The State of Platforms

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Platform Review and Forecast

- Regulation  Geoff
- New Technology  Peter
- Rise of Enterprise and Firm Inversion  Marshall
New Regulatory Constraints
Recent Regulatory Actions

Supreme Court rules against Apple in antitrust suit

Germany accuses Facebook of abuse, slaps restrictions on how it can gather data

What Amazon tells us about antitrust today

It's a reflection of how market power gets exercised

Facebook Co-Founder: “It's Time to Break Up Facebook”

Google fined nearly $1.7 billion for ad practices that E.U. says violated antitrust laws
An Essential issue: Platforms Have the Best User

- Facebook + Google
  - Data allows highly targeted advertising …
  - get 75% of digital advertising budget in America
  - control 84% of global spending on online ads, excluding China
- In the U.S. Amazon handles:
  - > 83% of e-book sales
  - ~ 90% of online print sales
  - 44% of all e-commerce transactions
  - Mines the data to pick off the highest profit sectors
Where Will Data Barriers to Entry Emerge?

AI/ML Performance

• Autonomous vehicles
• General search
• Translation
• Seismic analysis
• Banking services
• Drug discovery
• Medical diagnostics
• ... and much more

• How to account for spillover benefits and social welfare?
Traditional tests of monopoly power

- Ability to fix prices
- Ability to exclude competition
- Willful acquisition or maintenance of power
- Exceptions for success as result of superior product, business acumen or historical accident
Big tech firms don’t fit model of traditional monopolists

- Often offer free services
- Operate at loss for a long time
  - Can internalize network effects to cross subsidize free services (Multi-sided networks)
- Often protected by strong network effects
Possible remedies (and a clear shift to focusing on data):

- Breaking up companies (what does this mean for platforms?)
- New taxes (e.g. on targeted ad revenue)
- Restrict markets where Big Tech can operate
- Rights assignment/compensation to data providers (users)
  - However; bargaining between marginal and average
- Data sharing mandates (much to be done to figure out what works)
Meanwhile, rules governing cross border data flows are growing

Sources: Information Technology & Innovation Foundation and KPMG, 2019
Platform growth brings new questions

- What types of harm is posed by platforms and how?
- How are companies addressing these concerns?
- How to promote competition in a world of network effects?
- Who should regulate and in what jurisdictions?
- Will new technology reinforce or reduce dominance?
- And, what’s really driving the conversation? Economic harm, digital industrial policy, or harmful effect on public governance?
Technology Disruption
Platform strategist only beginning to probe 5G

1G: Analog Voice
2G: Mobile Data, Basic Internet
3G: Digital Voice, Text Messaging
4G: Mobile Broadband, Smartphones/Apps
5G: Extreme Speed, Connectivity, & Reliability

2G to 3G meant transformed internet access from computer only to mobile device.
3G to 4G app based always connected enable services ride sharing, streaming, and mobile payment.
4G to 5G virtual and augmented reality, smart cities, autonomous vehicles, and not yet conceived technological advances.

Sources: Qualcomm Everything you need to know about 5G, 5G Americas.
10K times more traffic

10-100 more devices including IoT devices

Capacity

Latency

Speed

Ultra Reliability

Energy efficiency

10Gb per second (or even 20 gigabits per second)

rapid download of

extremely low latency at less than 1 millisecond

Rapid download of (or even 20 gigabits per second)

Machine-to-machine (M2M) ultra low cost

10 years battery life

M2M connections maintained even when device is moving at high speed

Reduced energy usage on the network by 85-90%
5G opens the door to many new platform use cases:

- Machine remote supervision and control
- Real-time energy distribution
- Manufacturing process automation
- Smart meter monitoring
- Remote diagnostics
- Factory automation
- Self-driving cars
- Vehicle-to-infrastructure communication
- Smart grid control
- Smart buildings
- AR/VR gaming/retail
- AR-aided treatment
- Robot-aided treatment
- Vehicle-to-infrastructure communication
- Ultra-HD video
- Vehicle infotainment

Sources: KPMG 5G Research Sprint, 2019.
While automation, analytics, and AI can be deployed separately, companies are beginning to realize these capabilities are more effective if deployed together.

Source: KPMG’s 2019 Enterprise AI Adoption Study.
AI News and Job Posting Research Approach

Timeframe
May 2018 – May 2019

Keywords
artificial intelligence, cognitive, ontology, machine learning, natural language processing (NLP), Neural Networks, ‘structured and unstructured data’, and predictive modeling

No. of Articles
A total of 66,300 articles were analyzed from top tier news outlets, yielding 134,257 mentions (approximately 2 per article)

Tool and data sources
Quid and Quid’s news database

Source: KPMG’s 2019 Enterprise AI Adoption Study.
AI News and Job Posting Research Approach

The analysis identified 134,257 articles that mentioned AI and at least one company in the AI 200.

News mentions are highly concentrated by sector. In the US over 80 percent of news mentions occur in the technology sector. Internationally, there is higher concentration in Industrial manufacturing, which represents 50 percent of the job posts. It is important to note that one reason is the presence of Samsung in that category.

The bottom line is that supply-side companies dominate news about enterprise AI.

Source: KPMG’s 2019 Enterprise AI Adoption Study.
Will AI-as-a-service generate flywheels and network effects?

Supply-side platforms

- Microsoft
- Amazon
- IBM
- Google
- Apple
- Cisco
- Facebook
- Intel
- Oracle

Demand-side consumers

- Sell to the Market
- Amass Data
- Learn the Business
- Enter and Compete?

Source: KPMG's 2019 Enterprise AI Adoption Study
The future is AI-as-a-service platforms
Supply-side investment is rapidly expanding services and delivery models

Compliance services

Trust and Transparency

Services that provide Governance solutions, including methodologies, tools and controls to continuously monitor AI deployments and their performance

BOTs on demand

Integrated Microservices

AI delivered as collection of small, independently deployable services built around specific business requirements

Third-party management

A complete set of needs provided by a third-party leveraging AI capabilities.

Enterprise

BOT Stores

Microservices

Managed services

Examples

Automation Anywhere has an online marketplace to purchase "off-the-self" plug-n-play BOTs

Cybersecurity is spurring a range of independently deployable services like Darktrace and Senseon

Verizon's Digital Customer Experience-automate customer interaction

Source: KPMG’s 2019 Enterprise AI Adoption Study.
Platform strategists need to overcome anchoring bias

Anchoring bias =
Tomorrow will be like today

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5G
AI

2025

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- Highly responsive to customer demand and specifications
- “Always-on” – hyperconnected IoT
- Improve health care delivery
- Transform the retail experience
- Deliver next gen manufacturing

Sources: KPMG 5G Research Sprint, 2019.
More Technology Disruption
Amazon bid for Boost wireless services from Sprint
• Analyst 1: Competing with AT&T is “batshit crazy,” tried Fire in 2014 and 3G Whispernet in 2007
• Analyst 2: Trojan horse for connecting 5G to cloud, entering autos & healthcare

India introduces new platform laws
• Backdoor decryption on social media
• Weaken Section 79, their Section 230, exposing platforms to liability for content deemed unlawful
• Ban selling via partners if have >= 25% stake (Amazon cut 49% to 24%, 300,000 products back on 1 week later)

EU introduces new platform laws
• Article 11 “link tax” would require payment to publishers for © excerpts
• Antiterrorism law would require takedown in 1 hr for content recruiting terrorists, glorifying violence, or giving instructions for acts of violence else 4% tax on global revenue (FB = $680 M)
• Fair markets legislation requires revelation of how ranking determined

Supposed to be transparent and fair
• Microsoft chatbot “Tay” picked up racial & sexist attitudes after chatting with real humans
• Apple auto-complete gave male icon for CEO
• Wisconsin system predicted disproportionately high recidivism rates for black felons relative to white

Some bias inevitable if want comprehensible. Simpler omits cases, like Type I vs Type II errors
While automation, analytics, and AI can be deployed separately, companies are beginning to realize these capabilities are more effective if deployed together.

Wall Street Not Buying What Silicon Valley is Selling (WSJ May 2019)

Source: Wall Street Journal
Shift to Enterprise Markets
Platforms employ an order of magnitude fewer resources

<table>
<thead>
<tr>
<th>Firm</th>
<th>Start year</th>
<th>Employees</th>
<th>Mkt Cap ($B)</th>
</tr>
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<tbody>
<tr>
<td>BMW</td>
<td>1916</td>
<td>131,000</td>
<td>51</td>
</tr>
<tr>
<td>Uber</td>
<td>2009</td>
<td>16,000</td>
<td>76</td>
</tr>
<tr>
<td>Marriott</td>
<td>1927</td>
<td>177,000</td>
<td>39</td>
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<tr>
<td>Airbnb</td>
<td>2008</td>
<td>10,000</td>
<td>38</td>
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<tr>
<td>Walt Disney</td>
<td>1923</td>
<td>199,000</td>
<td>163</td>
</tr>
<tr>
<td>Facebook</td>
<td>2004</td>
<td>30,000</td>
<td>473</td>
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<tr>
<td>IBM</td>
<td>1911</td>
<td>350,000</td>
<td>125</td>
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<tr>
<td>Salesforce</td>
<td>1999</td>
<td>35,000</td>
<td>123</td>
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<tr>
<td>New York Times</td>
<td>1851</td>
<td>3,700</td>
<td>6</td>
</tr>
<tr>
<td>Twitter</td>
<td>2006</td>
<td>3,300</td>
<td>25</td>
</tr>
</tbody>
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Platforms are “inverted firms” having shifted production from inside to outside.
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 Effect:** Value that partners create for partners that makes the platform more valuable
- A Google search that makes another search better
- An SAP subroutine from one ISV that helps another ISV
Transformation Checklist

Ready for Transformation

High proportion of value from information (e.g. news, video)
*Provides NFX spillover*

Precise, fine-grained, modular output (e.g. tweet, ride, stay, retail)
*Allows 3rd party supply / curation*

Lightly regulated, fault tolerant (e.g. videos, apps, tweets)
*Safe for experimentation*

Spare Capacity (e.g. Uber, Airbnb, loans, after markets)
*Utilization market, Decouple asset from use*

Resistant to Transformation

High proportion of value from physical assets (e.g. mining, construction)
*Prevents NFX sharing*

Highly complex products / services (e.g. Boeing airplanes)
*Prevents 3rd party supply*

Highly regulated industries. Fault intolerant (e.g. pacemaker, nuclear pwr)
*Dangerous experiments, malice*

High utilization (e.g. surgeons, phones, perishables)
*Own not rent*
If Amazon can create ecosystems of connected devices, M2M and M2C has more interaction volume than B2C.

Cloud connecting healthcare systems can achieve what Johnson & Johnson or AETNA insurance can’t.

Breakup that reduces Google ability to link maps to email to calendar. Value↓
(same for Facebook & Instagram or Amazon market and AWS)

PSD2 that increases competition on data, allows 3rd parties to also create links & spillovers. Value↑

NOT static. These systems improve at pace faster than humans.

If 1 Tesla can learn from all other Teslas, or one interaction can benefit from all other interactions, the rate of convergence will be fast and the size of the bias small.
Firm Inversion Insights

• Enterprises are buying their way into developer ecosystems (Google buys Kaggle, Microsoft buys GitHub, IBM buys Redhat)

• Buying for tech? Then product play. Seems to be #1 CRM plus #1 BI analytics
• Buying for community (like LinkedIn or Kaggle)? Then platform play.
• Real performance would come if, not just cloud, but also have partners create value for partners

B2B Enterprise
Amazon creates entire ecosystems

B2C is typically higher Value x Volume
B2B is typically higher Value x Volume. Network effects easier with volume.

Constellations of complementary partners e.g. Roppongi Hills

Roadmap (Intel & SAP) tells partners where to build and where not to
Now let us begin the program