IPS
Class
PLATFORM BUSINESS (I)

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CONTENTS:

Fourth Industrial revolution:

A characteristic of the changes induced by the fourth industrial revolution on industry is the emergence of new businesses:

PLATFORMS

= IMPORTANT ELEMENT OF DISRUPTION CAUSED BY THE 4^{TH} INDUSTRIAL REVOLUTION

Examples: Google search engine, Amazon, Airbnb, Uber

We’ve seen in the last class the disruption caused to industries such as newspapers, music and photos

Why this disruption?

Cause is in the economics of free, perfect and instant (Brynjolfsson and MacAffee, 2017)

Free, perfect and instant

Information goods are free and perfect

FREE: once something is digitised, it’s essentially free to make an additional copy of it (marginal cost is close to zero)

PERFECT: once something is digitised, any copy is as good as the original

INSTANT: once you get a network, information goods can be distributed anywhere instantly

This network is the Internet

Free, perfect and instant

DIGITAL PLATFORMS ARE ONLINE ENVIRONMENTS THAT TAKE ADVANTAGE OF THE ECONOMICS OF FREE, PERFECT AND INSTANT

The newspaper, music and photo industries mentioned in last class were all disrupted by digital platforms:

With the Internet and its dedicated platforms people could access news, music and pictures instantly, freely and perfectly

So why buy them???

People still pay for news, music and photos but at much lower price than before

- Newspapers have app where one can subscribe and get news and newspaper in digital form

- Music: Spotify or iTunes

- Photos: most pictures are kept on own smartphone, but there are app that allow to edit pictures

CONTENTS:

What is a Platform?

- Narrow definition: intermediary that “makes a market” to bring together buyers and sellers
  - NYSE/Nasdaq exchanges for public equities
  - eBay or Amazon’s e-commerce platforms
  - Apple’s “app store” for developers and consumers.
  - Google’s “ad platform” for websites and advertisers

- Broader: intermediary that brings together groups of users to facilitate economic or social exchange
  - Payment networks: Visa, Mastercard, Paypal
  - Social platforms: Facebook, Twitter, Match.com.
  - Media (papers, websites): advertisers, consumers, content.

CONTENTS:

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2. **Boom of digital platforms with the birth of the smartphone**
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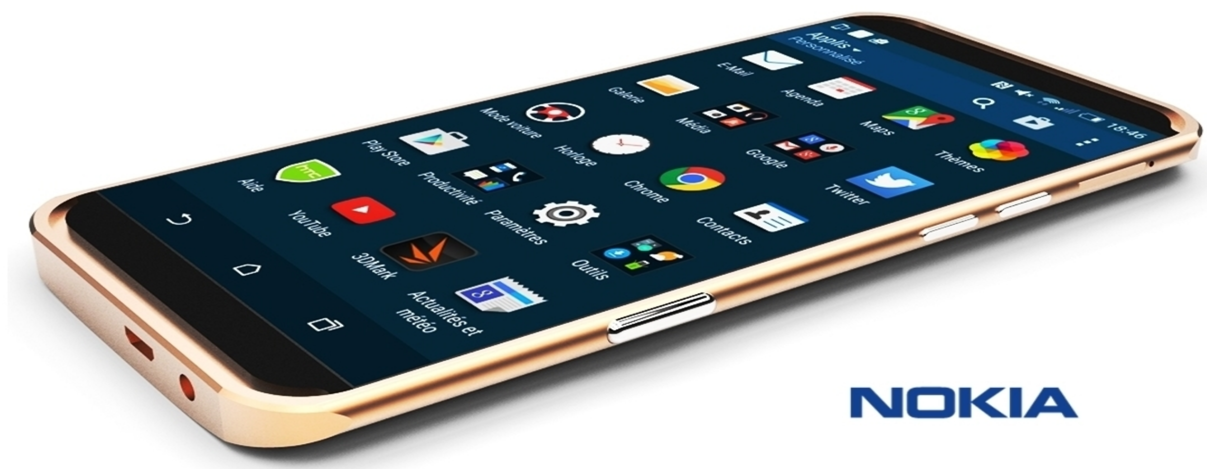
4. *Sharing economy: sharing, really?*

NOKIA
Connecting People

Up to 2011, Nokia was a successful company selling mobile phones with a specific operating system, Symbian.

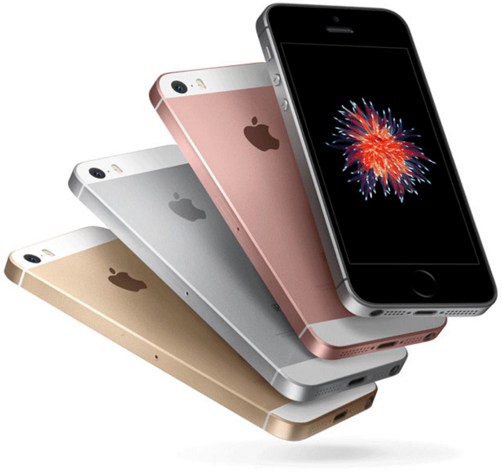
In 2011 the company went into troubles: Symbian was outdated, the company was still focused on hardware rather than software.

In the shift from mobile phones to smartphones Nokia did not realise the big importance of software and completely missed the market: the key strategic element had become **the platform**.



NOKIA

- The leaders who took over the smartphone market have been Apple, which launched the iphone in 2007 with its iOS operating system, and Samsung, which adopted the Android system in 2008.
- Blackberry: like Nokia, failed in the switch to smartphones.



Platform: definition

A platform = a business that connects two or more mutually dependent groups in a way that benefits all sides.

Platforms allow consumers and producers to connect with each other and exchange goods, services or information. They therefore create new markets. Examples:

- Uber ⇒ connects passengers and drivers
- Airbnb ⇒ connects travellers and homeowners

In 2016, the companies with highest market capitalisation in the US were: Apple and Google (Alphabet Inc.)

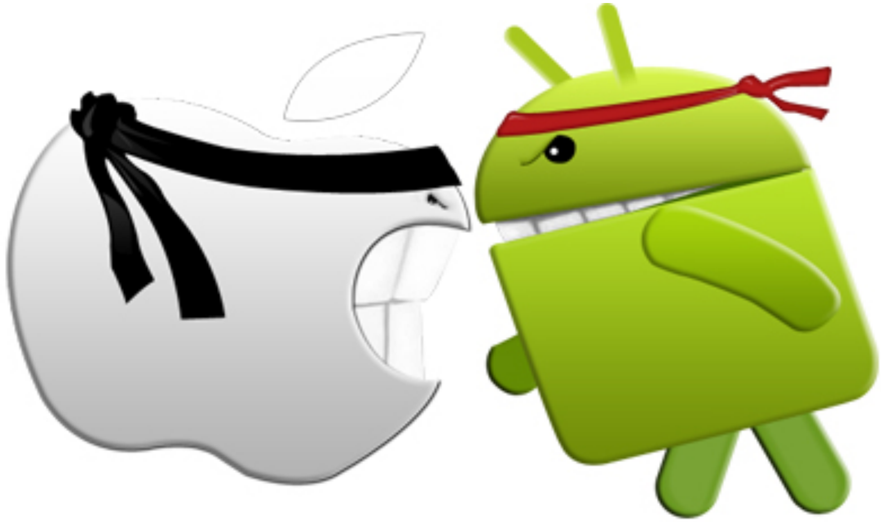
Apple has become a platform business: through iOS, itunes, App store, it connects buyers and sellers of any kind of digital good.

Android: Google developed the Android system because it saw that as mobile phones became internet-connected (smartphones) they would become competitors to its search engine. So it developed Android to propose an operating system for smartphone where the search engine would be his (Google).

5/11/2007: Google launches Android and announces the Open Handset Alliance (OHA), an alliance with over 30 companies that committed to use Android (Samsung, Motorola, HTC, …).

At the beginning agreement only with Motorola and HTC. However, HTC and Motorola do not turn up to be leaders in the smartphone market. So in 2010, Google signs agreement with Samsung, which introduces its Galaxy S smartphone with Android as operating system.

As a result, in 2012 the Samsung's Galaxy SIII Android becomes the best selling smartphone.



However, in 2015 Samsung’s shares are eroded by Huawei and Xiaomi in low market segments and by Apple in high market segments…

⇒ Apple reacts strongly to threat of dominance of Samsung over the high market segment. Apple therefore launches iphone 6 in 2014 with a bigger screen because Samsung was successful with its bigger screens.

Now OHA has 84 technology and mobile companies: telecom operators (Telecom Italia, Buygues, China Telecomunications,…); handset manufacturers (Acer, Dell, Huawei, LG, Samsung, …); semiconductors companies and software (App) developers.

open handset alliance

Mobile Operators

Sprint
中国电信 CHINA TELECOM
NTT DoCoMo
Telefónica
T-Mobile
中国移动通信 CHINA MOBILE
Bouygues Telecom
China unicom 中国联通
vodafone
TELECOM ITALIA
Designing The Future KDDI
SoftBank

Software Companies

Google
ebay
Living Image
SkyPop
myriad
SONiVOX sound that rocks.
OMRON
NUANCE
Ascender Corporation
pv
SVOX

Commercialization Companies

embinux
sasken
WIND RIVER
BORQS
noser
WIPRO Applying Thought
Aplix Corporation
tat
TELECA

Semiconductor Companies

ARM
freescale semiconductor
intel
QUALCOMM
AKM
CYPRESS PERFORM
csr
BROADCOM.
Audience
ATHEROS
ST ERICSSON
MIPS TECHNOLOGIES
Synaptics
RENESAS
MARVELL
VIA Telecom
TEXAS INSTRUMENTS
NVIDIA.

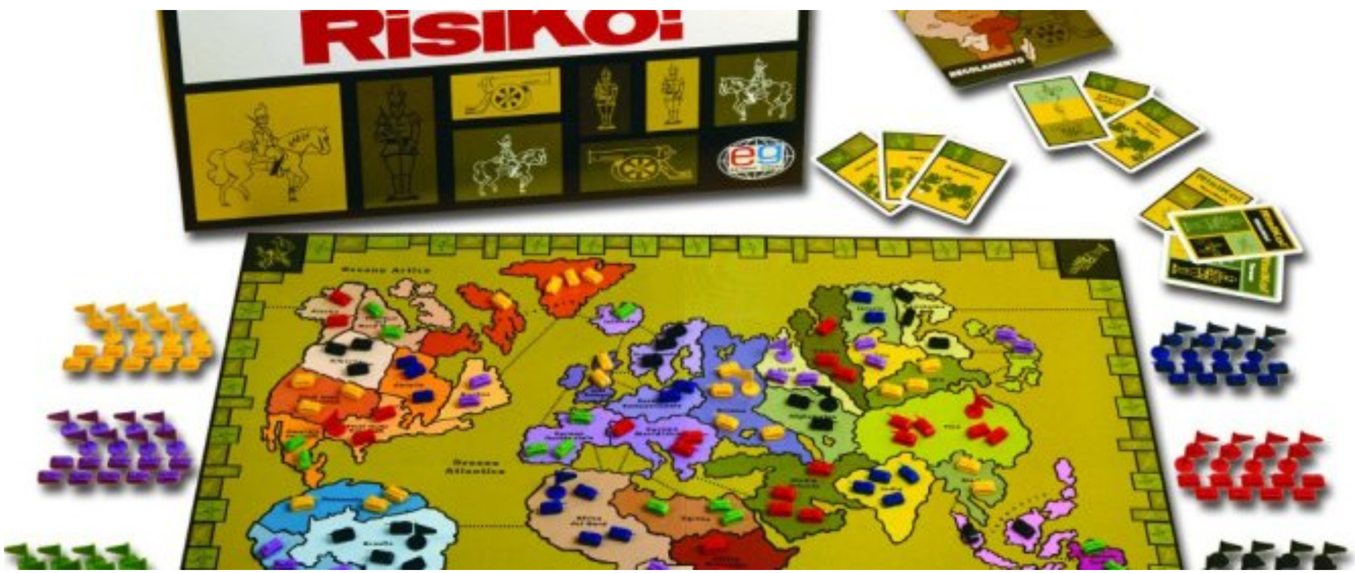
Handset Manufacturers

GARMIN
htc smart mobility
SAMSUNG
LG Electronics
acer
ASUS Rock Solid · Heart Touching
HUAWEI
KYOCERA
ALCATEL mobile phones
MOTOROLA
TOSHIBA
Sony Ericsson
FIH
ZTE中兴
lenovo 联想移动

Open Handset Alliance

http://www.openhandsetalliance.com

⇔ RISIKO: Google assembled an armada to conquer the market!!! Android developed substantially because it was used on many new smartphones produced (while iOS was used only on Apple phone) + it was open to any developers willing to offer products and services on it (while Symbian and Blackberry were closed to that)



App store has been a key success of Apple:

- 10 July 2008: launch of App Store
- 31 December 2008: App store had 500 million downloads
- 31 December 2015: App store had 100 billion downloads

Google launched its Android market (now called Google Play store) in march 2009: it had 50 billion downloads by the end of 2015

Smartphone war: 2016 Apple launches iphone 7 in September 2016

Shortly after that Samsung announces new Galaxy 7 Notes

Problem: some Galaxy 7 Notes got on fire or exploded (100 cases in the US, out of millions of phones sold), so that Samsung had to recall the phones first (consumers would bring it back to the shop and it would replaced), and then completely stopped (due to problems arising even with the replaced phone).

This is a hard hit on Samsung's position on the high segment of the smartphone market!

However, on 24 January 2017 Samsung announces global operating profits up 50% in last trimester of 2016!!!

Home Finanza con Bloomberg Lavoro Calcolatori Finanza Personale O

Samsung riparte dai chip, utili record nel trimestre

Nonostante lo scandalo corruzione e il ritiro dei Note 7 la società coreana ha visto i profitti operativi crescere del 50% nel periodo tra ottobre e dicembre, il migliore degli ultimi tre anni. A spingere i conti le vendite di componenti, chip e schermi, diventate ormai il suo primo business

di FILIPPO SANTELLI

Platforms are the new business model

Platforms are key to any business nowadays: they

⇨ market business (advertising)

⇨ read content (Facebook)

⇨ have your app downloaded (better on App store)

⇨ sell goods online (Amazon, eBay, ecc.)

In China, app stores are Taobao (Alibaba) and Baidu.

The previous business model was **linear**: you manufacture a product and then sell it on the market. Porter stylised it as the supply chain, where value is added at each stage and there is a linear flow of value and information.

The platform business instead is based on **networks**: value is exchanged in multidirectional networks comprising producers and consumers.

“Today’s most valuable businesses are those that can build and orchestrate large networks, not those that can aggregate and centralise large amounts of resources under one roof”

For instance, eBay does not own any product, it has just created a market place, a digital infrastructure for connecting producers and consumers.

Platforms create communities and markets that allow users to interact and transact. There are different types, according to what is transacted: services, products, monetary payments (payment platforms such as Paypal), investment, social networking.

Internet has given more power to the consumer, as he/she can:

- **Confront prices and products**
- **Look at products online**
- **Recommend products to thousands of consumers elsewhere**

Consumers are no longer limited to the information provided at the local stores.

Platforms are thus mainly marketplaces that allow better interactions between consumers (sharing experience with the product**) and more direct interaction between the producers and the consumers.**

⇒ consumers can know each other, hence more market power.

⇒ the information asymmetry between the producers and consumers (which was to the benefit of the producer) reduces

Paypal payment volumes:

2008: $ 25 million

2009: $ 141 million

2010: $ 750 million

2011: $ 4000 million

2012: $ 14 billion

2013: $ 27 billion

2014: $ 46 billion

2015: $ 66 billion

Worldwide mobile app revenues:

- **2015: $ 41 billion**
- **2020: $ 101 billion**

The connected revolution

Diffusion of computers: computers were rare in the 20th century, now everybody has at least one (desktop or portable), and increasingly computers are everywhere (in factories and offices, homes, toys, food).

Declining costs of communication: the cost of transmitting and storing information has tumbled.

20th century: information was on TV and the radio (one way)

21st century: information in real time

The connected revolution

Sensors are everywhere

Everybody has smartphones, which carry each dozens of sensors, that collect data by connected technologies so that huge amounts of data are available on most individuals

Computing power is increasing: e.g. quantum computing allows huge amounts of data (big data) to be analysed

The connected revolution

At individual level, individuals can now be producers of value on a whole new scale

The internet has become part of our life, of how we experience and communicate with each other

The internet has had a big impact on production

Example: Wikipedia => encyclopaedia realised online by individuals on the platform, in the network

A loosely organised community of individuals has substituted the business of encyclopaedia editing houses!

The Encyclopaedia Britannica has ended its print edition in 2012

Decentralised networks of autonomous individuals who existed outside the bounds of any single organisation have taken over many productive activities that used to occur within a single, hierarchically organised company

This is due to the fact that economies of scale in many businesses have collapsed completely (newspaper industry)

Value chains have not just broken up into separate components (as in the computer era), entire parts of value chains have disappeared

⇒ Is this the end of the Porter theory: a company's strategic advantage is not its value chain but its network ecosystem???

In many industries indeed value is essentially created at the distribution phase, where key is capacity to manage and expand network

Platform business base their activities on the management of networks and create value there (Amazon, Uber, Airbnb,…)

Big data and supercomputers allow these markets to function because of their extraordinary capacity to collect and process information

Consumers accept it: algorithms decide for them

e.g. Google tells you what you want, Uber makes you happy, although it selects your car for you and picks the driver should take

⇒ all these activities are orchestrated by a central computer running algorithms

Platform companies versus linear businesses

(Source: Moazed and Johnson, 2016, p. 83)

	% of platform companies in the S&P 500	**% of net income generated by platform companies in the S&P 500**
2015	2	7
2020	4	13
2025	6	20
2030	8	28
2040	14	50

Platform companies have low fixed costs: no factory, no machine, few people.

Example: Walmart and Alibaba have about the same revenue per year, but Walmart has 2 million employees, while Alibaba has 35,000 employees.

Platform do not own production, they focus on facilitating connections.

However, platform businesses need to reach a **critical mass** before creating value. For instance, the Uber service would not be interesting if it had only a few drivers in its network (many people would not find the drive they need).

Hence platform companies implement aggressive strategies at the beginning in order to reach their critical mass.

$\Rightarrow$ RISIKO is the game at market creation phase

Alibaba

The chief strategy officer of Alibaba, Ming Zeng, compared interplatform competition with a fight between warrying nations (in 2002).

Alibaba won the Chinese market over eBay by maintaining low transaction prices for three years on its marketplace (called Taobao), while eBay was charging a % fee on each completed transaction.

Alibaba

Alibaba also allowed the possibility for buyers and sellers to chat together before completing the transaction on its site, which was very appreciated in China

Result:

⇨ in 2006 eBay pulled out of China

Alibaba's rise

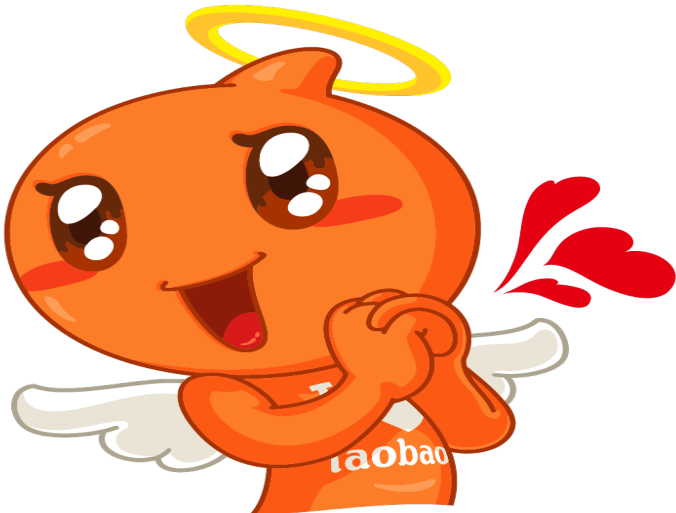
After winning against eBay, Alibaba had to win money. It therefore started to put advertising on its platform.

Problem: the leading marketplace in China was Baidu (the Google of China). Alibaba depended on Baidu in the sense that people would search for products on the Baidu search engine and then be connected to Alibaba for transaction.

Alibaba’s rise (cont’ed)

Alibaba decided it had to become a leading search engine. For this purpose, it bought Yahoo China.

But Baidu responded by a strategic move, namely creating its own marketplace, Youa, to directly compete with Taobao.



Alibaba responded by blocking Baidu on its marketplace, officially as a means to prevent fraud from merchants who were manipulating web search results on external sites.

This strategic move impeded Baidu from becoming the intermediary between Alibaba and the consumers.

⇒ **Success**: Alibaba became the main platform for product search in China: it has controlled as much as **90% of the Chinese e-commerce market** through its Taobao and Tmall marketplaces.

⇒ Platform battles are often winner-take-all

⇒ Hence huge growth of new firms: e.g. Facebook from 7 employees in 2004 to more than 17,000 in 2016 !!!

Other examples of winner-take-all results:

- Smartphone operating systems: Android + iOS = about 90% of the US market (Microsoft has less than 3% despite huge investments)

- Web search: Google = about 65% of the US market, 90% of the European market

When users can use different platforms or networks at the same time, the strength of network effects on any one platform will be weaker.

An industry where users can switch easily between networks often can support more platforms, even as the industry matures.

However, the best platforms use specific strategies to avoid users switching platforms: software tools that make transactions easier on the platform, **reputation scores** on eBay, Airbnb or Taobao; **personalisation aspects such as recommendation features**.

Platforms are actually in high competition:

Users can move, switch platform easily, much easier than switching product in the old monopolies, which had built excess capacity.

For instance, Amazon has created the ebook market in the US, but it has been rapidly and strongly contested by Google and Apple.

Platforms are in a way **contestable markets**: entry is easy and as soon as a firm reduces user-loyalty-building strategies an entrant can come in and try to attract customers by a better featured marketplace (or other platform).

Barriers to entry in the platform market are low and make them contestable markets.

Microsoft: is still dominant in its old business (computer operating system) but did not manage to become dominant in the smartphone operating system industry.

Google: it first created Android to protect its search business (defensive strategy to maintain in the face of development of smartphone market)

Facebook: bought Instagram and Whatsapp to remain dominant (it bought its competitors!)

Winner-takes-all + contestability $\Rightarrow$ No antitrust problem in platform competition

However, problem is privacy and security when these firms have access to huge amounts of personal data, data that the consumer is not even aware of revealing through the use of his/her phone or computer.

Privacy … antitrust?

Consumers (users) often use online platforms free

⇒ What is the value for the platform business?

⇒ The **private data** that the user reveals and the platform collects

⇒ what is the relevant market???

⇒ THE PLATFORM MAKES MONEY OUT OF THE SALE OF USERS' DATA TO ADVERTISING COMPANIES e.g. GOOGLE

We don’t pay anything to search on Google engine

But Google monetises the information we release on our tastes, preferences, income level, age…

By selling this information to ad companies

GOOGLE’s business = transaction with ad companies

Advertising companies pay to get advertising space on Google’s search engine

This advertising is TARGETED to each individual, since the ad is posted only on the screens of individuals with specific characteristics, that are likely to be lured by the advertised product or service (Google’s secret algorithms do this targeting)

We don’t pay anything to search on Google engine

But Google monetises the information we release on our tastes, preferences, income level, …

By **selling** this information to ad companies

DOES THIS MAXIMISES CONSUMER SURPLUS???

OR IS THERE AN INFORMATION ASYMMETRY THAT INDUCE GOOGLE’S USERS NOT TO REALISE THE BASIS OF ITS BUSINESS???

SHOULD NOT USERS GET A PART OF GOOGLE’S BENEFITS SINCE THEY *DE FACTO* CREATE VALUE FOR GOOGLE?

The answer here is not to limit the market power of these platform businesses – a move that would likely diminish overall consumer welfare – but rather to address the behaviour of these businesses in specific areas of concern:

- government regulation of big data and their use
- consumer education to raise awareness.

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2. *Boom of digital platforms with the birth of the smartphone*
3. **Platform as a new business model**
4. *Sharing economy: sharing, really?*

Creating a platform business:

The biggest resources of a platform business is its network, not its output, or inputs.

Unlike Ford, Uber does not own any of the value that is being produced and consumed on its platform. Instead, Uber owns the way its users connect – not the means of production but the means of connection.

UBER

According to Moazed and Johnson, there are four key activities to launch a successful platform:

1. **Audience building**: build a liquid marketplace by attracting a critical mass of consumers and producers

2. **Matchmaking**: connect the rights consumers with the right producers in order to facilitate transactions and interactions

3. **Provide tools and services**: build tools and services that support the core transaction by reducing transaction costs

4. **Create rules and standards**: set guidelines that govern which behaviours are allowed and encouraged and which are forbidden and discouraged.

Uber

Uber was created
in San Francisco in 2009.

At creation, it needed to establish a liquid marketplace, namely a market where there is enough overlap between demand and supply that most transactions can clear quickly and demand and supply result quite balanced.

Excess demand would imply delay to get the service (so people would prefer normal taxi instead of Uber)

Excess supply would drive prices down and producers would not earn enough.

Uber implemented a “surge pricing” to get supply and demand balanced. When demand grew a lot, prices were increased a lot so that many drivers would show up and demand would go down. For Uber it is better to reduce demand temporarily but ensure demand is satisfied rather than maintaining prices and having queues.

Airbnb

How did it grow?

Airbnb was created in 2010 (startup)

when the leader in the US market was Craiglist.

Airbnb implemented a specific strategy to enter the market: it created an unofficial integration with Craiglist, in the sense that users putting ad for their home on airbnb could also immediately put it on Craiglist thanks to a simple click. Viewers looking at the ad on Craiglist would automatically be sent back to Airbnb.

Airbnb

Airbnb also sent a lot of spams to Craiglist posters, so that people posting ad on Craiglist would immediately receive message suggesting to also post on Airbnb.

⇒ this was a **predatory strategy** (not illegal) to enter the market.

Paypal

In order to expand on the market, Paypal built a bot, a computer script that would automatically scan eBay auctions. Before bidding, the bot would identify itself to sellers by sending an email that indicated it was collecting goods that would be donated, but only if the transaction would be paid via Paypal. If the seller agreed, the bot would automatically place a bid. Even if the bot did not win the auction, at least the seller would have been introduced to Paypal. This “charity robot” has been called Paypal’s “secret weapon”.

Risks for platforms

Platforms can have communities of thousands and millions of users in their network, that are difficult to control. This has created problems for some platform business (see examples below).

It is therefore extremely important for platform businesses to set adequate rules and standards to avoid **misuse**.

Examples:

- **Twitter** has a 140-character limit on the length of tweets
- **Alibaba h**as had problems with merchants creating counterfeit transactions (so as to raise their reputation ratings)
- **Google and Facebook** keep their Page Rank and Newsfeed algorithms secret to avoid manipulation by users

⇒ the best platforms use a balance of algorithmic, editorial and user-powered elements to enforce the rules and monitor users’ behaviour.

Facebook

Facebook has been very successful but it started very slowly. At the beginning Facebook was open only to college students, but it extended progressively thereafter.

It started in 2004.

2005: Facebook had 85% of college students in the US

2015: 1.5 billion users!!!

Color

= app launched with the idea that on Color people could find any type of photo they could wish. It relied on people posting their photos on it and making them available to others.

Problem: Color did not manage to reach a **critical mass**: nobody would use the app unless there was a good choice of photos, but this never happened.

⇒ platform business must use specific strategies at the beginning to grow and reach a critical mass (discounts on transactions, gifts if people invite friends, etc.)

Three strategies to attract users at the beginning:

1. **Monetary subsidy**: e.g. referral fees used by most platforms;

Uber offer next ride free for up to $ 30 if you invite a friend (for you and your friend);

Discounted price: console industry Xbox One or Playstation 4 were sold below cost at the beginning to get as many users as possible and get a lot of developers who have to pay a licence fee subsequently.

2. **Product feature**: for instance, the photo-taking app of Instagram which attracts users

3. **User sequencing**: deliberately prioritizing the acquisition of certain user groups that others will want to interact with, for instance celebrities, college students (which quickly become workers and employees that want to be able to interact with their old college friends).

4. SHARING ECONOMY

Is it really sharing?

DEFINITION

Sharing economy = peer economy, collaborative economy, gig economy, on-demand economy, … (many names)

OXFORD DICTIONARY:

“An economic system in which assets or services are shared between private individuals, either for free or for a fee, typically by means of the Internet”.

EXAMPLES

Airbnb

Uber

Blablacar

Consequences:

Are we moving towards an economy where everything is shared?

i.e. cities will transform into communities where:

- Cars are used by different people using car sharing apps;
- We all make some of our flat’s rooms available to travellers and tourists;
- Free time is shared doing DIY in our neighbours’ home, taking others’ clothes to the laundry, and deliver food to clients of the nearby restaurant????

The sharing economy is not completely sharing things… there are actors making a lot of maney out of these activities:

UBER: riders = professionals who earn money through their work with Uber, but without any insurance or social benefits

Foodora, JustEat, **Deliveroo**…

Riders often work full time; if they are ill, they do not earn anything

+ ranking as tough evaluation system: if ranking is low, risk is to loose the job

The Guardian

Profiteers make a killing on Airbnb – and erode communities

John Harris

The short-let platform is pushing up rents and compromising people's privacy and security. Regulation is long overdue

Airbnb:

- Induces rising rents in cities
- Often people renting with Airbnb do not respect the neighbourhood (parties, noise, etc.)
- Tax evasion
- …

Benefits????

- Users gain (low prices, easy to access to the service, etc.)
- Great gains also for App owners and for the venture capitalists who support:

Forbes estimates the value of Airbnb to be $ 38 billion (May 2018, www.forbes.com)

Uber, despite debate on riders' treatment, has growing revenue and value estimated at $ 60 billion (Il Sole 24 Ore)

Is it really a sharing economy?

- Sharing platforms are in fact monopolies: Uber dominates in the market for ‘drives’; Airbnb dominates in the renting market; …

➔ rather a centralised economy!

- Besides, the sharing economy contributes to the diffusion of a very precarious job type: Uber’s drivers or riders for Deliveroo or Foodora in fact have very low wages

Deliveroo:

9,6 € per hour (gross) for food delivery (riders)

Foodora:

4€ for each delivery ⬄ about 8€ gross per hour

Just Eat:

Delivery is the responsability of the affiliated restaurants

Riders earn 8-11 € per hour + bonus in case of bad weather or bank holidays

➔ ‘gig economy’

"Le mie serate a consegnare pizze con Foodora per guadagnare 200 euro al mese"

Una notte a Torino con un rider dell'app dopo lo sciopero di sabato sera

20 marzo 2019

Reaction to these tendencies:

Platform cooperativism

= system in which the profits made by the platform are entirely re-distributed to partners / members

(think about how Uber would function if drivers were the owners of the platform; this is what a platform like La'Zooz (http://lazooz.org) tried to do

La`Zooz, created in 2013, is non-profit and the platform belongs to the network of users.

It has been defined as the cooperative form of Uber, where the app belongs to drivers and users.

Problem: had big difficulty in finding financing…it has been inactive

since 2016

➔ Difficult for small platforms to compete against large ones

Interesting issue:

Can cooperative platforms become a viable form of platforms?

How?

(good topic also for LM thesis)

Next class:

Growth of platforms in the early stages

Economics of platforms

Are there any antitrust issues?

References: (besides Brynjolfsson and MacAffee, 2017)

- Moazed A., Johnson N.L. (2016), *Modern Monopolies. What it takes to dominate the 21st century economy*, St Martin's Press, New York.

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