industrial era firms … but for the opposite reason

InterBrand: Global Brands

Rank	Brand	Change	Value
01	Apple	+43% (TOP RISER)	170,276 $m
02	Google	+12%	120,314 $m
03	Coca-Cola	-4%	78,423 $m
04	Microsoft	+11%	67,670 $m
05	IBM	-10%	65,095 $m
06	Toyota	+16%	49,048 $m
07	Samsung	0%	45,297 $m
08	GE	-7%	42,267 $m
09	McDonald's	-6%	39,809 $m
10	Amazon	+29% (TOP RISER)	37,948 $m
11	BMW	+9%	37,212 $m
12	Mercedes-Benz	+7%	36,711 $m
13	Disney	+13%	36,514 $m
14	intel	+4%	35,415 $m
15	CISCO	-3%	29,854 $m
16	ORACLE	+5%	27,283 $m
17	Nike	+16%	23,070 $m
18	HP	-3%	23,056 $m
19	HONDA	+6%	22,975 $m
20	LOUIS VUITTON	-1%	22,250 $m
21	H&M	+5%	22,222 $m
22	Gillette	-3%	22,218 $m
23	Facebook	+54% (TOP RISER)	22,029 $m
24	pepsi	+3%	19,622 $m
25	American Express	-3%	18,922 $m
26	SAP	+8%	18,768 $m
27	IKEA	+4%	16,541 $m
28	Pampers	+8%	15,267 $m
29	UPS	+2%	14,723 $m
30	ZARA	+16%	14,031 $m
31	Budweiser	+7%	13,943 $m
32	ebay	-3%	13,940 $m

Platforms are overtaking energy and banking

Top 5 Publicly Traded Companies (by Market Cap) — Tech / Other

	#1	#2	#3	#4	#5
2001	GE $406B	Microsoft $365B	EXXON $272B	citi $261B	Walmart $260B

Source: Visualcapitalist.com, Bloomberg

InterBrand: Global Brands

01 Apple +43% 170,276 $m	02 Google +12% 120,314 $m	03 Coca-Cola -4% 78,423 $m	04 Microsoft +11% 67,670 $m	05 IBM -10% 65,095 $m	06 Toyota +16% 49,048 $m	07 Samsung 0% 45,297 $m	08 GE -7% 42,267 $m
09 McDonald's -6% 39,809 $m	10 amazon +29% 37,948 $m	11 BMW +9% 37,212 $m	12 Mercedes-Benz +7% 36,711 $m	13 Disney +13% 36,514 $m	14 intel +4% 35,415 $m	15 CISCO -3% 29,854 $m	16 ORACLE +5% 27,283 $m
17 Nike +16% 23,070 $m	18 hp -3% 23,056 $m	19 HONDA +6% 22,975 $m	20 LOUIS VUITTON -1% 22,250 $m	21 H&M +5% 22,222 $m	22 Gillette -3% 22,218 $m	23 f +54% 22,029 $m	24 pepsi +3% 19,622 $m
25 AMERICAN EXPRESS -3% 18,922 $m	26 SAP +8% 18,768 $m	27 IKEA +4% 16,541 $m	28 Pampers +8% 15,267 $m	29 ups +2% 14,723 $m	30 ZARA +16% 14,031 $m	31 Budweiser +7% 13,943 $m	32 ebay -3% 13,940 $m

How are these Related?

Uber Drivers	Uber Riders
eBay Sellers	eBay Buyers
Xbox Developers	Xbox Gamers
Amex Merchants	Amex CardHolders
Aga Khan Doctors	Aga Khan Patients
YouTube Videographers	YouTube Viewers
AirBnb Rooms	AirBnb Renters
Tesla Charge Stations	Tesla Car Drivers
Mechanical Turk Laborers	Mechanical Turk Jobs
LinkedIn Employers	LinkedIn Employees
Upwork Projects	Upwork Freelancers
Android Developers	Android Users

1: Each side attracts the Other
2: They're all outside

The giants of the Internet era resemble those of the Industrial era but for the opposite reason.

Giants of Supply Side Economies of scale

Electric Dynamo 1893
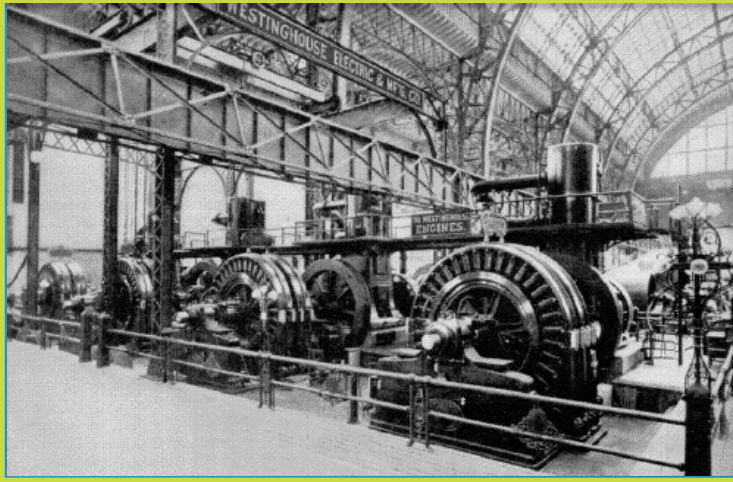
Ford Model T 1908

Acklam Ironworks 1924
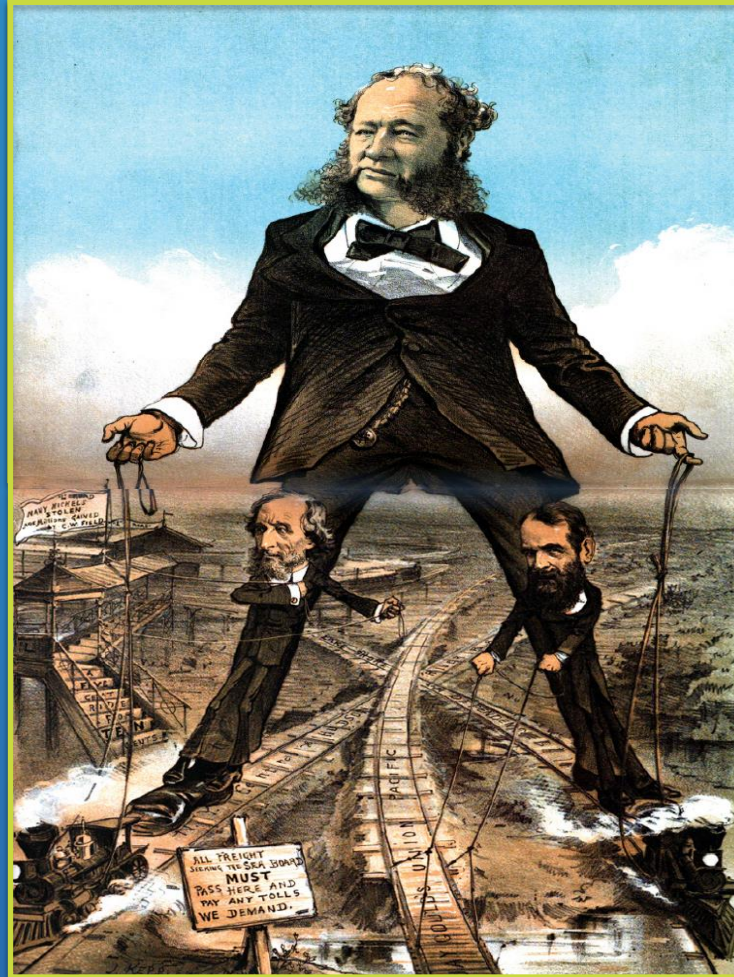
Standard Oil 1909

Vanderbilt Colossus of (Rail) Roads

Giants of *Demand* Side Economies of scale

Windows OS

Mobile
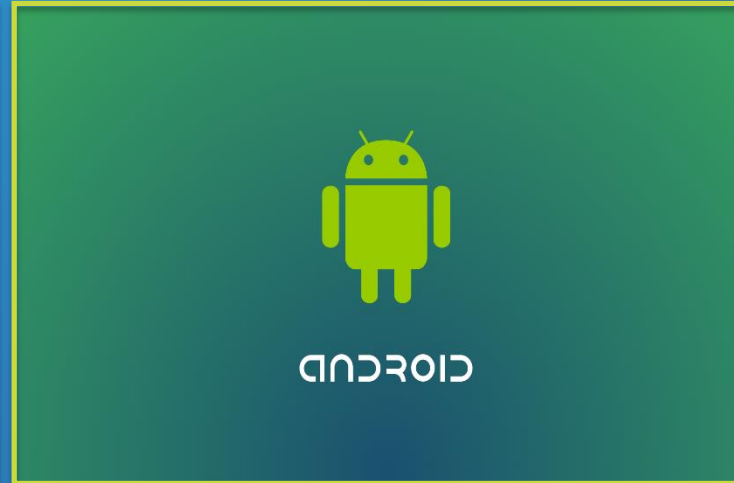
Merchant Mkts

Social Networks

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Platform sponsor can sell code V or give away share S=σV as input to developers who pay royalty Φ on output *y* across two periods.

$$\pi_p = V(1-\sigma) + \phi p y_1 + \delta \phi p y_2$$
$$\pi_d = (1-\phi)p y_1 + \delta(1-\phi)p y_2$$

Output is Cobb Douglas. Public code is input to production, which has recursive spillovers across periods.

$$y_1 = k(\sigma V)^\alpha ; y_2 = k(N y_1)^\alpha = k^{1+\alpha} N^\alpha (\sigma V)^{\alpha^2}$$

Platform Ecosystems: How Developers Invert the Firm

Vertical Integration Advantages
1. No subsidy cost
2. Higher output from tighter integration
3. Higher prices

Open Innovation Advantage

1. Larger recursive spillovers

Initially, vertical integration is always more profitable. However, as the ecosystem expands, open innovation dominates and the firm shifts its organizational form.

$1B+ Platforms by Region

North America   Asia   Europe   Africa & Latin America
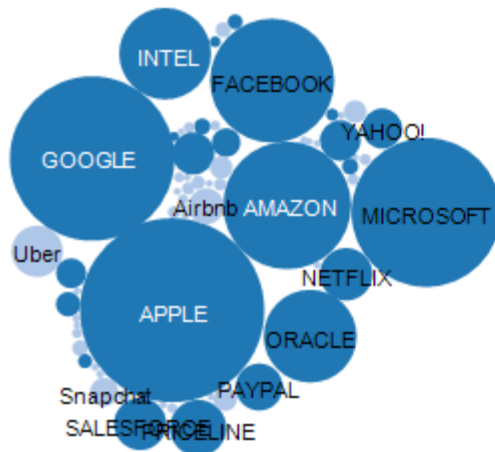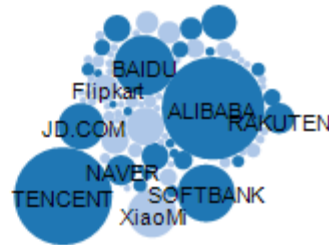
63: $2.8 trillion   **42**: $670 billion   **27**: $161 billion   **3**: $61 billion

North America has more platform firms than anywhere else in the world. China, with a large homogeneous market, is growing fast. Europe, with a more fragmented market, has less than $\frac{1}{10}$ the value of North America, not significantly far ahead of developing regions

Source: P. Evans, CGE; CB Insights, Capital IQ, CrunchBase, 2015

In any market with network effects, the focus of attention must shift from inside to outside the firm.

Reason: You can't *scale* network effects inside as easily as outside.

What Changes :: Operations & Logistics

Value creation shifts from internal to external servicing

Value creation inside versus outside

Value creation inside versus outside

| STEP 1 | STEP 2 | STEP 3 | STEP ... | STEP N |
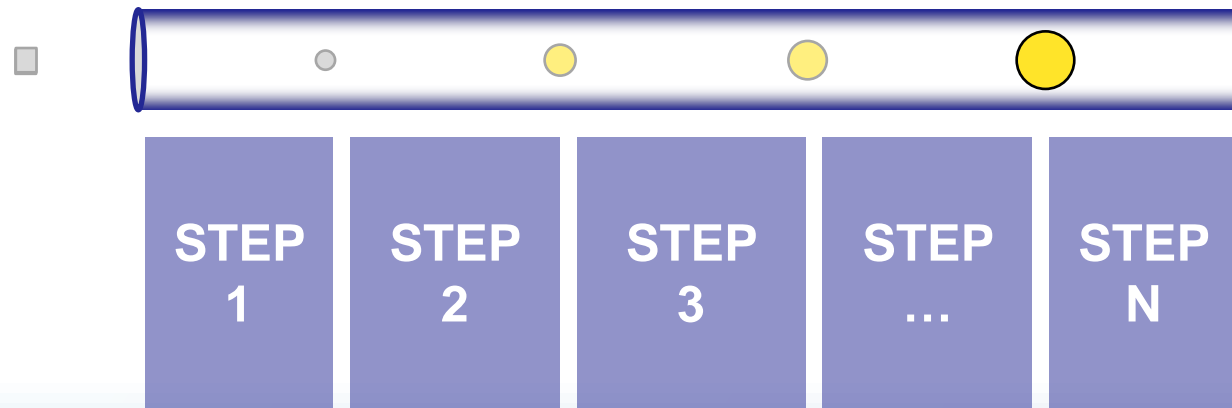
Value creation inside versus outside
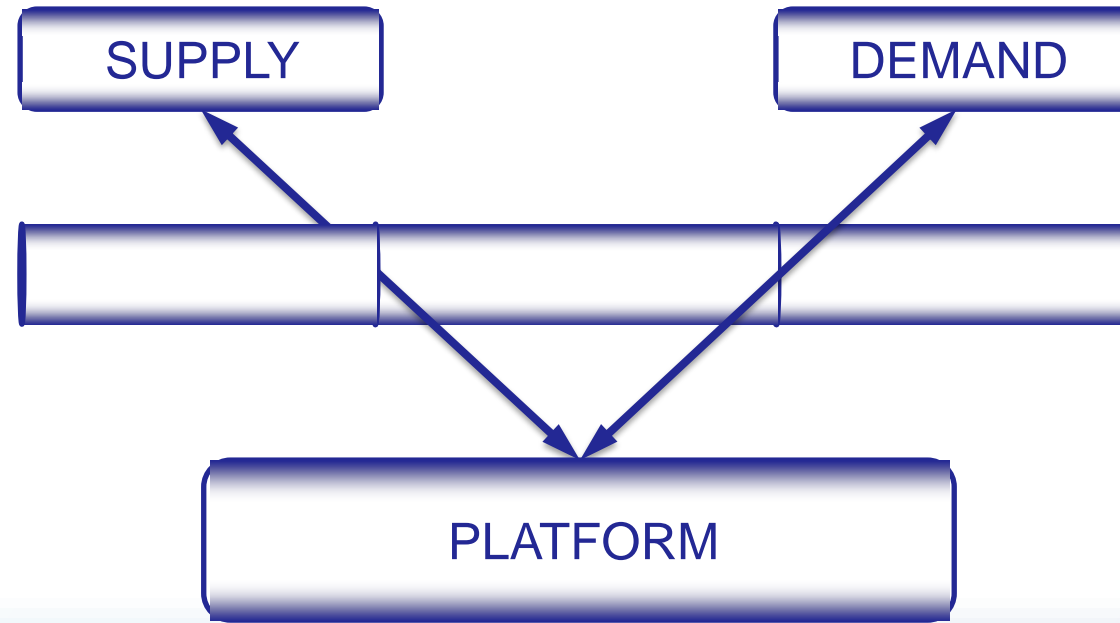
Business Models Can Overlap
Platforms Scale More than Pipes

Dell
Coca Cola
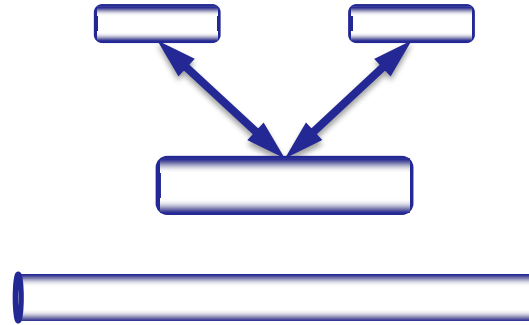
Apple
Samsung
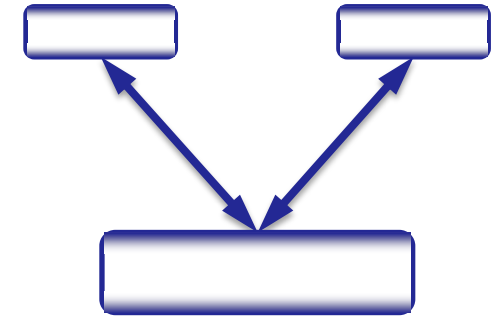
Airbnb
Uber

Founded in 2008, Airbnb operates at global scale: 1M+ listings, 34,000 cities, 180 countries

Paris
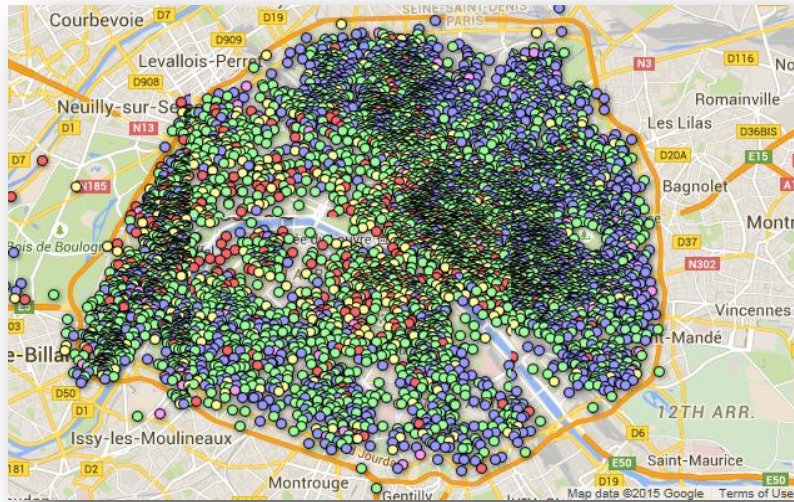
40,000 listings

Berlin
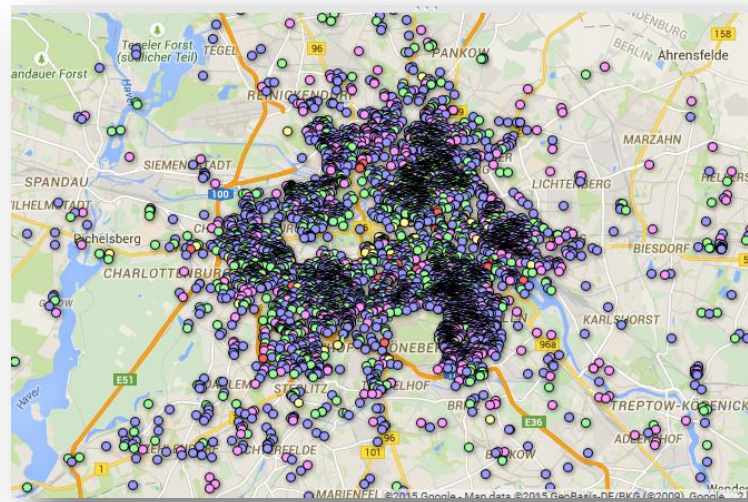
8,105 listings

Sydney
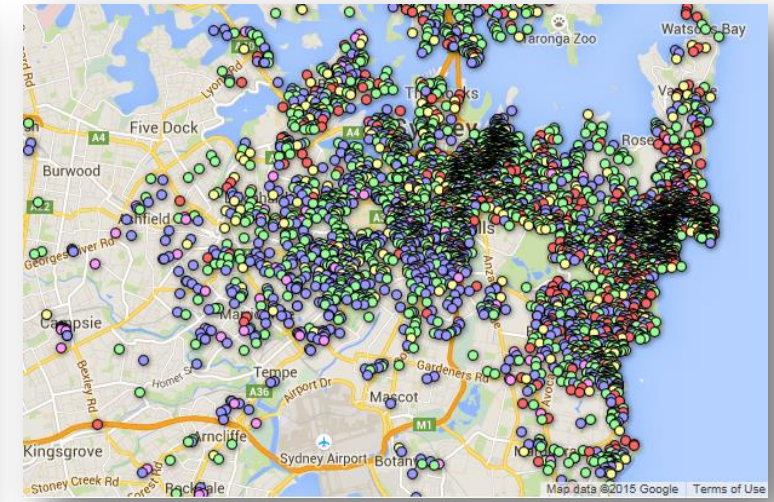
5,692 listings

Identify spare capacity, scale across boundaries

API Economy Visualized: Amazon vs Walmart

Walmart

Alexa Web Inform

Amazon SNS

Amazon Marketplace

Amazon SimpleDB

Amazon Product Advertising

Amazon SC2

Amazon S3

Amazon RDS

Amazon DynamoDB

Amazon Flexible

Amazon CloudWatch

Amazon Mechanical Turk

Amazon Queue Service

Amazon Redshift

Companies
- Walmart
- Amazon

API Clusters
- Social media / web
- Job search / work
- E-commerce
- Tools / cloud / big data
- Enterprise / storage
- Payments
- Messaging services

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Walmart vs Amazon growth over 10 years:
12% vs 1516%

Logistics & supply chain squeezing have limits.
External value add is much less limited.

What Changes :: R&D and Innovation

Platforms Open Themselves to Third Party Contributions

A platform is a system that can be... adapted to countless needs and niches that the platform's original developers could not possibly have contemplated..."

Mark Andreessen: Venture Capitalist, Netscape Founder, Board HP, eBay

It's Working when Users do Something You Didn't Expect

Ford Model T

Hay Carrier

Flour Mill
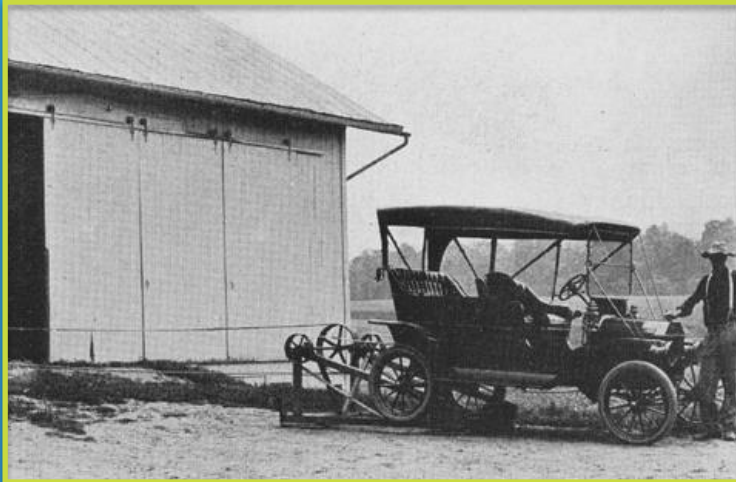
Racecar

Does Openness Work?

Daily Reach (percent)
facebook.com   myspace.com

Open to developers –

– Open to .com"

2005   2006   2007   2007 Oct 20

©2007 Alexa

The Rise & Ignominius Fall of MySpace – Business Week 2011

Does Openness Work?

"We tried to create every feature in the world and said, 'O.K., we can do it, why should we let a third party do it?'" says (MySpace cofounder) DeWolfe.

"We should have picked 5 to 10 key features that we totally focused on and let other people innovate on everything else."

The Rise & Ignominius Fall of MySpace – Business Week 2011

Platforms Get Enormous Value from 3rd Party Developers

Most firms can only concentrate on most valuable apps

Profits increase when others add to platform's Long Tail

You *don't* need to own this

Price

Application 1

App. 2

App. 3

Layer 2

Layer 1

Quantity
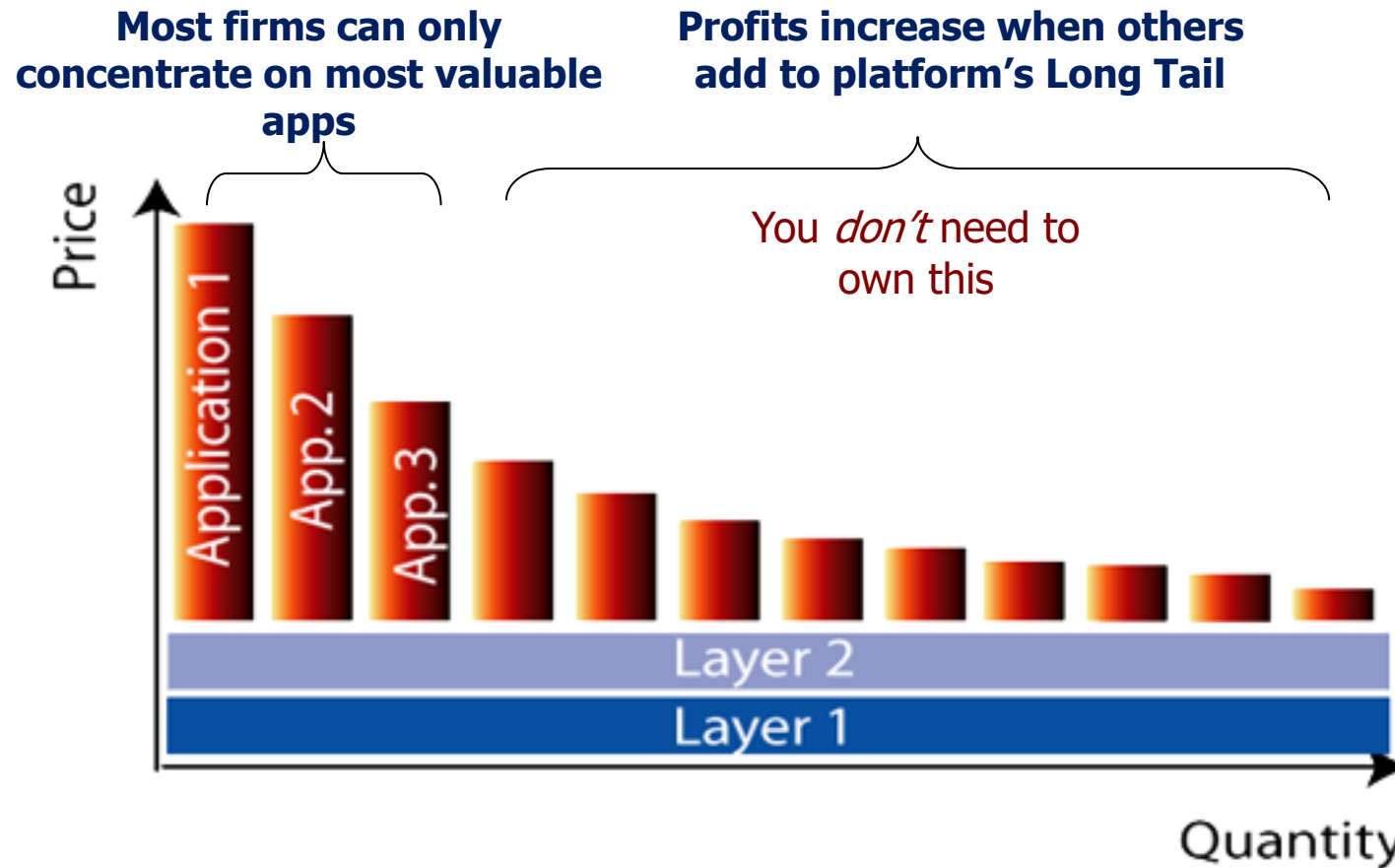
Why Platforms Beat Products
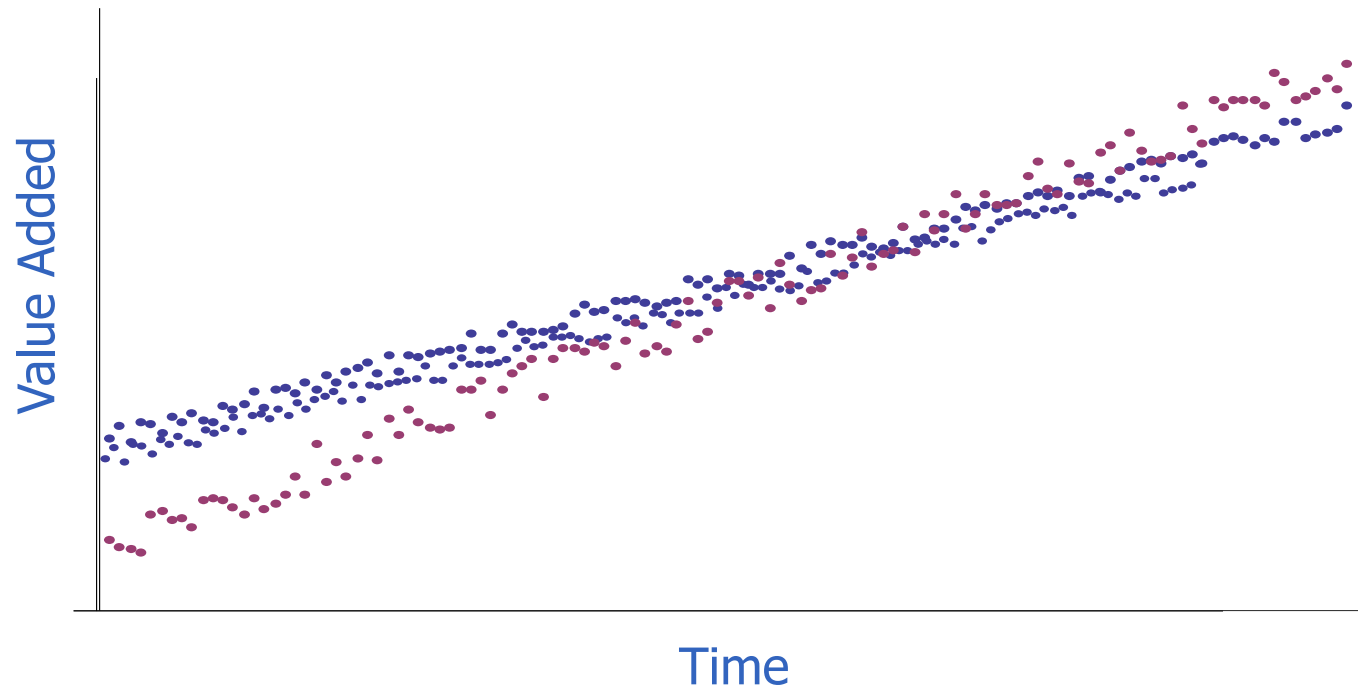
Consider product innovation alone

Harnessing 3rd party resources, innovation occurs at a higher combined rate

Even if a platform starts behind, its value overtakes the product leader

Shed costs, keep 30% gains!

Network Effects & Inverting the Firm Changes...

- **Finance**

  Shareholder Value → Stakeholder Value

  Incorporate network effects

- **Human Resources**

  Internal Employees →

  External communities

- **R&D**

  Experts & Specialized departments → Crowdsourcing & Open Innovation

- **Strategy**

  Entry Barriers & Inimitable Resources → Ecosystem husbandry & Long Tail

- **Marketing**

  Push → Pull, Outbound → Inbound

- **IT**

  Back Office (ERP) → Front Office (CRM) → Out-of-Office (Social & Big Data)

- **Operations & Logistics**

  Uber: biggest taxi company, no taxis,

  Airbnb (biggest accommodations but no real estate), Facebook (biggest media firm but creates no content), Alibaba (biggest merchant but has no inventory)

Governance Corrects Causes of "Market Failures"

- Information Asymmetry
    - Lemons, Insider Trading
    - Fake Goods, Drugs, Viagra

- Risk
    - Airbnb hosts / guests
    - Co-investment, hold-up; Visa Story

- Externalities
    - Spam, 3rd Party privacy
    - + Recommendations, Public Goods
    - + Network Effects

- Monopoly Power
    - On Platform: EA on Xbox, ADP on SAP
   - Of Platform: Regulation

Governance

Platforms are well-suited to regulating market failures "on-platform." They have better information and self-interest in preventing transaction failures among ecosystem partners.

Platforms are NOT well-suited to regulating market failures "off-platform." Their self-interest lies in market expansion, requiring external intervention.
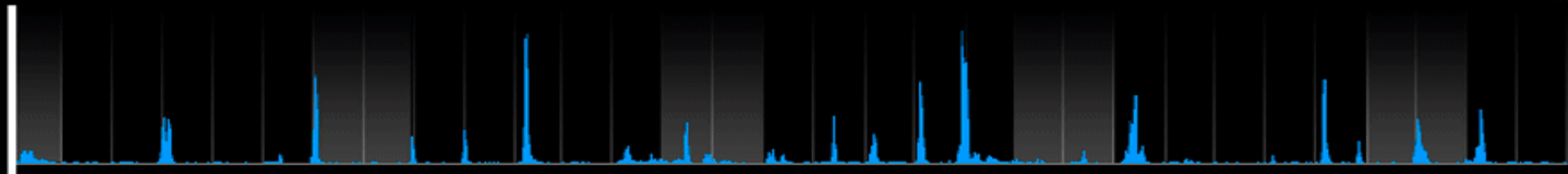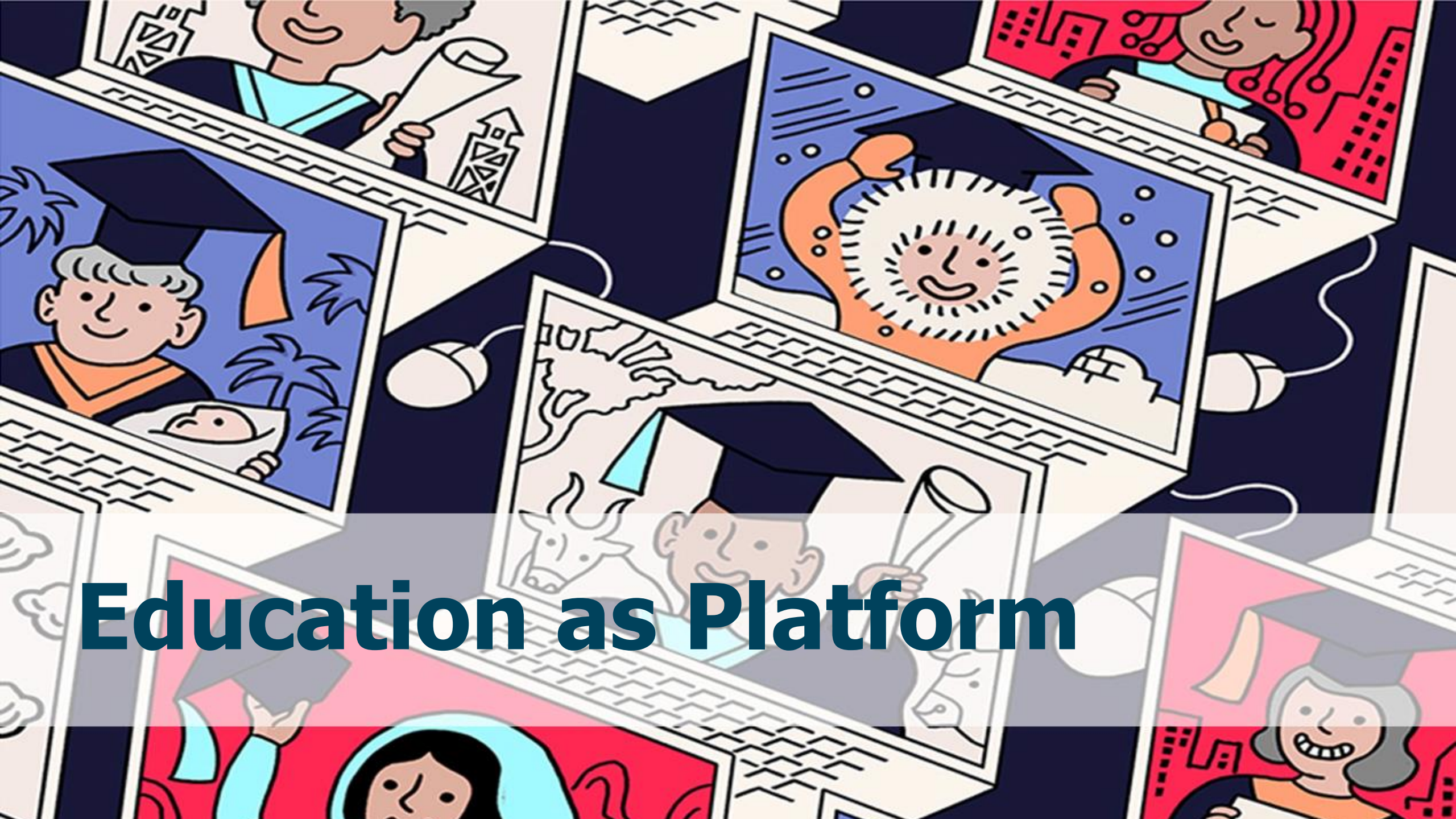
What's Next?
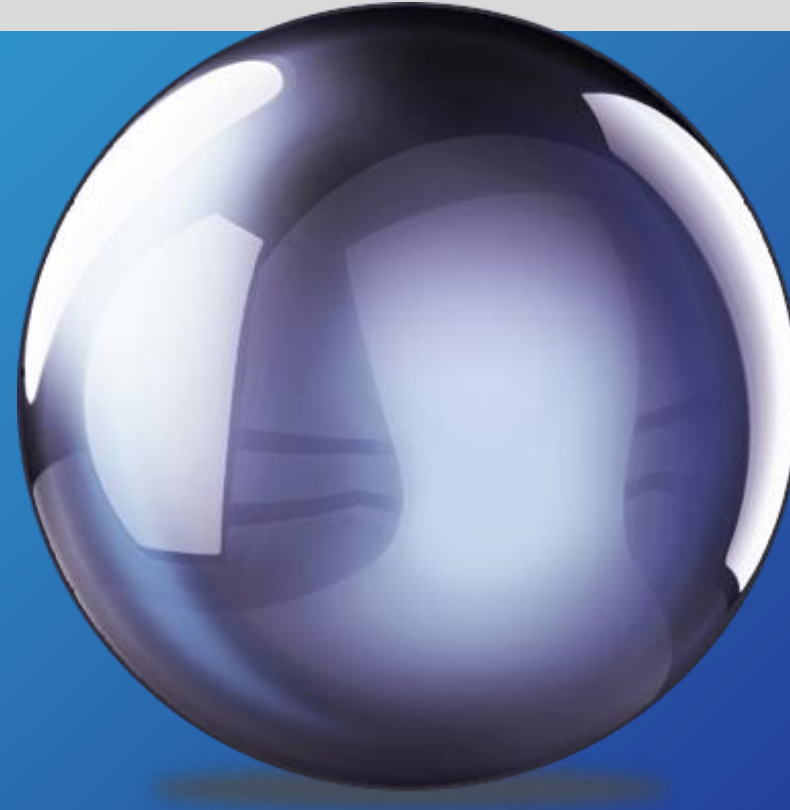
Internet of Things as Platform

Energy/Smart Grid as Platform

Education as Platform

Healthcare as Platform

PLATFORM

HOW NETWORKED MARKETS
ARE TRANSFORMING THE ECONOMY AND
HOW TO MAKE THEM WORK FOR YOU

REVOLUTION

Geoffrey Parker,
Marshall W. Van Alstyne *and*
Sangeet Paul Choudary
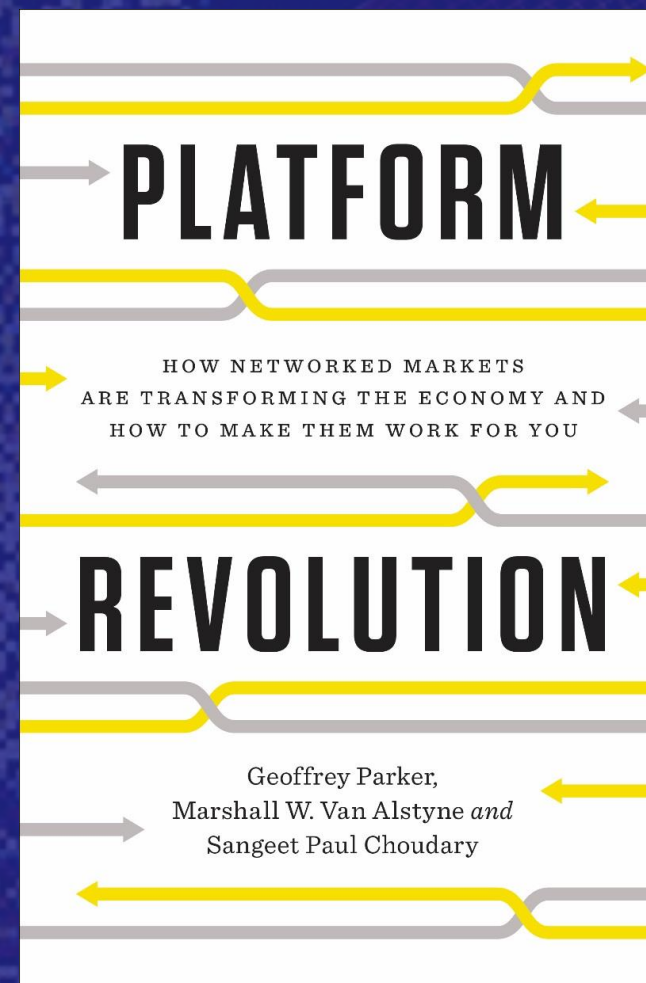
Platform Ecosystems: How Developers Invert the Firm

8. **Governance**

11. **Policy**

THANK YOU

QUESTIONS & DISCUSSION

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Find research HERE. Find blog posts HERE.

MIT Initiative on the Digital Economy 2016 Parker, Van Alstyne