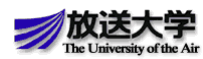


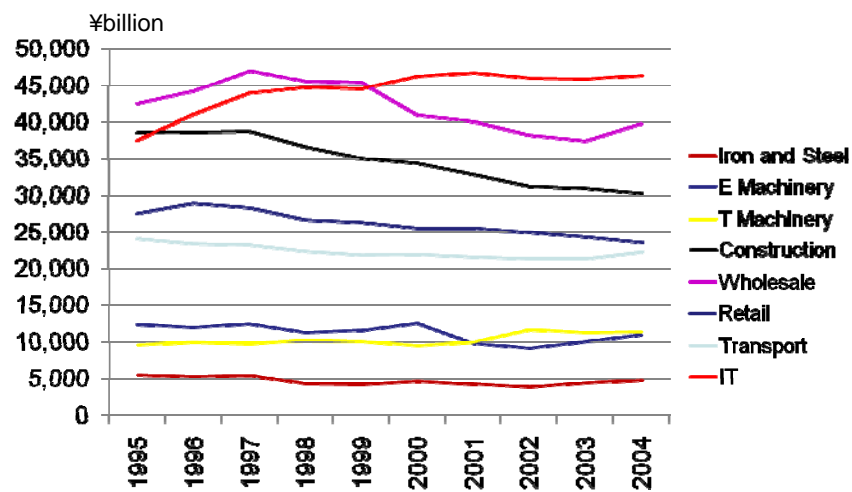
Information-Based Economy

June 18, 2007

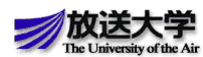
Toshihiko Hayashi



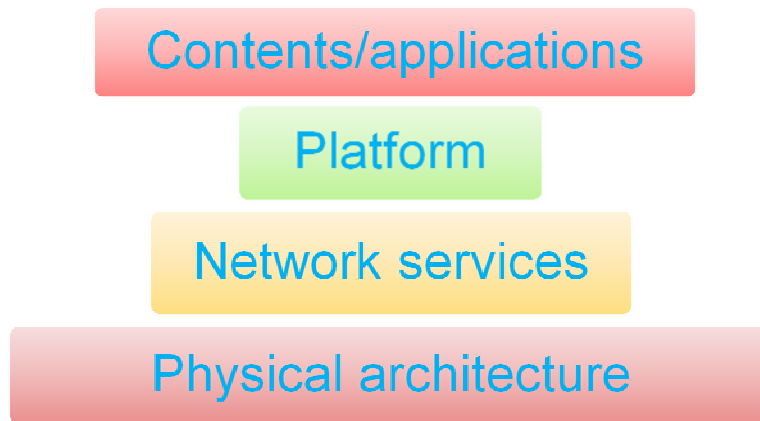
GDP by Industry



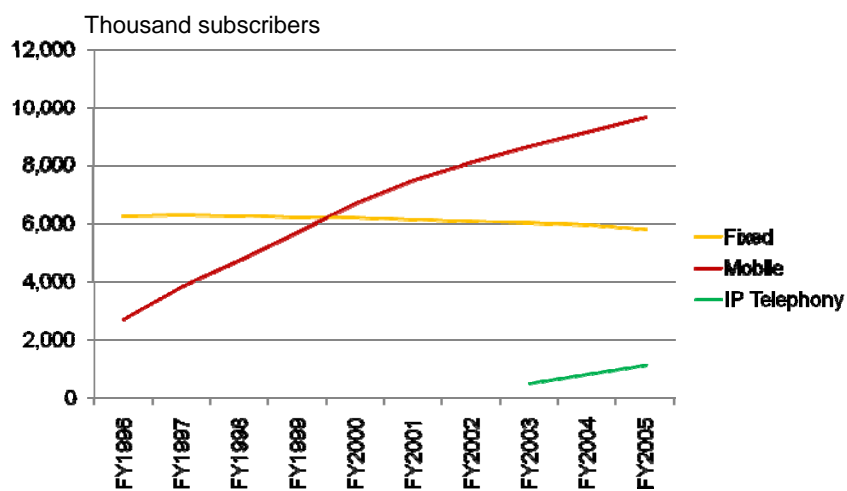
Source: White Paper on IC, 2006



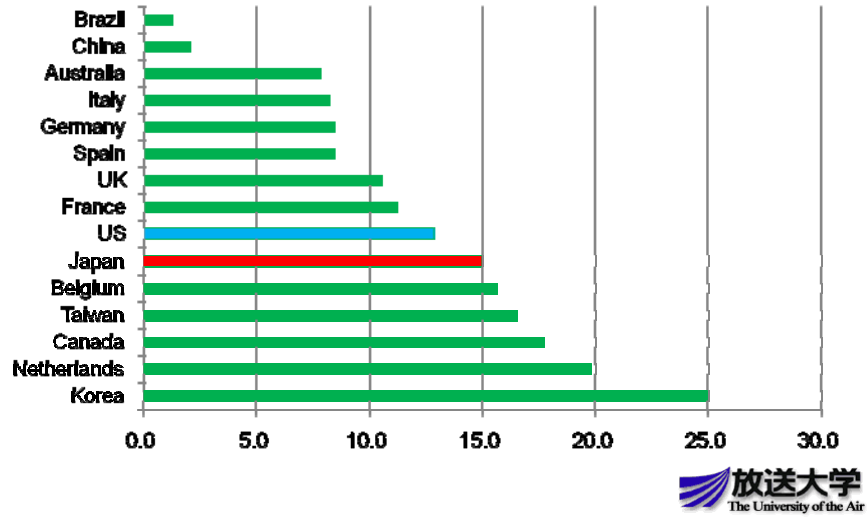
Four Layer Model of Network



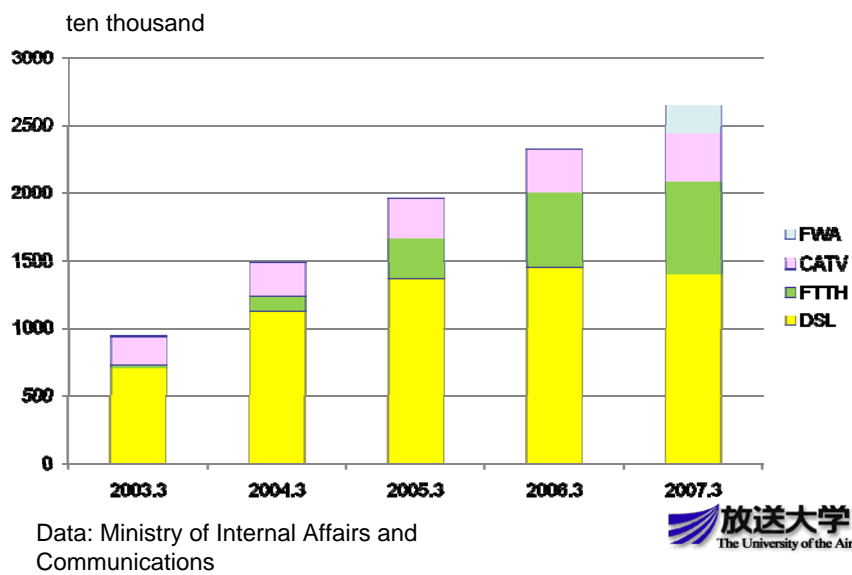
Fixed Line vs Mobile



Broadband Penetration (%)



Broadband Subscribers



Policy Debates on:

Network
neutrality

- Heavy users vs light users
- Who pays for investment

Vertical
integration

- Competition policy
- Leverage

Next
generation
network

- Network atavism
- Regulatory reversion?

What is Platform?

- Basic rules and protocols like the operating system of PC that enable secure and safe information flows, transactions and payments in the network.

(eg) copyright management, billing, payment, authentication, security, privacy protection

Network Effects

- Quality is determined by the product of intrinsic value and number of subscribers.
- Competition is likely to end in a landslide victory for one.
- Survivor may not be the fittest.
- Lock-in Effect, Path Dependency



Digital Contents

- Ordering, delivery, payment and consumption all take place within the network for digital contents like music, video or educational contents .
- The setup costs to create the original are high but the marginal cost of reproduction is almost nil.
 - ⇒ Can claim only zero price in market.



Business Models

	Model	Price	Costs born by	Examples
Third Party				
	Broadcast	Zero	Sponsors	Websites
	Artist Support	Low	Patron	Met
	Artist Support	Low	Government	Olympic Game
Sales				
	Club	Fee	Consumer	i-mode
	Direct Sales	Price	Consumer	Pay-per-View
Message				
	Telephone	Charge	Sender	3G Mobile
Sharing				
	Pro Journal	Fee, Price	Sender, Receiver	Physical Review



Economic Impacts of ICT

	Consumers	Corporations
Upsides	<ul style="list-style-type: none"> •Convenience •New Products •Work, Lifestyle 	<ul style="list-style-type: none"> •Corporate Organization •Market Reorientation •Value Creation
Downsides	<ul style="list-style-type: none"> •Freedom Lost? •Transfer of Property Rights •Digital Divide 	<ul style="list-style-type: none"> •Transition Costs •Confusions •Increased Competition •Property Right



Challenges to Economics

- Material Production Model Outdated
- Metamorphosis of Competition in Markets
- Market Limitations for Digital Products
- Law and Economics Required
- Analogy to Species Competition Model in Biology