

Visions moving forward: a Vantage from IT

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To become smart about smart grids...

- It is worth considering a previous and fairly recent and related experience from IT.
- I have analyzed the IT industry closely – as a whole, the biggest in Japan's GDP

Why Japan's IT experience matters (1)

- convergence between energy and IT, b/c **increasingly about flows of information** – larger number of providers and vast increase in information to and from users
 - Impending battles between *who provides the data networks*, (TEPCO, NTT, Softbank, Cisco?), *who provides the information control platforms* and mechanisms (NTT, Microsoft, Google??)
- necessarily a whole new set of players and the potential for linkages between domestic and foreign markets

Why Japan's IT experience matters (2)

- uncanny similarities between industries
 - large monopoly former state-owned operator controlling many of the critical resources
 - major Japanese industrial firms are customers
 - potential platform for innovation, experimentation, and entrepreneurship potentially unleashed by vertical disintegration

so what happened in Japan's IT?

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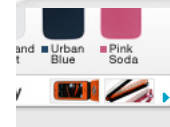


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The “Galapagos” Effect

- Galapagos = isolation led to distinct ecosystem
 - Distinct ecosystem is fine, but...
 - 1) weak vis-à-vis exogenous species → major opportunity cost lost
(eg., platform, handsets, content)
 - 2) Japan’s Galapagos IT is more than simply isolation, since isolation does not necessarily lead to sophistication
- The problem: **Leading without Followers**

Leading Without Followers

- Becoming a **leader** along a particular technological trajectory
 - large firms pursued innovation with cutting edge products, features seen nowhere else
 - new services and platforms
 - ecosystem of startups, entrepreneurship
- However, **no followers**
 - Instead of pursuing Japan, other companies/countries shift to different trajectories (eg., smart-phones)

Leading Without Followers

- **Not simply:**

- Lack of competition → mid to late 90s, large # carriers
- Exclusively domestic focus → manufacturers and carriers did aim at int'l markets, but failed (eg., i-mode, 3G handsets)
- Permanently misguided government policy → did try to correct
- Domestic Standards → later, 3G standards were global but too late
- Japan's overall macroeconomic weakness → very profitable domestic market during 90s and early to mid 2000s

Leading without Followers

- A Deeper Political Economy Problem:
- Political dynamics shaped the Actors, Resources, and Patterns of Interaction
 - NTT Group's resources (not completely split up)
 - Tech trajectories set by NTT, MPT
 - Stable set of actors with patterned interactions

Leading Without Followers

- core cause was initial market architecture
put in motion in process of liberalization →
dynamics of competition led to domestic
sophistication and global isolation
 - standards – wrong digital standard by going
proprietary closed, later correction too late
 - sources of R&D, manuf's followed carriers
 - weak capability to go global with platform,
winning locally = losing globally
 - regulatory authority initially focused only on
domestic industry competition level

How to Avoid Galapagos?

- There are system design aspects, but...
- Major role for shared social norm to at least attempt to avoid Galapagos IT.
 - Strong social push to avoid Galapagos
 - Get media attention (esp b/c politicians are concerned about media portrayal, and gov't officials can use “public opinion” as leverage)