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ICT Commoditization:
A Political Economy Explanation of the Rise of *Apple*, *Google* & Industry Disruptors

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Motivation: A Story about Galapagos

Geographic isolation → Distinctive Ecosystem

Japan's Mobile "Galapagos"

A slim, stainless steel mobile phone for more versatile enjoyment of 1 Seg

2007


android
2007
Urban Blue
Pink Soda
iPhone
Stanford University

What happened?

Japan was a Leader without Followers

- Industry isolation and combination of competition and abundant resources
- → rapid technological improvement along a particular trajectory

Put simply,

- It became a leader…
- But there were no followers…
- And then they all got disrupted

The Broader Issue

Japan: Leading without Followers… in int'l perspective

→ Actually a global story of Commoditization driven by Apple, Google Android

- Carriers commoditized: little possibility for value-added services beyond connectivity to Smartphones
- Handset manufacturers commoditized: fates of Nokia, Motorola, Japanese manufacturers, and Samsung's challenge

* Commodity = an offering differentiated primarily on the basis of price rather than value-added. Little opportunity for rent above costs. Applies to services as well as products.

Core Question

How did this trajectory of commoditization by US “computer industry/software services” players come about?

- Waves of disruption* and commoditization in ICT: incumbents rapidly displaced
  - Mainframes → Minicomputers/PCs
  - ATM → TCP/IP
  - Cell phones → Smart Phones
  - Cloud Computing about to deliver another wave of commoditization with commodity computing power

* disruption: Broadly shared expectations of how the Industry will develop encounter unexpected changes in business models and technological trajectories

Pardon the Academic Punch Lines

- "Industry architectures" (Actors, resources)Jacobides et al 2006, etc) often used to explain various phenomena.

- The political and regulatory factors that shape industry architectures are often treated as exogenous

- What if some critical industry architecture outcomes (cross-nationally) that explain key phenomena today actually have an underlying regularity in the political phenomenon that shape them?

- Towards a more complete understanding national industry structures shaping global competition

Methodology

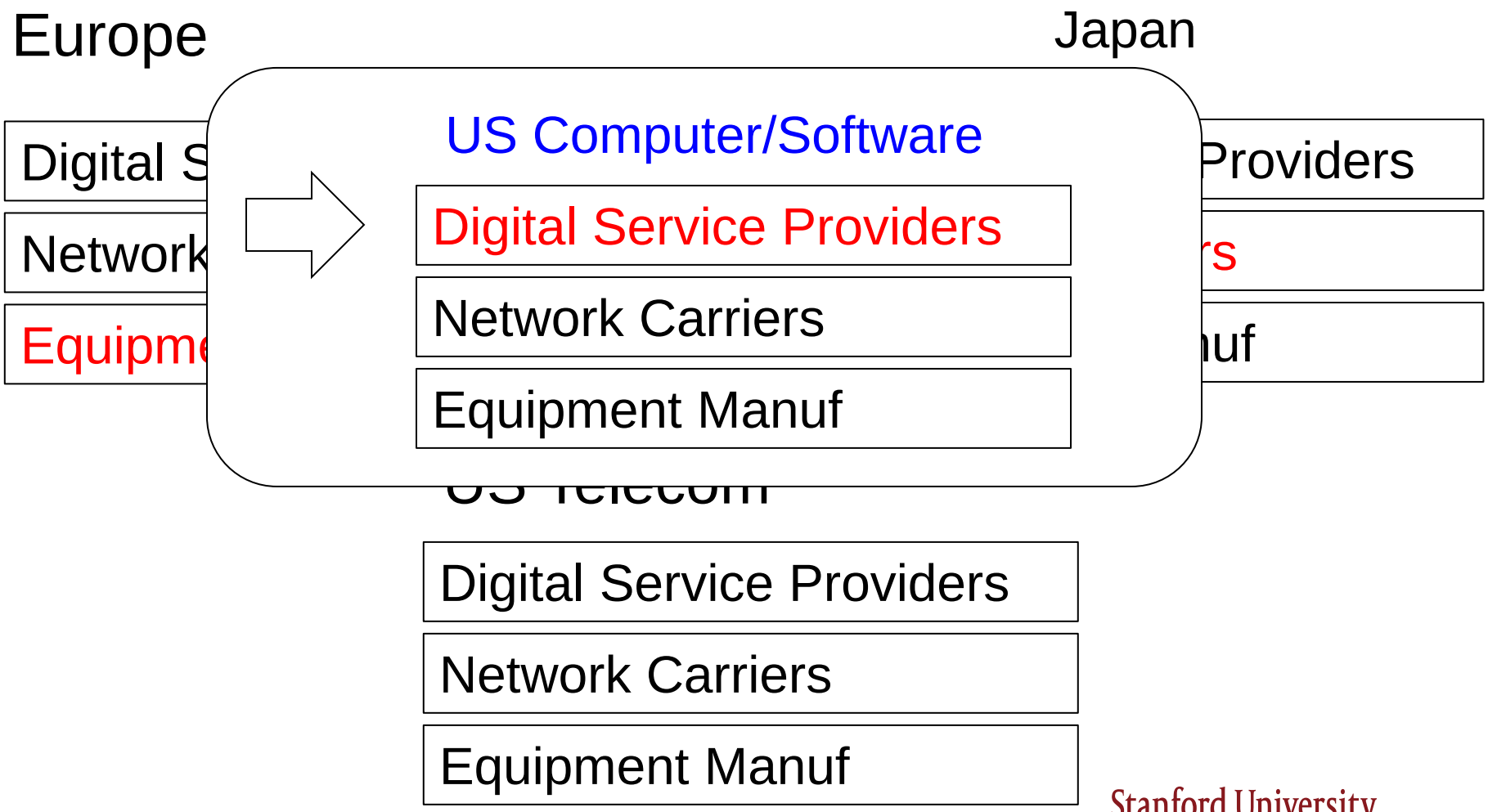
- Industry studies of R&D capable advanced industries countries (US, Japan, Europe [UK, Fr, Ger +Finland/Sweden])
- Trace across 3 most significant disruptions:
  - Liberalization
  - Advent of Internet
  - Rise of Mobile
- Sorted into industry layer stack
  - Digital Services/Content
  - Network Carriers
  - Communications equipment providers

Core Argument (1)

Different sets of winners and losers along the stack emerged in different parts of the world.

- → different industry leaders (primary source of R&D, set technological trajectories), usually result of national-level competition
- Global competition = patterned interactions of domestic winners and losers

Contrasting Industry Leaders (Winners)



Core Argument (2)

Incumbent's political strength and will to retain industry leadership during initial liberalization process → ability to exert industry leadership

- US = weakest incumbent (AT&T vs. DOJ) → breakup, no industry leader
- Japan = strongest incumbent → intact, industry leader
- Europe = in between (for large countries) → intact but late liberalization, rise of Nordic equipment firms
- US Computer industry → sustained protection of from telecommunications incumbents → disrupted telecom industry players with advent of Internet, now Mobile

In Sum

- Political settlements over telecom liberalization usually not the first place to search for waves of commoditization unleashed by Apple, Google, Silicon Valley, etc.

- This political economy vantage suggests that if one first traces the industry architectures, compares cross-nationally, and then examines the political/regulatory forces that shaped them → deeper understanding of global industry disruptions

- Perhaps useful vantage especially for physical network-related industries, where national infrastructure → global markets (eg., energy, transportation)