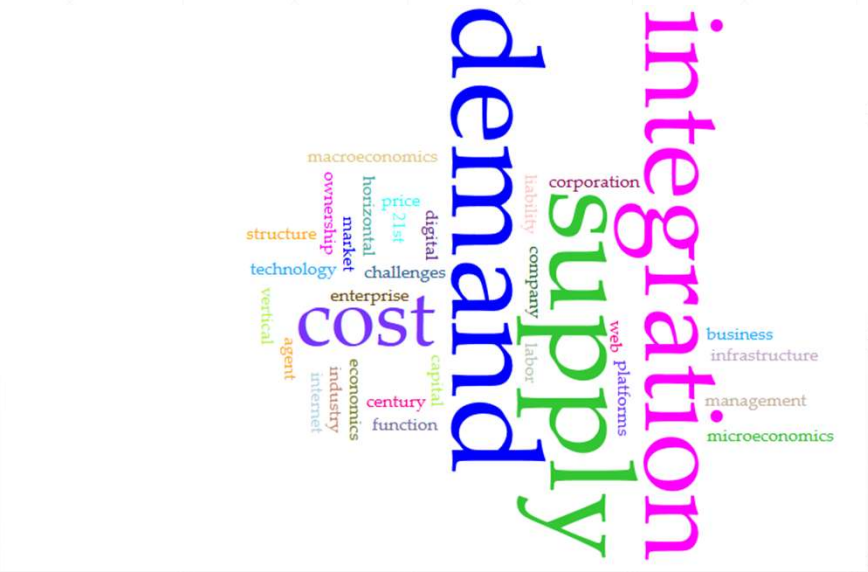
Enterprise Essentials

Class # 2 - The business environment: industries and markets

EPITA | Fall 2025

Valeriu Petrulian

Enterprise Essentials Class 2



- Admin
- Recap
- Thoughts for the day

Course Breakdown
EPITA | Fall 2025

Class	Date & Time | Topics
Class 1	Setting the scene: The economy and the firm as an economic agent
Class 2	The Business Environment: Industries and Markets
Class 3	Business Dynamics
Class 4	Enterprise & Business Models
Class 5	Managing a business organization 1
Class 6	Managing a business organization 2
Class 7	Final Presentations & Course Wrap-Up

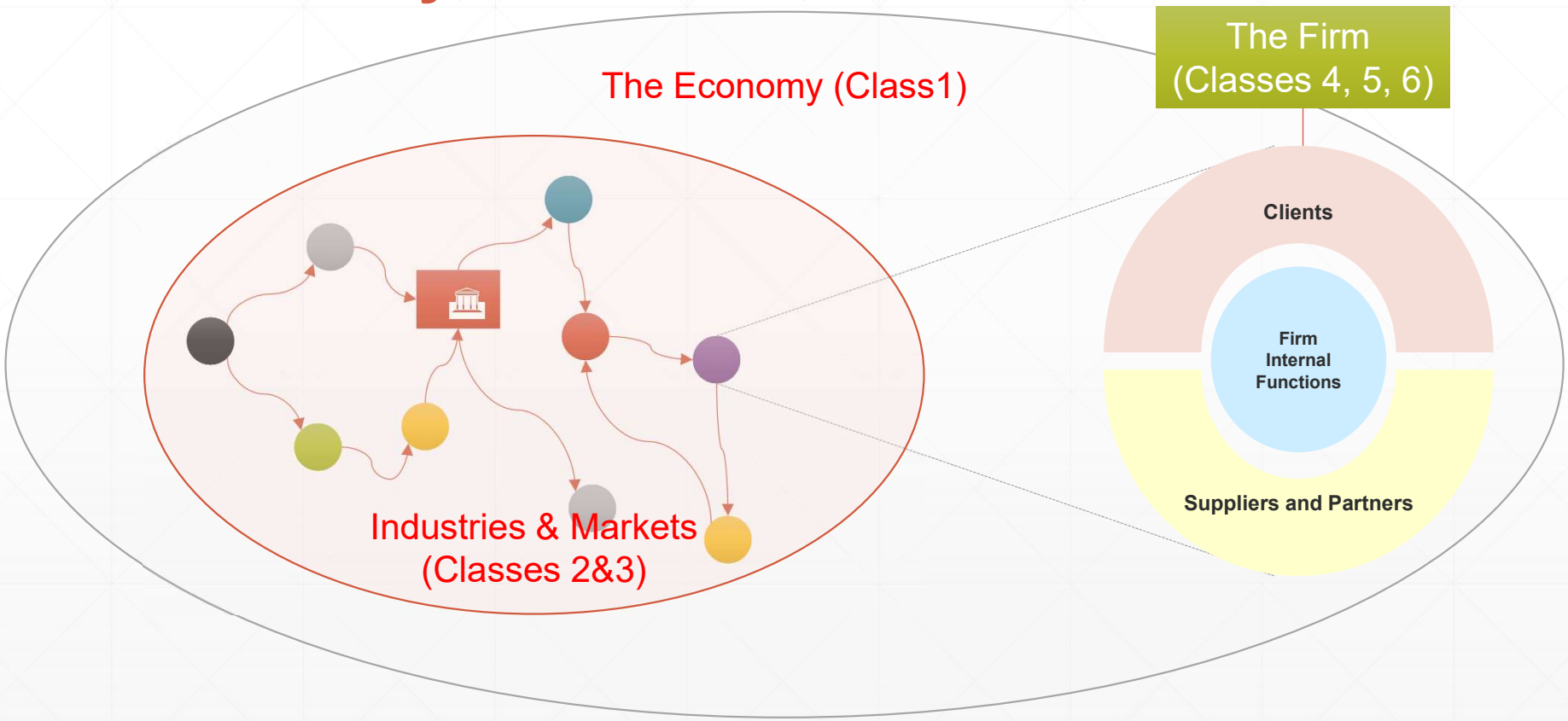
Today's Reference:

Michael E. Porter. *Understanding Industry Structure.* Harvard Business School, case 9-707-493, August 13th, 2007

The Business Environment: Industries and Markets

Concepts: Industrial Organization, Market Dynamics, Integration, Barriers to Entry, Michael Porter's 5F Framework, SWOT, Information industries

Our playground
The economy; industries, markets, firms



Value (economics)

From Wikipedia, the free encyclopedia

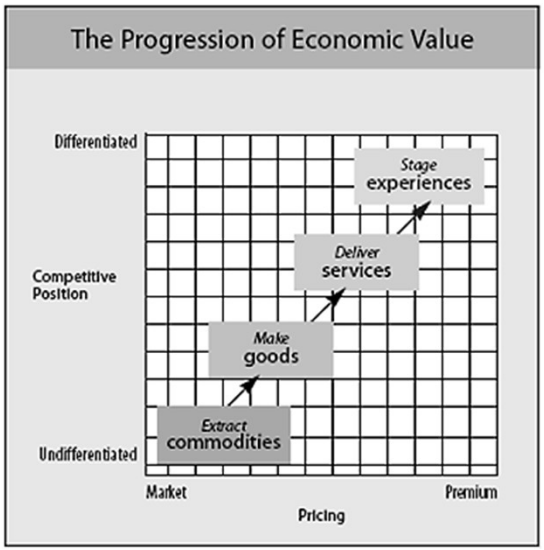
Not to be confused with Market value.

Economic value is a measure of the benefit provided by a good or service to an economic agent. It is generally measured relative to units of currency, and the interpretation is therefore "what is the maximum amount of money a specific actor is willing and able to pay for the good or service"?

Note that economic value is *not* the same as market price, nor is economic value the same thing as market value. If a consumer is willing to buy a good, it implies that the customer places a higher value on the good than the market price. The difference between the value to the consumer and the market price is called "consumer surplus". It is easy to see situations where the actual value is considerably larger than the market price: purchase of drinking water is one example.

The economic value of a good or service has puzzled economists since the beginning of the discipline. First, economists tried to estimate the value of a good to an individual alone, and extend that definition to goods which can be exchanged. From this analysis came the concepts *value in use* and *value in exchange*.

https://en.wikipedia.org/wiki/Value_(economics)



Welcome to the Experience Economy. By B. Joseph Pine II, James H. Gilmore. Published in the July–August 1998 HBR Issue
https://hbr.org/1998/07/welcome-to-the-experience-economy)

Value

"Value" measures the benefit that an economic agent (individual or firm) derives from a good or from a services. While a subjective concept in general, in economics, value is measured in currency units (monetary value).

In economic terms, one may also refer to the concept of "utility" which is the satisfaction an economic agent derives from the consumption of a good or service.

How is value created?
What is economic value?

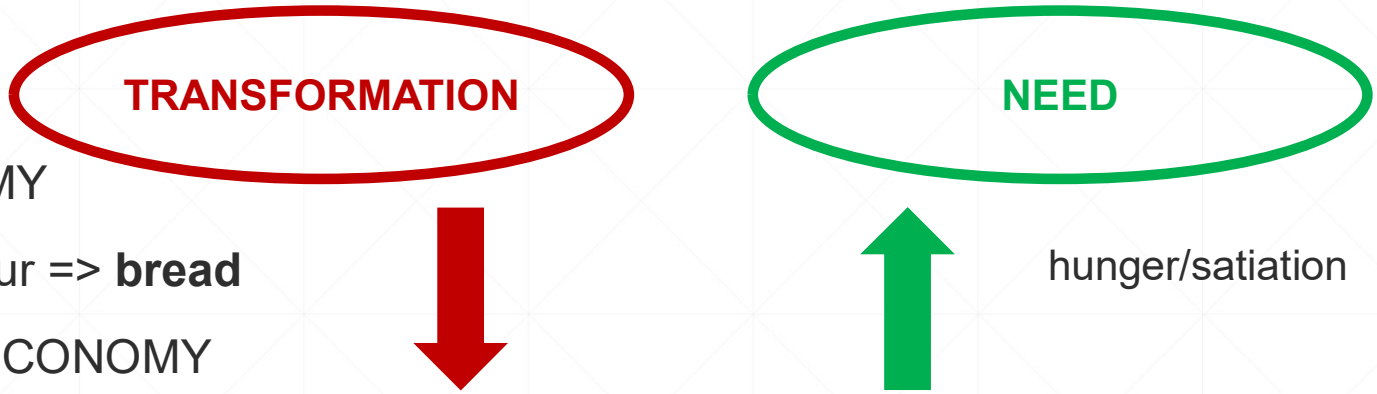
In economics, value is created:

1. When a need of one group of people (the largest possible) is satisfied,
2. Through the transformation (work) of resources (inputs) into products or services (production),
3. Through the exchange or distribution of products and services between producers (sellers) and users (buyers)

“Economics is the study of how people and society choose, with or without the use of money, to employ scarce productive resources which could have alternative uses, to produce various commodities over time and distribute them for consumption now and in the future among various persons and groups of society.”

Paul Samuelson (1915 – 2009), Nobel Prize in Economics 1970

Economic Value Examples



AGRARIAN ECONOMY

- Wheat seeds => flour => **bread**

MANUFACTURING ECONOMY

- Cotton (or silk) => fabric weaves => **clothes**

MASS PRODUCTION ECONOMY

- Ore => metal => mechanical parts => **automobile**

DIGITAL ECONOMY (OPEN QUESTION)

- Data => Information => Communication/Knowledge

hunger/satiation

coldness/clothing

horse riding/car driving

human intelligence/artificial intelligence ?

Economic Value Discussion

INPUTS

- RAW MATERIALS
  - Natural resources: Ore, seeds, plants, coal, oil, wood, fish, cattle, …
  - Artificial resources: Plastic, nylon, elastane, …
- LABOR
  - Physical labor, Intellectual labor
- CAPITAL
  - Physical capital (land ownership, production facilities, offices)
  - Intellectual capital (knowledge, patents, know-how)

TRANSFORMATION OF INPUTS DISTRIBUTION OF FINAL PRODUCTS

- WORK
  - Transformation/Production
  - Exchange (distribution)
- JOBS
  - Production (manufacturing)
  - Engineering & Design
  - Marketing & Sales
  - Finance & Accounting
  - Legal & Regulatory…

TRANSFORMATION OF INPUTS AND DISTRIBUTION OF PRODUCTS OR SERVICES TAKE PLACE IN **INDUSTRIES AND MARKETS**

http://archive.francesoir.fr/pratique/argent/bourse-paris-cloture-en-baisse-98261.html

http://www.entreprises.gouv.fr/semaine-industrie/activites-industrielles/industrie-petroliere?language=fr

Industries and Markets

In Economics, an Industry defines a group of production activities classified according to the good or service it provides.

A Market, in turn, is an exchange mechanism that brings together buyers and sellers.

Examples:

The industry of leather goods and the market of men shoes

The glass and metal industries and the market for packaging of soft beverages

Industries and Markets

INDUSTRIES

- « In macroeconomics, an **industry** is a branch of an economy that produces a closely related set of raw materials, goods, or services.” (Wikipedia)
- « **Industry**, group of productive enterprises or organizations that produce or supply goods, services, or sources of income.” (Encyclopedia Britannica)

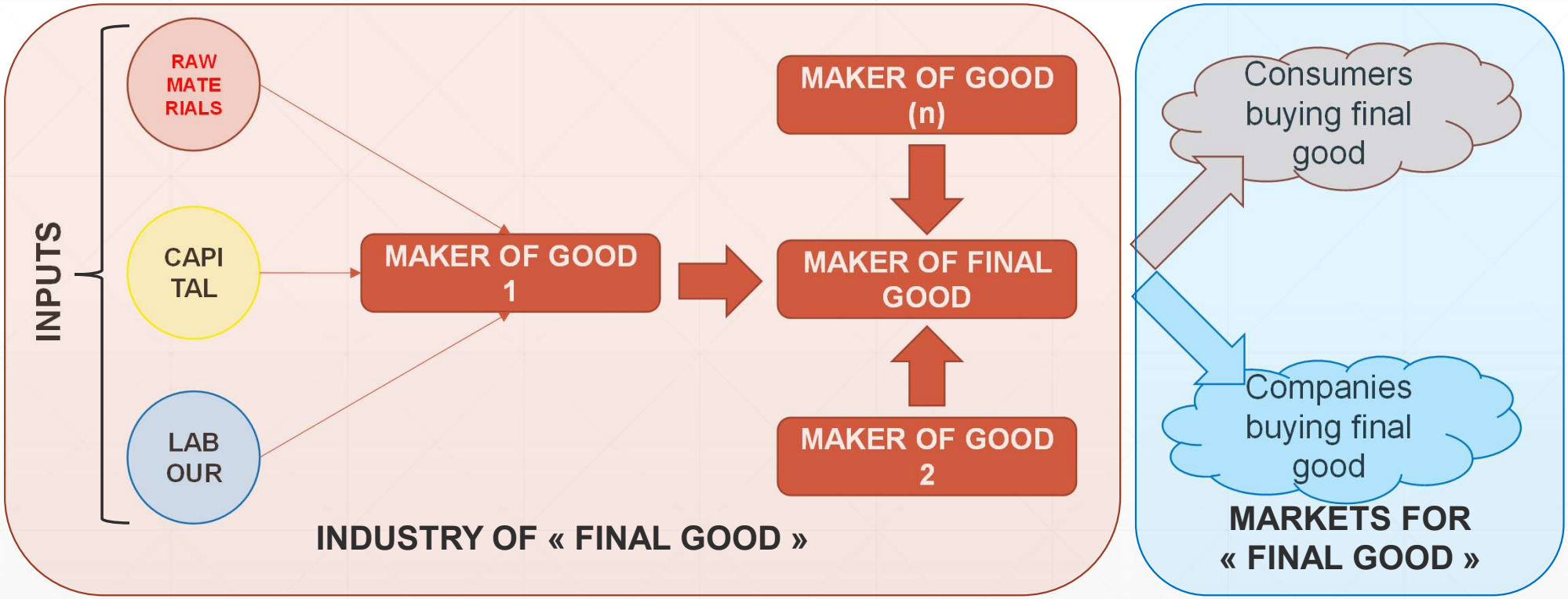
VALUE (OR SUPPLY) CHAINS

MARKETS

- « A **market** is one of a composition of systems, institutions, procedures, social relations or infrastructures whereby parties engage in exchange. […] It can be said that a market is the process by which the **prices** of goods and services are established.” (Wikipedia)
- “ **Market**, a means by which the exchange of goods and services takes place as a result of buyers and sellers being in contact with one another, either directly or through mediating agents or institutions.” (Encyclopedia Britannica)

TRANSACTIONS, PRICES

Industries and Markets Framework



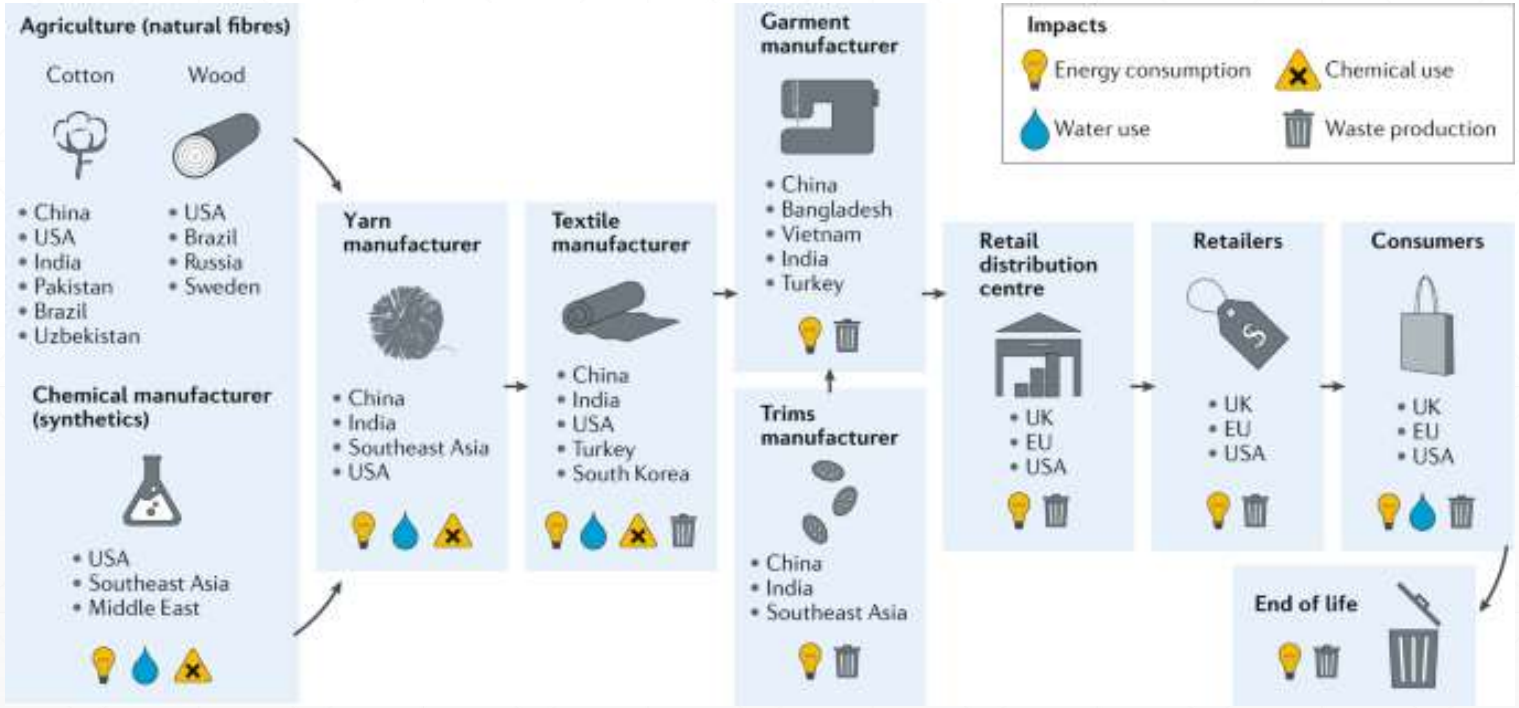
NB. In a market economy, the « inputs, » good 1, …, good (n), are tradeable as well, hence « markets. »

Industry – Supply Chain – Value Chain

Even though they are sometimes used indifferently, there are some important distinction between these 3 terms

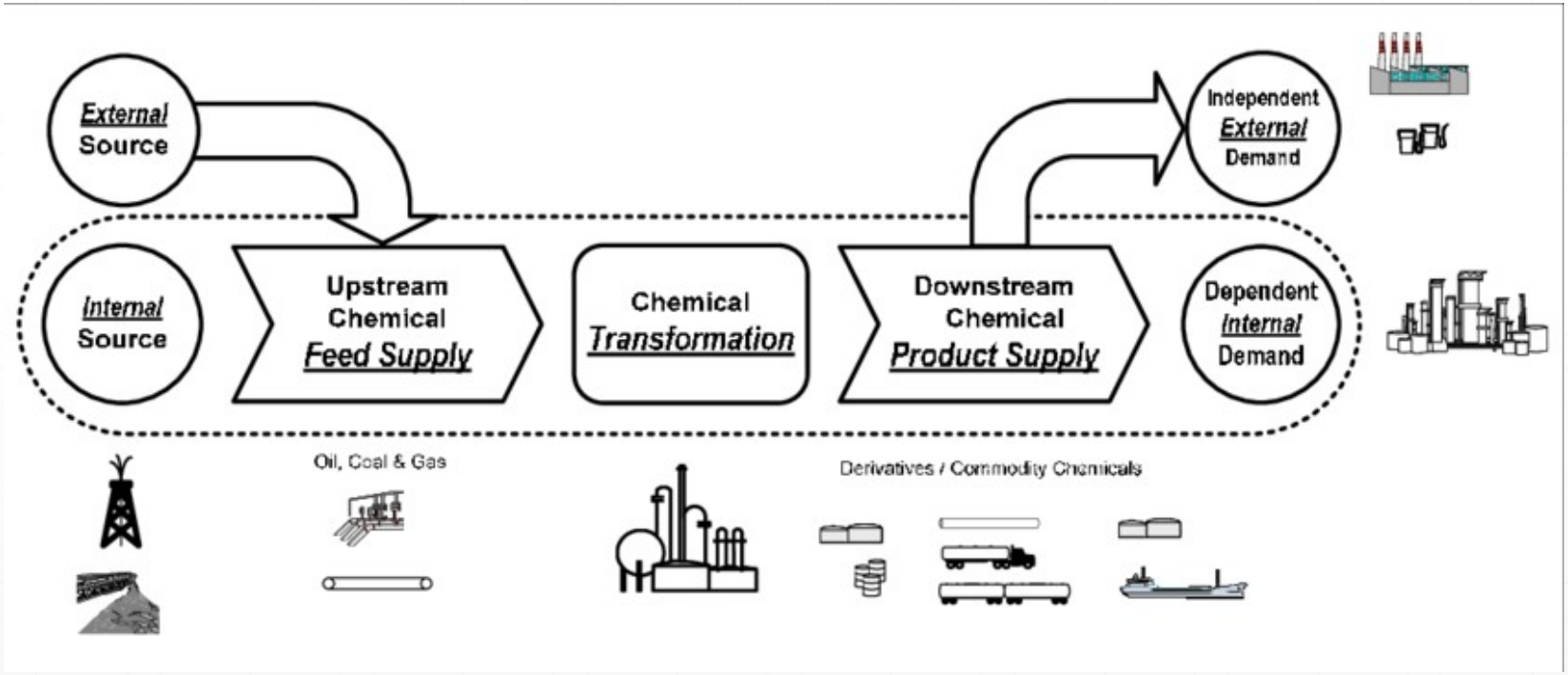
- Industry – a group of economic agents contributing jointly to the production of goods and/or services
- Supply chain - the system and resources required to move a product or service from supplier to customer
- Value chain – the process of transforming inputs into final products and the way value is added along the chain, both to the product / service and the actors involved.

Value Chain Illustrations
Garment Manufacturing



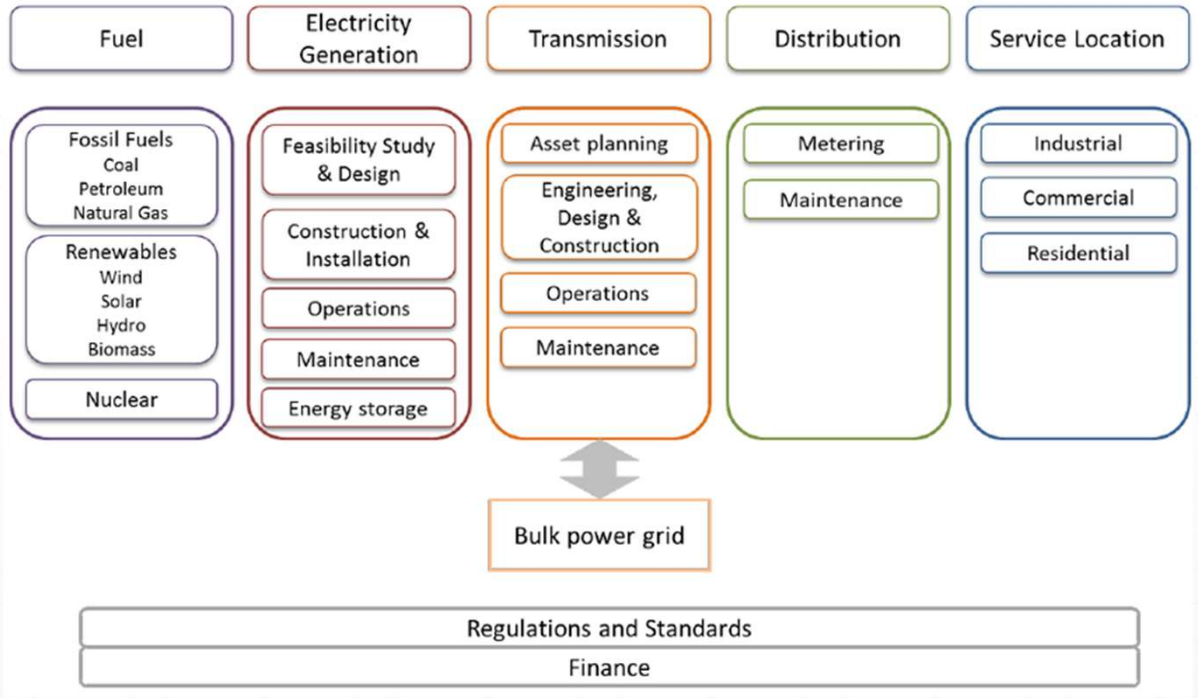
Source: Niinimäki, K., Peters, G., Dahlbo, H. *et al.* The environmental price of fast fashion. *Nat Rev Earth Environ* **1**, 189–200 (2020). https://doi.org/10.1038/s43017-020-0039-9

Value Chain Illustrations
Petrochemicals



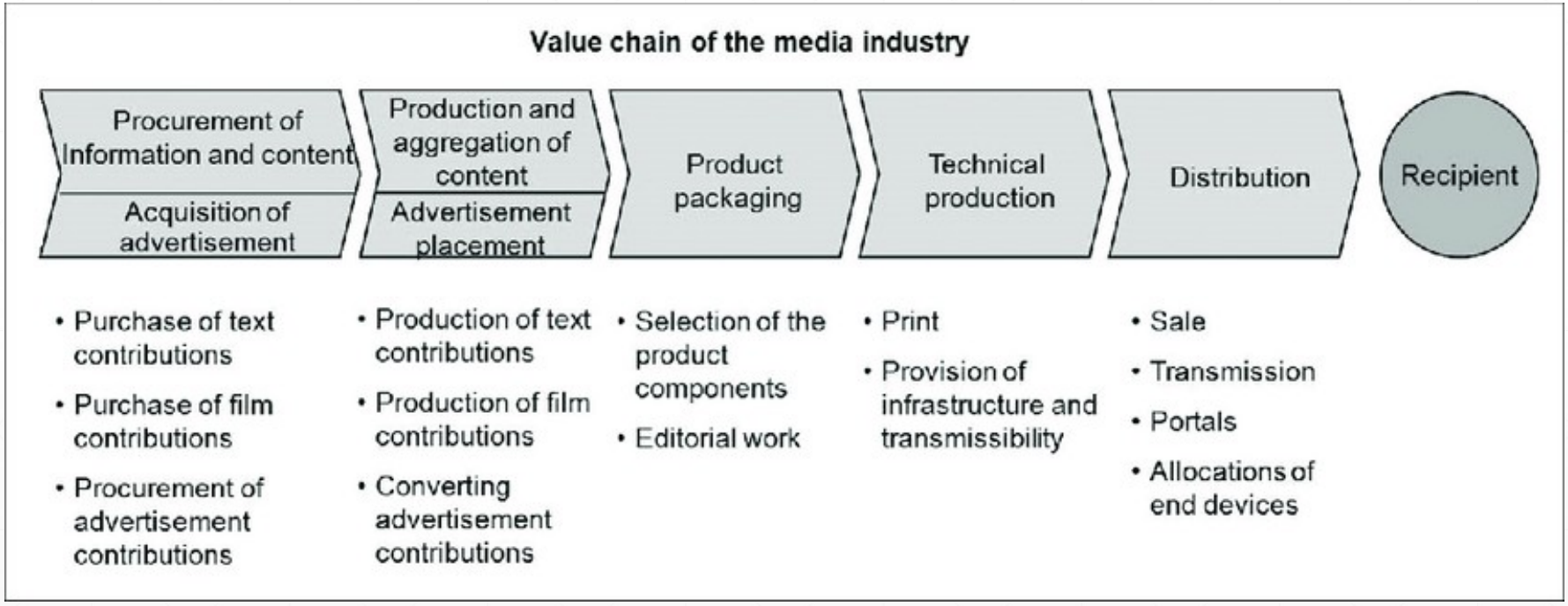
Source: author Johan Louw https://www.researchgate.net/figure/A-petrochemical-value-chain-with-its-associated-supply-chain-elements_fig2_44138070

Value Chain Illustrations
Utilities (Electricity)



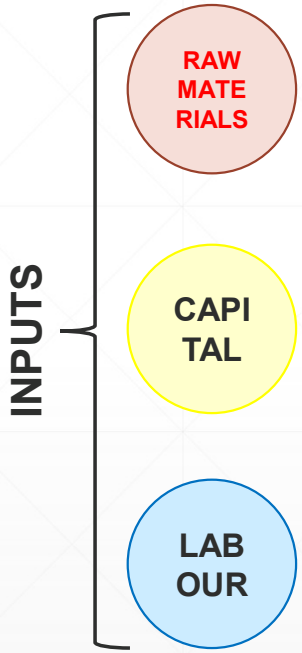
Source: author Gary Gereffi https://www.researchgate.net/figure/The-Electrical-Energy-Value-Chain_fig1_287958310

Value Chain Illustrations
Media



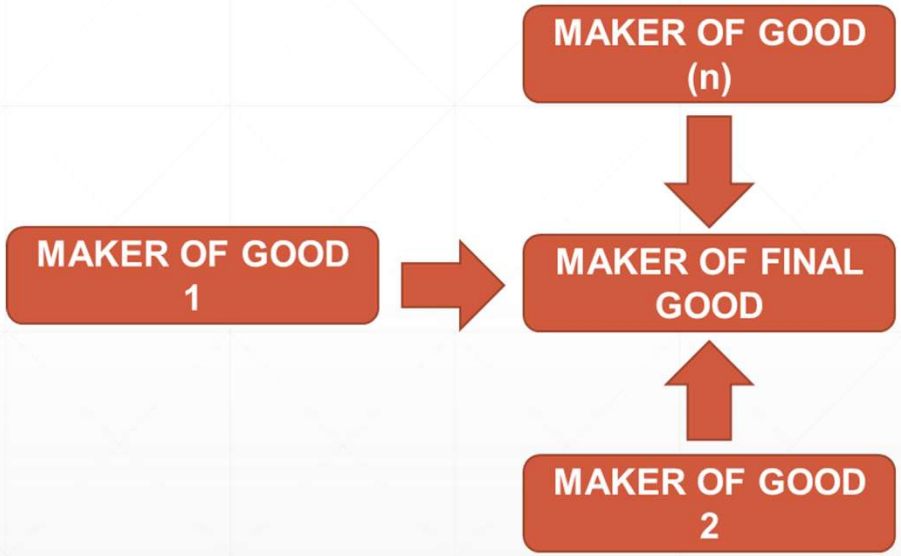
Source: author Denise Voci
https://www.researchgate.net/profile/Denise-Voci/publication/332080279/figure/fig1/AS:741828638822400@1553877138163/alue-chain-process-of-the-media-industry-Wirtz-2011-p-62.png

Markets for …
❶ Factors



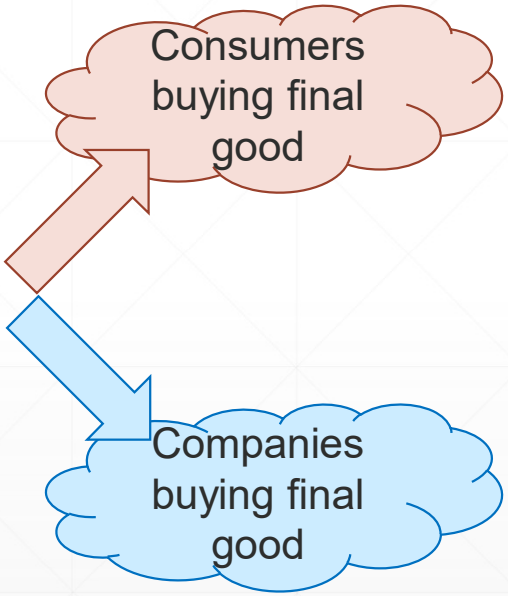
- **Inputs:**
  - Extraction of natural resources (ore, coffee, wheat, silk, cotton, …)
  - Production of synthetic inputs (elastane, nylon, …)
- **Capital** – capital markets (private/public), but also
  - Venture capital
  - Crowd-funding…
- **Labor** – local and global

Markets for …
❷ Intermediate goods



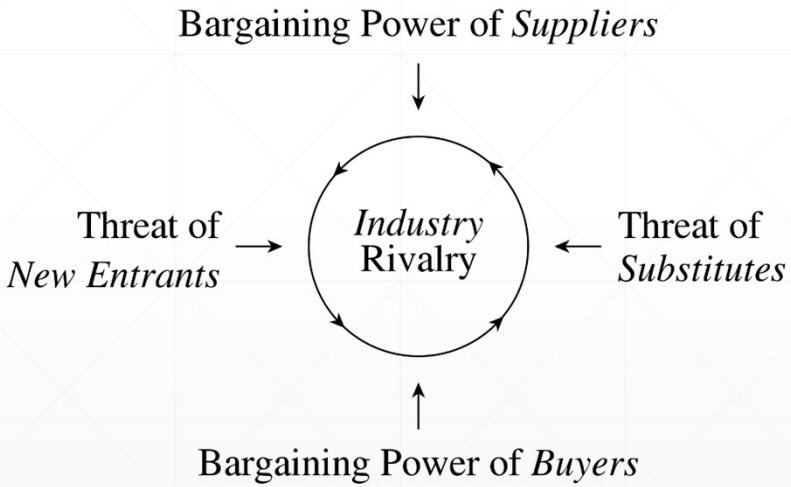
- **Intermediate goods** are acquired by company within an industry in order to be further processed and/or integrated with other intermediate goods towards the production of the final good
- **Examples:**
  - Car engine, car chassis, wheels and tires, …
  - Plane reactor, wings, fuselage, …
  - Tissue, buttons, sewing thread, …

Markets for …
❸ Final Users



- **Consumer markets (B2C):**
  - Food and perishables
  - Home appliances
  - Hospitality and tourism
  - Entertainment, …
- **Enterprise markets (B2B) :**
  - IT products and services
  - Corporate infrastructure (networking, …)
  - Facility management & catering …

Industries and Markets
Michael Porter's « 5 Forces Framework »



https://en.wikipedia.org/wiki/Porter%27s_five_forces_analysis

According to Porter, a firm's competitive environment is determined by:

1. Threat of new entrants
2. Threat of substitutes
3. Bargaining power of customers
4. Bargaining power of suppliers
5. Competitive rivalry

Industries and Markets
Industry Rivalry

- Firms competing to provide a similar good or service to clients in a same market
- « Similar » means one type of product or service
  - Ex: men's shoes
- « Same » means a group of customers sharing one or more common characteristics and that have the choice to buy from multiple firms
  - Ex: men buying leather dress shoes in a city or in a country, or sportsmen buying sneakers around the world
- In such situations firms compete between themselves to gain or to maintain market share by competitive advantage

Industries and Markets
About competitive advantage

Definition: “A condition or circumstance that puts a company in a favorable or superior business position.” (Oxford Languages)

Sources of competitive advantage (Michael Porter):

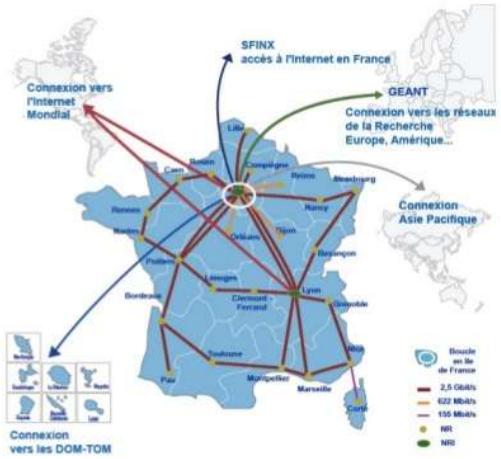
1. **Cost advantage** (the cost of producing men shoes is lower due to size of this company)
2. **Differentiation advantage** (this company’s derby shoes are made of superior quality leather, handmade by the best craftsmen)
3. **Specialization advantage** (Niche focus) (this company’s running shoes incorporate the latest sole technology, perfectly adapted to marathon running)

NB. At the heart of competitive advantage lie the notions of “economies of scale” and of “economies of scope”

Industries and markets
The communications industry

http://fr.freepik.com/photos-vecteurs-libre/ancien-telephone

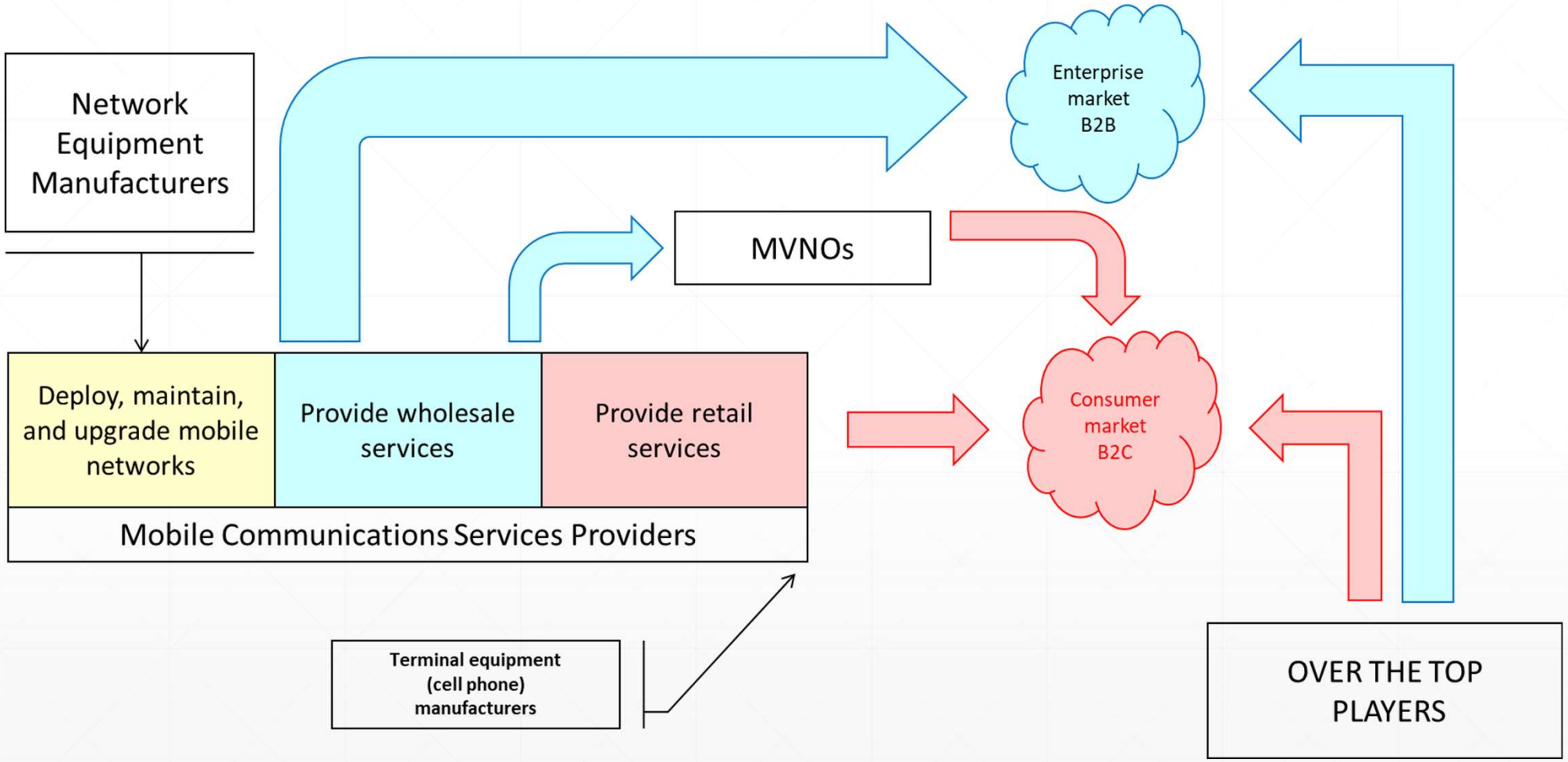
RENATER (réseau national de télécommunications pour la technologie, l'enseignement et la recherche) est le réseau informatique français reliant les différentes universités et les différents centres de recherche entres eux en France

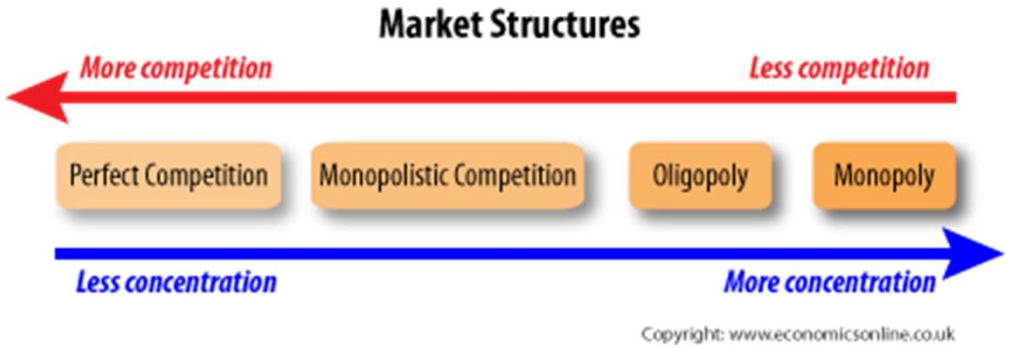


http://fr.slideshare.net/attahadi/reseau-44887391

- Based on the original patent of Alexander Graham Bell (1876), it has evolved in an “industry” thanks notably to Theodore Vail (1848 – 1920) who has set the basis and defined the principles for the organization of a national telephone system
- Economic concepts to be discussed:
  - Industry Rivalry
  - Economies of scale

Mobile Communications Industry Structure



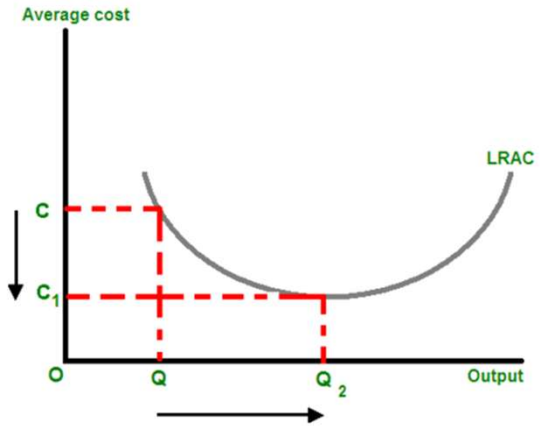


http://www.economicsonline.co.uk/Business_economics/Competition_and_market_structures.html

Market Structure

In general, a “market” is composed of a set of firms producing and selling similar goods or services.

The number of the firms will determine the market structure in terms, notably, of: competition and concentration.



https://en.wikipedia.org/wiki/Economies_of_scale

On peut formaliser cette définition en écrivant:

$$C(X_1,\ X_2) < C(X_1,\ 0) + C(0,\ X_2)$$

Où C représente la fonction de coûts, X_1 et X_2 les deux biens produits.

https://fr.wikipedia.org/wiki/%C3%89conomies_d%27envergure

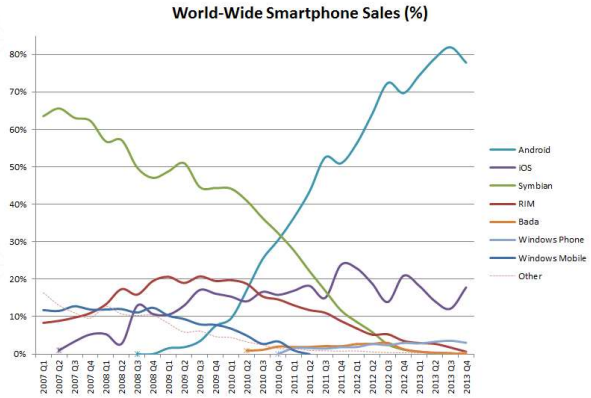
Economies of scale and Economies of scope

Economies of scale (can be internal or external) are cost advantages that enterprises obtain due to size, output, or scale of operation, with cost per unit of output generally decreasing with increasing scale as fixed costs are spread out over more units of output.

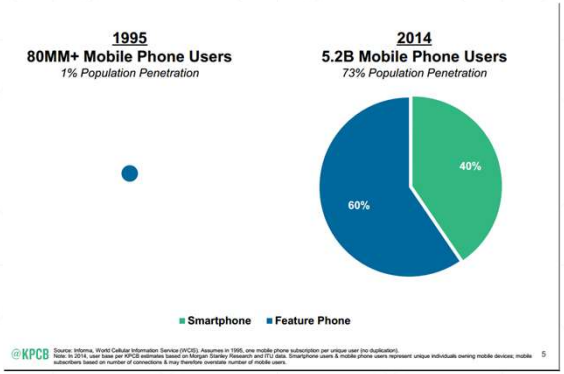
Economies of scope (John C. Panzar and Robert D. Willig, 1977, 1981) are economies that are generated through diversification of products (output).

The communications industry Snapshot

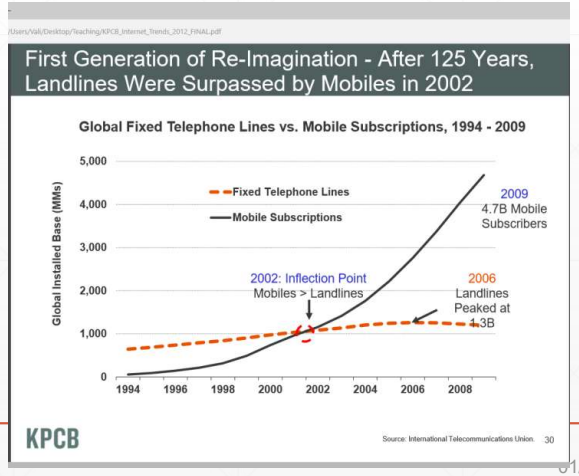
- Fixed | Mobile | Unified communications
- Longtime a monopoly
  - « Natural monopoly », Public (Universal) Service
  - Network effects
- Deregulation: first in the US (AT&T mid 80s) and then in Europe and the rest of the world
- In France:
  - At the beginning of the ’90s: France Telecom
  - Now (March 2021): Orange, Altice SFR, Bouygues Telecom, Iliad-Free
  - RIP: Siris, Cegetel, LDCOM, …



https://en.wikipedia.org/wiki/Mobile_operating_system



KPCB. *Internet Trends Report* by Mary Meeker. May 2015.



KPCB. *Internet Trends Report* by Mary Meeker. 2012.

Industries and Markets
Threat of new entrants

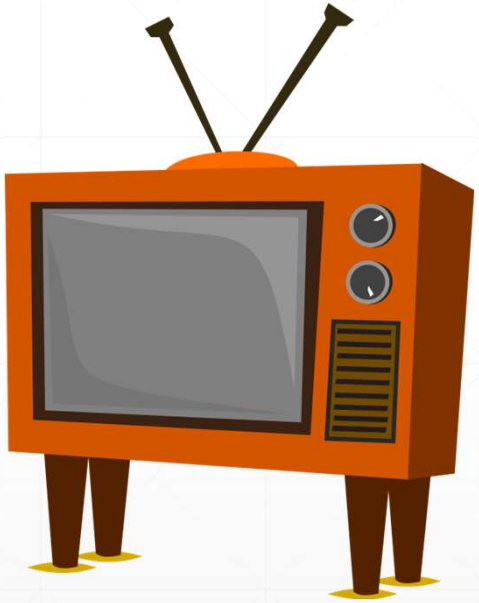
- Designates, in an established market, the possibility of « new » companies to enter the market and compete with existing firms (incumbents)
- « New » means that the companies entering the market did not have hitherto any connection whatsoever with the market
- Examples:
  - Eastern European companies entering Western European markets after the collapse of the communist regimes in the late 80s
  - Southern hemisphere companies (India, China) entering northern hemisphere markets due to globalization
- In order to perform market entry, new entrants have to consider the barriers to entry in the market

Industries and Markets
Broadcast Media Industry - Radio

http://www.radiomuseum.org/r/ducretet_piano_7_lampes.html

- Marconi (1895)
- Mass broadcasting (1920)
- First transistor radio set (1954)
- Economic concepts to be discussed:
  - Threat of new entrants
  - Barriers to entry

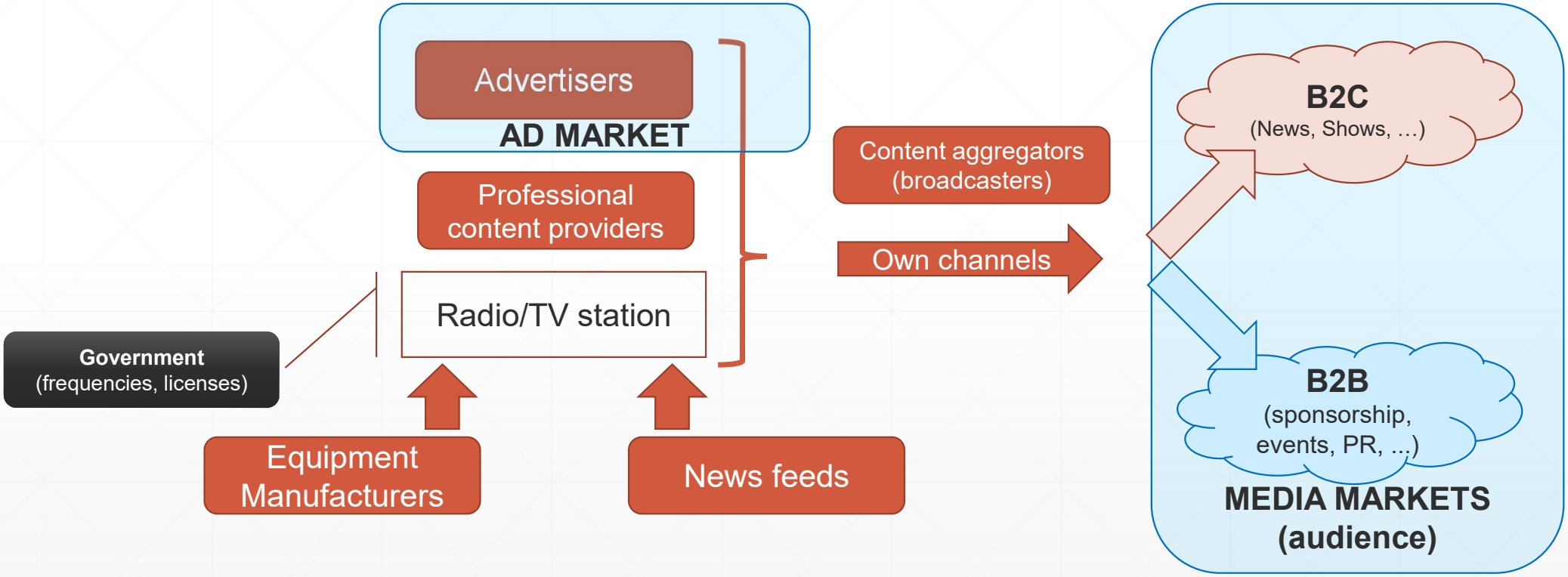
Industries and Markets
Broadcast Media Industry - Television

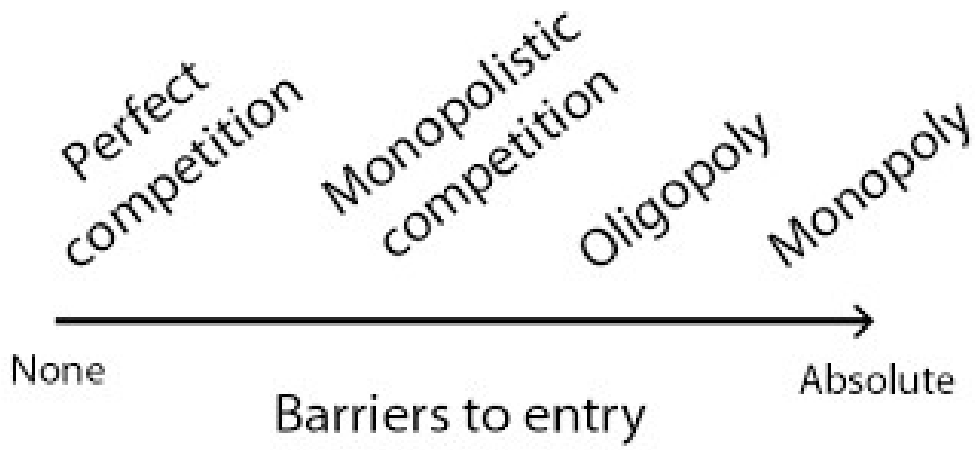


http://www.clipartlord.com/free-vintage-television-set-clip-art/

- Several technology innovations at the end of the 19th and beginning of the 20th century
- "Rich" and complex media
- Economic concepts to be discussed:
  - Threat of new entrants

Broadcast Media
Simplified industry structure





http://www.policonomics.com/lp-oligopoly2-entry-barrier/

Barriers to entry

Anything that prevents a new entrant into a market.

Barriers to entry may be numerous: advertising, know-how, proprietary technologies, customer loyalty, government regulations, product differentiation, etc

In some cases, barriers may be « statutory » meaning that the firms existing in the market need special license in order to operate

Radio (Audio) evolution Snapshot

- Vacuum Tube Radio | Transistor | MP3 | Audio streaming
- Radio utilizes scarce resources which are public goods (radio spectrum frequencies), Government intervention is necessary to allocate these goods among the various market players
- The FM radio stations (80’) have introduced:
  - Interactivity into a broadcasting (one-to-many) medium
  - A form of competition in an industry traditionally dominated by one single player
  - User-generated content
- Recently:
  - Podcasts, Playlists

TV (Video) Evolution Snapshot

- Video broadcasting| VCR | DVD Player | Video streaming
- In general, most countries have chosen an oligopolistic market structure (several players, with one of them owned by the Government)
- TV companies have, basically, 4 sources of revenues:
  - Public financing (through subsidies), Advertising-generated revenues (true for radio and print media, as well), Royalty fees (ex: “redevance” in France), Subscription-based models (PayTV, ex: Canal+ in France, HBO in the US)
- New entrants in the broadcast media arrive via:
  - News (24-H News, CNN, …)
  - Content (movies, documentaries, …): National Geographic Channel, Netflix, …
  - YouTube channels

Industries and Markets
Threat of substitutes

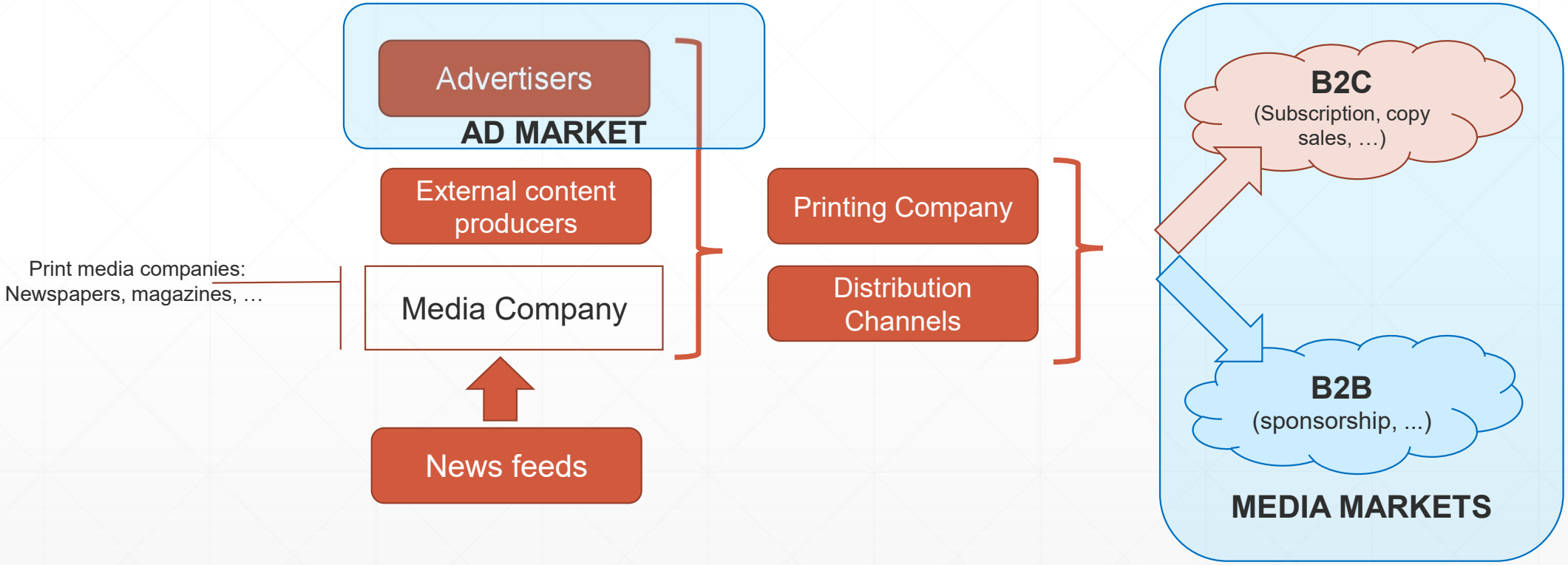
- A substitute is a product or service that may be used as a replacement for another product or service
- In most cases, the substitute comes from another market
- Examples:
  - I can drink coffee in a nice china coffee set – cup and saucer - or in a paper cup
  - I can type a document on a mechanical typewriter or on a computer
  - I can watch a movie on a DVD player or on a streaming platform

Industries and Markets
Media – Print Media (Newspapers)

- First “newspaper” published in Strasbourg (cca. 1600)
- New printing technologies made newspapers an affordable information means during the industrial revolution
- The decline in advertising revenues and the competition on online media have fundamentally shaken the traditional print media
- Economic concepts to be discussed:
  - Threat of substitutes

https://www.independent.co.uk/news/media/press/the-media-column-the-newspaper-industry-is-still-fighting-for-life-but-there-is-hope-for-the-future-a6698871.html

Print Media
Simplified industry structure



Print Media
Threat of substitutes

PRINT MEDIA INDUSTRY

- A Journal/Magazine:
  - Provides content (articles, stories, news, cartoons, …)
  - By leveraging contributing writers (journalists, columnists, novelists, cartoonists, …) or
  - External contributions (writers, news feeds …)
  - And advertising, to
    - Readers

SUBSTITUTES

- Free magazines (20Minutes, Metro, Direct Matin, …)
- On-line information sources (MSN, Yahoo, AOL, etc)
- Online news aggregators (Feedly, Google news, news360, …)
- Specialist information services (Bloomberg, etc.)

Industries and Markets
High Tech (Computer Hardware) Industry

- Charles Babbage (1888) and Alan Turing (1945), among others
- Mainframes (‘70s), PCs (‘80s)
- TCP/IP (mid ‘70s) and WWW (early 90’)
- Economic concepts to be discussed:
  - Supplier bargaining power

https://fr.wikipedia.org/wiki/Machine_analytique

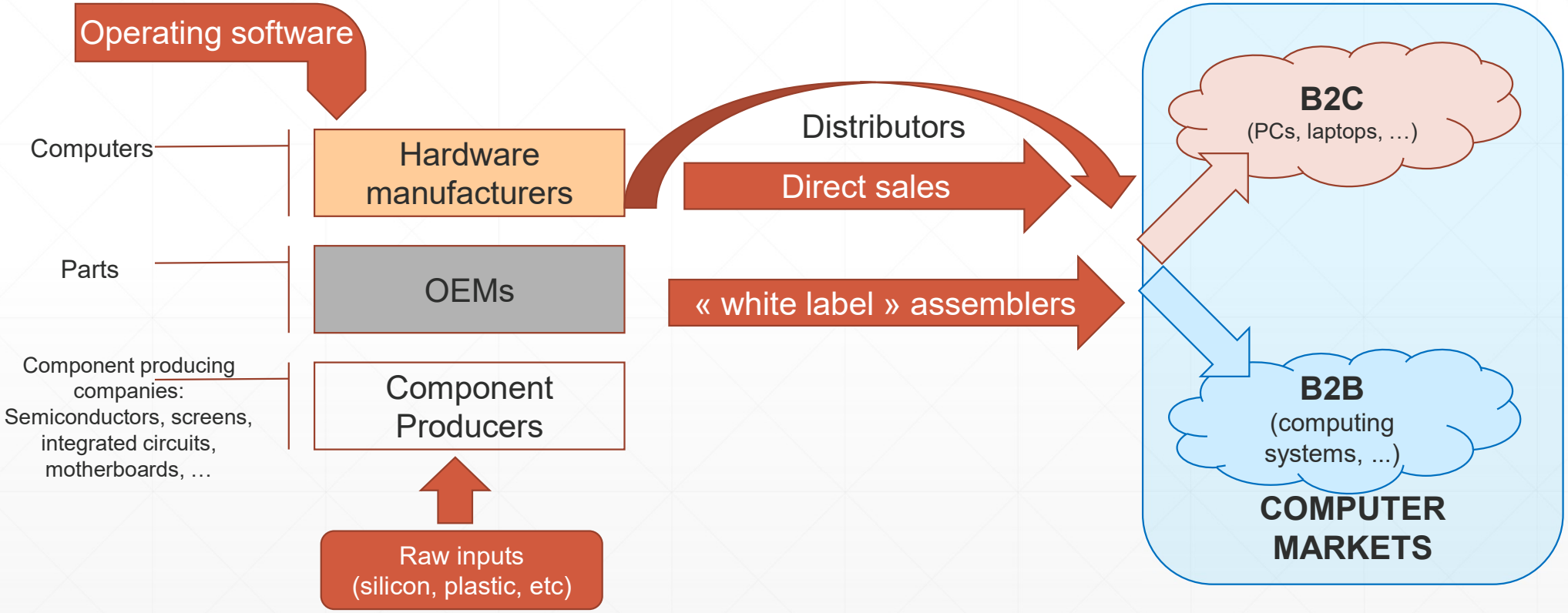
https://en.wikipedia.org/wiki/File:Turing_machine_1.JPG

https://en.wikipedia.org/wiki/Mainframe_computer

https://en.wikipedia.org/wiki/IBM_PC_compatible

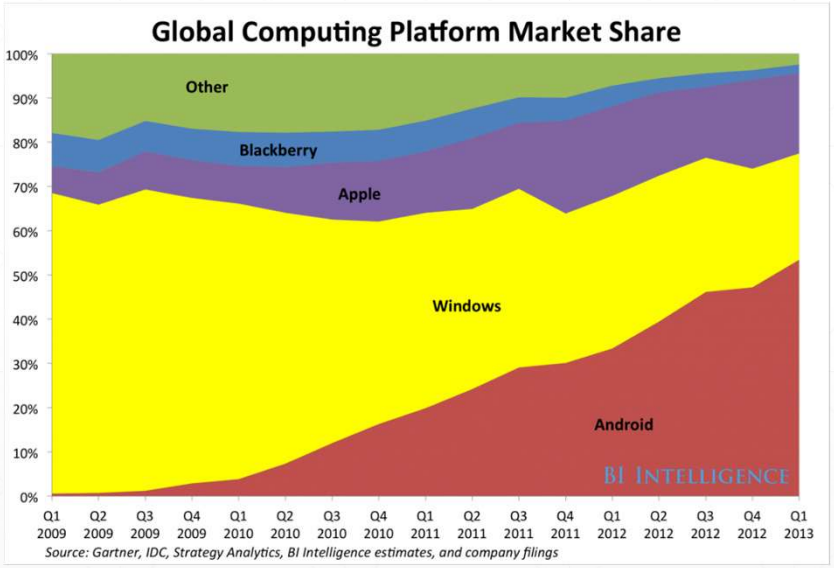
http://www.theguardian.com/commentisfree/2015/jun/25/wikipedia-editors-dying-breed-mobile-smartphone-technology-online-encyclopedia

Computer Industry
Simplified industry structure



Computer Hardware Evolution Snapshot

- Hardware | Software | Services |
  - Recently: SaaS | PaaS | IaaS
- Software – usually priced and sold as license
  - New models emerge:
    - Subscription (to cloud services)
    - Freemium models (for apps)
- RIP: DEC, Silicon Graphics, …
- “Computing Platforms” emerge as fundamental building blocks of our increasingly interconnected world



http://www.businessinsider.com/windows-monopoly-is-getting-destroyed-2013-7?IR=T

Computer Hardware Supplier Bargaining Power

HARDWARE MANUFACTURERS

- Around 150 companies listed currently, among which the most prominent ones are:
  - Apple
  - IBM
  - HP
  - Dell
  - Acer
  - Lenovo
  - Toshiba

CHIP MANUFACTURERS

- INTEL
- Samsung
- SK Hynix
- Micron
- Qualcomm
- Texas Instruments
- Broadcom
- NVIDIA
- AMD, …

The Fact: In 2021, the global semiconductor ecosystem was made up of 470 companies across various stages. The ecosystem featured just 31 fabrication companies, resulting in intense competition among semiconductor firms. Source: Statista

Class Assignment

Choose a company and describe its industry's structure (or value chain), i.e. the sequence of steps and activities resulting in the transformation of inputs into a final good or service and the type of players involved in this transformation. Answer the following questions:

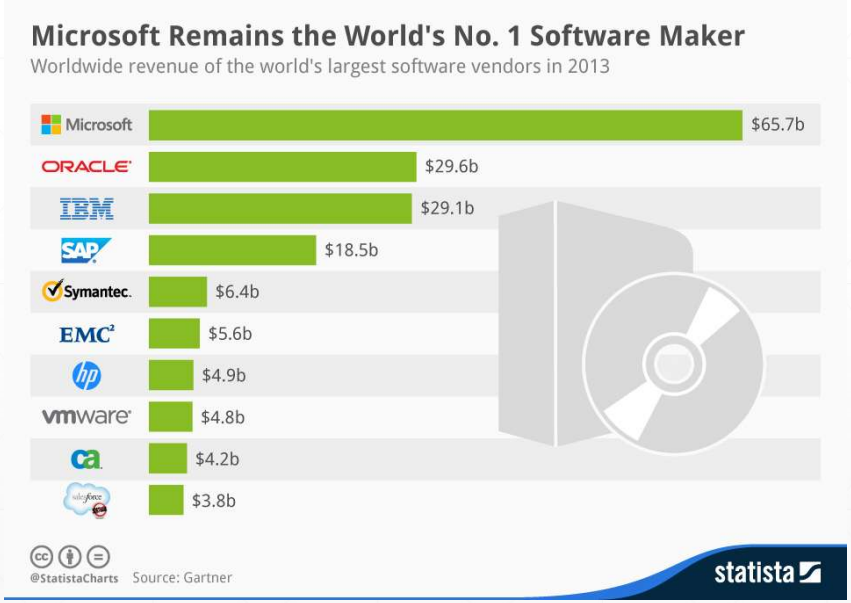
1. How many such similar companies exist in your chosen industry? (companies delivering the same final product or service)
2. How many types of companies contribute to the end-to-end value chain of that particular industry?
3. If the value of the industry (the total revenues generated by selling the final good or service) was a pie, what would be a "fair" sharing of that pie between all industry participants?

Industries and Markets
Bargaining Power of Buyers

- A situation which occurs when buyers have the possibility to lower prices, increase product quality or obtain better customer service
- It may happen when
  - There is high concentration between buyers or buyers are organized in powerful trade organizations
  - When there are many suppliers for an identical product or service
  - There is asymmetry in size between buyers (large companies) and suppliers (smaller companies, start-ups)
- Example:
  - In labor markets, imagine a town in a remote region where there is only one large company to provide work for the inhabitants of the town. The company is said to have monopsony power in the labor market of that remote town

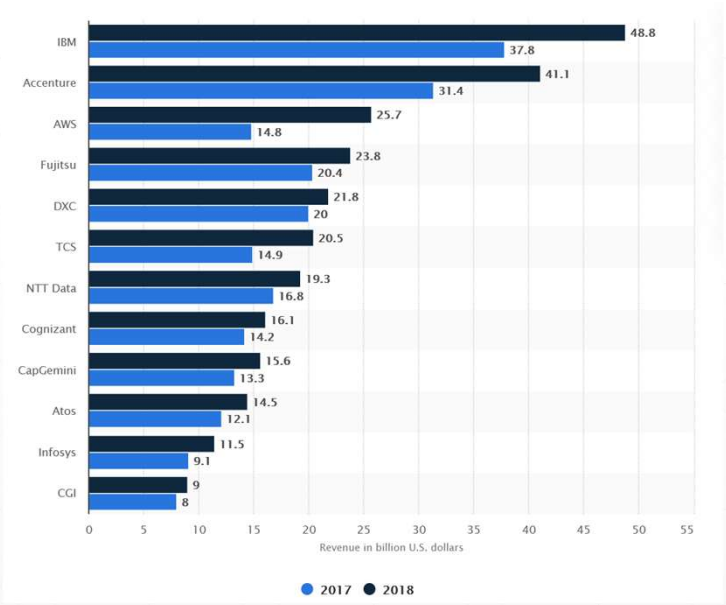
Software and Services Industry

SOFTWARE PROVIDERS



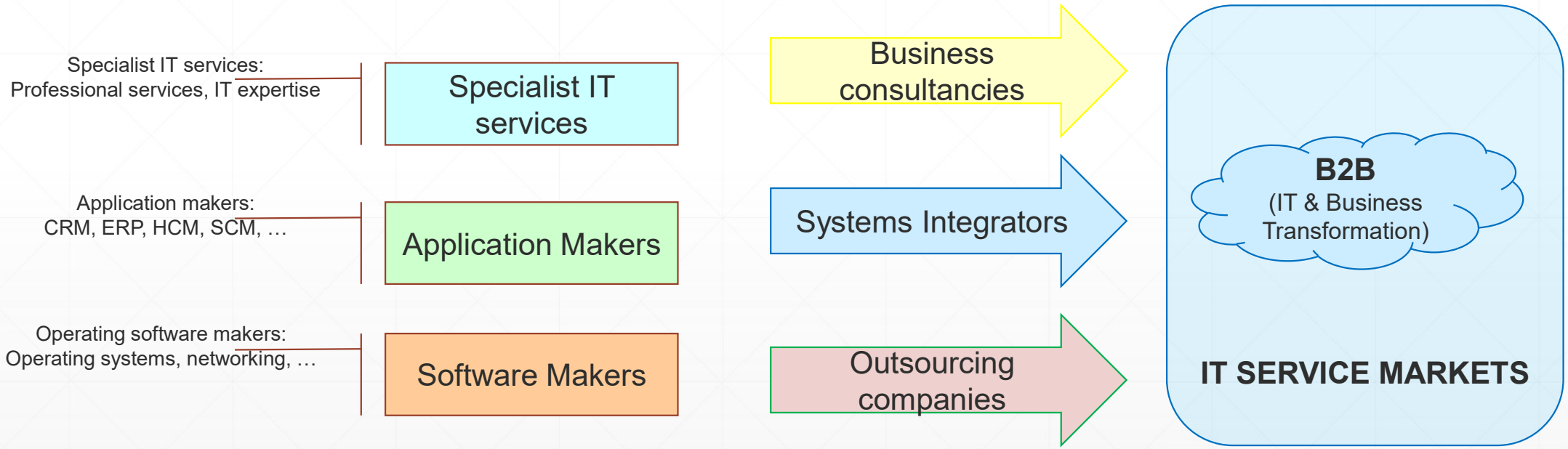
Source://www.statista.com/chart/2078/top-10-software-vendors-2013/

SERVICES PROVIDERS



Source: https://www.statista.com/statistics/479308/it-services-provider-revenue-ranking/

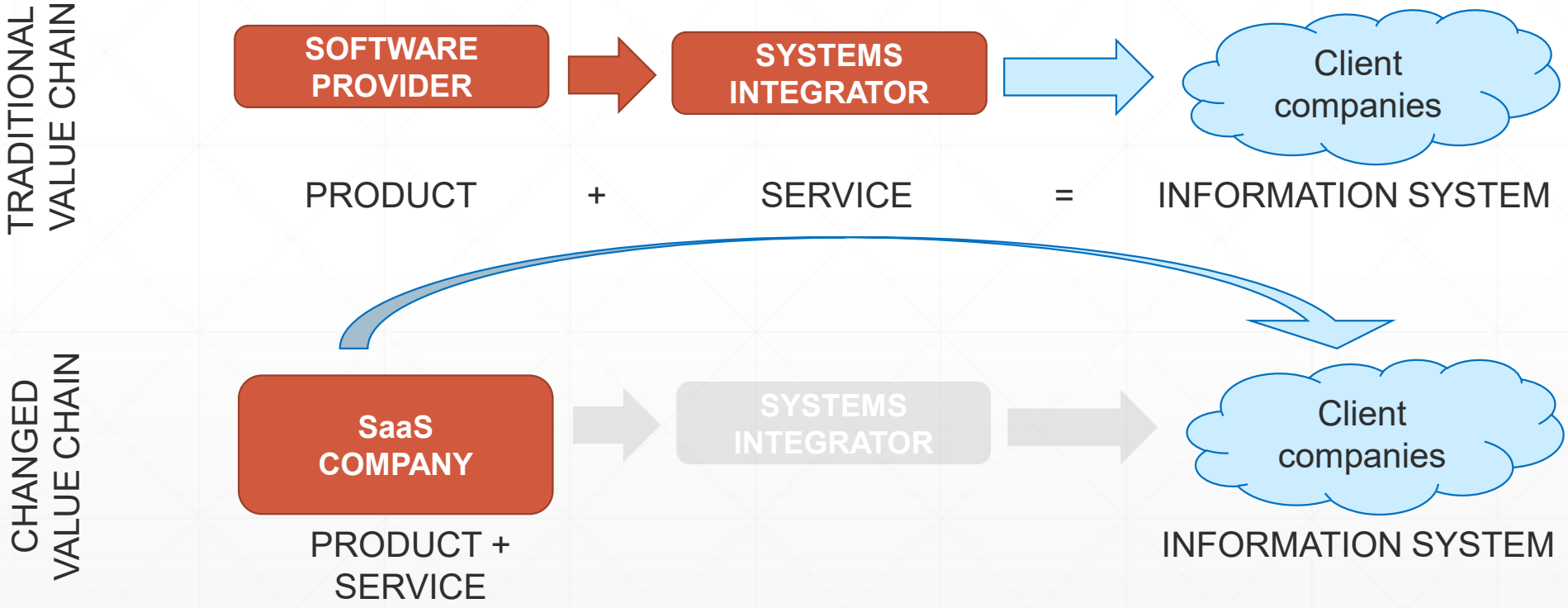
Software and Services Industry
Simplified industry structure



Software and Services Industry
Bargaining power of buyers

- Companies (especially large ones) negotiate fiercely their IT-driven transformation programs
- As a result:
  - Software companies tend to bundle prices (for example: database and operation systems, operating systems and business applications)
  - IT services companies try to avoid « commoditization » of their services and develop additional (higher-value) consulting services (ex: management and business consulting, web design, etc)
  - Software-services partnerships emerge (for example: Oracle-Accenture in the early 2000s)
  - Cloud-based companies tend to develop their own services capabilities

Changing the value chain
Software-as-a-Service (SaaS)



Industries and Markets
What is disruption?

DEFINITIONS

- “The action of completely changing the traditional way that an industry or market operates by using new methods or technology.” (Cambridge Dictionary)
- « (to somebody/something) a situation in which it is difficult for something to continue in the normal way; the act of stopping something from continuing in the normal way.” (Oxford Learner’s Dictionaries)

INTERPRETATIONS

- In **creative destruction**, the goal is to tear down/clear away the existing so that a new foundation can be built, and the economy can expand. (Joseph Schumpeter)
- In **creative disruption**, the goal is to expose flaws in the current business model, highlight areas where improvement/changes are needed, and to help inspire adaptation of the business model for future growth. (Jean-Marie Dru, TBWA)
- In **disruptive innovation**, the goal is to bring about a new market entirely, in general, through technical innovation. (Clayton Christensen)

Industries and Markets
About disruption

Types of innovation

Sustaining: An innovation that does not significantly affect existing markets. It may be either:

- **Evolutionary** - An innovation that improves a product in an existing market in ways that customers are expecting (e.g., tactile onscreen keyboard in mobile phones.)
- **Revolutionary** (discontinuous, radical) - An innovation that is unexpected, but nevertheless does not affect existing markets (e.g., Steve Jobs's NeXT computer)

Disruptive - An innovation that creates a new market by providing a different set of values, which ultimately (and unexpectedly) overtakes an existing market (e.g., the smartphone, which displaced traditional mobile feature phones)

Source: **Clayton M. Christensen** *(1997). The innovator's dilemma: when new technologies cause great firms to fail.* Boston, Massachusetts, Harvard Business School Press.

Industries and Markets
Class Discussion

Please comment on the possible reasons/criteria companies may have when choosing their position within an industry :

Reasons:

- Control of the end-to-end value chain
- Growth opportunities
- …

Criteria:

- Macroeconomic
- Political
- …

Industries and Markets
“Where do I belong? “

PRESENCE IN ALL SEGMENTS OF THE VALUE CHAIN

- Internalization of the whole value chain
- No dependencies on other firms
- Cost/price control

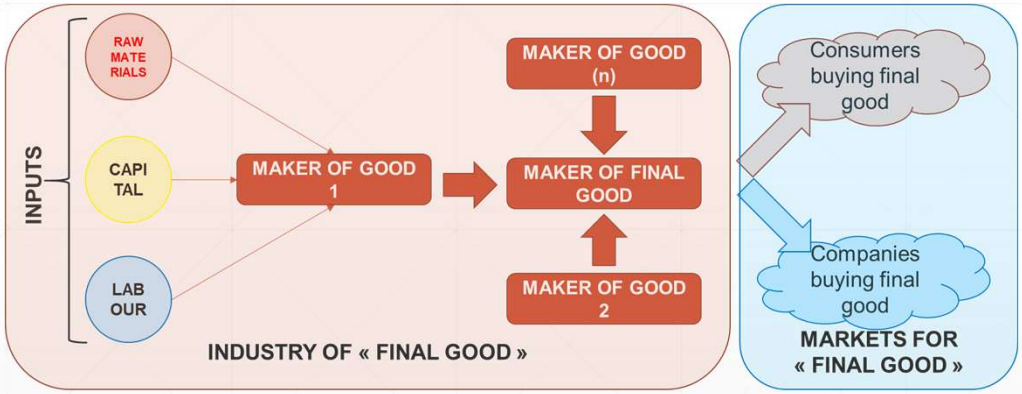
PRESENCE IN SELECTED SEGMENTS OF THE VALUE CHAIN

- Competitive advantage?
- Historical presence (path dependency)
- …

“Where do I belong?”
Analytical tool - SWOT Matrix

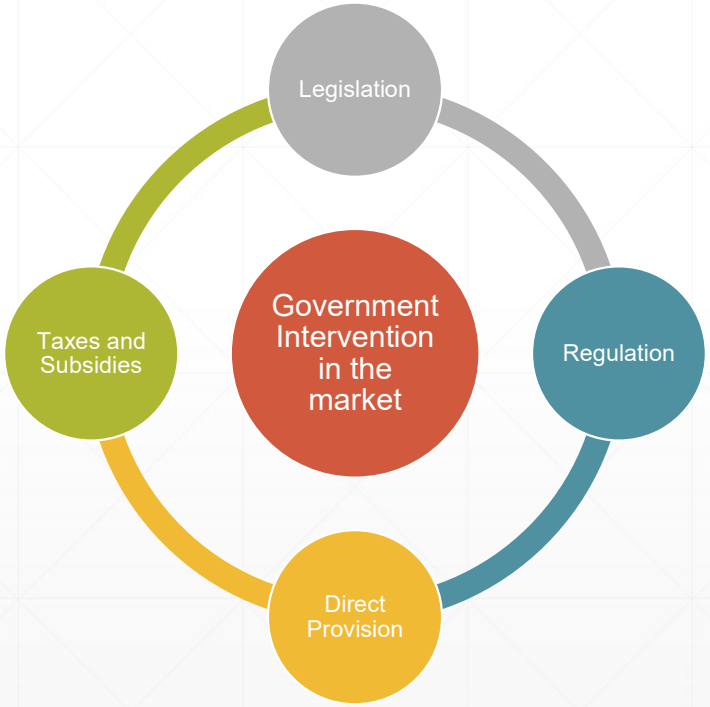
Strengths	Opportunities
- Internal strengths - Comparative advantage - What makes us good at what we do	- External positive factors - What is out there for us - Chances to seize, openings - Things we should « go for »
Weaknesses	**Threats**
- Internal areas of improvement - Things that we need to reinforce, develop, or acquire	- External factors of caution - Things we need to pay special attention to - External risks and uncertainties

Industries and Markets Wrap-Up



- In a « perfect » situation, industries and markets function so that:
  - Firms produce « just » what is needed to satisfy demand
  - Consumers buy « just » what they need to satisfy their needs
  - Value is distributed (through markets) and redistributed (through taxes) so that all participants to the market « get their fair share » of the overall value
- In real life situations, « distortions » to this desired functioning do exist

Industries and Markets
External Intervention in the market



Industry regulation
Various reasons, most important being **to correct « market failures »**

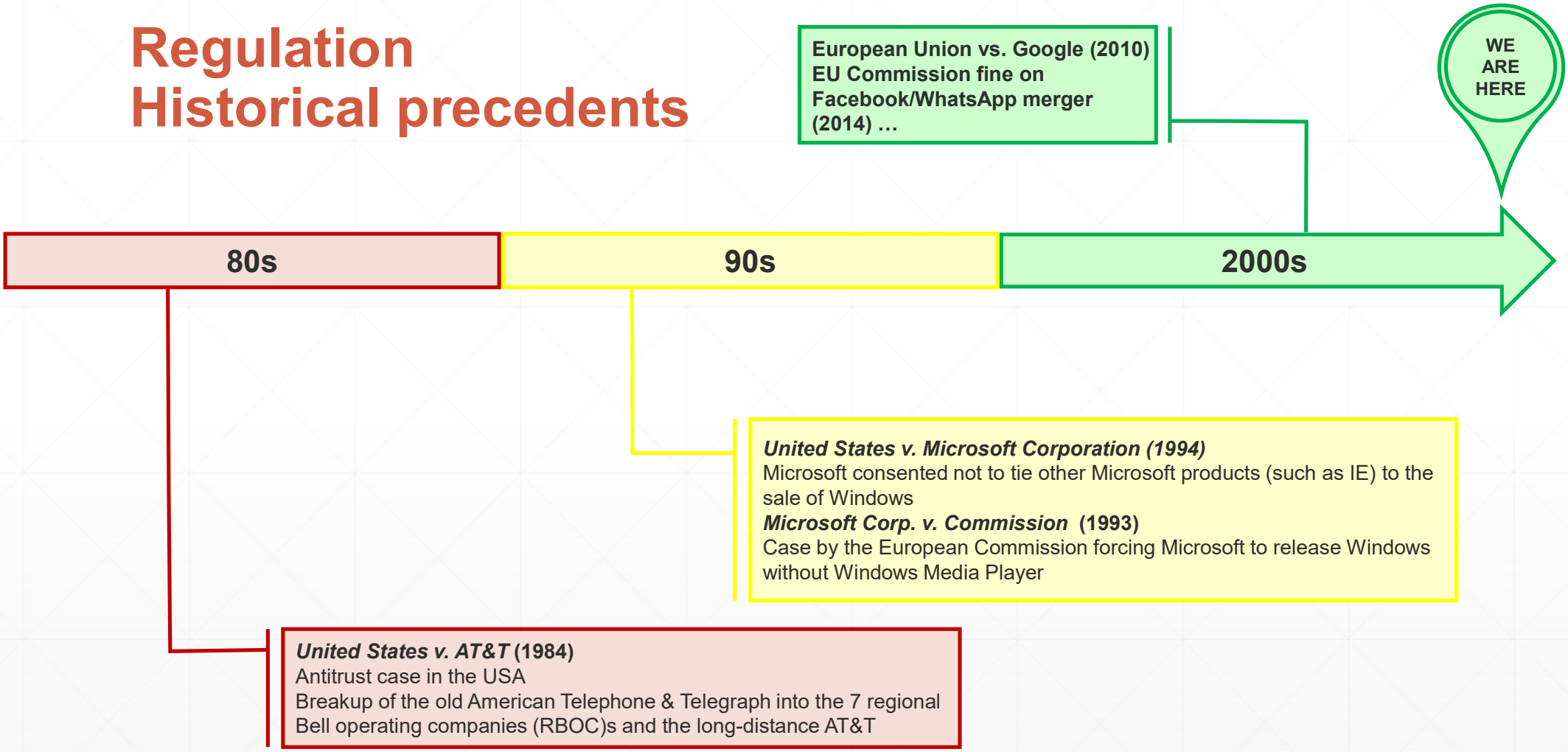
Industries and Markets
A 6th force? The role of regulation

« Regulation » covers a wide spectrum of external interventions into the market. These may be performed either by Governments, directly, or by dedicated organizations, called « Regulation authorities »

The reasons for such external interventions are, essentially, the following (Tirole, 2014):

1. Consumer protection (ex: addictions)
2. Negative externalities (ex: pollution)
3. Information asymmetry between firms and consumers (ex: prices and quality of consumer goods)
4. Equity considerations (ex: distribution of wealth)
5. Market power (ex: monopoly)
6. Long term (inter-temporal) protection (ex: bank deposits, insurance)

Regulation
Historical precedents



Enterprise Essentials Class # 2
Class Summary

- The business environment is composed of industries and markets, i.e. institutional arrangements whereby firms interact in order to produce together goods and services (industries) and exchange them with customers against money (markets)
- Industries allow firms to interact, according to certain rules, in order to produce goods and services. There are several forces shaping industry structure, Michael Porter has identified 5 of them (industry rivalry, threat of new entrants, threat of substitutes, bargaining power of supplier, and bargaining power of end-users)
- Determining how the enterprise should consider its presence in existing or in new markets is the task of management
- In general, market mechanisms allow the desired allocation and equilibrium between supply and demand. In other instances, external (i.e. government) intervention, through regulation, is necessary

Thank You!

Valeriu Petrulian