Digital platforms I

Understanding digital platforms:

key concepts and definitions

Learning objectives



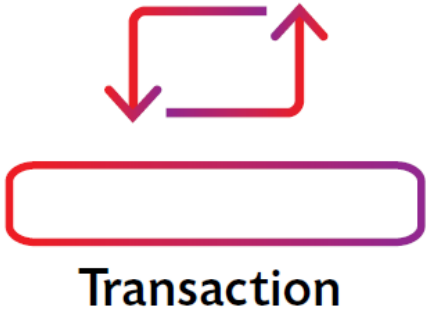
Be familiar with a ***digital platform perspective*** (construct)

- so that you can make an informed choice about using it as an analytical tool

Key concepts:

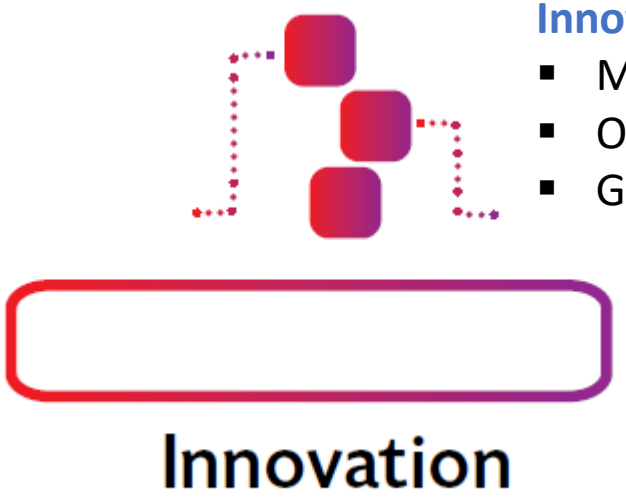
- **innovation** and **transaction** platforms
- **multisided** markets and **platforms**
- **modular architecture**: platform **core** and **complements**
- platform ***complementors*** and platform **leaders**
- platform **boundary resources**
- network effects / **network externalities** (self reinforcing mechanisms)
- **platform ecosystems**

Types of digital platforms



Transaction platforms (economic):

- Multi-sided market
- Competition / pricing strategies
- Network effects



Innovation platforms (technical):

- Modularity
- Openness
- Generativity

Consumer Platforms (B2C)

Industry platforms (B2B)

Enterprise Software Platform

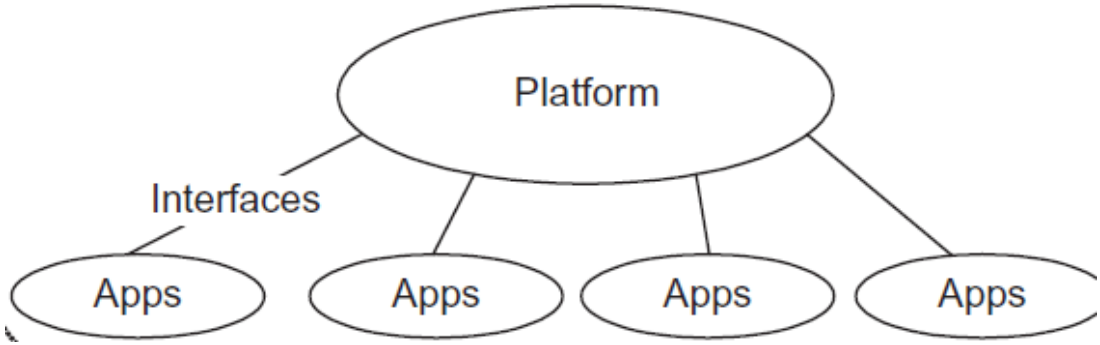
Digital (innovation) platform



Tiwana (2013) definition: *"a software-based product or service that serves as a foundation on which **outside parties** can build complementary products or services"*

Modular platform architecture:

- **Generic core** – low variability
  (e.g. data model, storage and access)
- **Complimentary applications** – high variability
- Stable interfaces



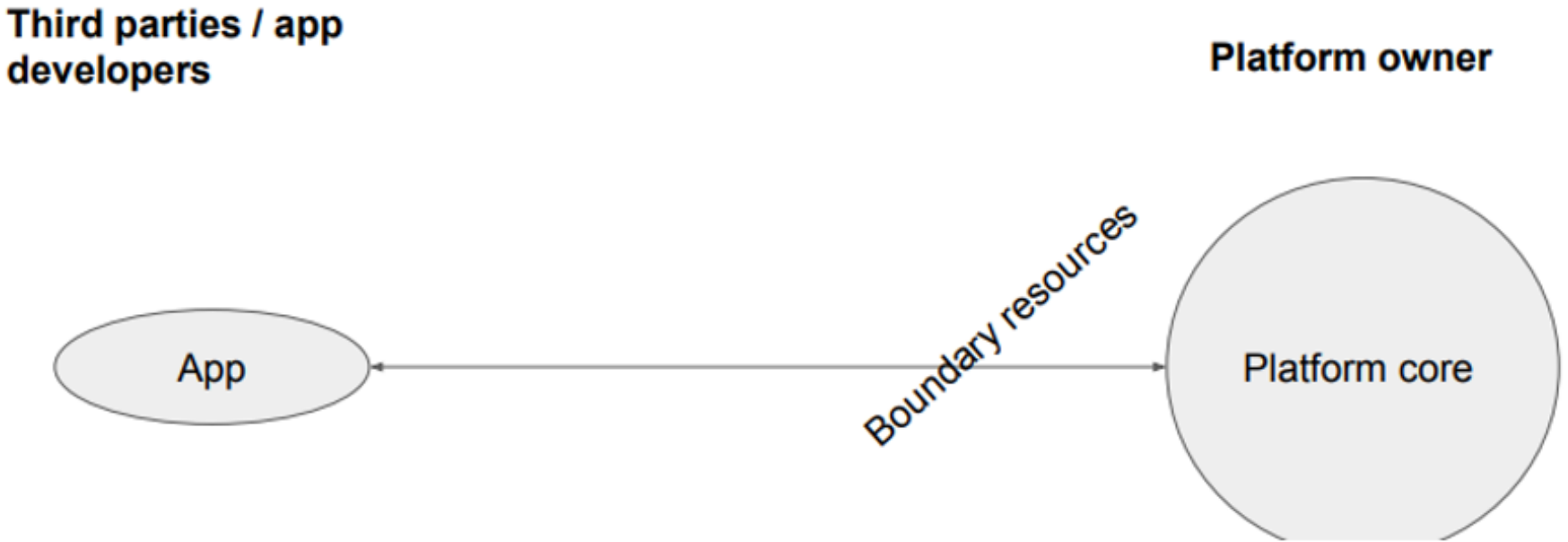
Innovation can take place at the **"application layer"** with minimal coordination and transaction costs

Tiwana, A. (2013). Platform ecosystems: aligning architecture, governance, and strategy
(not compulsory reading!)

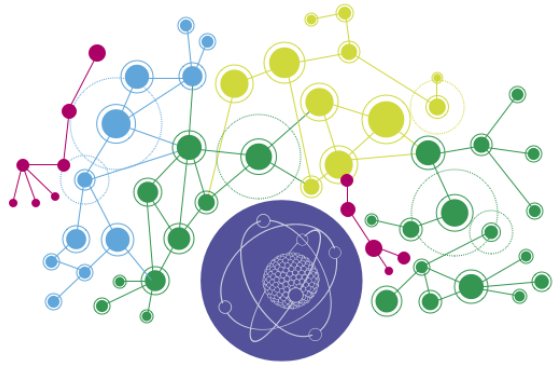
Digital platform *boundary resources*

Boundary resources are *"the software tools and regulations that serve as the **interface** for the arm's length relationship between the platform owner and the application developer"*

- **Boundary resources** grant complementors (third parties) **access** to co-create value with the platform leader/owner
- But also a way to **control** complementors' behavior
- Examples: APIs, SDKs, documentation, licenses, partnership programs



Digital *platform ecosystems*

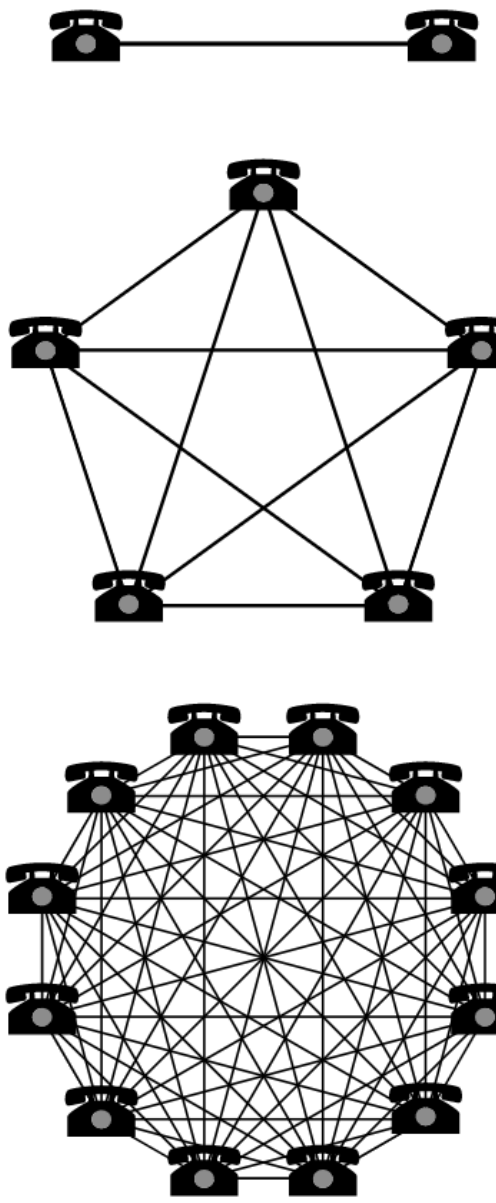


Technical view
A collection of **complements** (apps) to the core technical platform, mostly supplied by third party **complementors**

Socio-technical view

- **actors** that interact through the platform to integrate resources and thus generate and **appropriate value**
- an **innovation and service network** governed by a **platform leader**
- an **organizational form** associated with a digital platform

Digital Platform network effects (network externalities)



- Network effects: a technology's usefulness (value) increases with its user base through **positive feedback cycles**
- **Network externalities** are **direct (same sided)** if the value depends on the number of users in the same user group. E.g. social media.
- A digital platform that mediates between different actors or **groups of users**, such as buyers and sellers, is ***multisided***. Network externalities are **indirect (cross-sided)** when value depends on the number of users in a different user group. E.g., **developers** and **users** of applications, games, content, etc.

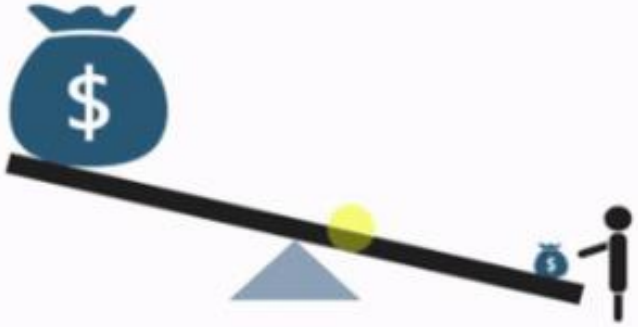
Innovation leverage in platform ecosystems

Innovation leverage is the sharing or reuse of technologies, processes, intellectual property, and other innovation assets in a network (Nambisan & Sawhney, 2011, p. 44)

- Facebook, Google, Microsoft, and SAP absorb **complementors' innovations** to maximize ecosystem value

Platform modularity and ***openness*** increase **innovation leverage**

- Modularity exposes resources to (third party) platform complementors
- Open **source code**, open **standards** and open **APIs**, raise platform **accessibility** and bring down **complementors** coordination and development costs



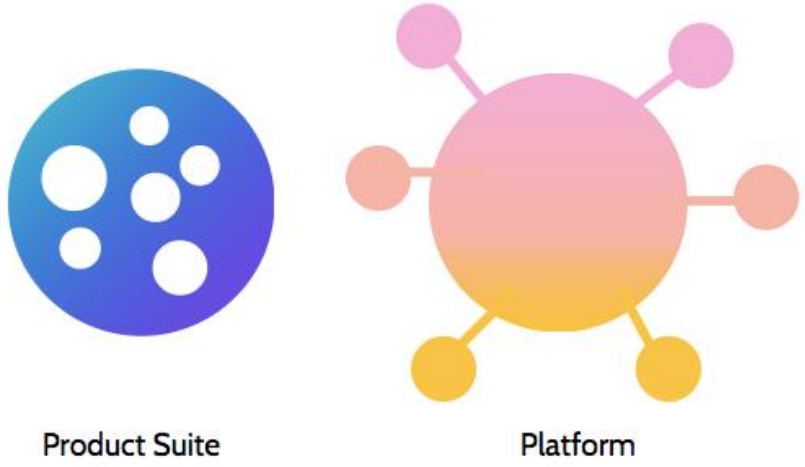
Nambisan, S., & Sawhney, M. (2011). Orchestration processes in network-centric innovation: Evidence from the field. Academy of Management Perspectives, 25(3), 40–57.
(not compulsory reading!)

Concept	Definition / description
Multisided platform	Mediating different groups of users, such as buyers and sellers
Multisided markets	Bring together (or match) distinct groups, whereas the value for one group increases as the number of participants from the other group increases
Direct network externalities (same sided)	The value of the platform depends on the number of users in the same user group
Indirect network externalities (cross sided)	The value the platform depends on the numbers of users in a different user group
Digital platform (technical view)	An extensible codebase to which complementary third-party modules can be added
Digital platform (sociotechnical view)	Technical elements (of software and hardware) and associated organizational processes and standards
Ecosystem (technical view)	A collection of complements (apps) to the core technical platform, mostly supplied by third party complementors
Ecosystem (organizational view)	Collection of firms interacting with a contribution to the complements.
Applications / complements (modules)	Executable pieces of software that are offered as apps, services or systems to end-users
Boundary resources	Software tools and regulations facilitating the arms' length relationships between the involved parties
Platform openness	The extent to which platform boundary resources support complements / complementors

Digital platforms II

Platforms everywhere

Every product is a platform waiting to happen!



Platforms are emerging in industries like banking, health care, music, energy, travel and transportation

Tiwana, A. (2013). Platform ecosystems: aligning architecture, governance, and strategy
(not compulsory reading!)

Platformization of the Internet: should we be concerned?

- Technically, the **open standards** of the Internet reduce the need for platforms
  - no dire need to manage complexity through a platform

Yet, platform providers like Google, Facebook, Amazon and eBay carve up the Internet into ***de facto* monopolies**

Because of user **convenience**?





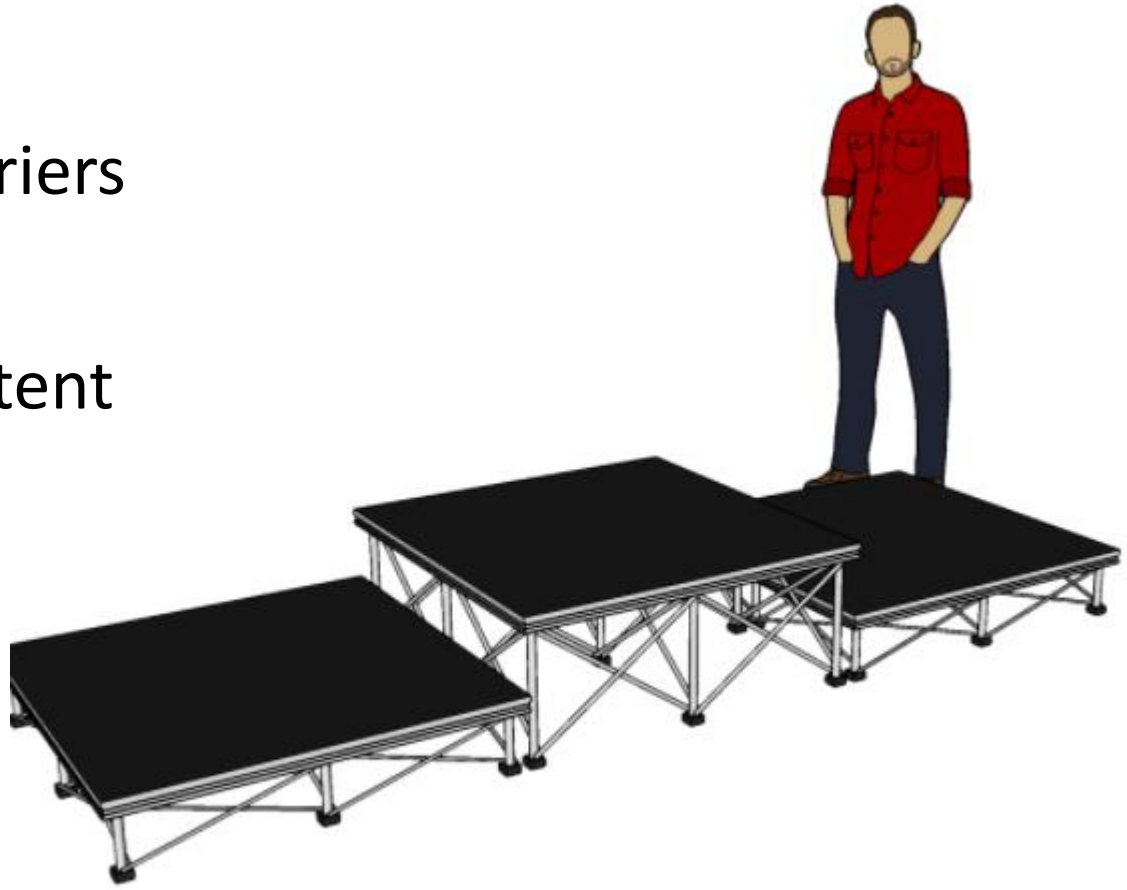






From the point of view of the (creative) individual

- A raised stage
- Easy access point and few entry barriers
- Large audience
- Convenient and quick access to content



“GROWTH OF THE DIGITAL ECONOMY IS DRIVEN BY LARGE ECOSYSTEMS THAT ARE DESIGNED TO PAY LITTLE TAX”

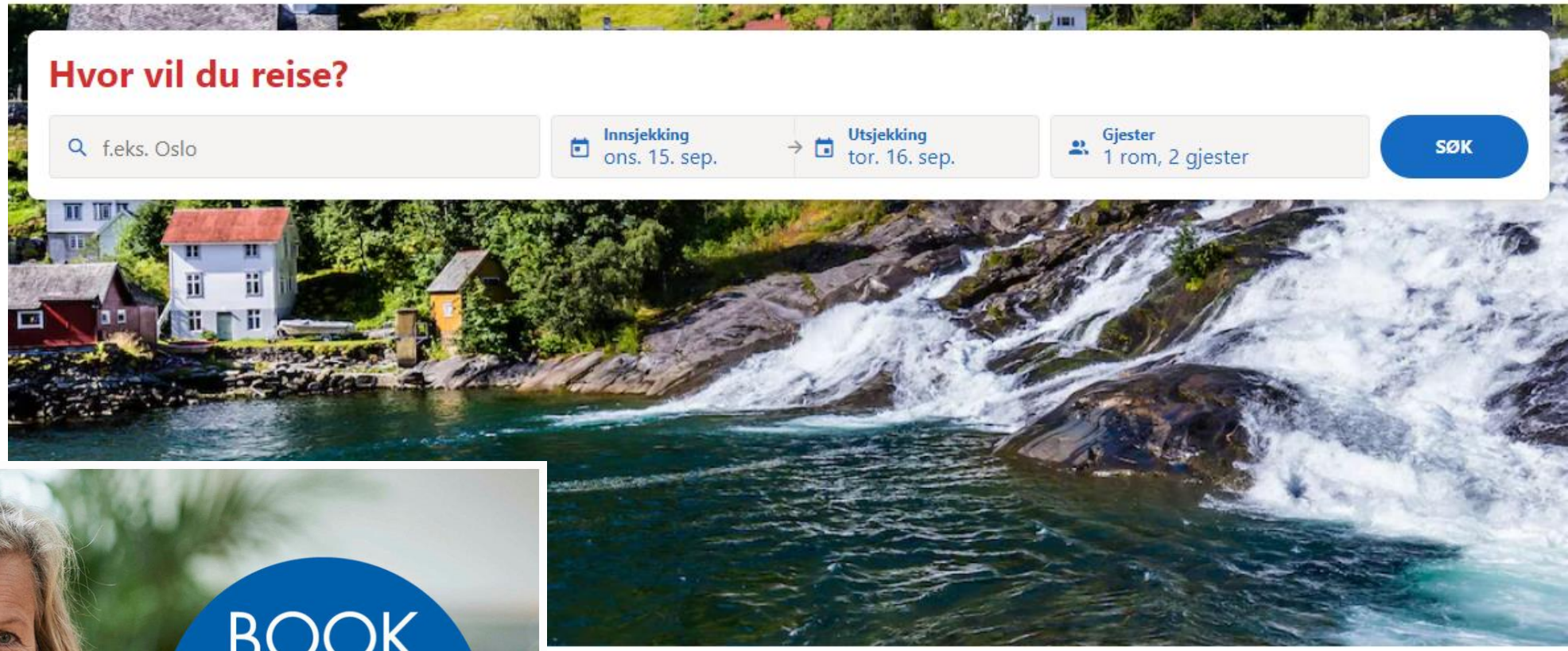


- Even national states find it difficult to **regulate** digital platforms
- Challenges traditional conceptions of **value creation**
- Significant value is shifted to the accounts of companies set up in tax havens (uneven distribution of wealth)
- Constant changes in the technologies or business models used, or even the services rendered

Collin, Pierre, and Nicolas Colin. “Task Force on Taxation of the Digital Economy.” Report to the Minister for the Economy and Finance, the Minister for Industrial Recovery, the Minister Delegate for the Budget and the Minister Delegate for Small and Medium-Sized Enterprises, Innovation and the Digital Economy, 2013.

(not compulsory reading!)

How do digital platforms shape power structures?






Tønsberg


Arendal


Fredrikstad


Sandefjord

Digital data as a currency
"surveillance capitalism"



- **Personal data** is the key resource of the digital economy
- **Platform leaders** use data to improve the performance of an application, customize a services, recommend products, or support innovation of a new application, etc.
  - Use of data licensed to **third parties** as a digital platform business model

- Data generated in one country contributes to profits declared in another country
  - Despite "doing business" in countries, digital platform leaders pay little tax in those countries
  - User activity is made possible by public funding of education, social security and infrastructure

Zuboff, Shoshana. "Big Other: Surveillance Capitalism and the Prospects of an Information Civilization." *Journal of Information Technology* 30, no. 1 (2015): 75–89.
(not compulsory reading!)

Platforms everywhere:
Are there sectoral and geographic differences?

- Few digital platforms originate from the Global South, most are from Northern America
- In the private sector the battle for a large user base is often financed by **venture capital**, until network effects and monopolistic dynamics kick in
- Public sector digital platforms based on governments' «platform thinking» are emerging, but still lag behind the private sector (lack of venture capital and generative business models)

