### Value of Data: There's No Such Thing As A Free Lunch in the Digital Economy

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The 2018 IP Statistics For Decision Makers

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# Motivation

### Value of Data

Example 1: Apple: share consumer data with app developers/30% commission/Revenue: US \$42.8 billion in past decade

Example 2: Farecast – analytics service/acquisition price: US \$110 million by Microsoft in 2006

vs. ITA Software – data owner

/acquisition price <u>US \$700 million</u> by Google in 2008

- → Data driven business models
- $\rightarrow \qquad \text{Online platform companies}$

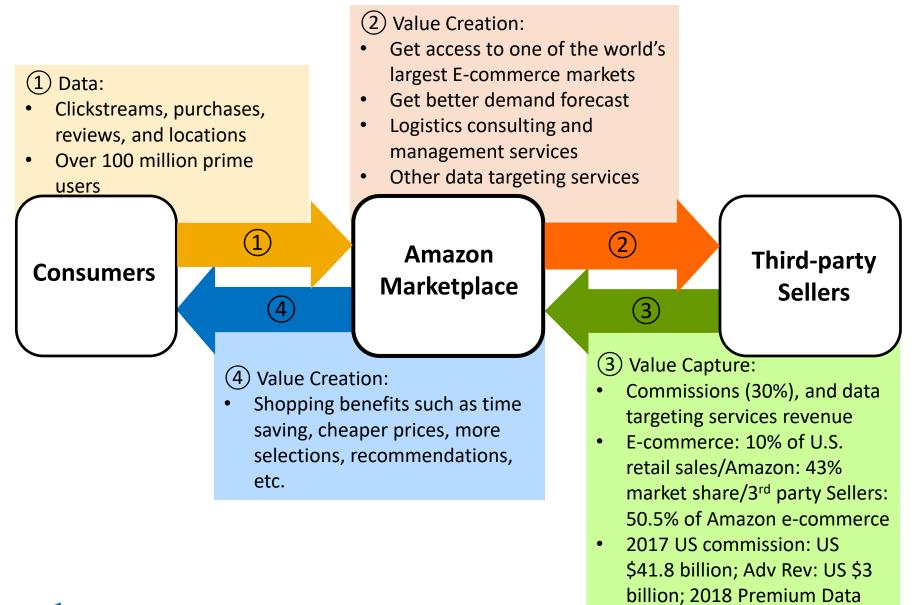
# **Outline of the Talk**

• Eight types of online platforms: 8 case studies

Definition of Online Platforms (European Commission, 2015): "an online platform is an undertaking operating in two- or multi-sided markets, which uses the internet to enable interactions between two or more distinct but interdependent groups of users so as to generate value for at least one of the groups."

- Analyzed dimensions: business model, data flow, value creation for consumers, value creation for third parties, and how the online platform company monetize its data
- The Creation of the Value of Data and Data Value Chain
- Valuation of Data
- Key findings and future trends

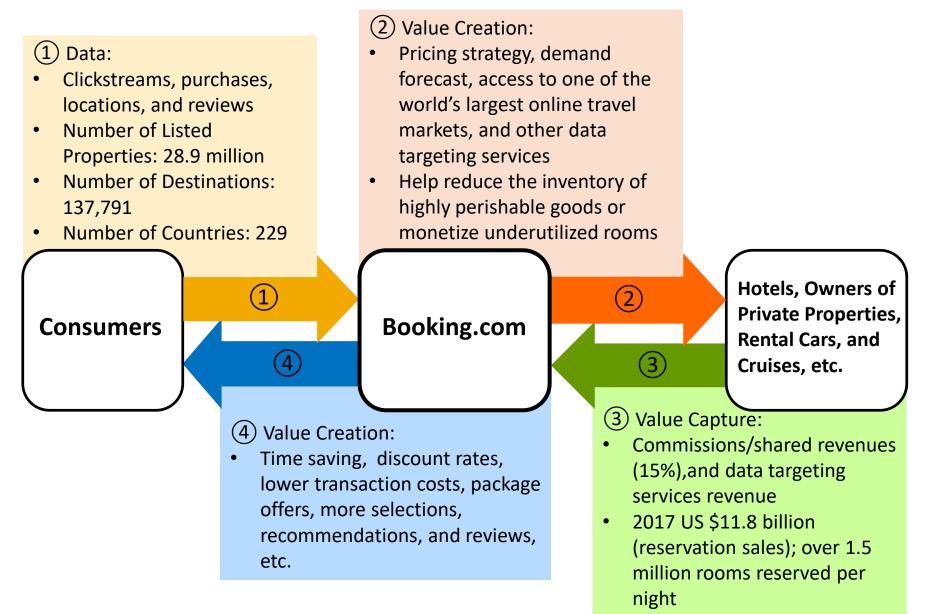
#### **Type I: E-commerce Online Platform**



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Service Rev US \$18 billion (e)

#### **Type II: Online Resource Sharing Platform**



Bureau of Economic Analysis U.S. DEPARTMENT OF COMMERCE Advertising and other revenues < 7% of total sales

#### **Type III: E-financial Service Online Platform**

1 Data:

- Clickstreams, daily consumption and lending behaviors, locations, and bank account information
- Number of Users: 870 million active users globally (mainly in China)
- More than 200 banks, 60 insurance companies, and over 700.000 stores

Consumers Microbusinesses 2 Value Creation:

- Cheaper credit ranking/risk management, and data targeting services
- Help banks reach customers that previously have no credit history
- Targeting demand and credit score services to vendors such as hotels

**Ant Financial** 

4 Value Creation:

(1)

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- Help consumer get cheaper loans
- Easier and flexible payment methods
- Faster solution for credit

(3) Value Capture:

(2)

3

 Commissions and interest revenue, advertising revenue, and other data targeting service revenues

Third Party Sellers;

**Banks; Institutional** 

**Managers; Charities** 

**Investors**; Asset

 2017 estimated net profit from Alipay: US \$1 billion (54.3% market share in China)

#### **Type IV: Online Social Network Service Platform**

1 Data:

- Clickstreams, social networks, work preference, and views
- Number of Users: 500 million users and 43,000 corporate customers over 200 countries

Individuals

LinkedIn

(2) Value Creation:

marketing

Cheaper hiring and search costs,

(4) Value Creation:

(1)

 Job search, online courses, and networking opportunities

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3 Value Capture:

(2)

(3)

Commissions, targeted advertising revenue, and other data targeting service revenue

**Third Party** 

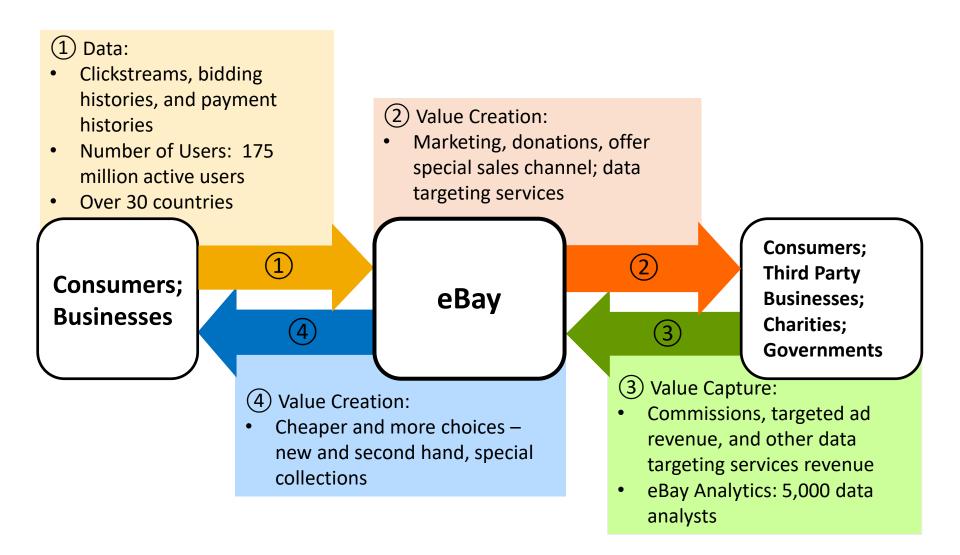
**Corporations;** 

**Small Businesses** 

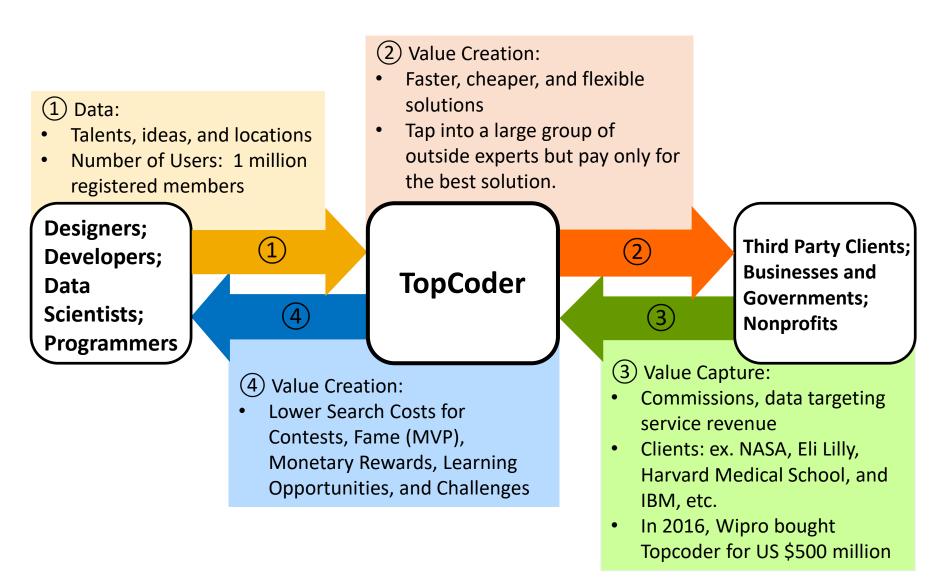
Sellers;

- Most revenue comes from selling access to its member data
- 2015 revenue: US \$2.99 billion
- 2016 Microsoft purchased LinkedIn for US \$26.4 billion

#### **Type V: Online Auction/Matching Platform**

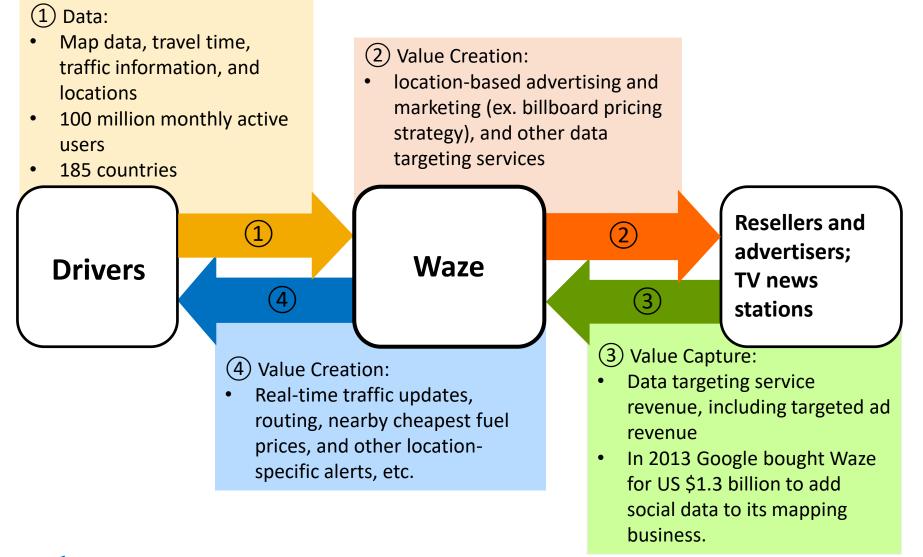


#### **Type VI: Online Competitive Crowdsourcing Platform**



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#### **Type VII: Online Noncompetitive Crowdsourcing Platform**



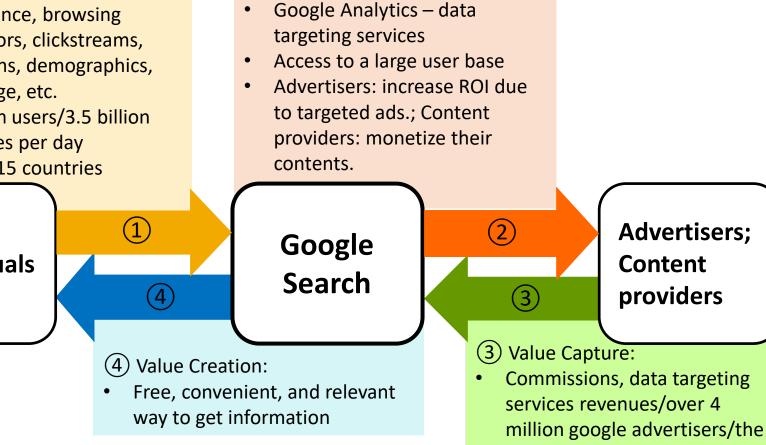
#### **Type VIII: Online Search Platform**

Value Creation:

Data:

- Search terms, revealed preference, browsing behaviors, clickstreams, locations, demographics, language, etc.
- 1 billion users/3.5 billion searches per day
- Over 115 countries

Individuals



world's most popular website

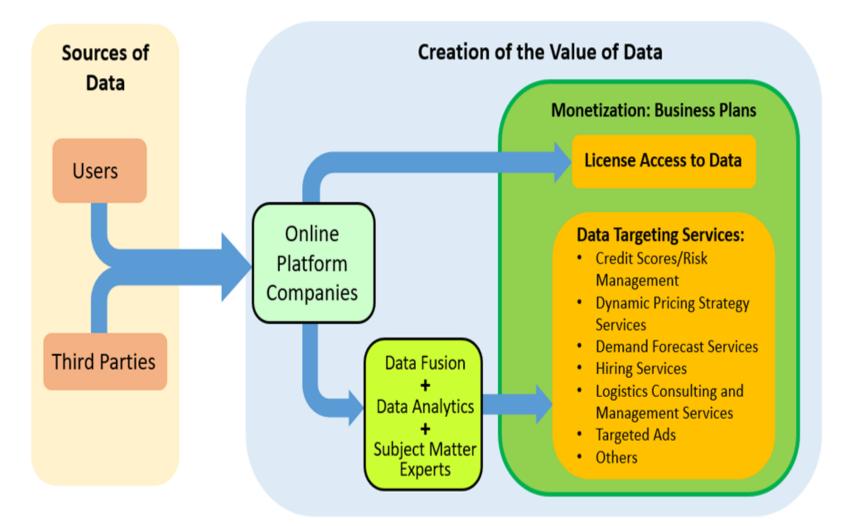
In 2017 advertising revenue

Holdings spent US \$3 billion

US \$95.4 billion; Booking

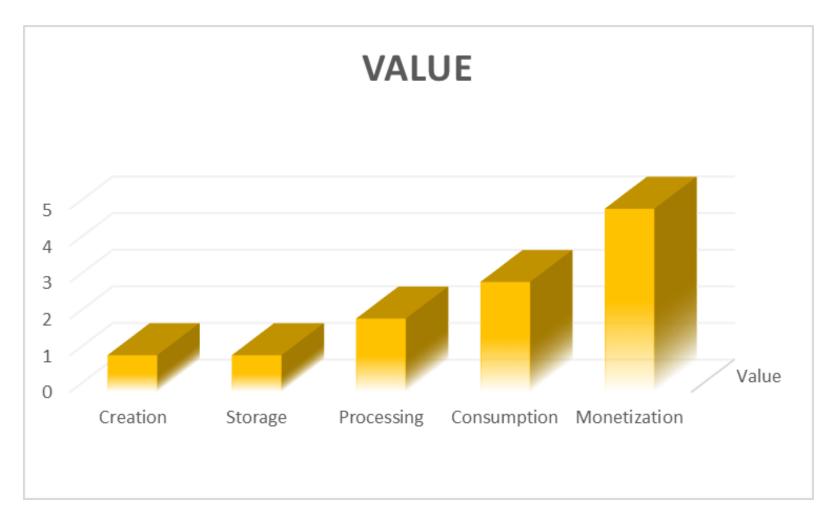


## The Creation of the Value of Data





### **Data Value Chain**



### **Case Studies:**

### **Estimations Based on Forward Looking Method**

Type of Online Platform	Company	Annual Commission or Licensing Access to Data	Value Based Data-driven Business Model	Merger & Acquizition Price
E-commerce	Amazon	US \$41.8 billion (2017)	US \$125 billion; Annual Growth Rate: 35%	
Online Resource Sahring	Booking	US \$11.8 billion (2017)	US \$15.7 billion; Annual Growth Rate: 40%	
E-financial Service	Ant Financial	No public financial statement.		
Social Network service	LinkedIn	US \$2.99 billion (2015)*		US \$26.4 billion by Microsoft in 2016
Auction/Matching	eBay		US \$16 billion; Annual Growth Rate: 30%	
Competitive Crowdsourcing	Topcoder	No public financial statement.		US \$500 million by Wipro in 2016
Non-competitive Crowdsourcing	Waze	No public financial statement.		US \$1.3 billion by Google in 2013
Search	Google	US \$95.4 billion (2017)**	US \$48.2 billion; Annual Growth Rate: 21.8%	



# Conclusion

- Online platform companies are data companies and our initial estimations show that the value of data they created can be tremendous.
- Online platform companies can vary in the degree of the vertical integration in the data value chain.
- The variation can determine how they monetize their data and how much economic benefits they can capture.
- Policy implications:

Corporate: investment, outsourcing, and competition strategies

Nation: trade and growth policy



## **Ongoing Projects**

- Develop New Methodology: increasing marginal returns to the investments
- Survey Design: corporate data
- Market Structure vs. Licensing Strategy
- Theory on Welfare Analysis



# THERES **NO SUCH** THING AS A FREE LUNCH MILTON FRIEDMAN BARR BR **ESSAYS ON PUBLIC POLICY**

Including Milton Friedman's Playboy interview

