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Comments on:  
Tsuru and Morishima:  
“Product architecture, organizational design,  
and HRM practices”

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# Research question

- Do product architecture, organizational structure, and human resource practice form a strategic “bundle” in high-tech manufacturing?
- And how does that bundle differ with the product and country (China, Japan, and Korea)?



# Core hypothesis: Product architecture determines product development organization, both of which in turn determine HR practices

## – Integral architecture:

- Organization: Cross-functional project teams; strong project team managers
- HR: Longer tenure, deep firm-specific training & skill; long-term incentives; flexible allocation of labor

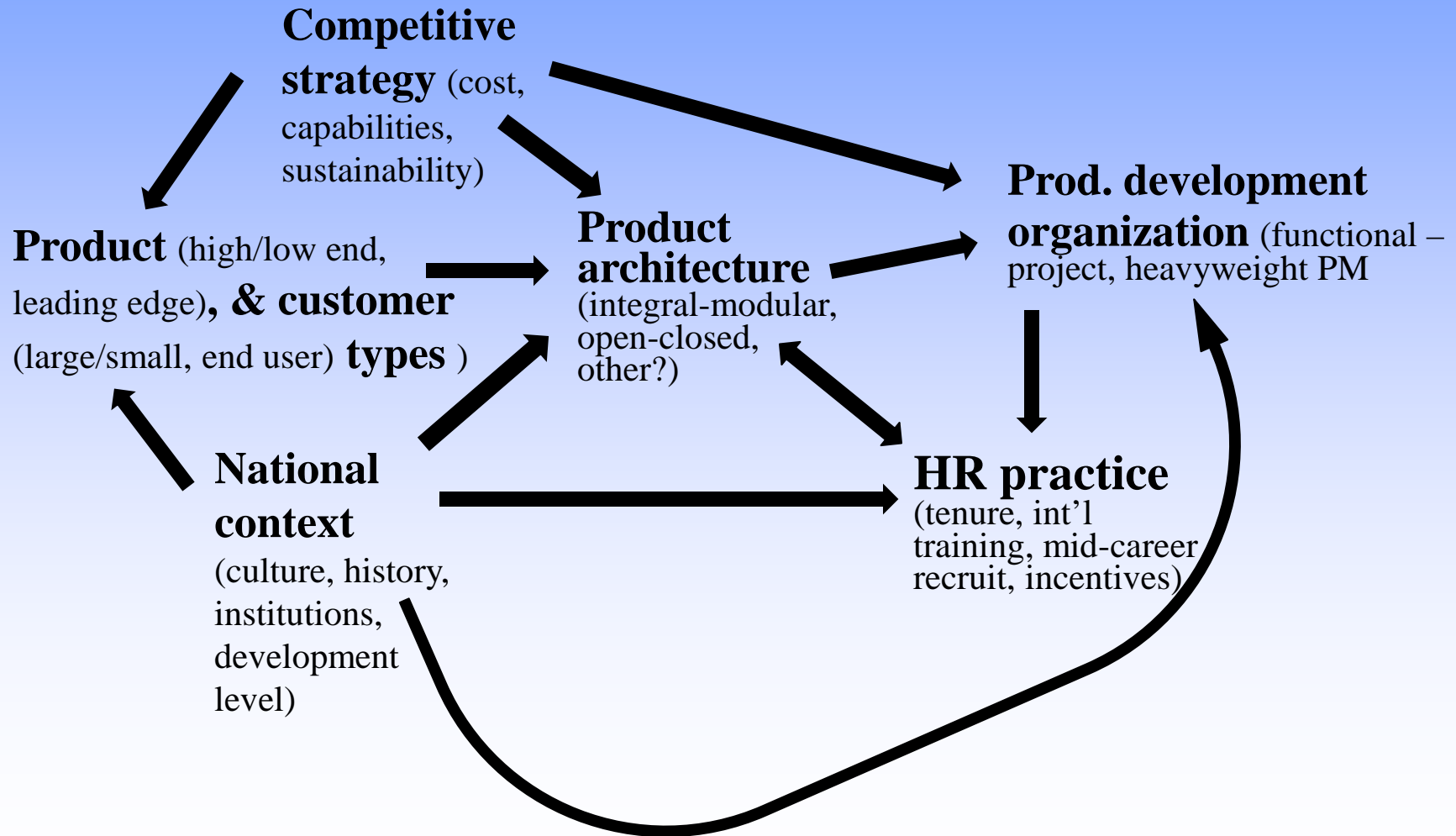
## – Modular architecture:

- Organization: Within-function product development; weak project team managers
- HR: Shorter tenure, occupation-specific & portable skills, midcareer recruiting of specialists

- *Do these patterns vary cross-nationally?*



# Causal connections researched





# Is “strategic choice” really involved?

- Choice of product architecture is constrained by product type (high – low end), customer type (individual - corporate), cost, corporate resources and capabilities
- Once architecture is chosen, organization and HR systems are determined
- No evidence on strategic decision making
  - Evidence on country effects suggests that national institutions (long-term employment) and cultural “routines” (teamwork) are reflexively invoked



# Main effects of national context

- Japan:
  - Integral architecture
  - C-F project teams and heavyweight PM
  - Long-term employment and internal training
- China
  - Modular architecture
  - Within-function organization
  - Shorter-term employment & external training
- Korea
  - No clear association with architecture
  - Heavyweight PM's



# Possible theoretical frames:

## Contingency theory

(Burns & Stalker; Lawrence & Lorsch; Woodward)

- **Product** (standardized - custom) & **Technology** (routine – nonroutine) & **Task environment** (stable - turbulent) & **National context** combine to determine **Organization** (centralization, specialization) and **HR practice** (training and skill; incentives)
- Firms whose organization is not aligned with their technologies and environments will underperform



# Possible theoretical frames: Transaction cost economics (Williamson)

- Integral architecture involves specific assets
  - Indecomposable
  - So high interdependence
  - Coordination by c-f teams and hierarchy (PM)
- Modular architecture involves general assets
  - Decomposable
  - So low interdependence
  - Coordination by standards





# Possible theoretical frames:

## Resource-based view of the firm

(Hamel, Nelson, Teece)

- How to achieve sustainable competitive advantage
  - Build hard-to-imitate capabilities
    - Tacit knowledge learned through trial-and-error and path- dependent evolution
      - Japan had a competitive advantage in manufacturing due to culturally-grounded hard-to-imitate capabilities (e.g., groupism)
        - » Competitors have copied those capabilities (e.g., JIT)
        - » Modular architectures have eroded need for them



# Methods issues

- Case study richness but also uniqueness
  - One firm from each country for each product type
- Survey
  - Response rate problem
  - Indirect measurement of integrality-modularity



# Conclusions

- Ambitious and important study
- Intriguing and useful findings
- Problems with case studies and questionnaire survey hard to avoid
- More theoretical framing needed