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ABSTRACT

What commonly held visions do planners have about the strategic use of IT for organizational transformation? Pursuit of this question was prompted by a research gap between planned organizational change and the often unsuccessful ways in which IT has been used to implement change. A longitudinal ethnographic study of two organizations has revealed a contrast between the perceptions of change architects and IT users regarding IT-based change initiatives. Our findings reveal that IT-based organizational change initiatives can run into trouble at implementation from the peripheral treatment given work in strategic visions.

BACKGROUND

The underlying assumptions of work organization are changing. From a legacy of localized bureaucratic hierarchies, industries are now turning to global markets and the realization of value-added products and services to expand demand, diversify risk, and create competitive advantage. In meetings where managers gather to pioneer organizational change, it is the talk of competitive advantage, industrial positioning, productivity and investment value that charts the direction of change. Driven on by these pressures to change, organizations have turned to the TQM, Statistical Process Management, and BPR change strategies in a big way -- strategies that pivot on the use of information technologies (IT) either to initiate or to steer the direction of change. In managerial deliberations about work reorganization IT is the means to achieve organizational goals and to steer the corporate ship. Managers believe in IT -- in improving productivity, creating value-added services, in facilitating coordination, and reducing costs. But while belief in IT to meet the challenges of changing work is spreading, managerial visions of strategic change underrepresent the real impacts of IT on work, often leading to significant problems in downstream implementation.

THE RESEARCH STUDY

The organizational change literature portrays IT as a powerful agent for change [Rockart & Short, 1989] [Johnston & Vitale, 1988] [Hammer & Champy, 1993] [Applegate, 1994] [Venkatraman, 1994]. The social and behavioral literature, in contrast, points to often disappointing results for attempts at IT-based work change [Attewell, 1991] [Orlikowski, 1991] [Kling, 1992] [Brynjolfsson, 1993] [Grudin, 1994]. It seems that IT, on one hand, has vast powers to redefine businesses and whole industries yet, on the other, only marginal and largely unpredictable impacts on organizational participants. Given that

business managers are generally attentive and reasoning individuals, what would draw them into basing large-scale organizational change on such a shaky foundation?

This research project seeks to identify commonly held expectations organizational planners have for IT-enabled work changes. It is an attempt to understand the complicated change process and the relationship between planning and actual implementation of IT-enabled work. The research project is a detailed, interlocking set of studies of IT-based organizational change efforts in the field. The research design uses longitudinal ethnography [Lincoln & Guba, 1985] [Agar, 1986] to uncover managerial strategy and workplace change.

Two sites were chosen to uncover the expectations and components of the IT-based change process. The first, referred to here as Coast Pharmaceuticals, is a large multinational pharmaceutical and medical supply company. Coast has undertaken a large-scale business process re-engineering (BPR) project cutting across both the domestic and international operations. Compelling this change is a desire to become a delayered, integrated and cost efficient trading partner with their customers and suppliers by replacing their legacy mainframe IS systems.

The second site ("WestTel") is a large, multinational telecommunications firm. They too have undertaken a large-scale BPR in response to impending industrial reformation and rapidly changing technologies. Tied to a legacy IT architecture and a historically steeped as a regulated monopoly, WestTel struggles with the sweeping changes central to the organizational change plan.

The data from these two interlocking studies includes sixty-four hours of direct observation and twenty hours of interviews at Coast Pharmaceutical, and eighteen hours of interviews with executive managers heading the strategic change effort at WestTel. At Coast, interactions among meeting participants during organizational change meetings, off-site meetings, and software selection steering committee meetings were observed and their discussions recorded. Field notes and researcher observations were transcribed into electronic text and collated with handouts, overheads, and other reference materials. Interviews at Coast Pharmaceutical included a full range of the organizational hierarchy, from Executive Vice President of Operations to Customer Service Representatives in the effected work processes, while the retrospective interviews at WestTel focused on the planners of strategic change -- key executives who had been leading the change efforts at WestTel over several implementations. Interviews ranged from forty-five minutes to two hours each and were audio-taped. Complete electronic transcriptions were generated and collated with the field notes. In addition, the researchers spent several days at warehouse and office field sites observing work-in-practice. Field notes from these observations, as well as transcribed notes generated from analysis sessions, were also electronically captured and collated.

In this study, we use the concept of cultural models to elicit understanding about the expectations and behavior of the informants. Anthropologists have successfully used the concept of cultural models to understand the cultural constructs through which people

view their worlds. Business professional communities usually have some consensus about the character of systems in the organizational change process -- how people do and should use computer systems, and what roles different users should play in the design of new systems. These models become cultural models when they are taken for granted within a professional community as *the* natural way to design all systems. These models, however, are theoretically complex and their richness is only hinted at without a means to properly frame the findings.

Social Rule System Theory [Burns & Flam, 1987] has been the tool used to frame observations and to provide initial insights into the study sites. Social rule system (SRS) theory is a theoretical approach to understanding and characterizing differences in assumptions about the computerization of work held by participants in organizational change. In general, SRS defines three rule categories that structure social relations -- classificatory, evaluative and prescriptive rules that order behavior. Discord among participants about the structuring of social relations reveals underlying assumptions and beliefs about the nature of work and organizational change. Differences arise between participants about how a work setting should be constructed (classificatory differences), what roles the participants should take on (evaluative differences), or about what courses of action are to be considered legitimate (prescriptive differences). Tacit or manifest conflicts in underlying assumptions revealed by this process can then be used to predict problem areas downstream during implementation.

Data analysis has been performed concurrent with the data collection as recommended by [Agar, 1986] and [Strauss & Corbin, 1990]. Discrete events, peculiar phrasings, or out-of-place behaviors are identified and isolated. These observations are compared and contrasted with similar accounts and data sources to uncover the underlying assumptions and patternings of the participants' cultural models. Informants are re-approached and asked to validate these interpretations as a way to deepen the research. This iterative cycle continues until "theoretical saturation" [Strauss & Corbin, 1990], where further elaboration becomes unlikely.

FINDINGS

A gap between managerial expectations and worker use of IT looms large on the horizon. Managers and users don't see IT in quite the same way. The strategic talk of the corporate "war room" remains tacitly abstracted away from concrete work practices. Getting organizational strategy down to the level of workplace change and business policy down to the routinized processes of productive labor remains largely ambiguous and equivocal.

At Coast, we noticed how the members of the management team were either unable or unwilling to discuss work, even their own. There were no discussions about the allocation of IT resources, the kinds of work to automate, access to data and equipment, the amount and kind of training and support to provide, the structuring of employee incentives and involvement, or even to what extent work should be defined by computerized processes. The meeting dialogue concentrated on abstracted ideals of work processes, broken apart,

reformulated, and reconnected in such a way as to optimize their strategic value to the organization.

The managers at Coast are bright, motivated people. Yet, despite guidance and expertise from a nationally famous IT consulting organization, critical issues about work remain implicit in the planning sessions. Discussions are highly abstracted, focusing primarily on identifying and securing strategic advantage and administrative efficiencies. The realization of this was not lost in a follow-up interview with one of the participants, "Organizationally, we're going to bleed during the implementation ... For Christ's sake, just how in the hell are we going to do this?"

We found that the strategic talk and behavior at both Coast and at WestTel organizes perceptions of work around central organizing themes. Managerial planners, initially unfamiliar with the details of executing a large-scale change, turned to external consultants and internal champions to guide the process and define themes of organizational change. As a result the discussions were largely limited within the strong organizational and social assumptions held by these change leaders. In strategic planning sessions, participants framed their behavior and talk in terms of the dominant cultural model. The raising of ideas and the unfolding of discussions were tightly bound to themes of internal process efficiency and the quantification of goals and measures. The commonalties of these central organizing themes across the sites was surprisingly high, due at least in part from the homogenizing language and generalized methods promoted by national consultancy firms specializing in BPR and IT-enabled change.

In many cases, work was organized through these models in ways that appeared irrational or counter-intuitive. Many of the assumptions held by change planners presumed shared views of work and implied compliance with organizational initiatives. Workers were implicitly expected to "pitch in" extra work hours, seek out additional training opportunities, and embrace additional responsibility and authority. Managers were expected to recommend and implement sweeping changes -- sometimes at the expense of their own job or job status. And even with their own extra-organizational responsibilities like families and social lives becoming stretched, managers were not at ease to raise concerns about these impacts on work in their planning sessions.

A particularly large portion of the "show-stoppers", however, arose from problems with the existing IT architecture. The complexities of reconfiguring the existing legacy IT architectures to a new way of doing business were often unrecognized and consistently understated in the planning sessions. As an executive director of BPR at WestTel characterized it, the "nasty and ugly" realities of stubbornly out-dated IT architectures and stodgy defensive reactions to change initiatives invariably forced planners to scrap their change plans and to return to the drawing board to find the ever-elusive "better way of doing it."

Our study of the process of IT-enabled organizational change has revealed that planners and designers tend to frame their discussion and behavior around central organizing themes about appropriate and legitimate change. Themes not central to the cultural model

of the planners tend to be incompletely articulated or broadly underemphasized in the design. Many of the underlying assumptions about IT-enabled work go unmentioned as the strategic design process unfolds. Other assumptions about work may be recognized but remain unarticulated in the design product. In the end, many recipients of IT-based change programs are at best confused and at worst inimical about the new work implementation.

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