

Science Economy: Innovation Strategy in 21st Century

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Concept of “science economy”



Manual Economy



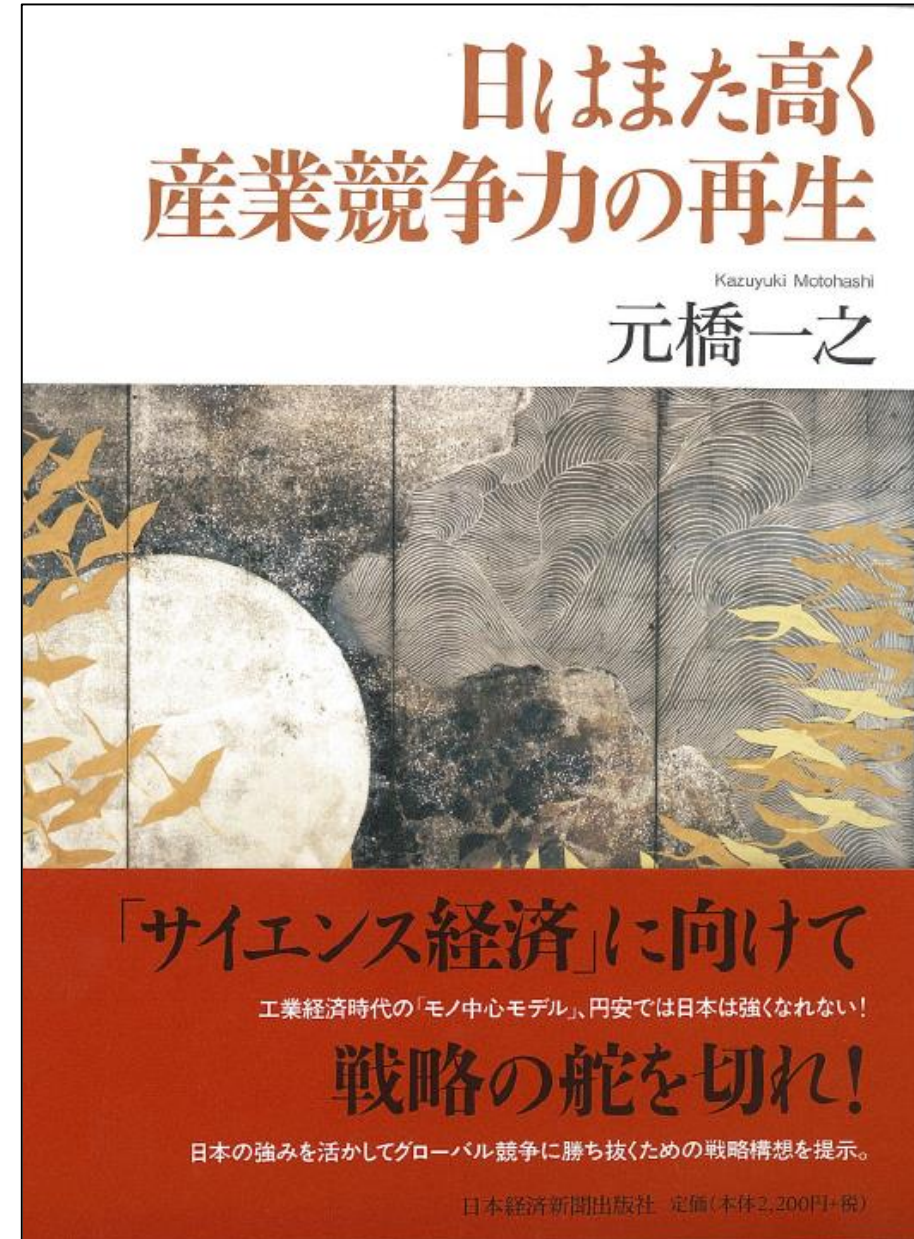
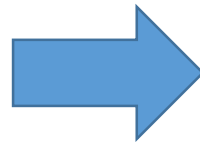
Industrial Economy
<Industrial Revolution
in 19th-20th Century>
-> Scalability in
physical production



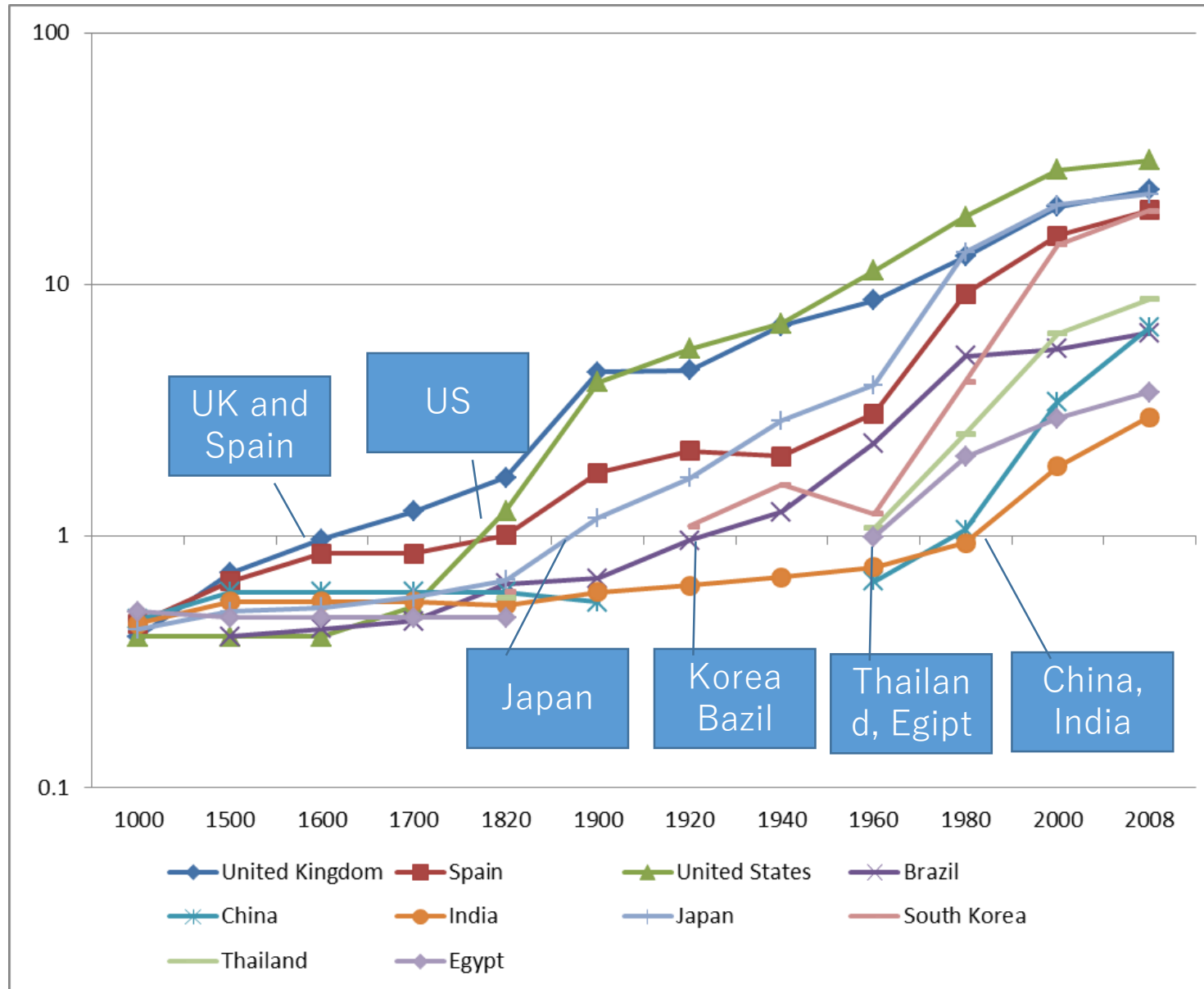
Science Economy
<Science Revolution
in 21st Century>
-> Scalability in
knowledge production

The concept of science economy is developed through my book on Industrial Competitiveness of Japan by Nekkei (February 2014)

Change of innovation strategy toward “Science Economy”



Per Capita GDP (1000\$ · log scale)

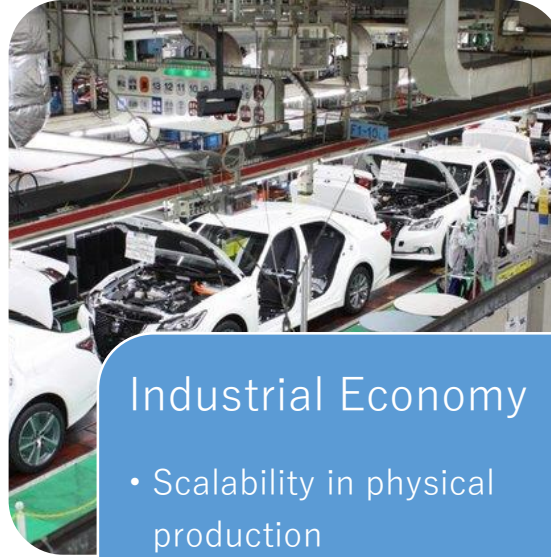


Concept of “science economy”



Manual Economy

- Until industrial revolution



Industrial Economy

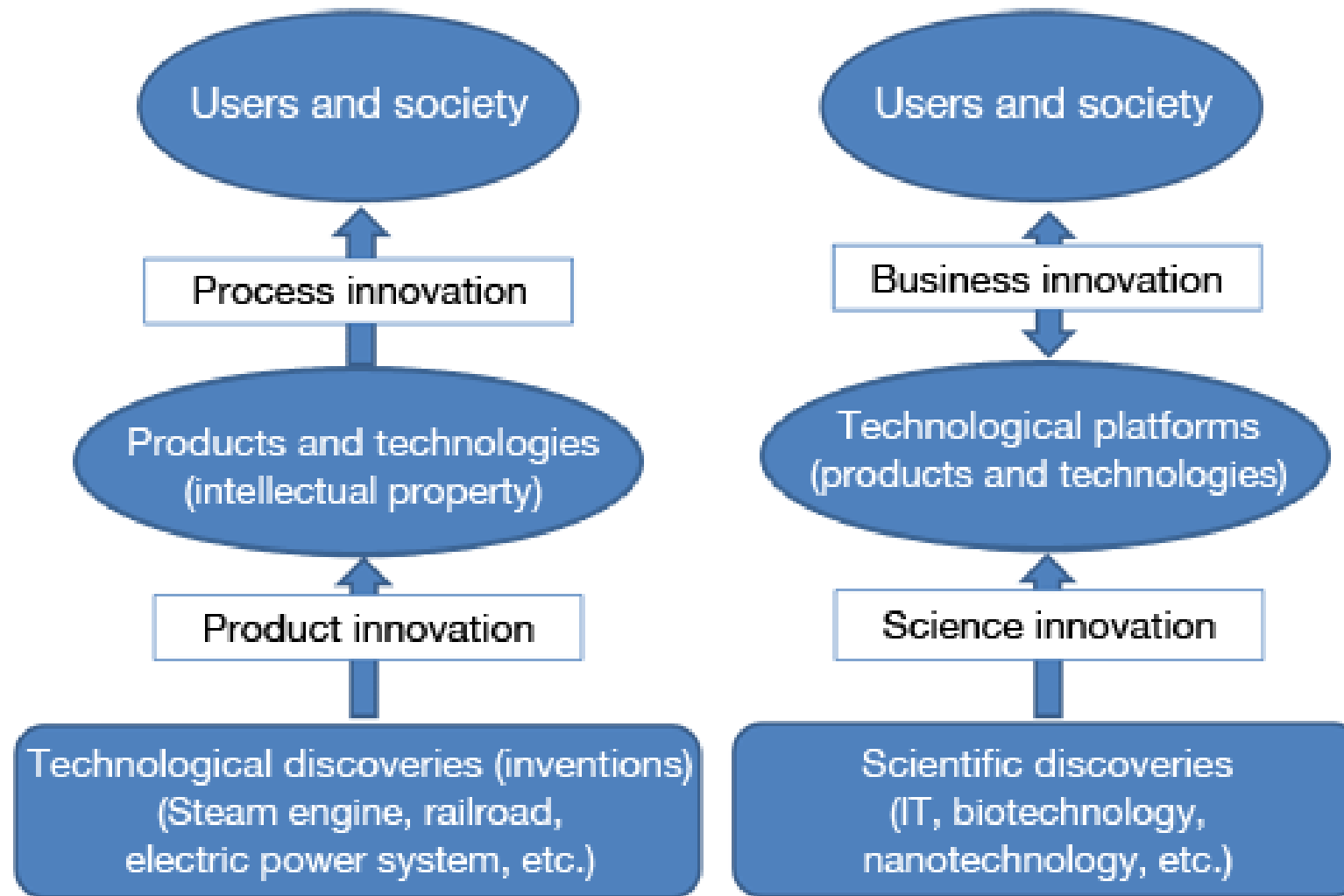
- Scalability in physical production
- Physical infrastructure (railway, electricity..) as a basis of scalability
- In-house innovation with propriety technology



Science Economy

- Scalability in intangible knowledge
- Virtual infrastructure (internet, IoT) as a basis of scalability
- Science based open innovation

Changes of Innovation Process



Industrial Economy

Science Economy

Comparison of characteristics of innovation

Industrial Economy	Science Economy
Product + Process Innovation	Science base + Business Innovation
Technology Push or Market Pull (Narrow technology and product specification)	Business system design (Broad market definition with dynamic technology evolution)
Mono-zukuri	Koto-zukuri
In-house R&D, business development	Open Innovation Science base : U-I collaboration Business : Collab. with customer (firm)



Example

- Komatsu's i-construction ("big data" application)
- Uniqlo + Tray (for science based fabrication)

Continuous innovation based on deep interaction between business partners with deep scientific backgrounds

Technology Management Strategy in Science Economy Era

Final demand (customer needs) : more dynamic, diversity (globalization) and uncertain

