

A Systemic Investigation Of Complex IS Framing And Specification

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Studies by Orlikowski and Gash [4] and Davidson [3, 6] have examined the constitution and impact of “technology frames”: local worldviews and meanings ascribed to information technology in its use and in early requirements analysis. These studies reflect the understanding that an organizational information system is defined with reference to a network of contextually-situated, socially-negotiated meanings. But IS framing operates at multiple levels of analysis. For example, the political and competitive environment affect how a group of stakeholders frame an information system. So do individual perspectives and interpretations of the organization. To better manage the process of IS definition and design, we need to understand how these influences affect group framing processes over time, taking a contextualist research approach [5]. This research thus employs multiple methods of data analysis, to understand framing processes that are socially situated, socially-shared, or distributed across group members.

Level	Construct	Processes of Interest	Research Method
<i>Individual</i>	Socially-situated cognition	(i) How individuals frame design problems/solutions; (ii) How individuals make sense of organizational context.	Discourse analysis of interviews and design meeting contributions. Guided interviews using SSM techniques
<i>Group</i>	Socially-situated cognition	How a community of professional design practice emerges.	Guided interviews using SSM. Analysis of shared metaphors and themes in meeting transcripts. Critical incident elicitation.
	Socially-shared cognition	(i) How group produces joint representations of design; (ii) How groups negotiate shared definitions of design.	Evolution of design representations. Analysis of meeting transcripts, by decomposition levels and sequences. Critical incident elicitation.
	Distributed cognition	(i) How groups externalize knowledge (<i>understanding what the group knows and how they know it</i>). (ii) How distributed and partial understandings are coordinated.	Guided interviews using SSM, to understand similarities and divergence in perspectives. SSM group workshop. Analysis of triggers for change in design meetings.
<i>Competing groups</i>	Distributed cognition	How groups internalize others’ knowledge (<i>understanding who knows what and how the group can share it</i>).	Analysis of triggers for change in design meetings. Guided interviews using SSM to understand changes in “worldview”.
<i>Organizational context</i>	Socially-situated cognition	(i) How organizational culture constrains or enables design; (ii) How competing interests of political groups are managed; (iii) How influential organizational stakeholders impact the design.	Analysis of triggers for change in design meetings. Guided interviews using SSM to understand changes in “worldview”. Ad hoc interviews, to analyze political pressures as triggers for design change.

Soft Systems Methodology (SSM) [1, 2] is used to understand internal (“cognitive”) perspectives on the IS and change processes. SSM is an action research method, commonly employed in facilitated stakeholder groups, to derive “feasible and desirable change” [1]. SSM provides innovative techniques for “surfacing” individual perspectives and worldviews, permitting deep insights of differences and similarities to be gained, over time. The techniques of SSM have been used in interactional sessions with individual group members, to explore the processes of IS and change framing and to understand the ways in which frames converge over time. When combined with other methods as described in the framework above, a variety of perspectives provide an integrated view of the IS framing process in context.

References

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