

Systems to Compliment Innovation



Reiko Aoki, Ph.D

Professor, Institute of Economic Research, Hitotsubashi University
Faculty Fellow, Research Institute of Economics, Trade and Industry

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Efficiency-Driven Model

- Production (economic) frontier determined by labor and capital
- Frontier expands with more labor and capital
- “How to allocate labor and capital efficiently” to move the frontier forward
- Economy will grow as result

Innovation-Driven Model

- Frontier expansion is not automatic with more labor and capital
- Direction of frontier expansion = “what we want” must be determined
- Innovation is determining the **direction** and what is necessary to move the frontier and then moving the frontier
- Information, knowledge, ideas critical

Innovation-Driven Growth

- What we want = valuable
 - Sustainable economy
 - Quality of life in Aging Society
- Achieving what we want = creating value
 - Alternative energy
 - Regenerative medicine
- Creation of value = growth

Implementing Innovation

- What do we want ?
- What needs to be done ?
 - What do we need ?
 - What are the steps ?
- What do we need ?
 - Factors = knowledge, labor, capital
 - Institutions = legal system, markets, education

Transformation Requirements

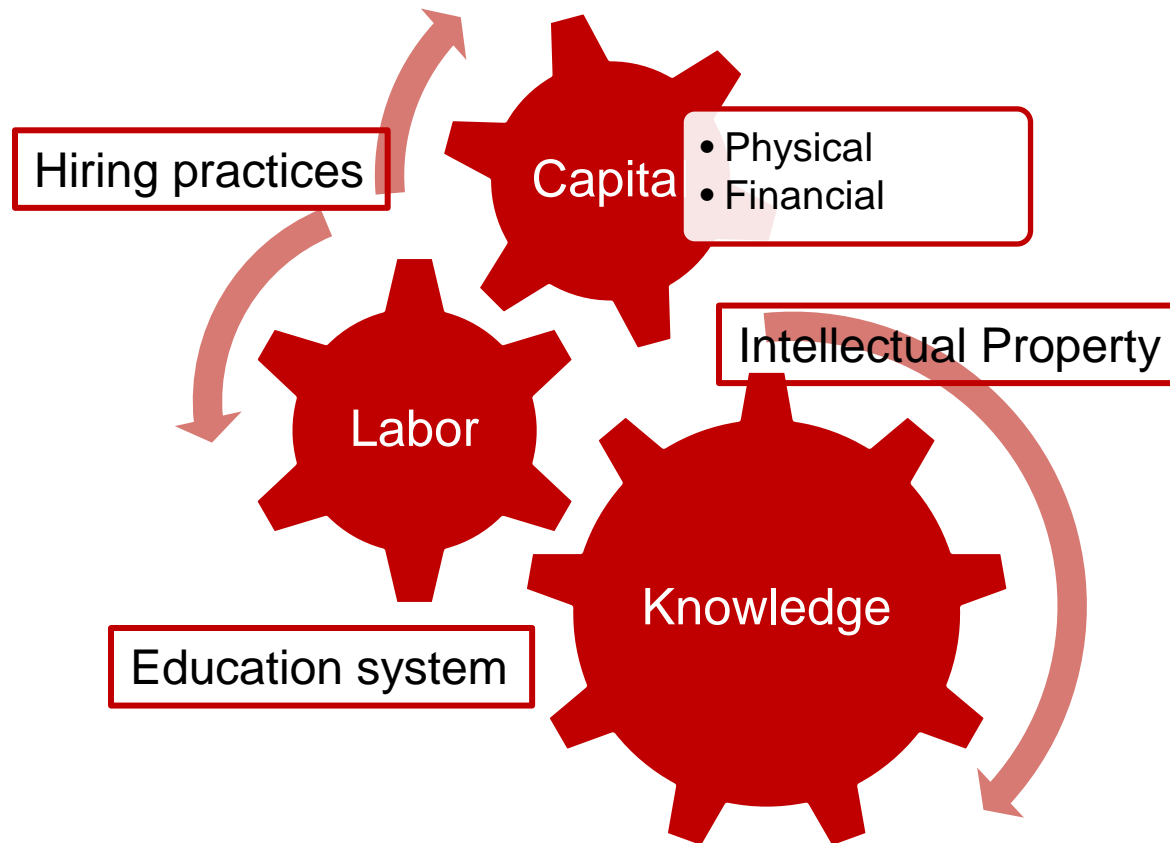
- What do we want ?
- What needs to be done ?
 - What do we need ?
 - What are the steps ? **Backcasting**
- What do we need ?
 - Factors = knowledge, labor, capital
 - Institutions = legal system, markets, education

Complementary Institutions

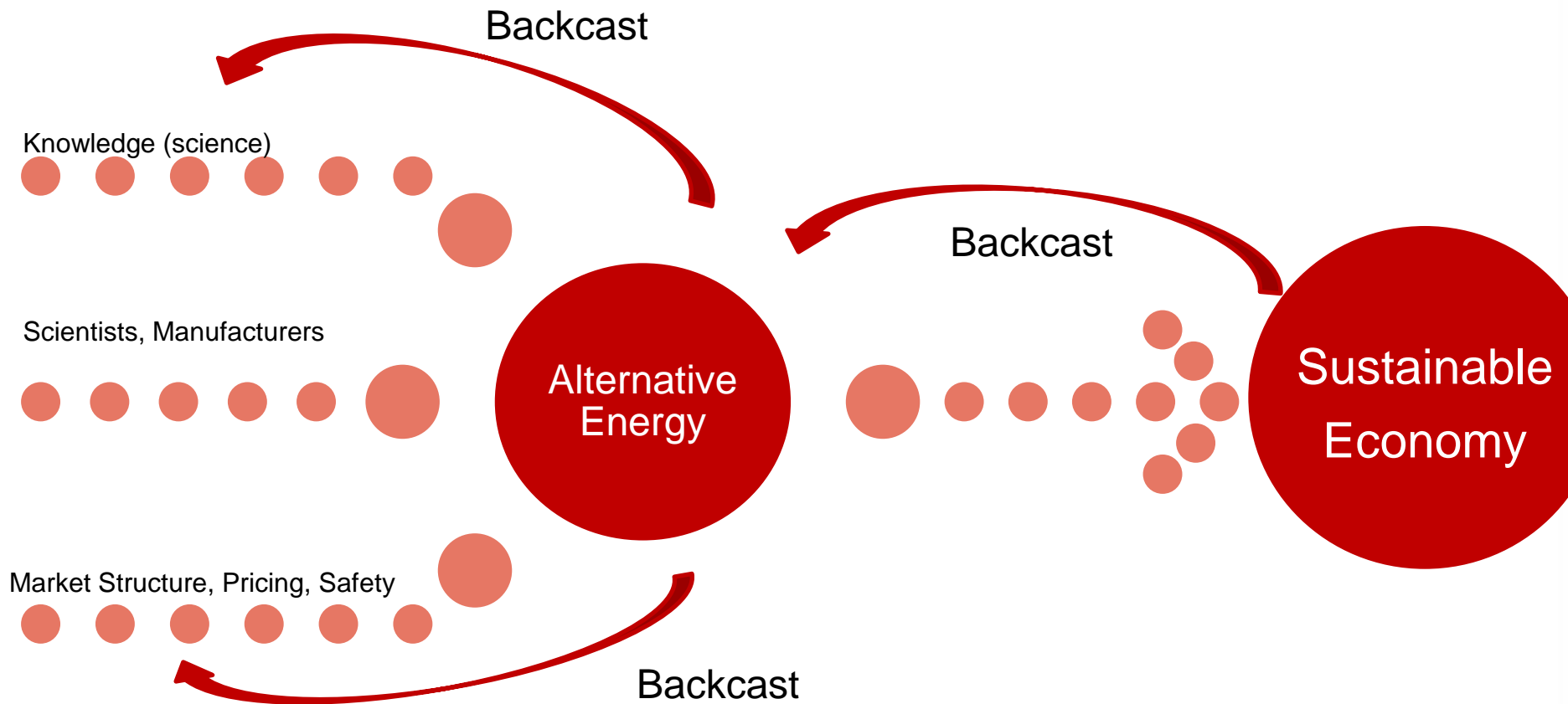
Complementary Institutions

- Safe environment for wearable robots
 - Safety standards
 - Liability rules
- Functional regenerative medicine
 - Definition (not a drug, not a medical device...)
 - Function in the health system
- ICT products
 - Establishment of property rights

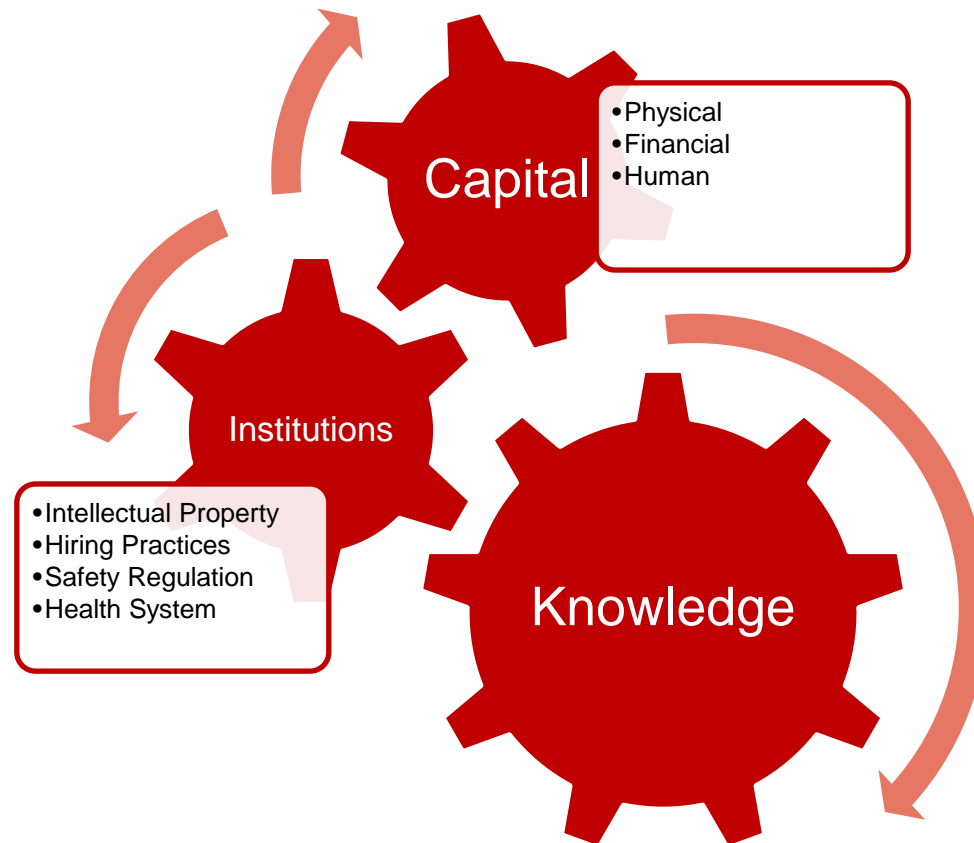
Efficiency-Driven



Innovation-Driven



Innovation Platform



Innovation Platform

- Determine goal and **backcast**
- Capital
 - Human, Financial, Physical
- Information
 - Science, **Knowledge**
 - Ideas
- **Complementary institutions**
 - Legal system (intellectual property, labor, liability)
 - Delivery system (market, health system, government)

Immediate Implications (1)

- Decide what Innovation Platform does
- Information gathering vs Decision making
- **Information** for setting direction, backcasting, determining complementary institutions
 - **Many** stakeholders is desirable
- **Decision making** is more **difficult** with many stakeholders

Immediate Implications (1)

- Decide what Innovation Platform does
- Information gathering vs Decision making
- Platform does not make final decisions
 - Separate decision maker
- OR Limit membership

Immediate Implications (2)

- **Complementary institutions** should be included in TPP and other economic integration/trade agreements
- TRIPS dealt with intellectual property
- Standards for new technologies require industries to collaborate
 - Alternative cars = auto, ITC, electricity, H₂
 - Regenerative medicine = medicine, chip manufacturers

Network of Knowledge

- Must **act** on the **knowledge**
- **Collaboration** on
- Complementary Institutions
- Innovation Platforms

Thank you for your attention !