A Problem-Driven Perspective to Developing Impactful IT Adoption Theories

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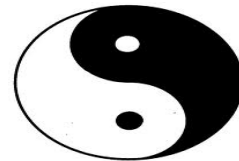Georgia State University

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Strategy: Leverage the Problem Context to Challenge and Elaborate Theory

- Isolate unique elements of the context
- Engage multiple stakeholders in problem formulation
- Build options through multiple theoretical perspectives and corresponding high quality data

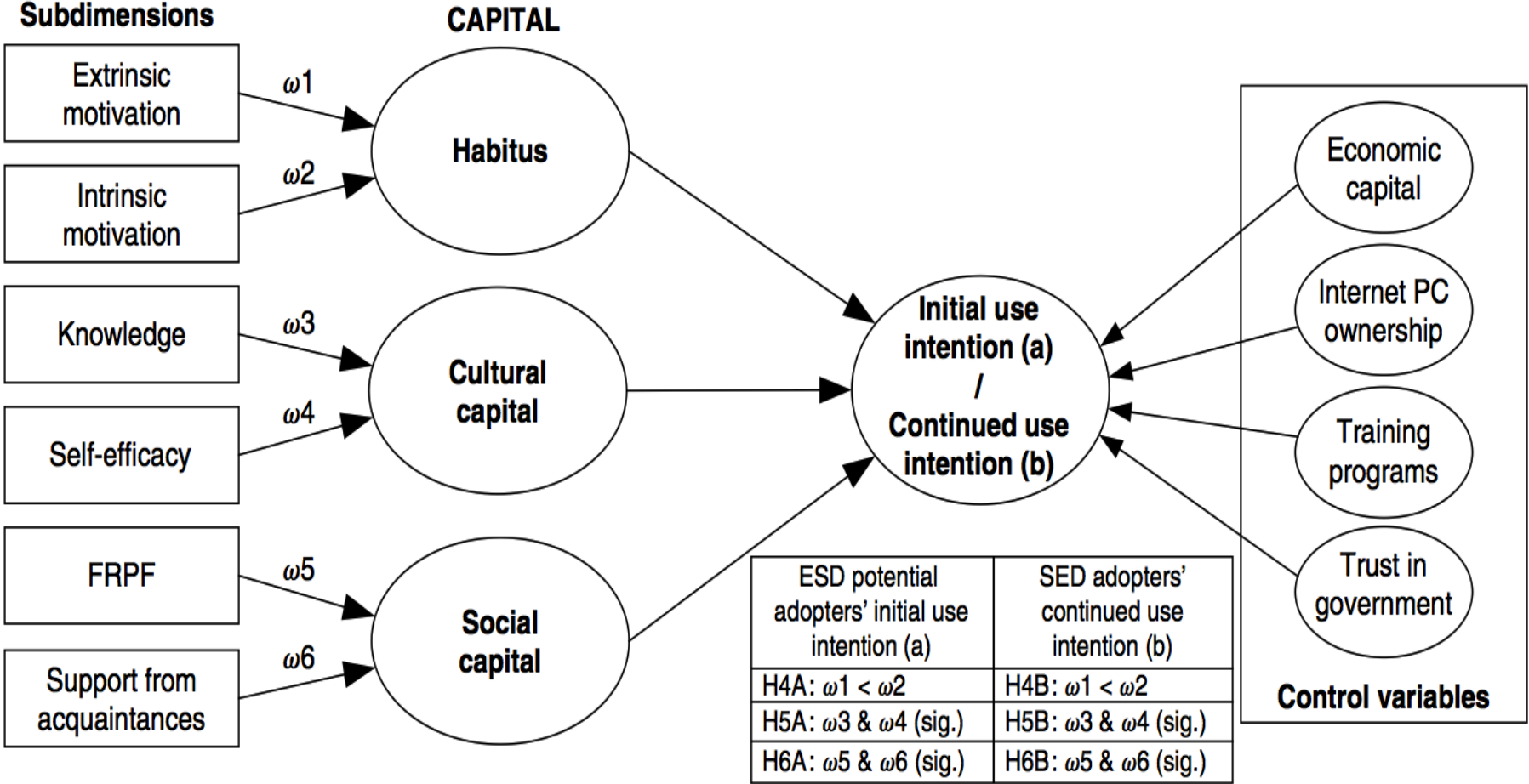- Scientific problem
- Theory and methods

- Business problem
- Up-close experiences and rich data

Example 1 - Addressing the Digital Divide with Government Sponsored "Free" ICT: The Role of Forms of Capital

Hsieh, Rai, Keil, *Information Systems Research*, **2011**

Figure 1   ICT Usage Behavioral Models for the Socioeconomically Disadvantaged

ESD potential adopters' initial use intention (a)	SED adopters' continued use intention (b)
H4A: $\omega 1 < \omega 2$	H4B: $\omega 1 < \omega 2$
H5A: $\omega 3$ & $\omega 4$ (sig.)	H5B: $\omega 3$ & $\omega 4$ (sig.)
H6A: $\omega 5$ & $\omega 6$ (sig.)	H6B: $\omega 5$ & $\omega 6$ (sig.)

*FRPF = Family, relatives, peers, and friends' influence.

Hsieh, Rai, Keil, *Information Systems Research*, **2011**

Example 2 - Addressing the Digital Divide in Rural India through Effective Technology Sponsor-Local Government Partnerships:
A Social Networks & Governance Perspective

Table 2. Governance Modes

Pre-launch / Post-launch	Local government	Technology sponsor
Local government (LG)	Homogenous	TS-LG
Technology sponsor (TS)	LG-TS	Homogenous

Venkatesh, Sykes, Rai and Setia, Working Paper

Figure 1: Research Model

Citizens' Advice Networks
- Eigenvector centrality
- Closeness centrality

Technology Use

Economic outcomes

Governance Mode

H4

H3

H1 and H2

H3

Note: Thick lines represent proposed hypotheses.

Venkatesh, Sykes, Rai and Setia, Working Paper

Example 3 - Addressing the Health Divide with "Cost-Effective Telemedicine":
An Integrated Needs Fulfillment, Media Synchronization & Resource Configuration Perspective

Free Health Camps & Teleconsultation

- Five rooms in the Hospital on Wheels
- Each room: videoconference equipment +TV, PC (webcam for Skype) as backup
- Bandwidth: 512 kbps (upload & download)

Rai, Li, and Ganapathy, Working Paper

- Power: local site, 5kva UPA + generator as backup
- Connected with hospitals at Ahmadabad, Bangalore, Chennai, Hyderabad, & Madurai w/ different specialties
- One room: dermascope

Free Health Camps & Teleconsultation

Example 4 – Addressing IT Underutilization: A Multilevel Capabilities & Sensemaking Perspective of "Extended" CRM Feature Use
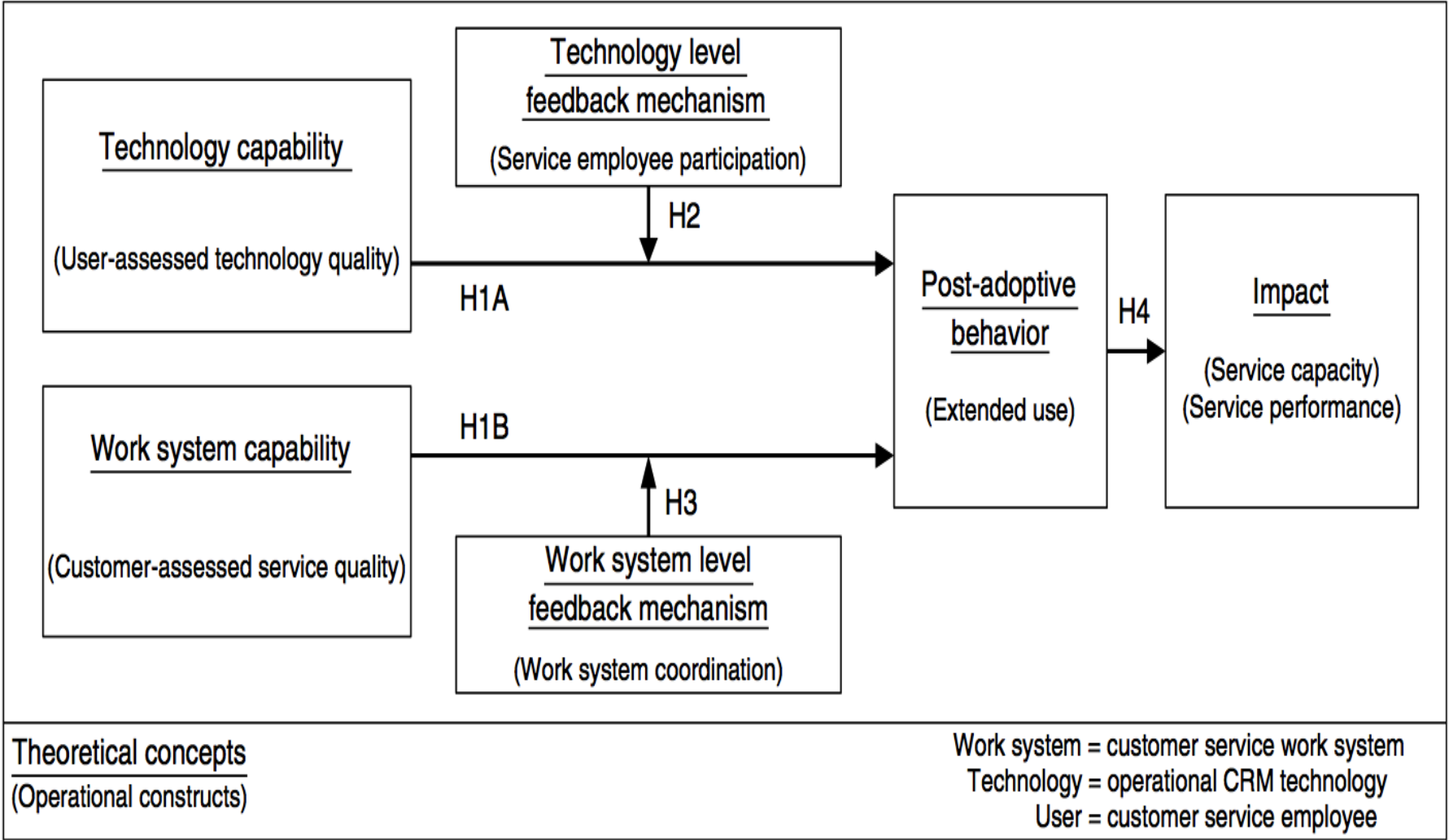
Figure 1   Research Framework

Hsieh, Rai, Xu, *Management Science***, 2011**

Table 2   Data Collection Timeline and Scope

Data collection timeline	Time 1	Time 2 (four months after Time 1)	Time 3 (one month after Time 2)
	Theoretical variables		
Service employee data	*Information Quality, System Quality*	*Service Employee Participation, Work System Coordination, Extended Use, Capacity to Satisfy Customers*	—
Customer data	*Service Quality* (seven customers per employee)	—	—
Company's archival data	—	—	*Customers Signed In, Products/Services Sold*
	Control variables		
Service employee data	*Age, Gender, Education, Prior Usage Experience, Prior Service Experience*	—	—
Company's archival data	*CSE Prior Performance, Store Prior Performance*	—	*Store Location, Store Service Area, Store Marketing Budget, Store IT Budget, Store PC Quantity, Store Employee Number*

- **Multiple stakeholders**
- **Multisource archival data**
- **Multiple points in time**
- **Objective outcomes**

Extracting Business Value from IT: A Sensemaking Perspective of Post-Adoptive Use

(with Hsieh and Xu, Management Science, 2011)

- **Study 1**: Differential CPOE adoption (resistance, use, proxy use) and process benefits (efficiency, quality, safety) across roles (doctors, nurses) and over time

Study conducted with Mark Keil

- **Study 2**: Differential CPOE deep structure use and IT-enabled coordination in clinician teams, and impact on patient satisfaction

Romanow, Keil, and Rai, working paper

- **Study 3**: Role of governance (fairness and justice) in affecting EMR adoption (resistance, use, proxy use) and process benefits (efficiency, quality, safety) across roles (doctors, nurses) and over time

Study conducted with Mark Keil

Understand Problem
- Assess staying power
- Evaluate personal commitment
- Determine field opportunities
- Examine heterogeneity of perspectives

Contextualize Problem
- Situate problem
- Frame problem through interactions
- Situate problem in literature streams
- Identify distinctive elements of the problem

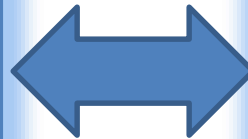## Research Process: Generate Contribution

Evaluate Models/Solutions
- Invest in collecting empirical materials
- Include multiple levels, sources, and time periods
- Conduct analysis with appropriate techniques

Develop Models/Solutions
- Engage in thought trials
- Identify candidate theories (but avoid stale ones)
- Determine stance: to complement, compare, elaborate or develop theories

Comments welcome!

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