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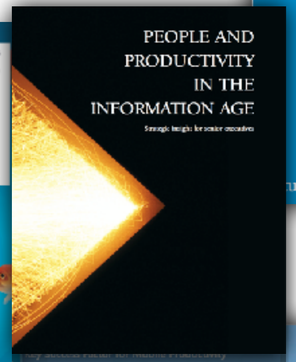
- Digital Transformation 1989-
- Mobile Tech. 1993-2011
- Remote working 1992-1997
- Infrastructures 1995-
- Future of Work 2002-
- Digital Platforms 2008-
- Blockchain & DLT 2018-

Microsoft

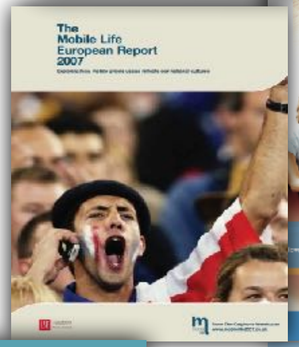
The Corporate Research Forum is an association of HR Directors from large firms

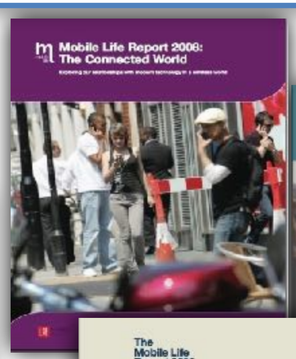


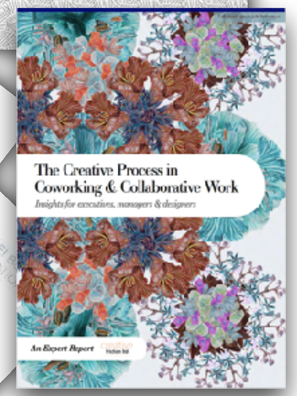
Google

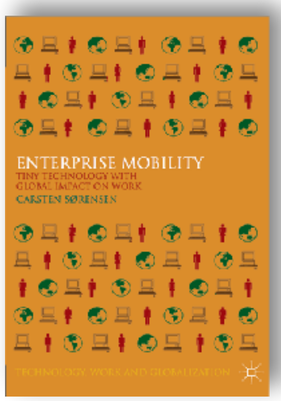
HUAWEI

Study of digital platform support for distributed Innovation management

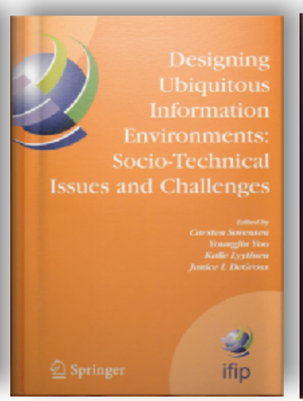








enterprisemobilitybook.com



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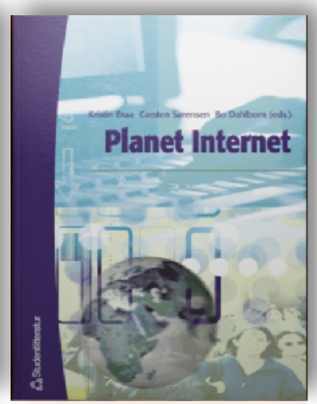


The Internet Project 95-00

PA

LSE

Platform Origins

Supply-Demand Innovation

Hand-crafted engagement

Unaffordable Bespoke Goods

Goods transactions

Affordable Goods but Standardised & Mass-produced

Service Relationships

Affordable Quality-Service but Mainly Self-Serviced

Value Ecosystems

Decentralised B2B, B2C, C2C enabled by tokenisation managed by digital cooperatives

19th Century

Early Modern Consumption
New Middle Class

20th Century

Mass Consumption

21st Century

New Society of Individuals
Individuated Consumption
Service Relationships
e-Commerce
Social Media
Smartphone Ecosystems
Centralised Platform Power
Privacy & Data Barriers

Multi-platformisation
Industrial restructuring
Tokenisation of assets
Digital scarce rights
Value-sensitive infrastructures

Integral vs modular product architecture

Modularity is a key strategy to deal with product complexity by breaking the product into modules that can be assessed and changed separately.

- A key design principle across industries
- Relative module independence within a broader system of connections and operational relations
- E.g. object-oriented programming is a paradigmatic example of modularisation.

Integral system (product)

Top-Down Control

Modular design

Independent modules/systems

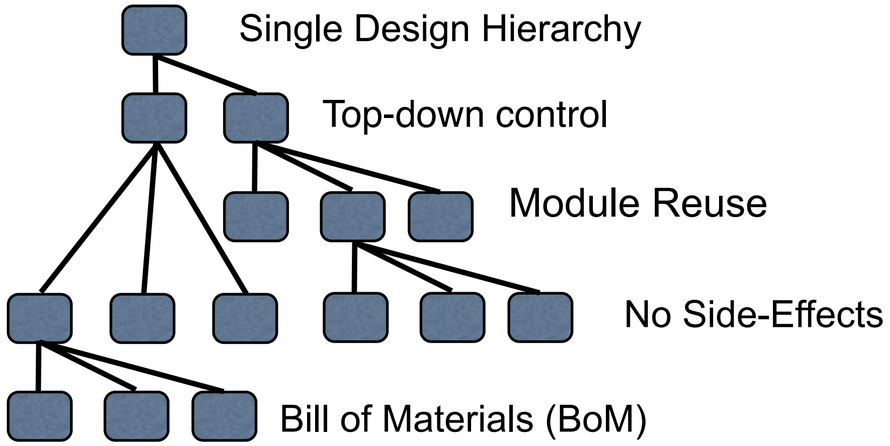
Standard Interfaces

Modularity

Mirror hypothesis = organisation of work mirrors product design

Dealing with complexity through modular design

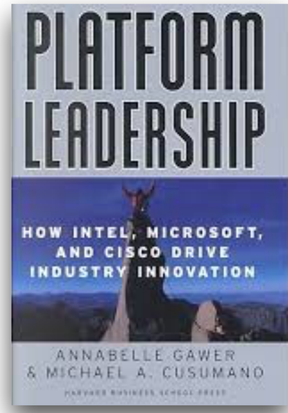
1. Decomposability
2. Control
3. Local adaptation
4. Division of labour and efficiency

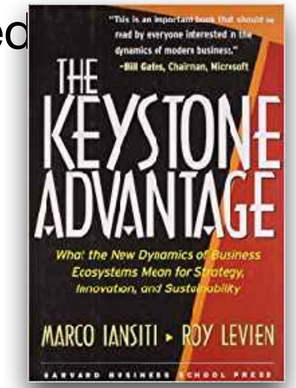


(Clark, 1985; Carstensen & Sørensen, 1996; Yoo et al, 2020)

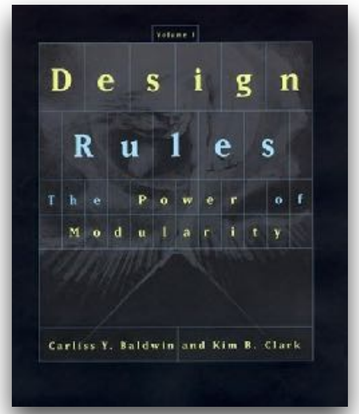
Platform Origins

From Integrated to Modular to Distributed





- The foundations of industrial innovation management of production from integrated products to increased modularisation.
- Modularity and single design hierarchies as a means of managing the coordination of distributed manufacturing (Abernathy, Utterback, Clark)
- From industry verticals (Chandler) to modular clusters (Baldwin & Clark)
- The management of innovation products as internal platforms.
- The coordination of component sourcing as external supply-chain platforms.
- Industry standardisation of common open interfaces (Gawer).
- Economic view of platforms implementing two-sided markets (Rochet & Tirole).
- Digital platforms supporting distributed innovation through multiple design-hierarchies.
- Framing digital platforms and -infrastructures.
- Business ecosystems.
- Digital infrastructures based on the open Internet and value-sensitive infrastructures.



Platform Features & Types

- Vertically integrated industries (Chandler)
- Integrated products
- Design hierarchies (Clark)
- Dominant designs within industries
- Platforms (Gawer & Cusumano etc)
  - Internal
  - Supply-Chain
  - Industry
  - Multi-Sided

- Core modules provide stability
- Peripheral modules support variety
- Industry platforms often support standardisation

Is anything that can be explained as a platform really qualifying to be labeled as such?

shopping mall, game consoles, printers

(Gawer, 2014)

Two views

1. Platform as a modular technical system (engineering)
   “The extensible codebase of a software-based system that provides core functionality shared by the modules that interoperate with it and the interfaces through which they interoperate” (Tiwana et al. 2010, p. 676)

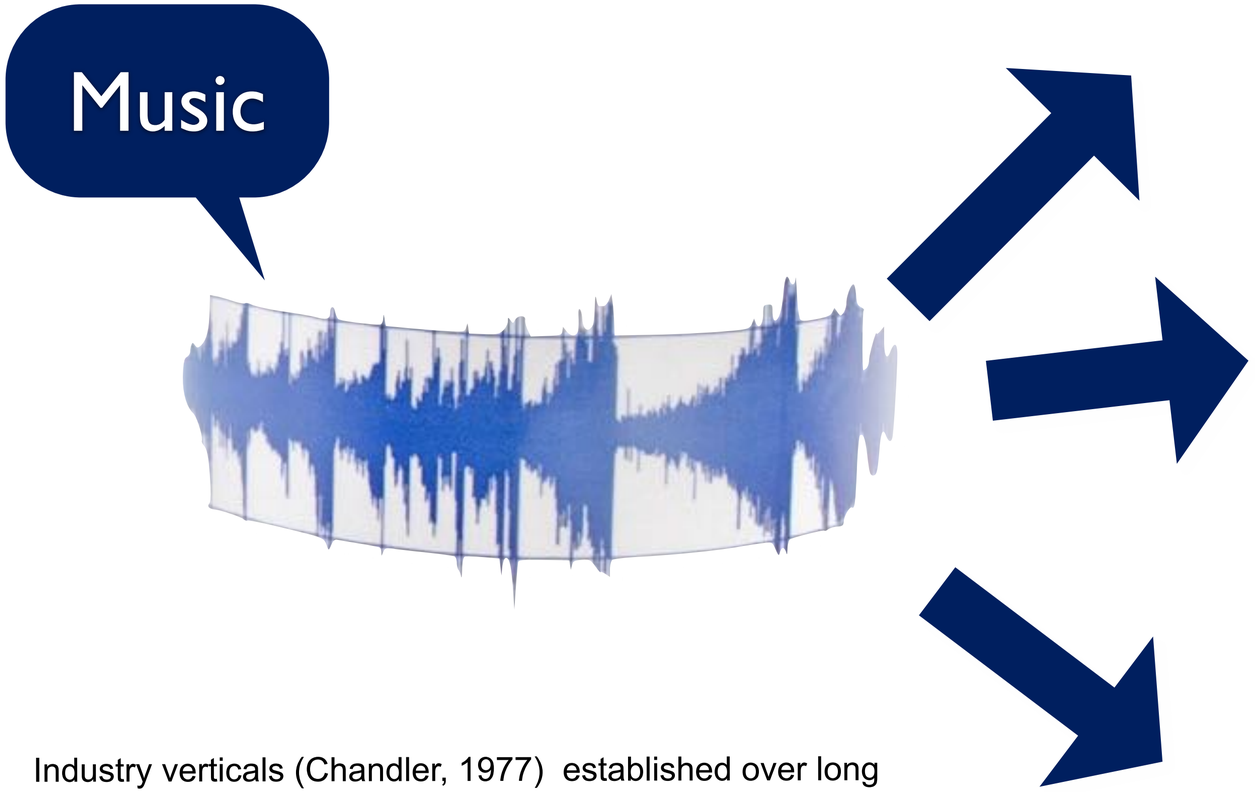
2. Platform as a multi-sided market (economics)
   Focus on the value-creating aspects of platforms – however, not all multi-sided markets are platforms. Gawer and Cusumano (2014) note that platforms must enable innovation in complementary products.

Digital Platforms?

Digital Disruption

Analogue Business Models = Tight Coupling

Industry Verticals Protect Firms and Activities



Storage Format

Processing Technology

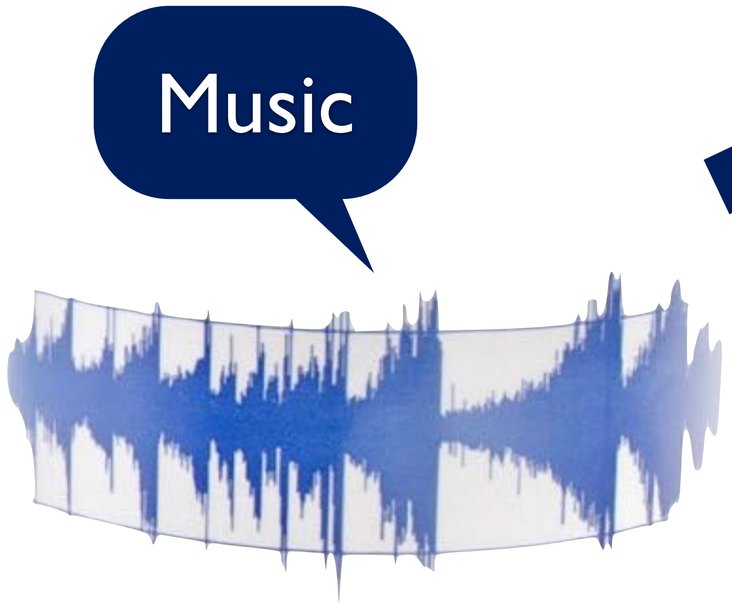
Distribution Technology

Industry verticals (Chandler, 1977) established over long periods of time secure integration of activities, while relatively protecting individual firms through the tight couplings, here of storage, processing, and distribution where a firm at a given level only competes with other firms at the same level. A firm in the music publishing business competes with other peers within this part of the vertical. Likewise, turntable manufacturers compete against each other, as do (did!) record shops.

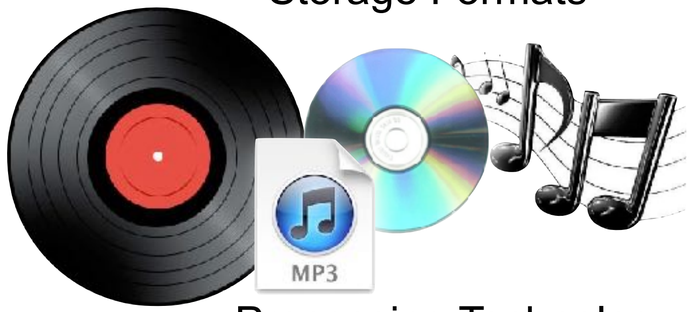
(Chandler, 1977; Hitt & Brynjolfsson, 1996; Goldsmith & Wu, 2006; Elaluf-Calderwood, Eaton, Herzhoff, Sørensen, 2011; Isaacson, 2011; Tilson, Sørensen, Lyytinen, 2010, 2021)

Digital Business Models = Loose Coupling

Industry Fragmentation Through Digitalisation



Storage Formats



Processing Technology

Distribution Technology

last·fm

napster

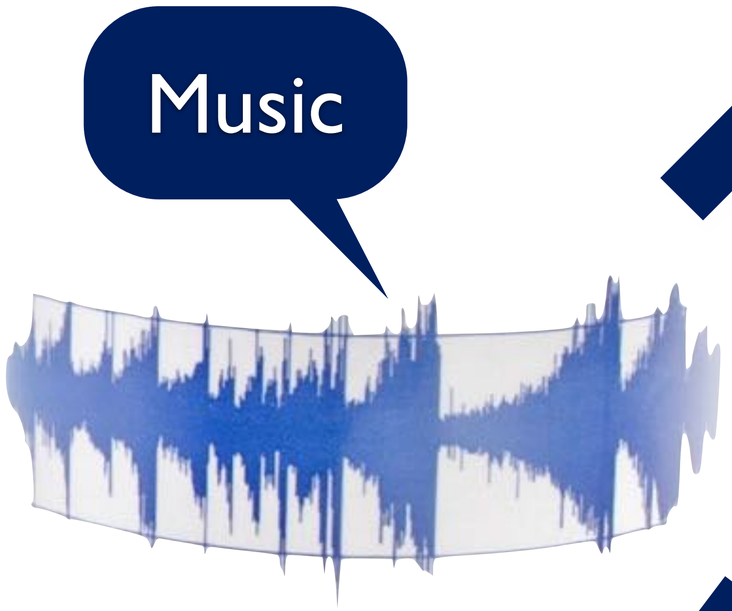
Spotify

IP

The perfect storm of MP3, cheaper storage, home-PC adoption, Peer-to-Peer technology, and free US local dial-up and later DLS connections, resulted in theft as consumer activity, and legal action as music industry business model — it did not work ;-) The digital convergence revealed the paradox of record companies confusing the music with the medium it was encoded in. As the music could be transferred and stored on any medium holding bits, the rights holders lost a core architectural control point underpinning their business model. They defended their legal ones until the next chapter in the story.

Platform Business Model for Digital Downloads = New Couplings

Jobs to the Rescue by Reconfiguring a New Vertical



Storage Format

Processing Technology

Distribution Technology

IP

Google™

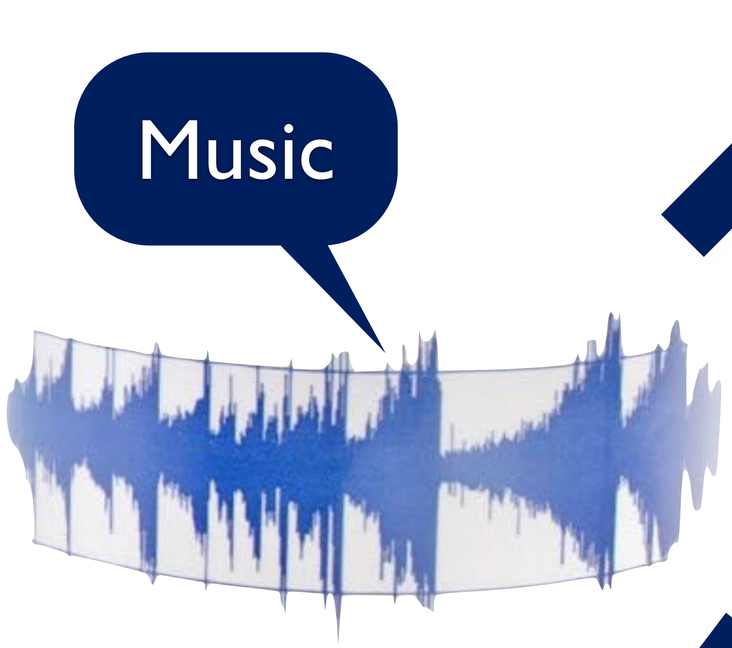
Music downloads

amazon MP3

Steve Jobs (and later others) strong-arm the music industry to accept ¢99 pr song downloaded with DRM protection, thus reconfiguring the business model power balance between service, platform, and infrastructure. The resulting shift of architectural control points meant that the owners of the mobile phone operating systems gained power over the music rights holders.

Third Digital Business Model Disruption

Once Digital, Business Models are Malleable



Storage Format

Processing Technology

Distribution Technology

Google™

IP

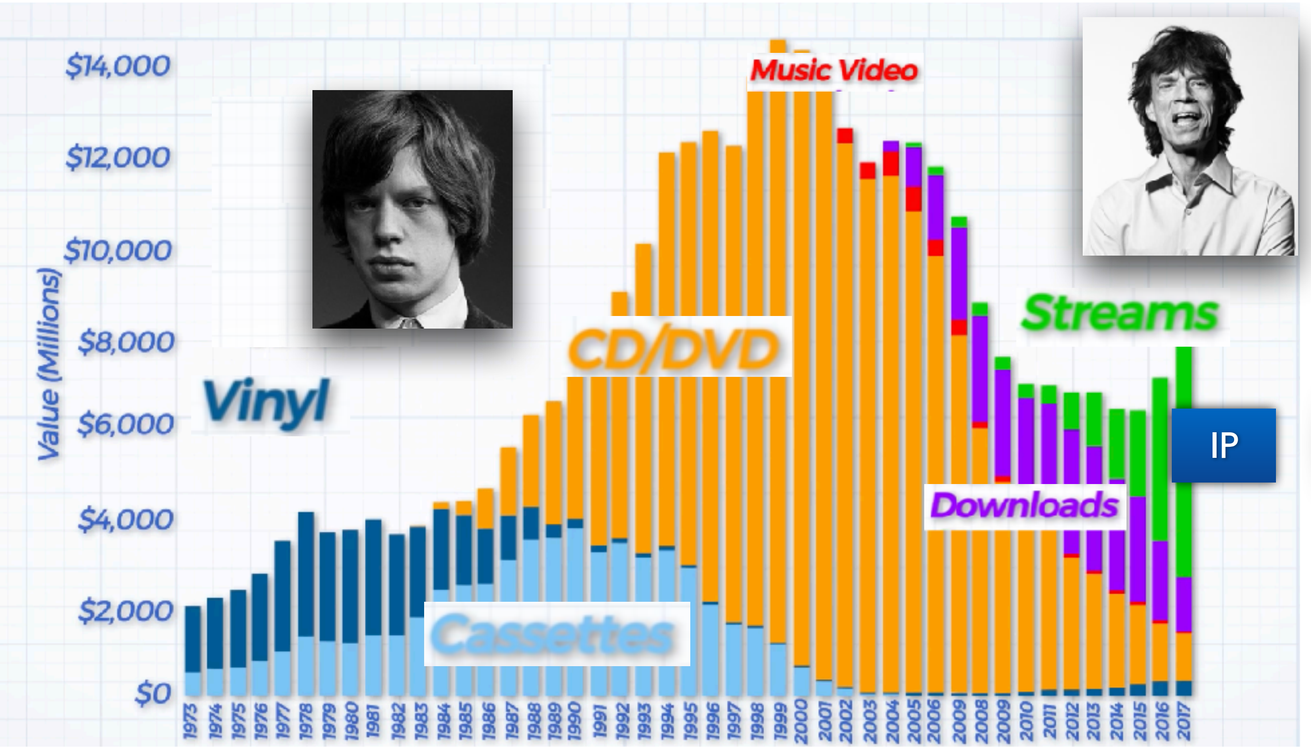
music

Music streaming

MUSIC

Spotify

Steve Jobs had the flawed assumption that consumers wanted to own their own digital music. This turned out to be wrong. Spotify showed that digital business models easily shift value gains to consumers and offered add-based streaming and premium subscriptions of almost infinite music catalogues. As a result, Apple is forced to purchase Beats Music to establish its own streaming service Apple Music. Amazon and Google follow suit along with others. This reshapes the business model from downloads to streaming and with new entrants.



When **Mick Jagger** in 1963 went to his LSE tutor and told him he would leave his studies, this was just at the cusp of a new era where concerts became single and LP sales marketing, rather than the main source of income. Digitalisation has now 60 years later, as Mick Jagger is close to retirement, reversed the music business model to pre-1960s where music product sales (streamed songs) is the marketing of concerts, which along with intellectual property licensing for adverts and movies, makes the largest proportion of artist income.

Other examples of digital disruption

London Black Cabs: Business since 1588 and regulated since 1644. Multi-year exam, "The Knowledge" protected against challengers. In 2012, Uber leveraged digital technologies and fundamentally challenged London cabbies by claiming not to be a taxi firm.

1991

$45-Million Contract for Rolling Stones : * Pop music: A 6-year deal with Virgin makes it the highest-paid band again with an estimated $8-million fee per album and a 25% royalty on each album sold.

2023

Tidal: 83,333
Apple Music: 1000,000
Amazon Music: 250,000
Spotify: 303,000
YouTube Music: 500,000
Deezer: 909,091

Number of music streams to earn $1,000

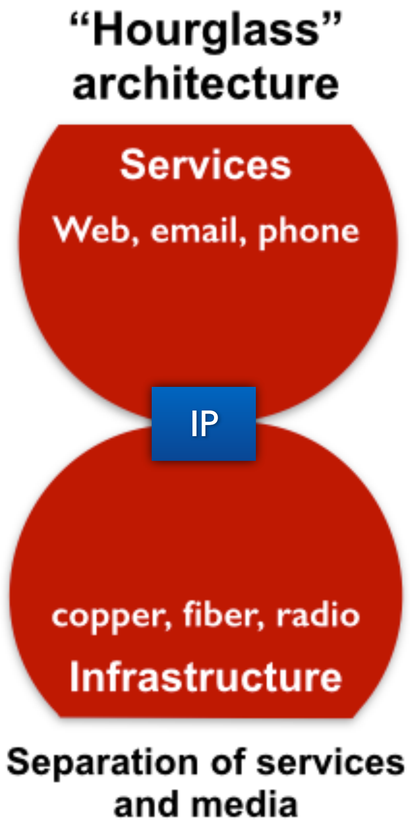
Newspapers: Twenty-Years of Business Model Struggle weaning off paper distribution and establishing a digital business model, with no clear solution in sight, while web-news ecosystems extract significant value from news.

News Ecosystems: The web browser and social media advertisement ecosystem works through exchanges between thousands of companies with complex business relationships. The tokenisation of this arrangement could enable much more flexible allocation of resources with protection of private and corporate data.

(Lindskow, 2016; Åkesson, Sørensen, Ihlström Eriksson, 2018; Tilson, Sørensen, Lyytinen, 2021)

Digital Platforms

Internet Only Knows About Data Packages

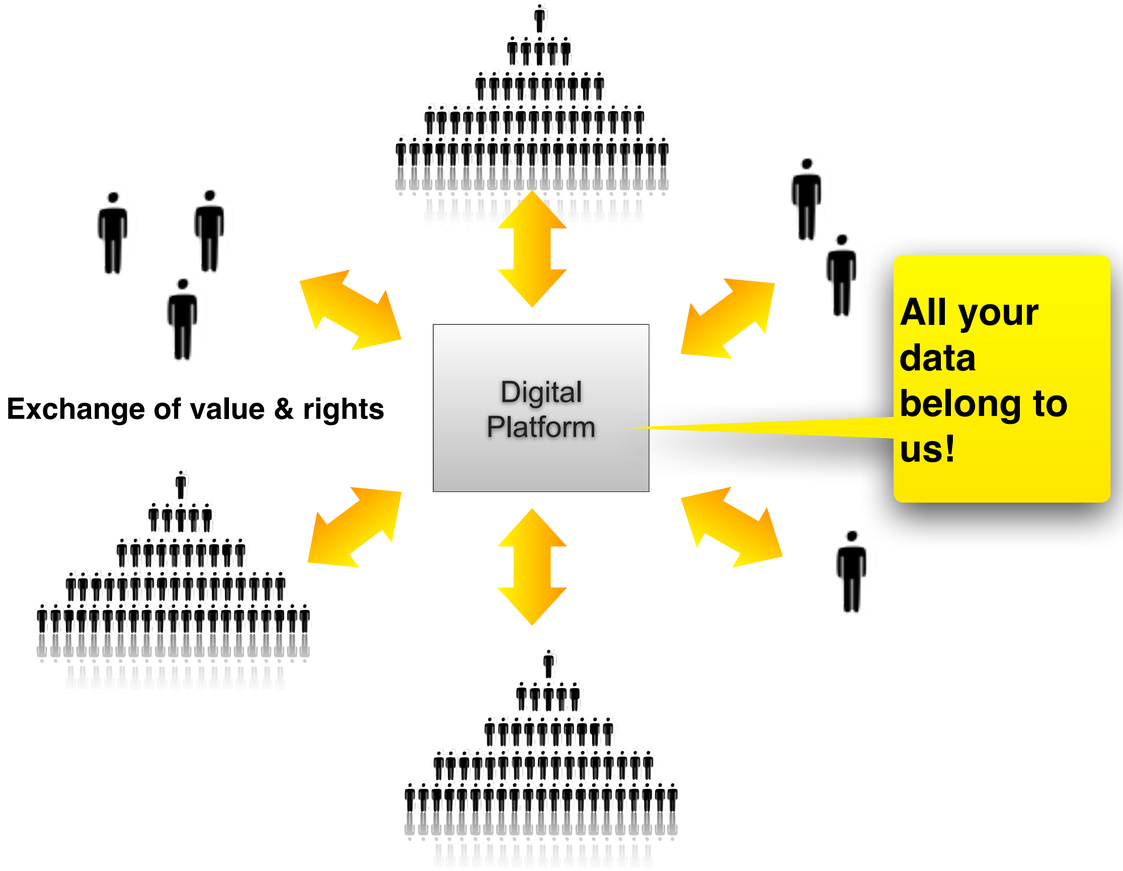


Services
User Experience & Intimacy
Value **creation**

Platforms
API, SDK, Rules
Value **capture**

15

Infrastructures
Enabling capabilities
Value **delivery**



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

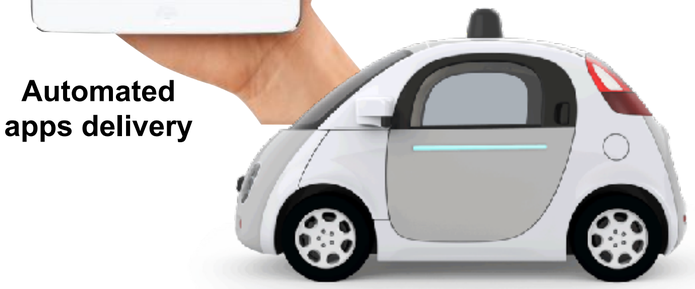
Platforms for Automated Customer-Led Self Service Relationships

Automated cash

Automated check-outs

Automated Homes

Automated apps delivery



Services

User Experience & Intimacy
Value **creation**

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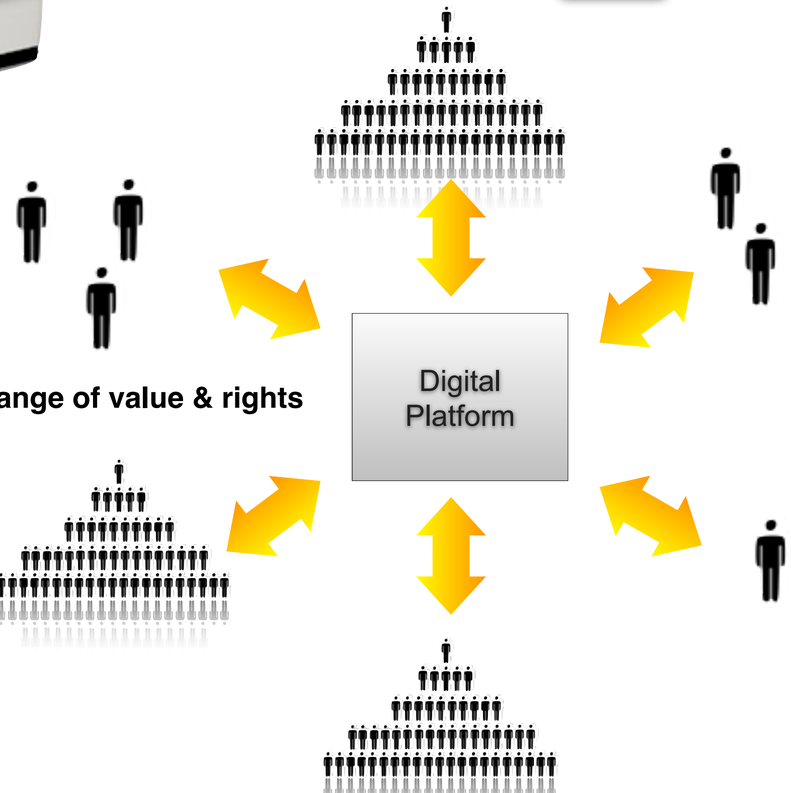
Infrastructures

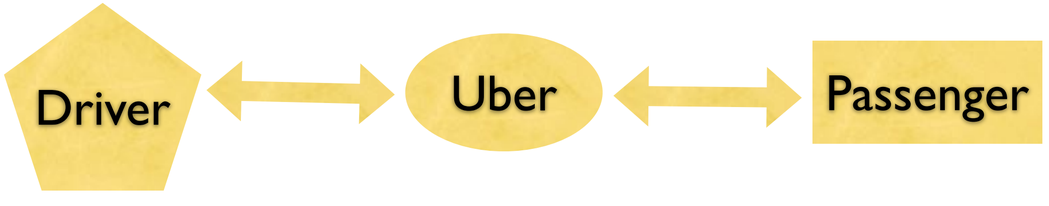
Enabling capabilities
Value **delivery**

IP



Exchange of value & rights

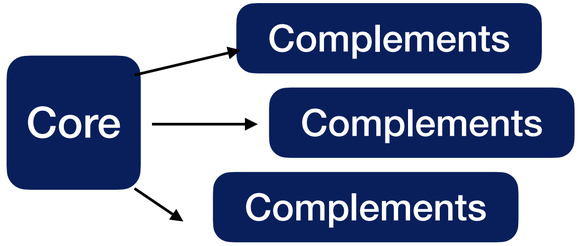
Pushing Paid Human Action to The Edges
Placing some Innovation at the Centre
Outsourcing remaining Innovation Risk
to independent contributors

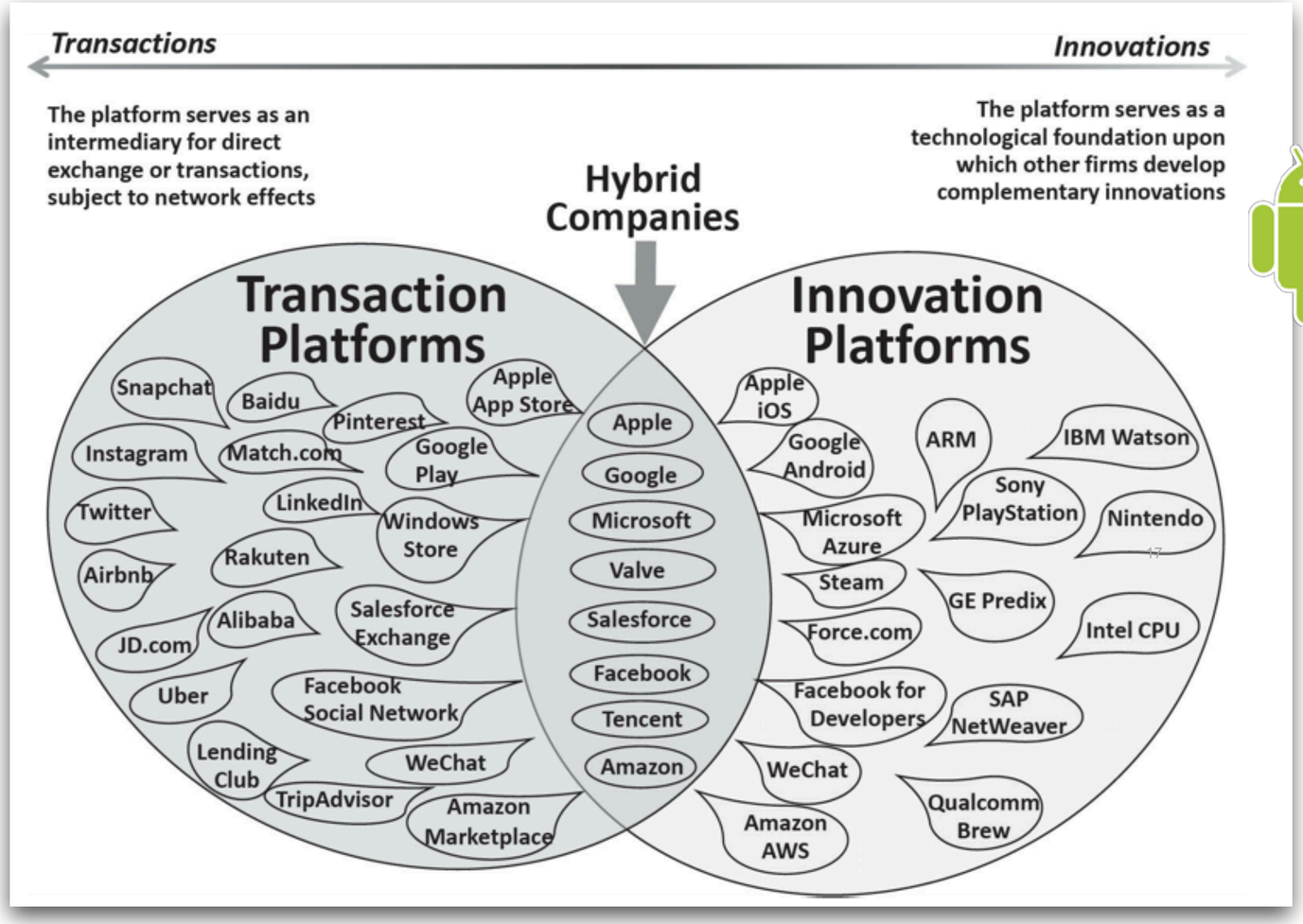


Two Fundamental Flavours of Digital Platforms implementing Multi-sided Markets

Transaction Platforms = those that mediate exchanges between multiple parties

Innovation Platforms = those, which in addition leverage digital materiality to enable distributed complements to the platform capabilities through boundary resources (APIs, SDKs, and rules), for example in the form of smartphone apps.





(Cusumano, Gawer, Yoffie, 2019, p.18)

Multi-sided, distributed and digitally scaled markets based on limited sets of shared boundary resources

Average iPhone app = 50.000 lines of code

USA heathcare.gov website 2013 = 500 million lines

2.2 million iPhone apps, 2.8 million Android apps = 250 billion lines

http://www.informationisbeautiful.net/visualizations/million-lines-of-code/

Digital Platforms For Multi-Sided Markets

Side 1 ⟷ Side 1

Mobile operator - Vodafone

- Mobile phone users

Side 1 ⟷ Side 2

Visa

- Credit card users
- Vendors accepting Visa

Side 6
Web-page publishers

Side 5
People searching

IP

Side 1
Vendors advertising

Google

Side 4
Web-search indexing and optimisation companies

Side 2
Advertisement auctions

Side 3
Search analytics companies

1) Information

2) Goods Encounters

$£€

IP

3) Service Relationships

$£€

4) Innovation Complements

$£€

5) Meta-data

$£€

Multi-Sided Market Dynamics

Network Externalities => More fax machines means buying one a better idea.

Chicken & Egg: Growing each side – **go narrow and go deep!**

Subsidisation:

- ***Platform***: Investors => Uber drivers and passengers
- ***Same-side****:* I send you cat picture on Facebook
- ***Cross-side****:* Google advertisers pay for search

Incentives can *change* over time

Multi-homing = participate on multiple platforms.

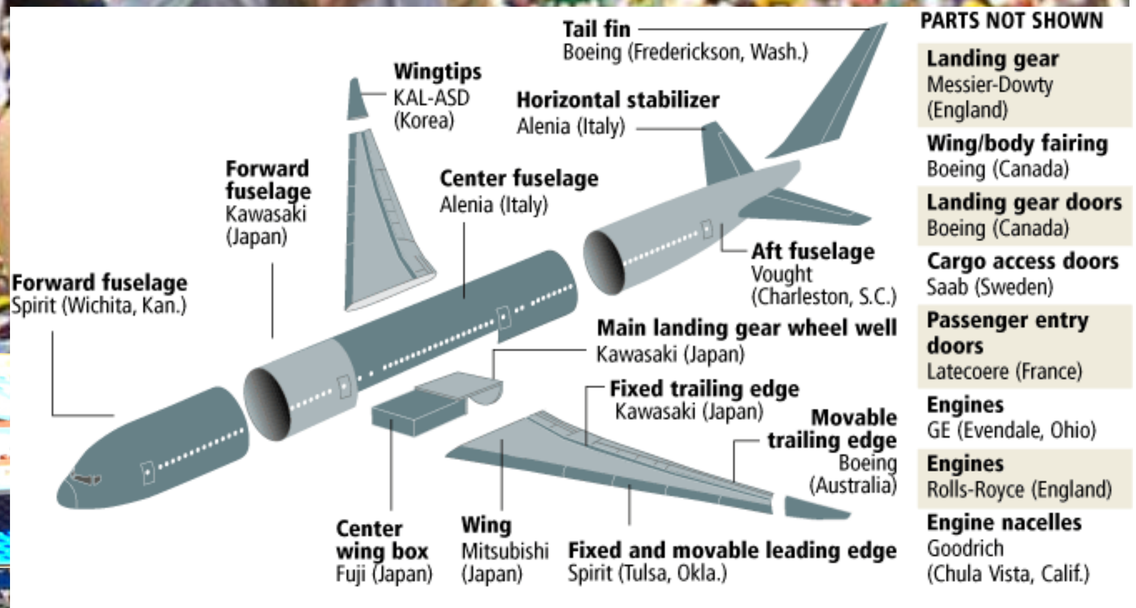
Marsupial Platforms, such as Wechat: From app to platform

http://digitalinfrastructures.org/Marsupials.html

Innovation Platforms

Centralised Control

Single Design Hierarchy



Distributed Innovation

Multiple Design Hierarchies!!

- Each “brick” can display behaviour potentially changing behaviour of other “bricks”
- Output from each element potential input to another.
- Elements can after “manufacture” be improved or changed into something different

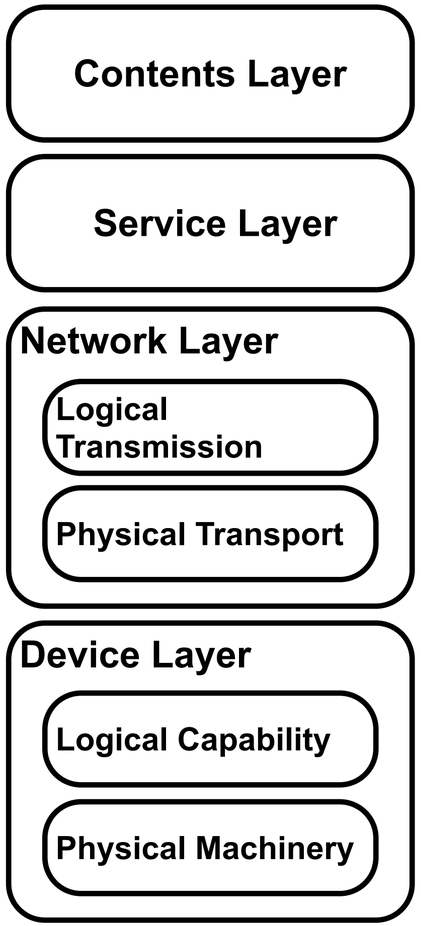
Layered-Modular Architectures

Physical goods and digital software

Modularity of manufacturing

Layering of software

Layered Modular Architecture extending the modular architecture of physical goods with four loosely coupled digital layers



Modular Architecture

Fixed product boundary and meaning

Loose coupling between components through standardized interfaces

Components nested in a single design hierarchy

Product-specific components

Components designed and produced by firms sharing product-specific knowledge

Reprogrammability
Homogenization of data
Self-reference

Low **High**

Layered Modular Architecture

Fluid product boundary and meanings

Loose coupling between components through standardized interfaces

Heterogeneous layers following multiple design hierarchies

Product-agnostic components

Layer are coupled through standards and protocols shared by heterogeneous firms

- The product is made of modular components on different layers that belong to different design hierarchies.
- Components are product agnostic. They can be used simultaneously as a part of many different products.
- The product emerges (rather than is strictly designed) from components that are controlled by different regimes.
- Firms can compete and partner at different levels at the same time.

(Yoo, Henfridsson & Lyytinen, 2010)

Boundary Resources = Tools & Rules

Enabling a balance of openness & control

Tools

Software Development Kit (SDK)

- The production environment for iOS apps
- Apps must be developed on Mac Computer
- Using GPS requires asking user for permission

Application Programming Interface (API)

- High level functions (building blocks) hosted by others
- e.g. Google Maps or Facebook OAuth login

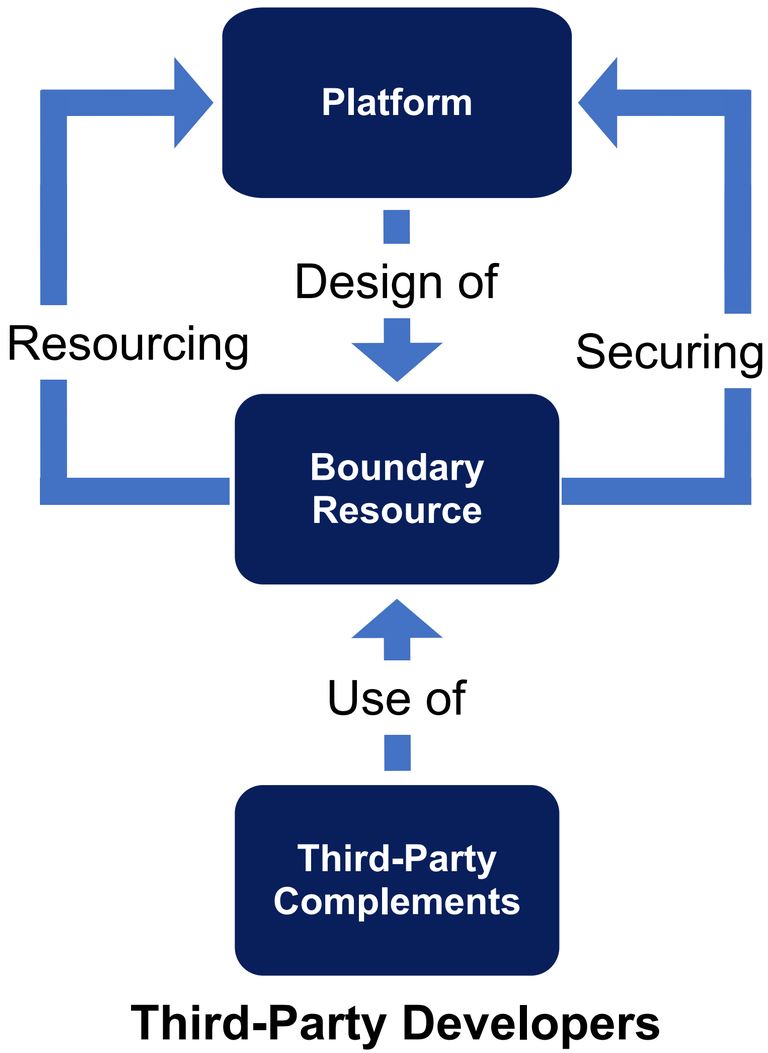
IP

Rules

Platform rules governing development

- The app should do what it promises
- Good clean family entertainment you can trust
- 30% tax on app sales
- No competing platforms

Dim sum ordering boundary resource

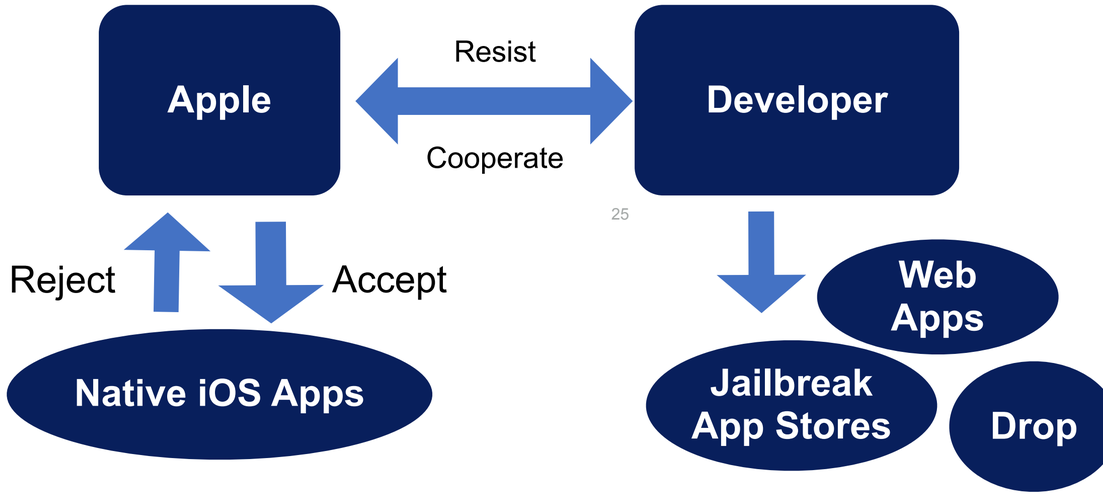


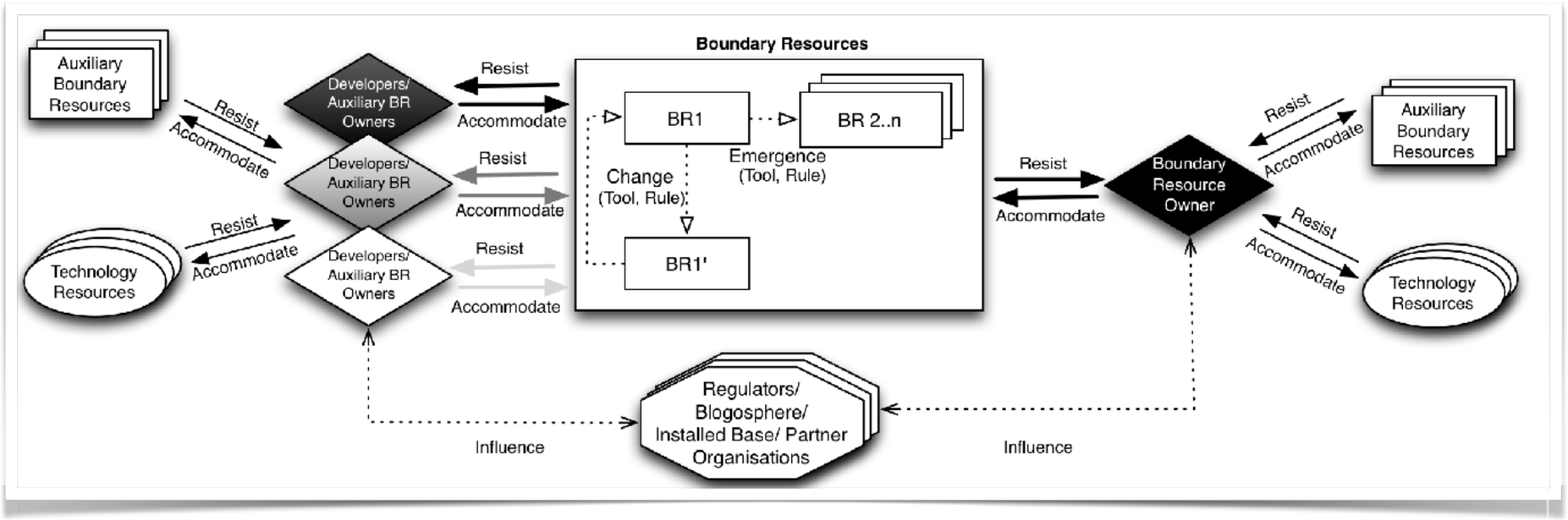
Eaton, B. D., S. Elaluf-Calderwood, C. Sørensen, & Y. Yoo (2015): Distributed Tuning of Boundary Resources: The Case of Apple's iOS Service System. MIS Quarterly: Special Issue on Service Innovation in a Digital Age, vol. 39, no. 1, pp. 217-243.

Ghazawneh, A. & O. Henfridsson (2013): Balancing Platform Control and External Contribution in Third-Party Development: The Boundary Resources Model. Information Systems Journal, vol. 23, no. 2, pp. 173-192.

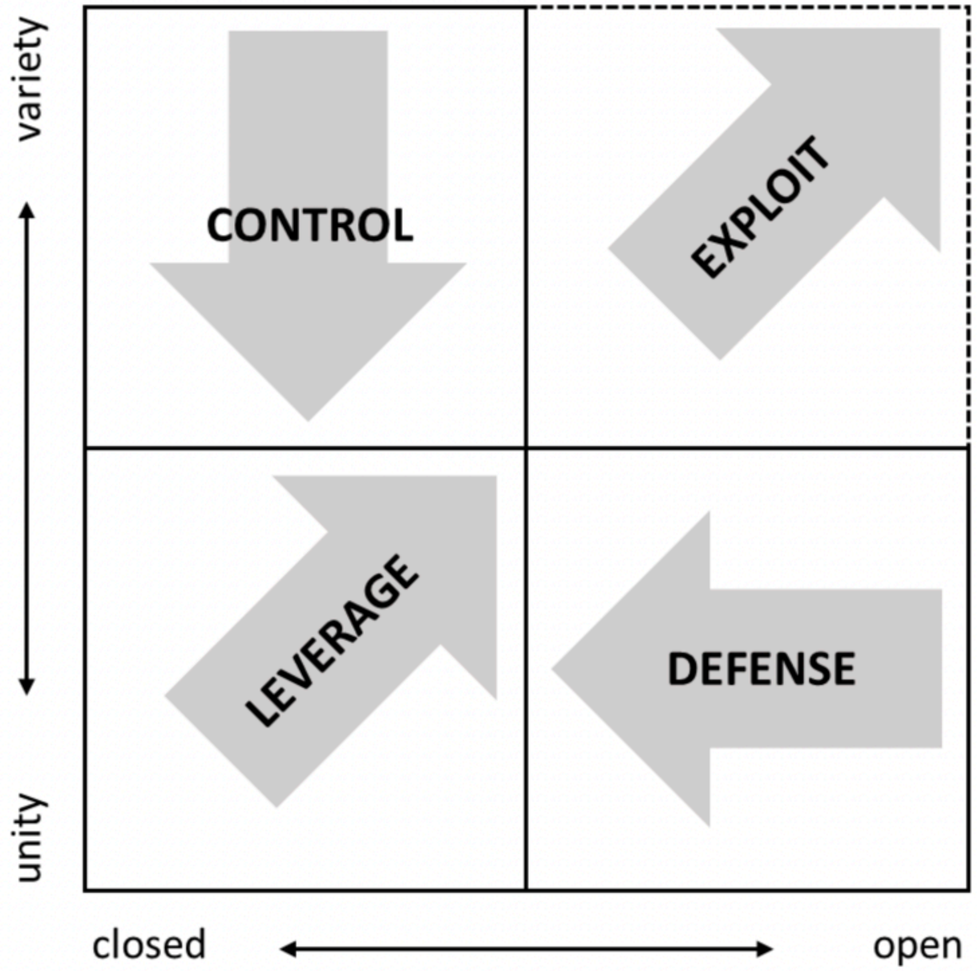
Boundary Resources

Highly distributed innovation in an unpredictable recursive process of push and pull where even the highly controlling Apple is not entirely in control and where even individual developers can exercise influence through leveraging the blogosphere





Architectural Control Point Tactics



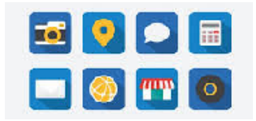
Case platforms	Leverage	Control	Exploit	Defense	Key features of each case (incl. boundary resources used)
Apple iOS (2007→)	++	+++	less significant	+	- The first smartphone platform to launch a marketplace and monetization boundary resources to leverage 3rd party developers in large scale - Strong quality control to prevent exploitation - Case shows that leveraging only one side with focus on quality can bring sustainable success and high profits despite restricted market share
Google Android (2008→)	+++	++	++	++	- Instead of control aims at maximal leverage from two sides: developers and manufacturers - Employs digital boundary resources, such as Play Protect, client library, compatibility definition document & test suite (CDD & CTS), to control for the massive scale of complementors - Wide openness has led to vulnerability to exploitation by platform forks such as Amazon Fire. Actively defends the platform - Google itself exploited core APIs from Java
Amazon Fire (2011→)	+	+	+++	less significant	- A closed platform similar to Apple iOS, but instead of building the platform on its own, Amazon exploited AOSP to get both platform core and complements from Android - To minimize multihoming costs for Android developers, provides a replica of Android boundary resources including Maps APIs

Karhu, K., Gustafsson, R., Eaton, B., Henfridsson, O., and Sørensen, C. 2020. "Four Tactics for Implementing a Balanced Digital Platform Strategy," MIS Quarterly Executive (19:2), pp. 105-120.

Platforms & Infrastructures

Infrastructure as Fuel, Protector, or Millstone

Services
User Experience & Intimacy
Value **creation**

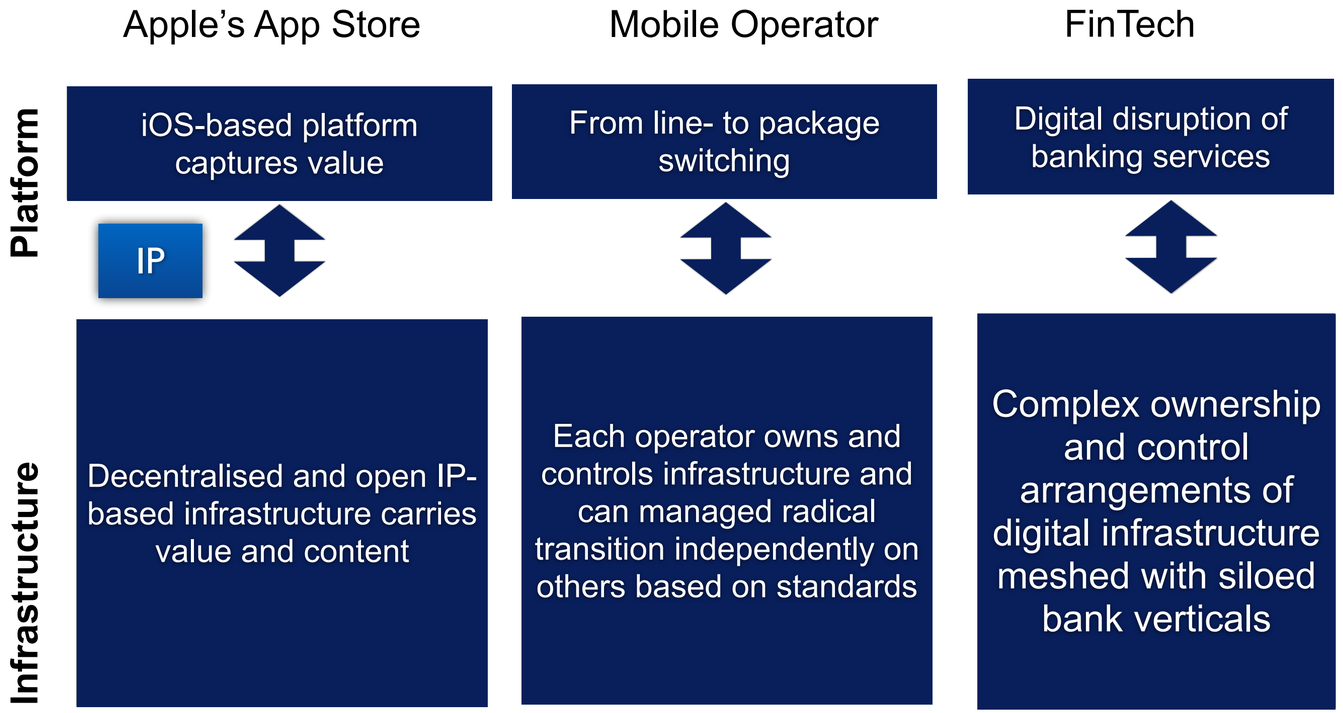


Platforms
API, SDK, Rules
Value **capture**

iOS

Infrastructures
Enabling capabilities
Value **delivery**

IP



Smithsian Growth & Infrastructure (Exploit & Improve)
The critical importance of infrastructure to protect incumbency if commanding it as an exclusive user – small hotel chains cannot compete against Hyatt Hotels' 777 properties in 54 countries.

Schumpeterian Growth & Infrastructure (Explore & Destroy)
The change of the competitive rules through innovation can render an existing infrastructure a burden rather than a protector of incumbency – if, for example, guests prefer Airbnb over Hyatt when Airbnb leverages an open Internet infrastructure.

Mega-Platform Risks — Strategic Control Points!

Movers
Transporting people & things
(Uber, DoorDash, Didi)

Streamers
Delivering content
(Netflix, Spotify, Disney)

Creepers
Spying on users
(Meta, Snap)

Platform Challenges

- **Network externalities are not always delivering on their promise**
  - More Uber cars in New York is no good for me in London
  - Limited how many local Indian restaurants on DoorDash is any good for me
- **Without strong architectural control points, others can rapidly copy business model**
  - Uber is an app, some drivers and a brand… so is Lyft (US) and Bolt (UK)
- **Relying on a delivery platform means paying platform tax**
  - Spitify pay 15% subscription tax to Apple
  - Epic's court tussles over Apple's Fortnite tax
- **Being a platform relying critically on another platform can be dangerous**
  - Apple's decision that users can turn off cross-app tracking will cost Meta around $10 billion in 2022
  - Platforms banned the right-wing social platform Parler

Control Point Strengths

- **Apple** has strong control points weaved together in a device ecosystem and could decide to lock out key Meta business model. Hence Meta betting the farm on the Metaverse where they think hey will be in control through Oculus headsets
- **Google** equally has Android as core architectural control point. Simultaneously seeking to aggressively build the cloud offering
- **Amazon** is able to cross-subsidise between Amazon Web Service and the rest, and is leading on providing cloud infrastructure
- **Microsoft** has a corporate PC software stronghold and globally 2nd in cloud

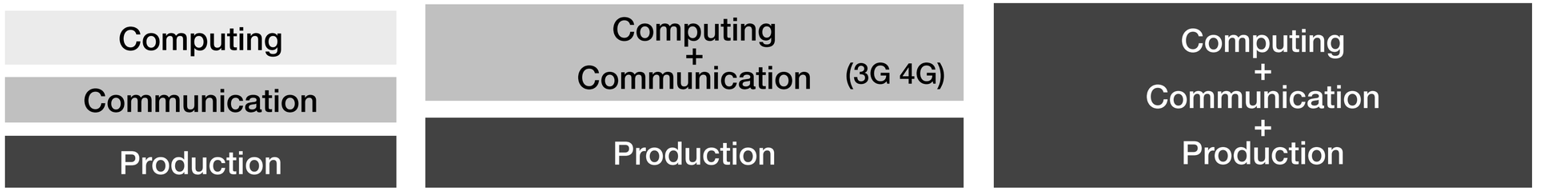
https://www.economist.com/business/2022/10/31/what-went-wrong-with-snap-netflix-and-uber

Future Platforms

Emerging Forces of Digital Business Model Disruption

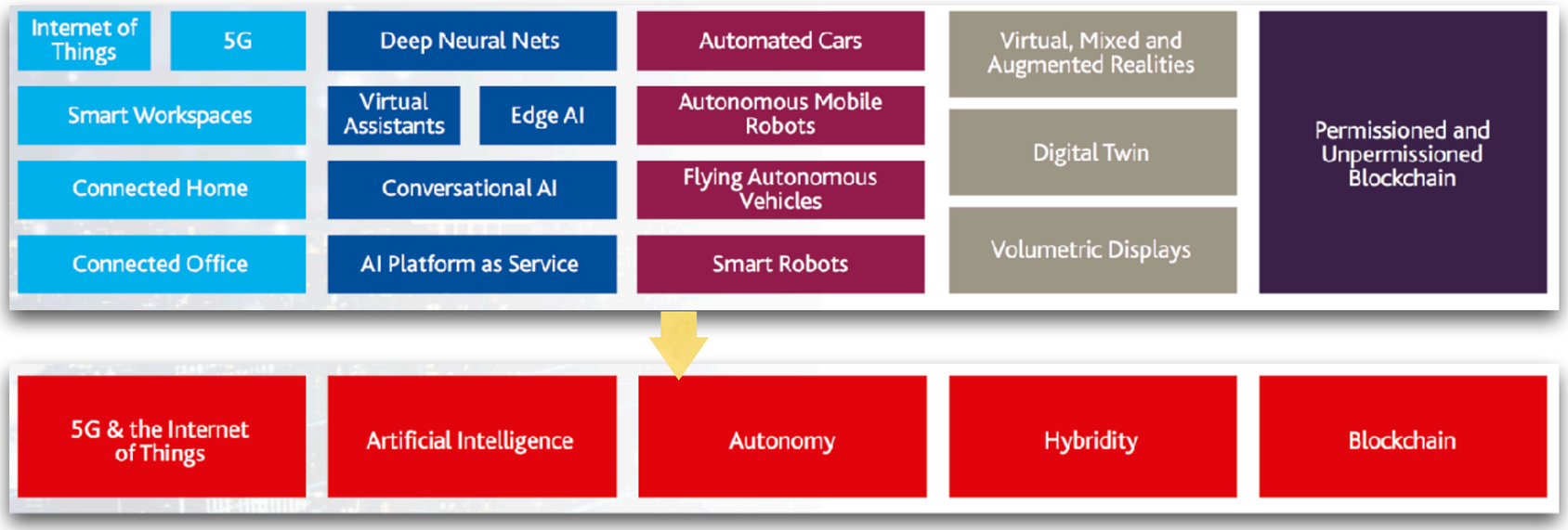
The islands of automation traditionally governed organisations as computing was done using mainframes, communication with telephones, typewriters and fax machines, and with production machinery disconnected from the rest. Networked PCs and smartphones converged computing and communication in multiple ways through web pages, mailing lists, e-commerce systems, video calls, instant messaging, and much else.

Businesses are now on the cusp of converging computing, communication, and production through five foundational categories of technologies, which converged both will enable a plethora of new opportunities as well as challenges.



Islands of Automation | **Digital Convergence** | **Cyberphysical Convergence**

Whereas the smartphone revolution has resulted in millions of apps being developed in no time through distributed innovation, this arrangement is also characterised by a simple and unified form factor and a stable human-service relationship. The coming decades will see categories of technologies transform the foundational logic for business models. This development will challenge organisations to radically rethink their business models and require new methods, tools, and techniques to do so.



(McKenney & McFarlan, 1982; Hale et al, 1989; Brodie, Brennan, Sørensen, 2019)

The Web in Three Acts

Web 1.0 — Read

Democratising digital information

Sir Tim Berners Lee's World Wide Web

Telecoms infrastructure = centralisation

Web = decentralisation

Web 2.0 — Read/Write

Democratising digital interaction

Middleware services

Social media engagement

Global mega platforms = centralisation

Open internet infrastructure - decentralisation

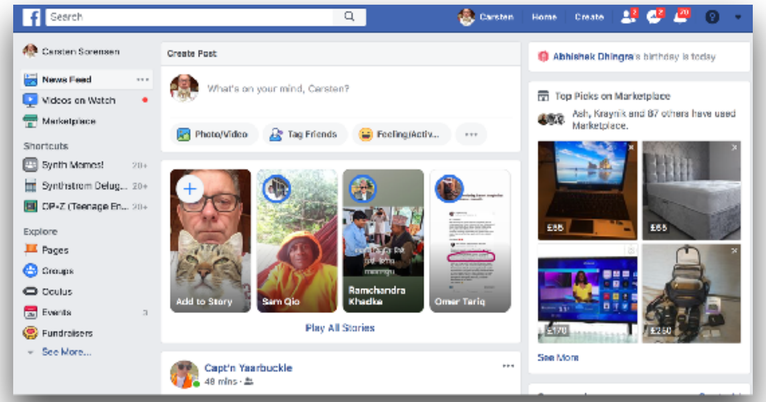
Web 3.0 — Read/Write/Own

Democratising digital rights

Distributed ledger infrastructures = (de)centralisation?

Distributed ledger platforms = (de)centralisation?

Resolving the double-spend problem



https://www.youtube.com/watch?v=bpaKQ3CZpVs

https://medium.com/@matteozago/why-the-net-giants-are-worried-about-the-web-3-0-44b2d3620da5

https://www.preethikasireddy.com/post/the-architecture-of-a-web-3-0-application

https://medium.com/fabric-ventures/what-is-web-3-0-why-it-matters-934eb07f3d2b

The Three Necessary and Sufficient Elements in a Value-Sensitive Digital Infrastructure Resolving the Double-Spend Problem

Coin
Scarce digital right

Necessary for establishing the digital coin

Necessary for peer-to-peer transactions of digital coin

Community
Responsible for governance & cryptographic method for privacy

SHA256

Pseudonymity

Consensus Mechanism

Network
Technical architecture supporting peer-to-peer broadcasting of all transactions on distributed ledger

Necessary for establishing the privacy and equality of peers

(Sørensen & Rossi, 2019; Rossi & Sørensen, 2019)

Blockchain Platforms Makes it Feasible for Everyone to Join

All coins/tokens are equal

Coin
Scarce digital right

Necessary for establishing the digital coin

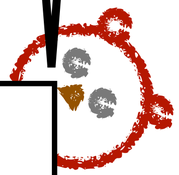
All community members are equal

Service Providers
Supporting light nodes access Wallets & Exchanges etc. Not equal members

Light nodes are not equal to full nodes

Necessary for peer-to-peer transactions of digital coin

Community
Responsible for governance & cryptographic method for privacy



SHA256

Pseudonymity

Consensus Mechanism

All network nodes are equal

Network
Technical architecture supporting peer-to-peer broadcasting of all transactions on distributed ledger

Necessary for establishing the privacy and equality of peers

(Sørensen & Rossi, 2019; Rossi & Sørensen, 2019)

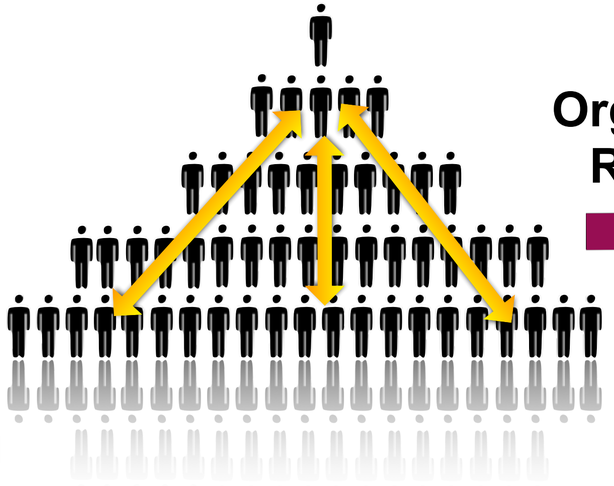
Digital Transformation Through Service-Platform-Infrastructure Reconfigurations

	Vertical Integration	Digital Fragmentation through Theft	Platform Consolidation on Downloads	Platform Consolidation on Streaming	Value Ecosystems through Tokenisation
Service An offer of **value creation** to someone					Tokenised music blending streaming, renting, and owning across multiple device ecosystems enabling revenue through smart contracts
Platform Architectural control points enable **value capture** (platform tax, for example)		napster.	Google amazon MP3	Spotify music Music	Multi-platformisation facilitation complex intellectual property value networks across device and service ecosystems facilitated by token exchanges
Infrastructure The necessary infrastructural capabilities for **value delivery**		IP	IP	IP	Hedera Hashgraph

(Kazan, Tan, Lim, Sørensen, Damsgaard, 2018)

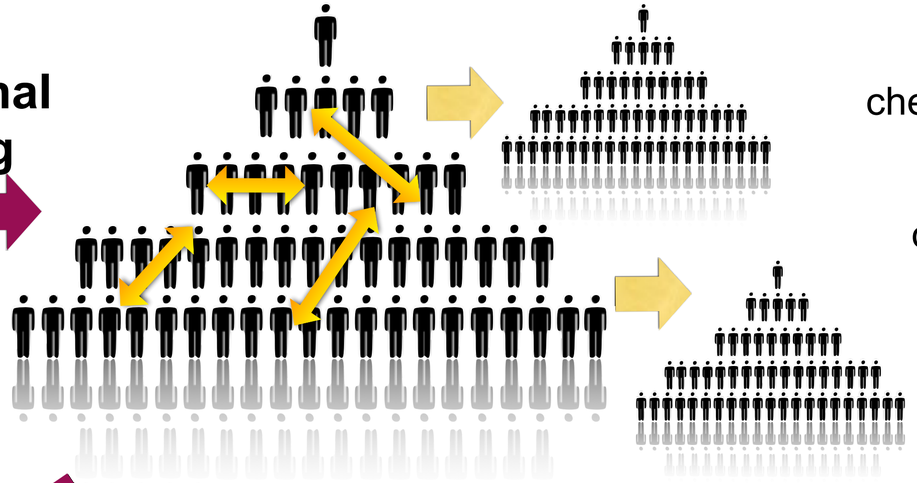
1) Expensive Communication in Large Collective Efforts => Tightly Coupled Pyramids of People

As the industrial revolution required large entities to establish economies of scale but did not offer cheap means of communication, organisations were forced to become hierarchically centralised



Organisational Recoupling

2) Market Demand for Flexibility => Recoupling through Internal Markets & Global Sourcing

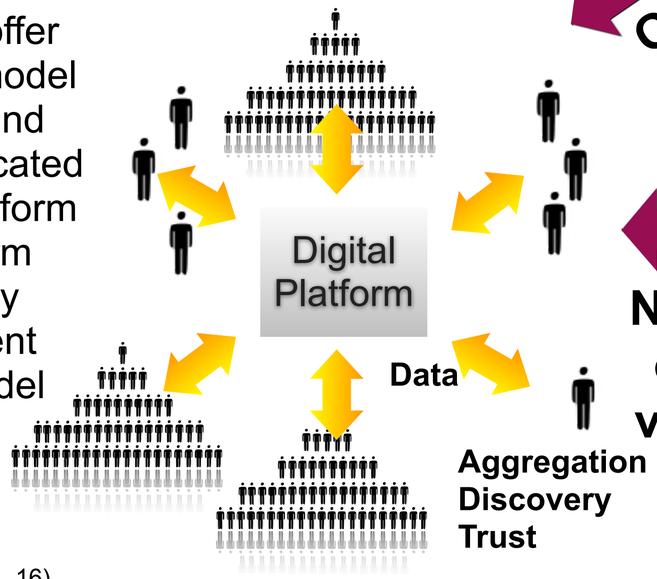


To meet changing market demands for cheap consumer goods of high quality delivered fast, organisations sought agility through outsourcing, off-shoring, and internal markets.

Org. + Digital Recoupling

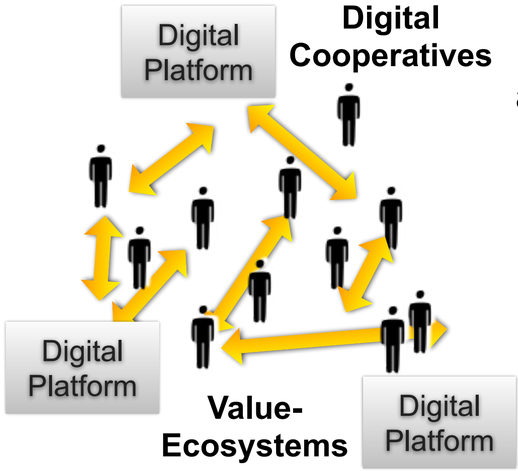
3) Digital Platforms => Large-Scale Innovation

However, digital platforms offer a far more agile business model as much of the innovation and operational risk can be allocated in the ecosystem at the platform edges. However, the platform seeks to become autarkic by dictating rules of engagement and is, therefore a poor model for ecosystems of equal organisational members



New combinations of platforms and value-ecosystems

4) Value Ecosystems Through Tokenisation



Digital ecosystems based on rights- and value-sensitive infrastructures and governed by consortia, digital cooperatives, are able to to engage flexibly in complex business arrangements due to the ongoing agreements on tokenised assets and processes governing these, for example, distributed consensus

(Kunda, 1992, Malone, 2004; Sørensen, 2011, 16)

End Credits

Researching Digital Transformation 1986-2023

Publications

Dr Sørensen's research impact is, according to Google Scholar h-index is 39 with over 8800 citations across 11 books and proceedings, 38 international journal papers, 43 book chapters, and 79 refereed conference papers.

Projects

£3million in research funding of several large projects in collaboration with universities and enterprises across Denmark, Sweden, United Kingdom and several European countries

PhDs

Since 1993 been primary and secondary supervisor for 22 completed PhD projects, of which 12 as primary supervisor at the LSE. Examined 43 doctoral dissertations

Impact

Executive teaching, academic consulting and whitepaper collaboration with industry leaders since 1991 across a number of countries and literally hundreds of sessions and companies

1995-2031 DIGITAL INFRASTRUCTURES

Hallingby, H.-S., G. Hartviksen, S. Elaluf-Calderwood, & C. Sørensen (2016).
Kazan, E., C.-W. Tan, E. T. K. Lim, C. Sørensen, & J. Damsgaard (2018):
Lyytinen, K., C. Sørensen, & D. Tilson (2017).
Tilson, D., K. Lyytinen, & C. Sørensen (2010):

2018-2031 BLOCKCHAIN INFRASTRUCTURES

Lacity, M, R. Sabherwal, & C. Sørensen (2019)
Pitt, J., J. H. Clippinger, & C. Sorensen (2018):
Rossi, E. & C. Sørensen (2019a):
Rossi, E. & C. Sørensen (2019b):
Rossi, E. & C. Sørensen (Forthcoming)

2008-2031 DIGITAL PLATFORMS

de Reuver, M., C. Sørensen, & R. Basole (2018). JIT.
Eaton, B. D., S. Elaluf-Calderwood, C. Sørensen, & Y. Yoo (2015): MISQ.
Kazan, E., C.-W. Tan, E. T. K. Lim, C. Sørensen, & J. Damsgaard (2018): JMIS

1987-2031 DIGITAL TRANSFORMATION

Åkesson, M., C. Sørensen, & C. Ihlström Eriksson (2018)
Klus, M. F., N. Pollock, & C. Sørensen (Forthcoming)
Lyyra, A. K., K.Koskinen, C. Sørensen, & M. Tucker (Forthcoming).
Mathiassen, L. & C. Sørensen (2008)
Sørensen, C. (2011)
Sørensen, C. (2020)

1996-2003 KNOWLEDGE MANAGEMENT TECHNOLOGIES

1995-2021 ENTERPRISE MOBILITY

1992-1996 COMPUTER-SUPPORTED COLLABORATIVE WORK

1989-1997 CASE TOOL DIFFUSION

1987-1989 STANDARD SYSTEM IMPLEMENTATION

Faculty Collaborators

Prof Kalle Lyytinen, Case Western Reserve University
Prof Kjeld Schmidt, Copenhagen Business School
Prof Lars Mathiassen: Georgia State University
Prof Ola Henfridsson: Warwick University Business School
Prof Youngjin Yoo: Case Western Reserve University

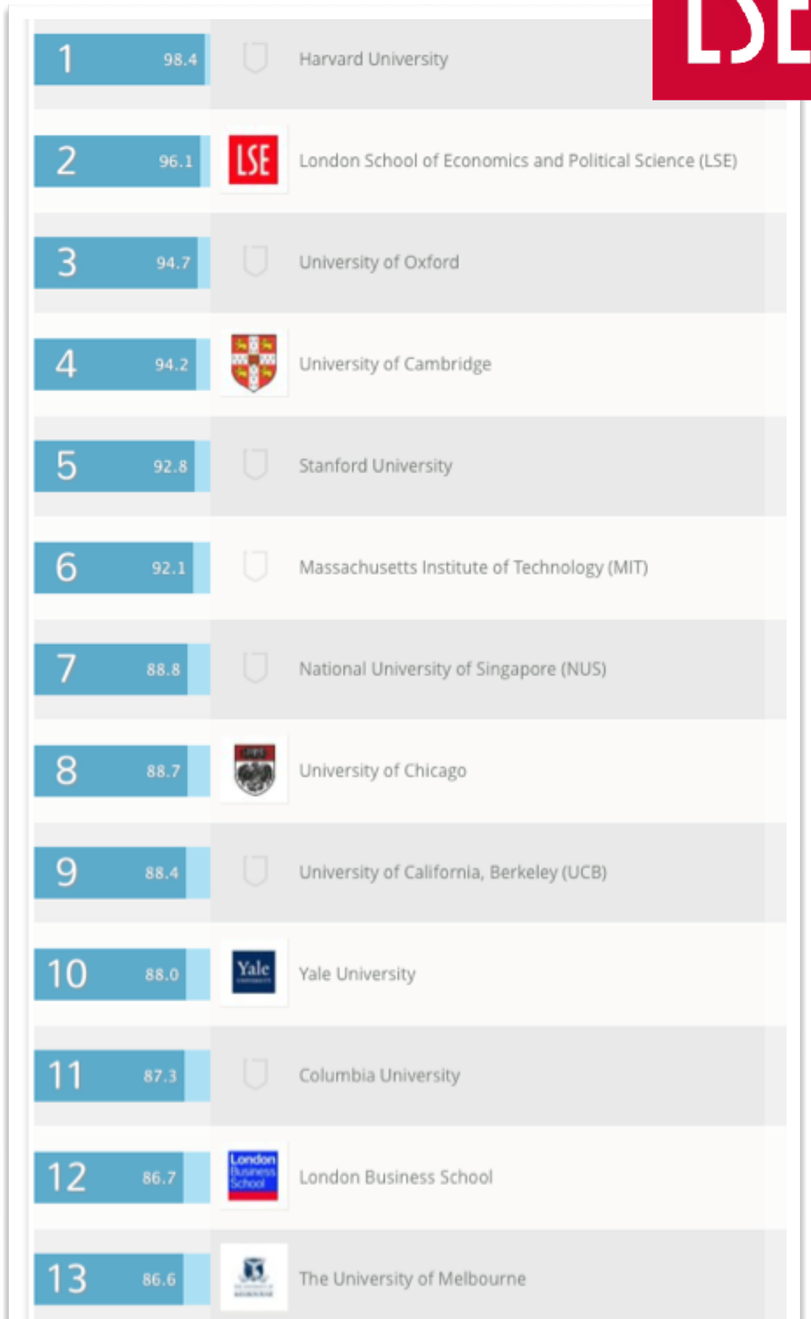
Doctoral Students (at least at some point in their process ;-)

Dr Adel Al-Taitoon[1]: Off-premises F/X trading in Middle-East bank
Dr Amarolinda Saccol: UNISINOS: PDA Support for Brazilian bankers
Dr Antti Lyyra[1]: Robotics Platforms & Machine Learning
Dr Arianna Bassoli[1]: The urban experience and ubiquitous technology
Dr Ben Eaton[1]: Technical visions for mobile innovation
Dr Daniele Pica[2]: Mobile interaction in UK operational policing
Dr David Tilson[2]: Case Western: Digital infrastructure innovation
Dr Fredrik Ljungberg[2]: Göteborg Universiy: Networking
Dr Gamel Wiredu[1]: Mobile ICT for remote learning in NHS
Dr Henrik Fagrell[2]: Göteborg University: Mobile Knowledge
Dr Jan Herzhoff[2]: Convergence and control in mobile infrastructures
Dr Jan Kietzmann[1]: Mobile communities of practice
Dr Kanchana Ambagahawita[1]_Regulated digital infrastructure innovation
Dr Katerina Voutsina[2]: Itinerant IT experts in Greece
Dr Kofi Boateng[1]: ICT-based control in distributed organising
Professor Lars Svensson[2]: University West: Communities of Distance Education
Dr Masao Kakihara[1]: Emerging practices of Tokyo professionals
Dr Nina Lundberg[2]: Göteborg University: IT in Health Care
Dr Ofer Engel[1]: Social Networking Services
Dr Patrick Kärrberg[2]: Mobile service delivery platforms
Dr Peter Carstensen[2]: Risø: Coordination of software testing
Dr Reuel Ocho[1]: Digital Fluency and Virtualisation in Cloud Computing
Dr Silvia Elaluf-Calderwood[1]: Choosing contexts in taxi work
Dr Siobhan Thomas[1]: Somatic Awareness in Games Design

[1] Primary supervisor [2] Secondary supervisor

The London School of Economics and Political Science

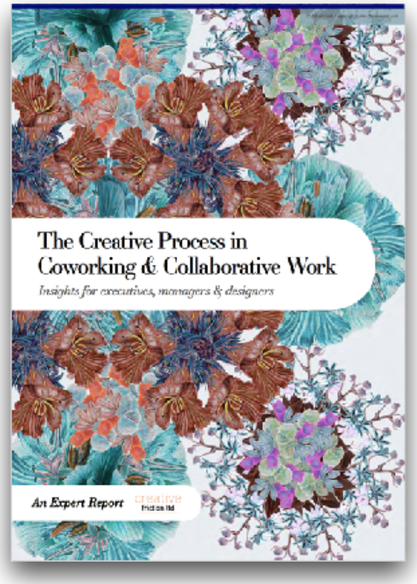
- LSE was founded in 1895 by Fabian Society members Sidney Webb, 1st Baron Passfield, Beatrice Webb, Graham Wallas and George Bernard Shaw for the betterment of society
- 9,500 full time students from 140 countries
- Just over 3,000 staff, about half from outside the UK
- Over 100 languages are spoken on LSE's campus (10 members of staff speaking Danish)
- Network of over 160,000 LSE alumni spans the world, covering over 190 countries with more than 80 active alumni groups
- In all, 34 past or present world leaders have studied or taught at LSE and 31 current members of the UK House of Commons and 42 members of the House of Lords have also either taught or studied at LSE
- 16 Nobel Prize winners in economics, peace and literature have been either LSE staff or alumni
- Famous alumni: Queen Magrethe II of Denmark. Mick Jagger, John F. Kennedy (signed up but got ill*). George Soros. Tony Giddens (the guy who hired Carsten ;-), Carlos the Jackal (infamous terrorist).
- Fictional alumni: Josiah Bartlet (President in The West Wing). James Bond's dad. Jim Hacker (Yes, Minister). Eliza Doolittle (My Fair Lady).
- Ranked 2nd globally within social sciences and management
- Rankned first in the UK for Business & Management
- London top-university city globally with 4 universities in top-40: Imperial College, University College London, LSE, Kings College
- Frequent public lectures at LSE. Recent have included Kofi Annan, Ben Bernanke, Tony Blair, Gordon Brown, David Cameron, Noam Chomsky, Bill Clinton, Niall Ferguson, Joschka Fischer, Vicente Fox, Milton Friedman, Muammar Gaddafi, John Lewis Gaddis, Alan Greenspan, Tenzin Gyatso, Paul Krugman, Jens Lehmann, Lee Hsien Loong, John Major, Nelson Mandela, Dmitri Medvedev, John Atta Mills, Mario Monti, George Osborne, Robert Peston, Sebastián Piñera, Kevin Rudd, Jeffrey Sachs, Gerhard Schroeder, Carlos D. Mesa, Luiz Inácio Lula da Silva, Costas Simitis, George Soros, Lord Stern, Aung San Suu Kyi, Baroness Thatcher and Rowan Williams.



*http://blogs.lse.ac.uk/lsehistory/2015/11/25/the-almost-alumnus-john-fitzgerald-kennedy-1917-1963/

Reports and Blog Articles

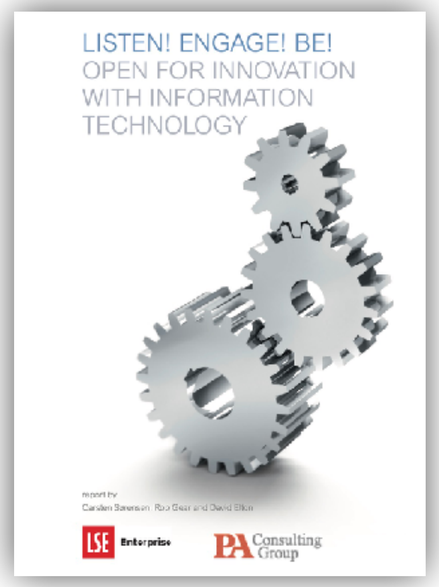
http://stuff.carstensorensen.com/TidesOfDisruption2019.pdf



http://stuff.carstensorensen.com/ToivonenSorensen2018.pdf

http://stuff.carstensorensen.com/VentersSorensen2017-CostOfCloud.pdf

http://stuff.carstensorensen.com/SorensenPillans2012-FutureOfWork.pdf



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https://blogs.lse.ac.uk/covid19/2022/01/13/lse-iq-podcast-when-you-work-from-home-you-work-harder/

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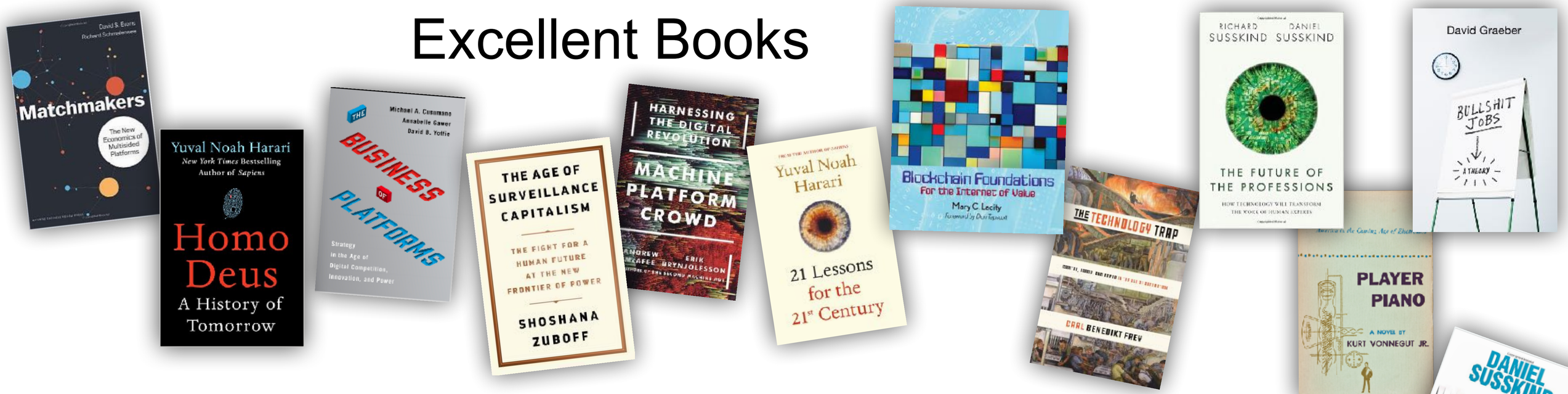
http://blogs.lse.ac.uk/businessreview/2017/04/12/future-of-work-making-a-living-from-cutting-our-own-hair/

digitalinfrastructures.org

Introduction	http://www.youtube.com/watch?v=HHOPBDq2jcI
Digitalisation	http://www.youtube.com/watch?v=BRay1SYmjZU
Platforms	http://www.youtube.com/watch?v=ohzB4XH2GWM
Control	http://www.youtube.com/watch?v=AM1xhZgsXis
Generativity	http://www.youtube.com/watch?v=2QCAVUDYDak
Curation	http://www.youtube.com/watch?v=X4PF9Lf0fKI
Protagonists vs Antagonists	http://www.youtube.com/watch?v=IkuCvbin_Yc
Strategies	http://www.youtube.com/watch?v=b6PYgfRkNwQ
Owners	http://www.youtube.com/watch?v=2x0KhFi6JN4
Marsupials	http://www.youtube.com/watch?v=_38C73R3_uA
Enablers	http://www.youtube.com/watch?v=0rz_Wg9zV_M

Excellent Books



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Evans, D. S. & R. Schmalensee (2016): The Matchmakers: The New Economics of Multisided Platforms Boston: Harvard Business Review Press.

Frey, C. B. (2019): The Technology Trap: Capital, Labor, and Power in the Age of Automation. Princeton University Press.

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McAfee, A. & E. Brynjolfsson (2017): Machine, Platform, Crowd: Harnessing Our Digital Future. WW Norton & Company.

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Books on Platformisation

Evans, D. S. & R. Schmalensee (2016): The Matchmakers: The New Economics of Multisided Platforms Boston: Harvard Business Review Press.

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Books on Blockchain & Cryptoassets

Lacity, M. C. (2020): Blockchain Foundations for the Internet of Value. Arkansas: epic books.

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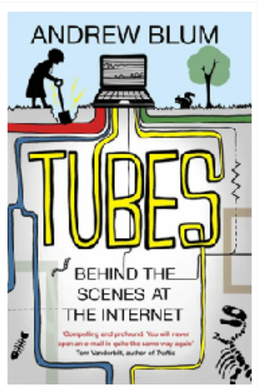
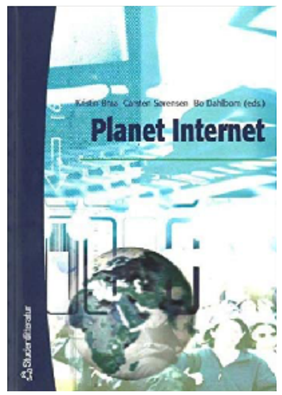
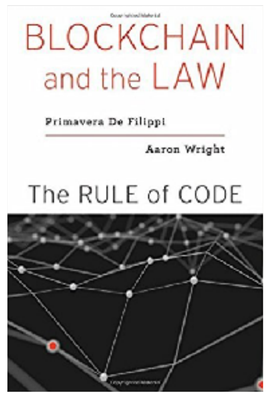
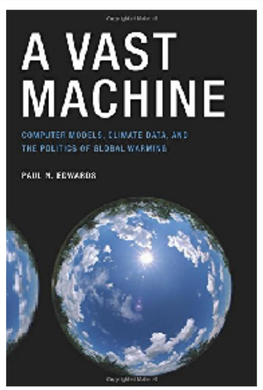
Books on Infrastructuring

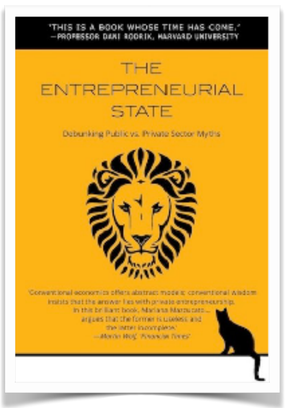
IP

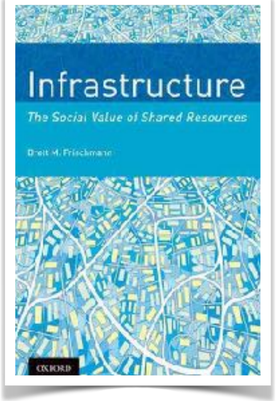


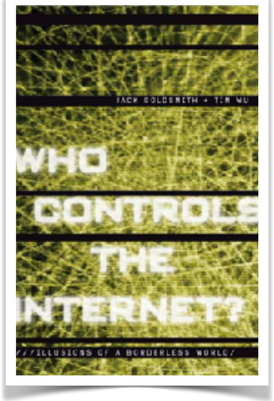


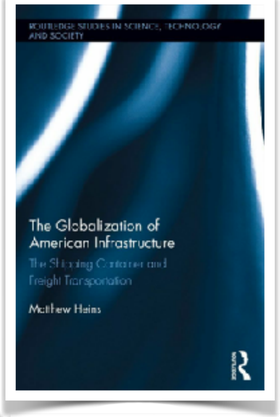


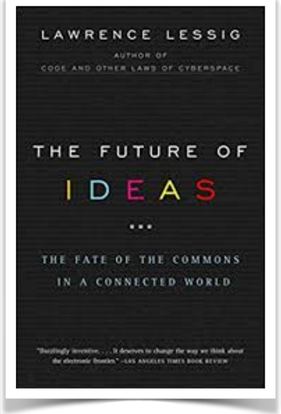


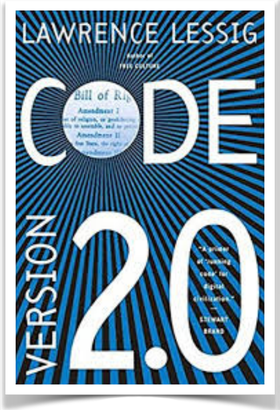


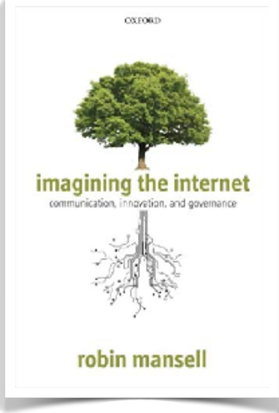


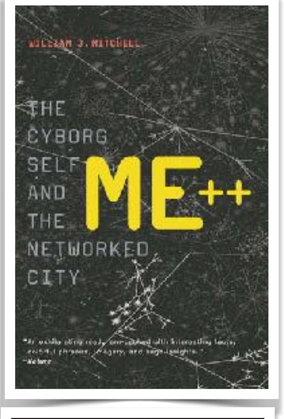


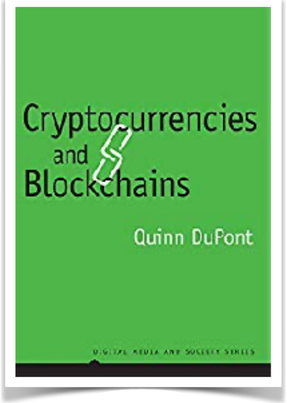


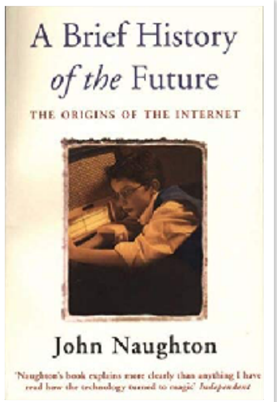


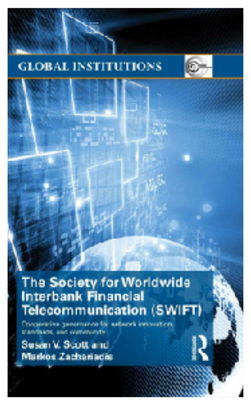


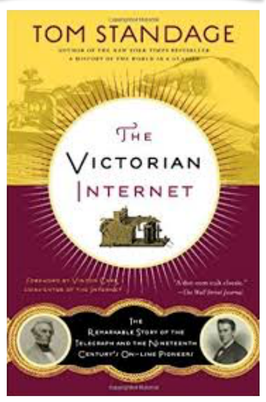


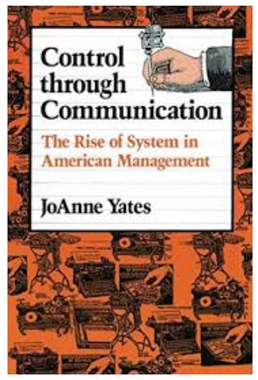


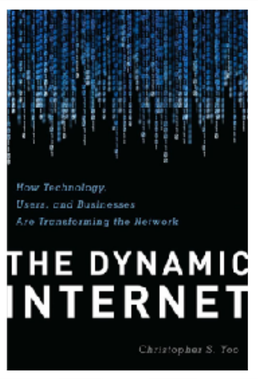


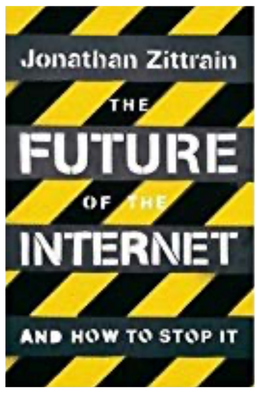


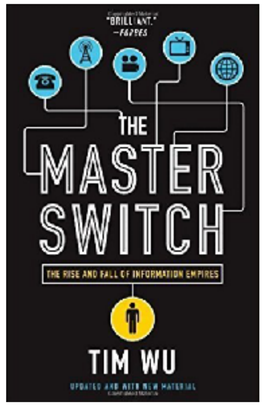


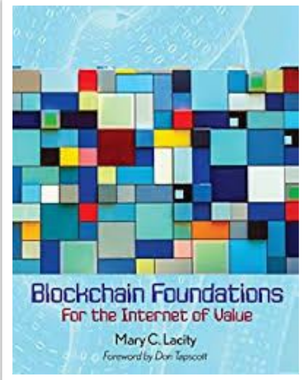












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Thanks!

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