Chapter 1

Introduction: Welcome to Platform World

Platform Revolution: Making Networked Markets Work for You

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Boston University
@InfoEcon

with Sangeet Choudary
Platform Labs
@sanguit

Questrom School of Business

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## SOMETHING HAS CHANGED

<table>
<thead>
<tr>
<th>FIRM</th>
<th>YEAR</th>
<th>EMPLOYEES</th>
<th>MKT CAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMW</td>
<td>1916</td>
<td>116,000</td>
<td>$53B</td>
</tr>
<tr>
<td>UBER</td>
<td>2009</td>
<td>7,000</td>
<td>$60B</td>
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<tr>
<td>MARRIOT</td>
<td>1927</td>
<td>200,000</td>
<td>$17B</td>
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<tr>
<td>AIRBNB</td>
<td>2008</td>
<td>5,000</td>
<td>$21B</td>
</tr>
<tr>
<td>WALT DISNEY</td>
<td>1923</td>
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<td>$165B</td>
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<tr>
<td>FACEBOOK</td>
<td>2004</td>
<td>12,691</td>
<td>$315B</td>
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<tr>
<td>KODAK</td>
<td>1888</td>
<td>145,000</td>
<td>$30B (heyday)</td>
</tr>
<tr>
<td>INSTAGRAM</td>
<td>2010</td>
<td>13</td>
<td>$1B (acquisition)</td>
</tr>
</tbody>
</table>
### THESE ARE THE MOST FAMOUS GLOBAL BRANDS

<table>
<thead>
<tr>
<th></th>
<th>Brand</th>
<th>% Growth</th>
<th>Brand Value (in $m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Apple</td>
<td>+43%</td>
<td>170,276</td>
</tr>
<tr>
<td>02</td>
<td>Google</td>
<td>+12%</td>
<td>120,314</td>
</tr>
<tr>
<td>03</td>
<td>Coca-Cola</td>
<td>+11%</td>
<td>78,423</td>
</tr>
<tr>
<td>05</td>
<td>IBM</td>
<td>-10%</td>
<td>65,095</td>
</tr>
<tr>
<td>06</td>
<td>Toyota</td>
<td>+16%</td>
<td>49,048</td>
</tr>
<tr>
<td>07</td>
<td>Samsung</td>
<td>0%</td>
<td>45,297</td>
</tr>
<tr>
<td>08</td>
<td>GE</td>
<td>-7%</td>
<td>42,267</td>
</tr>
<tr>
<td>09</td>
<td>McDonald’s</td>
<td>-6%</td>
<td>39,808</td>
</tr>
<tr>
<td>10</td>
<td>Amazon</td>
<td>+29%</td>
<td>37,948</td>
</tr>
<tr>
<td>11</td>
<td>Mercedes-Benz</td>
<td>+9%</td>
<td>37,212</td>
</tr>
<tr>
<td>12</td>
<td>Disney</td>
<td>+7%</td>
<td>36,711</td>
</tr>
<tr>
<td>13</td>
<td>Mercedes-Benz</td>
<td>+13%</td>
<td>36,514</td>
</tr>
<tr>
<td>14</td>
<td>Intel</td>
<td>+4%</td>
<td>35,415</td>
</tr>
<tr>
<td>15</td>
<td>Cisco</td>
<td>-3%</td>
<td>23,854</td>
</tr>
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<td>+5%</td>
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</tr>
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<tr>
<td>18</td>
<td>HP</td>
<td>-3%</td>
<td>23,056</td>
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<tr>
<td>19</td>
<td>Honda</td>
<td>+6%</td>
<td>22,975</td>
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<tr>
<td>20</td>
<td>Louis Vuitton</td>
<td>-1%</td>
<td>22,250</td>
</tr>
<tr>
<td>21</td>
<td>H&amp;M</td>
<td>+5%</td>
<td>22,222</td>
</tr>
<tr>
<td>22</td>
<td>Gillette</td>
<td>-3%</td>
<td>22,188</td>
</tr>
<tr>
<td>23</td>
<td>Facebook</td>
<td>+5%</td>
<td>22,023</td>
</tr>
<tr>
<td>24</td>
<td>PayPal</td>
<td>+3%</td>
<td>19,622</td>
</tr>
<tr>
<td>25</td>
<td>IBM</td>
<td>+8%</td>
<td>18,922</td>
</tr>
<tr>
<td>26</td>
<td>SAP</td>
<td>+8%</td>
<td>18,768</td>
</tr>
<tr>
<td>27</td>
<td>IKEA</td>
<td>+4%</td>
<td>16,541</td>
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<tr>
<td>28</td>
<td>Pampers</td>
<td>+8%</td>
<td>15,267</td>
</tr>
<tr>
<td>29</td>
<td>UPS</td>
<td>+2%</td>
<td>14,733</td>
</tr>
<tr>
<td>30</td>
<td>Zara</td>
<td>+16%</td>
<td>14,031</td>
</tr>
<tr>
<td>31</td>
<td>Starbucks</td>
<td>+7%</td>
<td>13,943</td>
</tr>
<tr>
<td>32</td>
<td>eBay</td>
<td>-3%</td>
<td>13,940</td>
</tr>
</tbody>
</table>

Source: Interbrand 2015

% is growth relative to prior year, $ is value of brand equity
13 OF THESE ARE PLATFORMS

<table>
<thead>
<tr>
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<td>Microsoft</td>
<td>+11%</td>
<td>$67,670 M</td>
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<tr>
<td>23</td>
<td>Facebook</td>
<td>+54%</td>
<td>$22,029 M</td>
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<td>24</td>
<td>Costco</td>
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Based on presence of a developer or buyer/seller ecosystem.
North America has the most $1B+ platform firms, as measured by market cap. China, with a large homogeneous market, is growing fast. Europe, with a more fragmented market, has less than ¼ the value of North America.
## World’s Most Valuable Companies Q1 2018

<table>
<thead>
<tr>
<th>Company</th>
<th>Market Cap ($B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apple</td>
<td>851</td>
</tr>
<tr>
<td>Alphabet (Google)</td>
<td>717</td>
</tr>
<tr>
<td>Microsoft</td>
<td>702</td>
</tr>
<tr>
<td>Amazon</td>
<td>701</td>
</tr>
<tr>
<td>Tencent</td>
<td>508</td>
</tr>
<tr>
<td>Berkshire Hathaway</td>
<td>492</td>
</tr>
<tr>
<td>Alibaba</td>
<td>471</td>
</tr>
<tr>
<td>Facebook</td>
<td>464</td>
</tr>
<tr>
<td>JP Morgan Chase</td>
<td>377</td>
</tr>
<tr>
<td>Johnson &amp; Johnson</td>
<td>343</td>
</tr>
</tbody>
</table>
LINEAR PIPE VS. TRIANGULAR PLATFORM

RAW MAT’LS
Source Content

PRODUCTION
Edit/ Curate

ASSEMBLY
Create Bundles

DISTRIBUTION
Multiple channels

Elements of value exchange

PRODUCERS

CONSUMERS

PLATFORM
A PLATFORM:

- **Definition**: A platform is an open architecture, together with a governance model, designed to facilitate interactions.

- **Open architecture**: allows 3rd parties to participate, add value, and innovate in a standardized way.

- **Governance**: gives power to exclude bad actors, steer community behavior, and monetize.

- **Interactions**: means by which value is created, finer grain than “exchange.”

- **Platform Purpose**: The goal of a platform is to consummate the match, interactions create value.
CONCEPTS & ARCHITECTURE
PLATFORMS LEVERAGE NETWORK EFFECTS

More users = more value = more users...

2 phones

1 connection

5 phones

10 connections

12 phones

66 connections

Source: Wikipedia.org

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IT HELPS TO BREAK EACH INTERACTION INTO 2 SIDES

Phone Callers
Uber Drivers
eBay Sellers
Xbox Developers
Amex Merchants
Aga Khan Doctors
YouTube Videographers
AirBnb Rooms
Tesla Charge Stations
Mechanical Turk Laborers
LinkedIn Employers
Upwork Projects
Android Developers

Phone Callees
Uber Riders
eBay Buyers
Xbox Gamers
Amex Cardholders
Aga Khan Patients
YouTube Viewers
AirBnb Renters
Tesla Car Drivers
Mechanical Turk Jobs
LinkedIn Employees
Upwork Freelancers
Android Users

This helps explain how attraction and feedback happen

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A TWO-SIDED NETWORK HAS FOUR NETWORK EFFECTS

- **A same-side** effect for each side, i.e., preference regarding number of other users on *own* side
- **A cross-side** effect in each direction, i.e., preference regarding number of users on *other* side

GIANTS OF SUPPLY SIDE ECONOMIES OF SCALE

Electric Dynamo 1893

Ford Model T 1908

Acklam Ironworks 1924

Vanderbilt Colossus of (Rail) Roads

Standard Oil 1909
GIANTS OF **DEMAND** SIDE ECONOMIES OF SCALE

- Windows OS
- Mobile
- Merchant Mkts
- Social Networks

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SUPPLY ECONOMY OF SCALE

- Falling average costs
- Monopolistic supply
- Utilities, Semiconductors
DEMAND ECONOMY OF SCALE

- Value grows with volume
- Monopolistic Demand
- Often falling average cost
- Operating Systems, Instant Messaging, Social Networks
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.
Network Effects & Inverting the Firm Changes...

- **Finance**
  - Records outside firm,
  - Shareholder Value $\rightarrow$ Stakeholder Value, Incorporate network effects

- **Human Resources**
  - Internal Employees $\rightarrow$
  - External communities

- **R&D**
  - Experts & Specialized departments $\rightarrow$
    Crowdsourcing & Open Innovation

- **Strategy**
  - Entry Barriers & Inimitable Resources
    $\rightarrow$ Ecosystem husbandry & Long Tail

- **Marketing**
  - Push $\rightarrow$ Pull, Outbound $\rightarrow$ Inbound

- **IT**
  - Back Office (ERP) $\rightarrow$ Front Office (CRM) $\rightarrow$
    Social & Big Data). Communication *among* users.

- **Operations & Logistics**
  - Uber: no taxis, Airbnb: no real estate, Facebook: creates no content, Alibaba: no inventory.
  - Shed variable costs
BUILDING NETWORK EFFECTS CHICKEN AND EGG PROBLEM
FIND A COMPELLING BAIT
USE BAIT TO GAIN TRACTION ON ONE SIDE
LEVERAGE TRACTION ON ONE SIDE TO BRING IN OTHER SIDE
LEVERAGE TRACTION ON SECOND SIDE TO BRING IN MORE OF THE FIRST SIDE
RINSE... REPEAT...
EIGHT STRATEGIES TO SOLVE CHICKEN-OR-EGG PROBLEM

1. FOLLOW THE RABBIT
2. PIGGYBACK
3. SEEDING
4. MARQUEE USER
5. SINGLE-SIDE STRATEGY
6. PRODUCER EVANGELISM
7. BIG BANG ADOPTION STRATEGY
8. MICROMARKET NICHE
1. Complements: Sell later chapters or works in series
2. Fame monetized: speaking, movies, merchandise
3. Sell kindles
4. Establish competing format: ePub vs AZW vs …
5. Grow user base for eCommerce
6. Attract more content from other authors.
7. Use data to recommend related authors & merchandise
8. Use user base to negotiate with publishers

DOES FREE MAKE SENSE?
SO WHICH MARKET IS SUBSIDIZED?

Consider which market creates more surplus.

SO WHICH MARKET IS SUBSIDIZED?

Consider which market creates more surplus.
Subsidize the one that creates more surplus in the cross market.

Consider which market creates more surplus. Subsidize the one that creates more surplus in the cross market.

DOES FREE MAKE SENSE?

- Publishers/Authors only use razors/blades strategy.
- Amazon also using a platform strategy. Will do it more often than authors or publishers.
- Users love it, so anticipate their support for Amazon.
## PRICING

<table>
<thead>
<tr>
<th>1. Ability to capture cross-side effects</th>
<th>1. Mistake of Netscape</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. User sensitivity to price &amp; quality</td>
<td>Denver vs. Boston real estate markets</td>
</tr>
<tr>
<td>3. Value added</td>
<td>Mistake of Apple</td>
</tr>
<tr>
<td>4. Marginal costs</td>
<td>Mistake of FreePC</td>
</tr>
<tr>
<td>5. Interfering same-side effects</td>
<td>Mistake of Covisint</td>
</tr>
<tr>
<td>6. Marquee users</td>
<td>Mistake of Microsoft</td>
</tr>
</tbody>
</table>
Basic Demand Curve

- Users can set any parameter: market size, value, price charged
- Graph automatically adjusts profit, sales, consumer surplus, etc.
Students can compete against the machine or against each other. Optimizing price for one division alone yields much less profit than optimizing both divisions.
OPENNESS
OPENNESS VS. CONTROL

MAXIMUM PROTECTION ≠ MAXIMUM VALUE

Your Reward = (Value added to industry) x (Your share)

Based on: Shapiro & Varian '99
OPENNESS TRADEOFF: LOWER REVENUES VS. MORE APPS

Average selling price (and gap) of iOS and Android smartphones worldwide

More open system has lower price

More open system has more apps

Total Number of Apps by App Store

2010 2011 2012 2013

iTunes Google Play

0 k 250 k 500 k 750 k 1,000 k 1,250 k 1,500 k
WHAT DOES CONTROLLING OPENNESS MEAN?

1. Open Access
2. Extend Platform
3. Touch Customers
4. Change Platform

Split IP control from Customer contact control

Platform Provider
Platform Sponsor
MODELS FOR ORGANIZING PLATFORMS

One Sponsor

One Provider

- Vendor
- Users
- SPONSOR
- PROVIDER

Many Sponsors

Many Providers

- Vendor
- Users
- SPONSOR
- PROVIDERS

1) Proprietary: e.g. Mac

2) Licensing: e.g. Google Android

3) Joint Venture: e.g. Orbitz

4) Shared: e.g. Linux

Open

Closed

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GOVERNANCE
PLATFORMS ABSORB STATE FUNCTIONS
PLATFORM AS REGULATOR

FOUR NON PRICE INSTRUMENTS CAN BE USED:

• The platform as a competition authority.
• The platform as a price regulator.
• The platform as a licensing authority.
• The platform as enforcer.

GOVERNANCE CORRECTS CAUSES OF "MARKET FAILURES"

• INFORMATION ASYMMETRY
  Lemons, Insider Trading
  Fake Goods, Drugs, Viagra

• EXTERNALITIES
  - Spam, 3rd Party privacy
  + Recommendations

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

• MONOPOLY POWER
  On Platform: EA on Xbox, ADP on SAP
  Off Platform: Regulation
PLATFORM REGULATORY TOOLS – LAWRENCE LESSIG
(Constitutional Law Scholar)

SUPPOSE THE GOAL IS TO CURB SMOKING:

- Laws could ban it or limit to 18+
- Markets could raise price or cost
- Architecture could filter carcinogens
- Norms could stigmatize behavior

YOU NEED A FULL RANGE OF OPTIONS
ONLY 7 FIRMS CONTROLLED 99% OF HANDSET PROFITS IN 2007

- Economies of Scale
- Famous Brands
- Regulatory Protection
- World Class Logistics
- Global Sales Channels
- ≥ $40B twenty yr
- R&D by Nokia alone

Source: Asymco
Is it likely all 7 incumbents had failed strategies, run by clueless management, lacking execution capabilities?

Or was something more fundamental happening?

“We didn’t do anything wrong, but somehow we lost.” Nokia CEO 2016
1. Goal is a protected market niche, emphasizing industry barriers
2. Categories are sharp
3. Weapon is cost leadership or product differentiation
4. Inimitable resources you own provide sustained advantage
5. Core competence: focus what you do best
1. Goal is interactions that yield NW effects - partner to partner value. NW effects provide sustainability.
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2. Boundaries can be altered as consumers can be producers.
1. Goal is interactions that yield NW effects - partner to partner value. NW effects provide sustainability
2. Boundaries can be altered as competitors can be complementors
1. Dangerous entrants are those with stronger network effects. Can be producers or consumers.

2. Having the technology is unnecessary as an ecosystem partner can provide it.

*It’s easier to add a technology to a community than to add a community to a technology*
PROBLEM SPONSORED LEARNING
Platform Project Opportunities
Platform Project Opportunities
Problem Sponsored Learning

Firm Engagement
• Market of 27 projects solicited from real exec challenges. Firms offer executive time and $1,500 - 3,000 for solutions.
• Student teams of 2-4 choose problems that interest them most
• Students work problem sets, conduct field work, interview execs to solve problems. Receive awards conditional on sponsor satisfaction

Outcomes:
• Multiple job placements directly with sponsors.
• Student teams presented to boards of PGA, PTC
• Over $1M allocated by publisher to undertake student proposal
• Sponsors flew student teams to Amsterdam and Silicon Valley
• Students presented at major conferences.
SLIDES FOR CHAPTERS OF PLATFORM REVOLUTION

https://www.dropbox.com/s/58o4t0hczx6i6e3/CH%201-11-Slides_PlatformRevolution_.zip?dl=0