

Theories of Information Systems in Organizations

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Key concern in Information Systems

- Understand the interaction between ICT and organizations, society, individuals, teams etc
- What kinds of theories and concepts help us to understand this interaction?

The field of IS is premised on the centrality of IT in everyday socioeconomic life. Yet, drawing on a review of the full set of articles published in *ISR* over the past ten years, we argue that the field has not deeply engaged its core subject matter—the IT artifact. Instead, we find that IS researchers tend to give central theoretical significance to the context (within which some usually unspecified technology is seen to operate), the discrete processing capabilities of the artifact (as separable from its context or use), or the dependent variable (that which is posited to be affected or changed as technology is developed, implemented, and used). The IT artifact itself tends to disappear from view, be taken for granted, or is presumed to be unproblematic once it is built and installed. (Orlikowski and Iacono 2001)

Some foundational concepts of Theory

- **Ontology**
 - A scholarly school of thought: comprises its members' foundational beliefs about the empirical and “real” world they are researching. Assumptions about knowledge (Allen Lee)
- **Epistemology**
 - Epistemology is methodology. It refers to a more specific manner in which we do empirical and logical work, and seek to access knowledge

Interpretivism

- Basic assumptions
 - The world is socially constructed
 - The researcher is not separate from the world he/she studies
 - Data is always value laden
 - There is no “a truth” : only the researcher’s interpretation of the truth
 - Focus then is on understanding subjective meanings
 - And the inter subjective processes through which these meanings are constructed
 - Look for coherence rather than generalization

Positivism

- Basic assumptions
 - The researcher stands apart from the world which he/she studies
 - Data is value free
 - Hypothesis testing – to refute theories and hypothesis
 - Replicability of research findings
 - Statistical generalization from small samples to population, given statistical confidence levels

Critical

- Explicitly seek emancipation and improving the state of things
- Fundamentally seek to bring about structural changes surrounding the phenomenon being studied
- Always carried out in collaboration with the group whose situation you want to change
- HISP action research – could at some level be categorized under this tradition

Categories of theories

- Within a particular tradition – interpretivism and positivism
- Within particular academic disciplines (eg economics, political science, development, social sciences etc)
- Theories that describe, analyzes, predicts
- Situate yourself within a tradition and discipline based on research questions, personal orientation, and your level of comfort with the concepts

Research tradition, methodology and methods

- Distinguish between tradition, methodology and methods
- Qualitative is NOT necessarily Interpretive
- Quantitative is NOT necessarily positivist
- Interpretive tradition can draw upon quantitative methods and positivism on qualitative
- Methods can be mixed, not traditions

Information Systems Theories

- IS an applied domain without own basic theories
- Eclectic, drawing upon various disciplines
 - Decision theory
 - Computer science
 - Social theory
 - Philosophy
 - Economics
 - Development studies
 - Political science

Some Commonly Used Theories

- Structuration theory
- Actor Network theory
- Institutional theory
- Social construction
- Transaction costs
- Modernity and identity
- Globalization – network society
- Many many more.....

What should theory help you with?

- Provide you with a world view to understand the problem you seek to study
- Guidance on how to orient your field work, whom to meet, what questions to ask, make research design and approach
- Help you to analyze your data- relate empirical findings with concepts
- Tell convincing story to relevant audience
- Theory as a conversation

Views on Theory

- John van Maanen:
 - Theories are not reflectors of the world....
 - ...but are makers of the world...
 - "the very process of theorizing helps creates the organizational process
 - This then emphasize the importance of how we write our accounts

”Theory as conversation”

- What theory allows is for a coherent story to be told. But I submit, it is the story that convinces, not the theory (van Maanen)
- All the classic stories are still read today despite the discredited theory developed in each study. What these authors accomplished was to create a narrative and use theory to abbreviate, organize, and embed certain obdurate facts such that a convincing account resulted. Theory was a tool in these studies, a kind of narrative device, that helped convinced readers that some sense has been made of the world.

Theory as Scaffolding

- Theory can provide the scaffolding, but once the building is completed, the scaffolding disappears
 - Use of jargon
- Checkland – “education system” – does not mean the educational entity is a system, is not being described as one...van Mannen “look at rather than through”
- Actor-network is not a network
- An II is not an II
 - We only use those metaphors to convince the reader about how we perceive the world

Starting point to theory development

- A research question
 - Clearly identifies a problematic that needs to be studied, inquired
 - Shows feasibility to be studied
 - Shows feasibility for question to be answered
 - Shows relevance to the field of study
 - Shows richness – concepts, theory, and potential of contribution

Some theoretical considerations

- Nature of agency ascribed to technology and to the social agent
- Conceptualizing technology and its materiality itself (tool, artefact, ensemble)
- Analytical focus: human agent, teams, groups, organization, inter-organization, national and global contexts
- Focus on one shot versus process
- Theorizing context
- The level and nature of change

Some theoretical relations

- IT and change
- IT and learning
- IT and conflict/politics
- IT and knowledge
- IT and teams
- IT and globalization
- IT and complexity
- IT and risks/unintended effects
- IT and other technologies
- IT and health (or other domains)

Theoretical trends in IS

- From cognitivist, rational models
- From factors to process approaches
- From structure to practice based approaches
- Intermingling of the technical and social
- Understanding and accepting of indeterminacy
- More sophisticated understandings of context
- Breakdown of assumptions of structure
- Wider incorporation of other disciplines
- Towards situated, context-specific understandings – semi and unstructured problems

What becomes important to theorize

- Meanings
- Tacit understanding
- Experiences
- Interconnections (gestalt)
- Situations - work practices
- Process of change
- Unintended effects

Some examples of theory

- Structuration theory
- Actor network theory
- Information infrastructure theory
- Complexity theory
- Identity theory
- Institutional theory
- Risk society