

1984

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Recommended Citation

Kling, Rob; Iacono, Suzanne; and Public Policy Research Organization, University of California, Irvine, "The Politics of Efficiency The Mobilization of Computing in Organizations" (1984). *ICIS 1984 Proceedings*. 2.

<http://aisel.aisnet.org/icis1984/2>

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The Politics of Efficiency: The Mobilization of Computing in Organizations

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ABSTRACT

Most behavioral studies of the social and information processing architectures of computer-based information systems (CBIS) focus on the early stages of their life cycles, their conception, design, adoption, and organizational implementation. Because of this focus on early periods in the life cycle of CBIS, we are most aware of the organizational dramas in these early stages. This article examines one aspect of the later stages in a CBIS' life cycle: the ways in which organizational actors select and implement enhancements to "existing" CBIS.

The implementation of computer-based information systems is not mechanical. If implementing a new technology enhanced aspects of worklife equally for all participants, all might agree on implementation schedules, strategies, and use of the CBIS. However, CBIS implementations are often accompanied by disagreements and delays, and sometimes failures.

There are two streams of research on information systems implementation: procedural analyses of implementation and studies of the political dimensions of implementation. This study builds on the political stream of information systems studies and organizational studies. The political studies of information systems implementation have traditionally focused on the early stages of implementation. Readers might assume that once a CBIS has been successfully implemented political elements are less central to its routine administration. We show how political campaigns can continue throughout the life of a CBIS and are equally critical in maintaining or shifting the balance of power.

This paper explains the nature of political mobilization in some detail. The primary data are drawn from an extensive case study of a medium sized manufacturing firm (PRINTCO) which operates a complex computerized inventory control system shared by several departments. We also show how the organization of a CBIS does not simply evolve; rather, key actors shape the developmental trajectory of the organization of computing. (A developmental trajectory for a system is a sequence of social and technical configurations through which it has developed and a sequence of future configurations.) Usually there is a range of variation in future sequences, and different groups may prefer different developmental trajectories.

In order to gain control over the developmental trajectory, key actors attempt to create sets of procedures and beliefs about the computing arrangements which other participants will accept as legitimate. These actors develop long-term strategies to mobilize support for their own preferences and to block the emergence of conflicting preferences. Participants in different work groups have different computing preferences which derive from their own lines of work. Subunits within an organization push for information system architectures and data access in forms which secure their own interests and enable control or significant influence over others.

Acknowledgements: This research was supported under NSF Grant #81-17719.
*This paper is forthcoming in Communications of the ACM.

At any given time the infrastructure for providing computing services is structured, but not for everyone's simultaneous convenience. (Infrastructure refers to resources and procedures which support the efficient use of some focal computing resource). It includes access to programmers, terminals, or appropriate computer-based reports; provision of training in system usage or programming languages; or participation in decision-making about appropriate procedures and priorities in system development. Those groups which are successful in developing and maintaining favorable arrangements amplify existing structures incrementally. Because computing resources are insufficient to meet all actor's preferences simultaneously, dominant coalitions can build power by guiding the development of a system to their own advantage and limiting other groups.

The incremental development of a CBIS takes place over a period of years rather than weeks. The specific direction in which powerful actors guide a CBIS has important consequences for others in the organization in that some groups will be better served than others. Over time the organization of the system becomes a "taken-for-granted" way of managing and coordinating work activities. As financial and ideological commitments are incurred, it may become too costly to radically alter its developmental trajectory.

We identify two key aspects of campaigns for computing: (1) a structural dimension, and (2) an ideological dimension. The structural dimension refers to the standardized arrangements for providing computing services (e.g., the infrastructure) and the process by which they become woven into organizational life and institutionalized. The ideological dimension focuses attention on the articulation of a world view which takes on meaning in the social world of an organization. Key actors seek legitimacy for their campaigns by convincing others that their world view makes sense.

In the paper we describe selected strategies key actors use to mobilize support for their preferences and to quiet opposition. The struggles for control might be "perverse" if power and control were the only issues. At PRINTCO we found that a coalition of manufacturing managers coupled their initiatives for control with material policies that could improve organizational efficiency. However, efficiency was not the only issue since these manufacturing managers did not engage in many varied experiments to improve material efficiencies. They engaged in a relatively narrow array of strategies largely tied to their computerized inventory control system. The language of efficiency was both "real" and an acceptable rationale for leveraging organizational influence.

Many organizations have now lived with several successive generations of the "same" kind of CBIS. By common standards of successful implementation, the computerized inventory control system at PRINTCO was adequately implemented. The company was also successful in growing rapidly and reaping good profits. The computerized inventory control system was heavily used for six years, central to the operations of the organization, and the subject of tremendous continuing commitment. However, its operation was not smooth, and its enhancement was the subject of several failed initiatives, including a major software conversion. It did not "evolve."

A coalition of manufacturing managers tried to move the system, and the associated computing environment, along a particular developmental trajectory. Their efforts were embodied in a series of campaigns which gave continuing life to the computerized inventory control system. This coalition dominated the local computing environment, but had neither perfect information nor total control. Some of their campaign strategies failed. In one period, they released substantial control over computing resources through a local "micro-revolution;" but rapidly regained control when they appreciated its scale.

The paper explains how key actors developed a variety of structural and ideological strategies to mobilize support for the arrangements they preferred and to quiet opposition. These structural arrangements became institutionalized; they were taken for granted and fit together in a mutually reinforcing complex. CBIS live and develop through the energies of their promoters rather than "evolve" through a life of their own.