Information Technology in Business and Society
- IT Disruption: Platforms

Pearl Yu
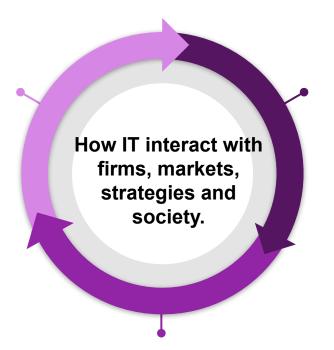
Information Technology

Module II: IT Disruption
- Emerging techs.
- How does IT changes the business and social world?

Introduction: Value of IT
- Conceptualizing IT's roles in organizations.

How IT interact with firms, markets, strategies and society.

Module I: IT Management
- How to properly developing and managing IT projects or vendors?

Outline

- What're platforms? Types of platforms.

- Why are platforms powerful? Network effects.

- Competition strategies in platform economy.

- Other issues: Social impact, regulation issues.

What're platforms?

Objective:

Conceptualization.

Categorizing platforms we're familiar with.

Platform as a business model

- The platform **facilitates the transactions and interactions** between the two (or multiple) external parties.

Platforms

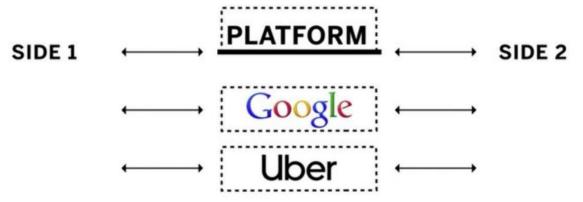**Gig economy**

**Social medias/
networks**

E-commerce

Platform as a business model

- The two (or multiple) parties are also called the two (or multiple) sides of the platform, hence the term "two-sided platform" or "**multi-sided platform**".

  Examples?

Business model! Not just a piece of technology.

Platforms

Gig economy

Social medias/
networks

E-commerce

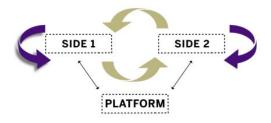# **Why are platforms powerful?**

Objective:

Understand the value creation of platforms.

Can analyze the network effects of familiar platforms.

Why are platforms powerful?

- Platform business model:

- **Value** from transactions, often matching supply and demand, **brokering** a transaction.

- **Monetize data**, sometimes giving away products or services to collect data

- Traditional 'linear' business:

RAW MATERIALS → INBOUND LOGISTICS → MANUFACTURING LOGISTICS → DISTRIBUTION CENTER → TRANSPORT → CUSTOMER

- **Create value** in the form of goods or services and then sell them to someone **downstream** in their supply chain.

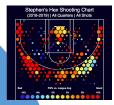- Can also monetize data, but limited. .

A side note on monetizing data:

Data and analytics!

INTERNAL
- Product Improvement & Development
- Supply Chain Management
- HR & Business Management
- Customer Experience with Sales & Marketing

EXTERNAL
- Sharing data with other organizations
- Creating subscription service to data and analytics
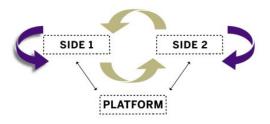- Selling insights to customers or third parties
- Offering premium products to members

Data and insights as services!

Why are platforms powerful?

- Platform business model:

- **Value** from transactions, often matching supply and demand, **brokering** a transaction.

- Monetize data, sometimes giving away products or services to collect data

- Asset light.

- **Leverage powerful network effects**.

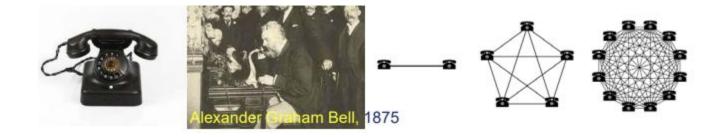- Traditional 'linear' business:

- **Create value** in the form of goods or services and then sell them to someone **downstream** in their supply chain.

- Can also monetize data, but limited. .

Network Effect

- Platforms create and benefit from network effects.

- Network effect / network externality: the **value** of a good or service **increases with the number of participants**.
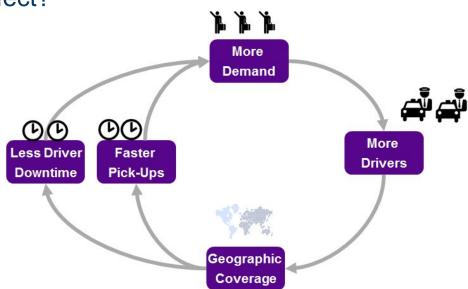
  Examples of a tech before the internet?

Alexander Graham Bell, 1875

Network Effect

- Platforms create and benefit from network effects.

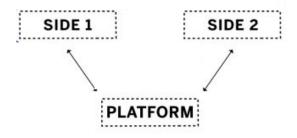- Network effect / network externality: the **value** of a good or service **increases with the number of participants**.
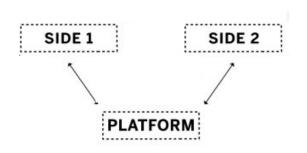
Examples of strong network effect?

Network Effect

- Different types of network effects:
  same-side vs. cross-side; negative vs. positive

Network Effect

- **Positive**

- **Same-side** positive network effects:

  – Example: many users posting reviews on Tripadvisor, Yelp, etc. increases the value of the website.

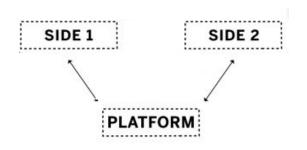- **Cross-side** positive network effects:

  – Example: many sellers offering products on eBay increases the value of the platform for buyers; many buyers bidding for items on eBay increases to value of eBay for sellers.

Network Effect

- **Negative**

- **Same-side** negative network effects:

  – Example: too many sellers on eBay, Etsy, Amazon marketplace, could intensify competition among sellers.

- **Cross-side** negative network effects:

  – Example: too many ads or promoted posts on social media platforms could reduce the value perceived by users.

Network Effect

- What network effects could exist on Nasdaq?
    - Traders / Companies

	Same side	**Cross side**
Positive	More traders using the platform => lower cost; higher liquidity	More traders using the platform => lower cost for listed firms, etc.
Negative	Exception: Too many traders => crashing the platform, hurting other traders	Exception: Too many traders => crashing the platform, hurting companies

Network Effect

- What about Google?
  - Users/ Advertisers

Google

	Same side	Cross side
Positive		
Negative		

Network Effect

- What about Google?
  - Users/ Advertisers

Google

	Same side	Cross side
Positive	Many users => more data collected by Google, better search results for users	Many users => more data collected by Google, more accurate ad targeting for business
Negative	Many businesses using Google ads => more competition among businesses	Too many targeted ads and extensive data collected => some users might leave

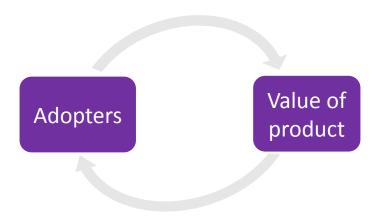# Brought by network effect

- Platform business model:
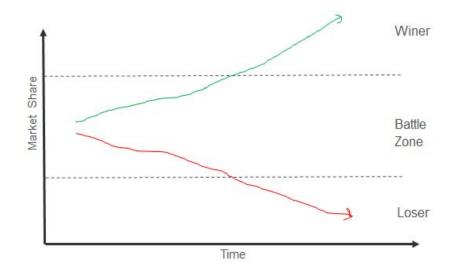
  - The rich get richer, the poor get poorer

  - Winner takes all?

Competitive Strategies in platform economy

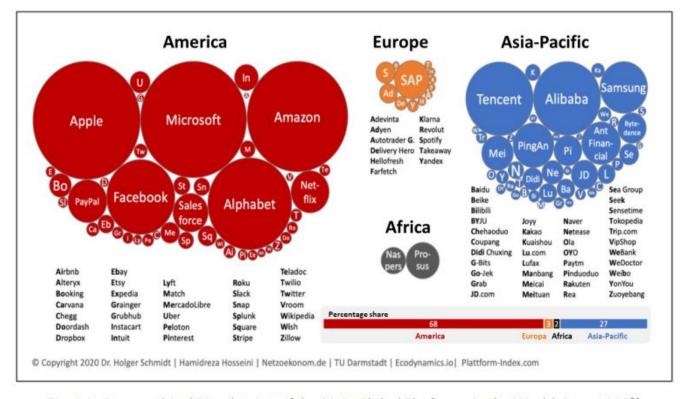- How can companies compete in the digital economy, which tends to be dominated by the platform business model?

Fig. 2.2: Geographical Distribution of the Main Global Platforms in the World, June 2020[84]

Competitive Strategies in platform economy

- **Strategy I: Starting from scratch**,

  Entrants generally must offer revolutionary functionality.

Competitive Strategies in platform economy

- **Strategy I: Starting from scratch**,

  Entrants generally must offer **revolutionary functionality**.

  E.g., Rent the Runway: an e-commerce platform that allows users to rent, subscribe, or buy designer apparel and accessories.

RENT THE RUNWAY

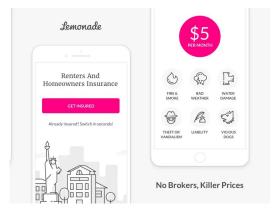# Competitive Strategies in platform economy

- **Strategy I: Starting from scratch**,

  Entrants generally must offer **revolutionary functionality.**

  E.g., <u>Rent the Runway</u>: an e-commerce platform that allows users to rent, subscribe, or buy designer apparel and accessories.

  E.g., <u>Lemonade</u>: uses a variety of insurance products, leveraging artificial intelligence and chatbots to process claims.

Competitive Strategies in platform economy

- **Strategy II: Platform envelopment**

  A provider in one platform market can enter another platform market, **combining its own functionality with the target's** in a multi-platform **bundle** that leverages shared user relationships.

  E.g., Microsoft entered online streaming platform market by bundling its own Windows Media Player into Windows NT Operating System.
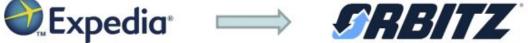
Competitive Strategies in platform economy

- Strategy II: Platform envelopment
- **Type 1: Enveloping of complements** (enveloping platforms that are closely related and adjacent)

Competitive Strategies in platform economy

- Strategy II: Platform envelopment
- **Type 2: Enveloping of substitutes** (enveloping a competing platform)

Competitive Strategies in platform economy

- Strategy II: Platform envelopment
- **Type 3: Enveloping of functionally unrelated** (or seemingly unrelated)

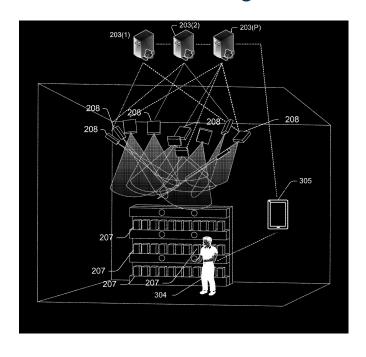# Competitive Strategies in platform economy

- Online to offline?

A side note on Internet of Things (IoT)

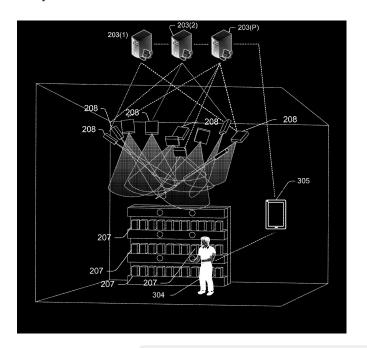- IoT: network of objects - "things" - embedded with sensors, software, and other technologies for realtime data sharing and processing.

A side note on Internet of Things (IoT)

- Why is Amazon (pure online retailers) enter the physical offline space?

Competition. Data! - How we move around in stores.

A side note on Internet of Things (IoT)

- Why is Amazon (pure online retailers) enter the physical offline space?

Hudson opens store with Amazon Go Tech

A side note on Internet of Things (IoT)

- Why is Amazon (pure online retailers) enter the physical offline space?

A Cibo Express OTG "Just Walk Out" Store at Newark Liberty International Airport. Thomas Pallini/Business Insider

- OTG is adopting Amazon Go's "Just Walk Out" technology at its airport Cibo Express Gourmet Market locations.

Competitive Strategies in platform economy

Strategy I: Starting from scratch

Strategy II: Platform envelopment

- Type 1: Enveloping of complements

- Type 2: Enveloping of substitutes

- Type 3: Enveloping of functionally unrelated

Other Issues

Objective:

Platforms impact the society in various ways.

Impacts on Global Innovation

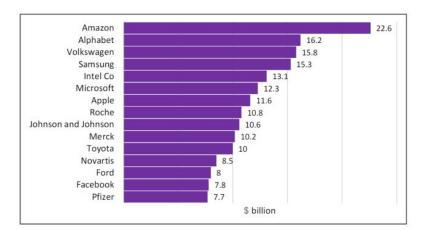- Digital platform companies make large **investments in research** and development.
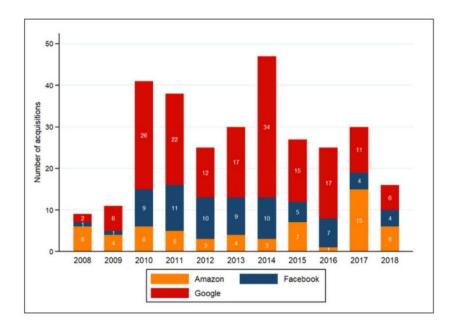
- High levels of mergers and acquisitions, possible '**killer acquisitions**'.

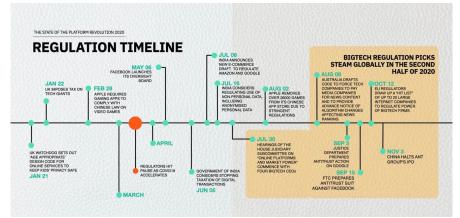Fig. 3.3: Top 15 Companies for Global Spending on Research and Development[107]

Impacts on the Society

- Stimulate innovation in **complementary products and services**.

- Creation of **new jobs**. Gig economy. Sharing economy.

- Fairness issues.

- Privacy and safety issues.

- Welfare issues: Could be fired at any time?

Key Takeaways

- Platforms: The platform **facilitates the transactions and interactions** between the two (or multiple) external parties.

- Platforms are powerful, driven by **network effects**. But at different situations, a platform can have different types (**positive/negative, same-side/cross-side**) of network effects.

- Strong positive network effects could lead to the 'winner takes all' situation, dominant platform will dominate.

- To compete with the giants, a platform can **start from scratch**, or **envelope (complements, substitutes, unrelated)**.

- Platforms impact the business world and the society in various ways.