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Roberta Lamb
Case Western Reserve University

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Roberta Lamb
Information Systems
Case Western Reserve University

Abstract

This paper describes a work-in-progress, qualitative research study that will examine intranet use from an interorganizational perspective. We commonly assume that internal organizational considerations, and the information technology strategies of firm executives, guide IT use. But, I have found that the use of one set of technologies--online information resources--is strongly shaped by interorganizational relationships. Could this be true of other information technologies as well? Some very preliminary data from this study suggests that, yes, interorganizational relationships may also shape the use of intranets.

In March, 1998, I began a qualitative research study that examines intranet use by firms in two midwestern U.S. cities, Cleveland and Chicago. My working perspective holds that interorganizational relationships shape organizational use of information technologies, and that firms find intranets more or less "useful" based on their interactions with other organizations. In a previous study (Lamb, 1997), I found that interorganizational relationships strongly influence a firm's data gathering practices and its use of online information resources. I have designed this study to extend the scope of that finding to another form of IT, intranets. Through this research, I intend to examine how firms actually *use* intranets--not just how they *plan* to use them, or *why* they originally implemented them. The results from this study could establish a basis for a more generalized theoretical understanding about how interorganizational relationships shape IT use.

Findings from Prior Research

Over the past few years, I have observed and discussed the use of online information resources with people from 26 California firms. I was originally motivated to study online services because there was a rather large discrepancy between how, and how often, people thought organizations would use these databases, and how they actually did use them. I found that this discrepancy could be explained, if we add an interorganizational perspective to information use theory. Here's how my research suggests that interorganizational relationships influence data gathering practices and online information resource use. First, my study shows that there is an informational dimension to institutional and technical environments (as defined by Scott, 1987, see Figure 1.) This informational dimension runs parallel to both institutional and technical dimensions. In other words, organizations that are both highly technical and highly institutional will have stronger incentives to gather information and use information resources than firms in any of the other quadrants. I sampled firms in two highly institutionalized industries, law and biotech-pharmaceuticals, and one non-institutional and non-technical industry, real estate. Generally speaking, firms in the more institutional industries gathered more data for documentation, than the real estate brokerages. And firms in the more technical industries, like biotech, gathered more data and used more information resources when profiling their competitors, potential partners or clinical experts. Industry-wide information infrastructures exist to support some of these activities, such as public law libraries in the legal industry and multiple listings services in the real estate industry.

Second, my data show that within this general framework, firms in each quadrant are more or less incented to gather data and use information resources depending on the clients they serve or wish to attract (see Figure 2.) For example, a law firm that serves high-tech manufacturing firms in Silicon Valley will have more incentives to gather and distribute information online than a firm that serves health clubs in Hollywood. Likewise, a commercial real estate firm that sells an office building to an institutional investor, such as a pension fund manager, will have more incentives to gather a large volume of data that portrays the property as a good investment--from a number of different information resources--than the firm would if it had sold the property to a local telemarketing firm that intended to occupy the building. Thus client relationships have a very strong impact on data gathering practices and the use of information resources (exemplified in Figure 2 by the arrows placed next to the 'corporate law firms' and 'commercial real estate' labels.) Additionally, firms that worked very closely with institutions, such as federal regulators, reported gathering more data overall than firms that did not interact with regulators as intensively.

Furthermore, I found that firms often partner with one another in ways that shift the responsibilities for gathering data across organizational boundaries.
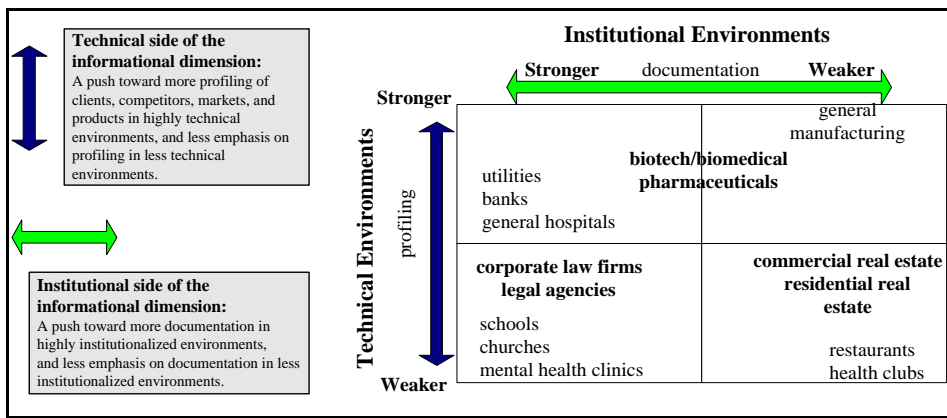
Figure 1. The Informational Dimension of Technical and Institutional Environments

The working perspective that guides my current intranet study comes directly from this research: these interorgani-zational relationships with institutions, clients, partners, and competitors strongly influence--in some broadly predictable patterns--the organizational use of online information resources and, perhaps, the use of information technologies more generally.

Why Intranets?

A fair amount of literature has begun to accumulate that bemoans the "underutilization" of intranets. This underutilization includes firms that don't use them at all, as well as firms that use them simply as file servers, or as corporate web servers--not taking advantage of their potential capabilities (Chellappa, Barua and Whinston, 1996; Hills, 1997.) Are intranets groupware, LAN replacements, local digital libraries, document management systems, Internet firewalls? In some ways, these lamentations about unmet expectations resemble those of online service providers who can't understand how any organization could live without the databases they provide, or why *all* organizations don't rabidly devour online information. For both intranets and online services, there is a gap between expected use and actual use. Intranets, therefore, suggest themselves to me as a technology whose usability is not totally obvious, nor limited to a single style of implementation. Each implementation may very well be open to redirection, and the influence of local interorganizational relationships. An extension of my prior research findings might help to explain, and perhaps predict, how organizations use intranets.

Theory and Methodology

As I attempt to extend my research findings from information resources in particular to information technologies more generally, I am essentially entering the theoretical domain of social constructionists (Bijker, Hughes and Pinch, 1987.) Bijker (1995) has developed a staged theory of the social construction of technology (SCOT), which describes how a technology may be shaped by social influences, or designed-in-use. But he does not make any specific claims about IT. Bijker defines the concept of technological frames, or how the social groups that we belong to limit or expand the ways we can think about using a particular technology, and so define how useful it can be for us. He has used this concept primarily to explain the development of consumer technologies, such as the bicycle and the light bulb, but others have begun to incorporate it into IT research (Orlikowski and Gash, 1994.) I believe that Bijker's technological frames concept can help guide my intranet study also. While adding an interorganizational and institutional focus through my own work and the work of other researchers who have examined IT, organizations and institutional interactions (Kraemer and King, 1979; Kling, 1988; Feldman, 1989; Czarniawska, 1992)**,** I will draw upon SCOT theory to conceptualize intranet use.

I plan to conduct my intranet field study in two phases. In the first phase, I will identify several firms in Cleveland and Chicago that use, or are planning to implement, intranets. I am currently screening firms in law and biotech/pharmaceuticals, and chemical and metal products manufacturing firms as well. I am interviewing MIS managers and Information Center directors at these firms, and I will also talk to their counterparts in firms that don't use, and aren't planning to implement, intranets. From these interviews, I will select two firms for an in-depth ethnographic pilot study. I intend to spend 4 to 6 weeks at each of these two sites, discussing and observing intranet use, in conjunction with any other information systems and information resources that may be used for similar purposes.

After I have conducted these two studies, I will have identified a set of interorganizational relationships that each firm participates in, and I will have a good understanding of how firm members are using and plan to use their intranets. Then I'll begin phase two. I will contact people at each organization that has a relationship with each of the pilot study firms, and talk to them about how information and information systems are used at their firm, and about the nature of their relationship with the pilot study firm. The motivation to "follow the links in the network" of interorganizational relationships comes from my earlier study, where I only accidentally contacted firms that interacted with one another. A theoretical motivation also comes from Latour's work on actor-network theory (ANT), which suggests that this might be a logical way to identify what influences the use of IT--better, perhaps, than the strictly cross-sectional approach I used in my prior research (Latour, 1987.) Latour's technology studies, which developed ANT, have also contributed important insights to socio-technical studies, like this one.
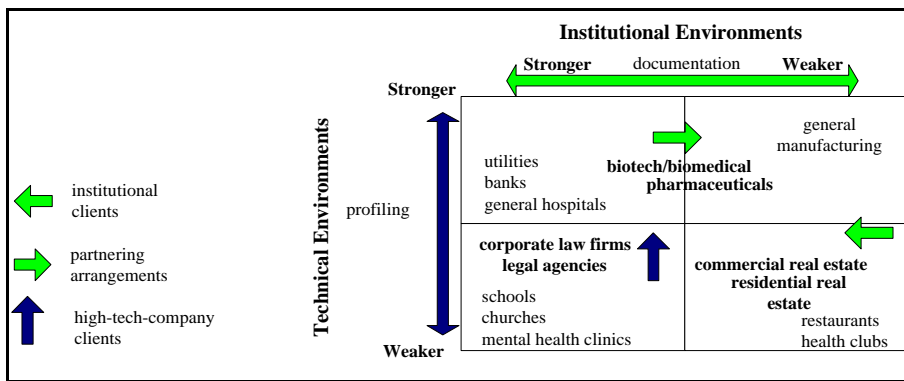
Figure 2. Client Influences on Information Gathering Practices and Information Resource Use

What Do I Expect to Find?

Based on the midwest firms that I have already screened, I do not expect to find an infinite number of possible arrangements of intranet technologies, but rather a small set of packaged configurations. Context--especially interactions with other firms, or with other organizational units--will matter enormously. I expect to see intranets used in some of the same ways that I saw information resources used in my prior studies: to signify competence, to ease the burden of mandates, to maintain profiles or present profiling information to others, to exchange standards and protocols of interaction, and to replace intermediaries or modify the roles of firm members who use intranets. I also expect that internet use models will be adapted to intranets, based on what other firms in the network are doing, and how the firm uses the Internet to work with its clients, regulators, and others.

So far, my preliminary research indicates that groups within firms do indeed take their cues to implement and use intranets from outside organizations. Corporate librarians, for example, often cite interactions with other information professionals (e.g. the general acceptance, within the profession, of intranets as useful extensions of special library technologies) as the impetus for building an intranet within their own firm. Within a firm that has an information center intranet, another organizational unit--like a chemical products research group--may develop and use their own intranet, perhaps as a result of other outside influences. In fact, an early finding from my study data is that large firms may frequently have several intranets operating within the same organization, and that such 'federations of intranets' may be the logical result of multiple influences to use intranet technologies.

Although current results are preliminary, this research holds much promise for IT managers. By identifying how groups of firms use and view IT--by characterizing an IT influence network--my study may be able to define a model for managing interorganizational information influences--not just for online services and intranets, but for IT more generally. And this model may be workable, not only for the small set of industries that I am studying, but for other industries as well.

References
References available upon request from the author (rel@po.cwru.edu).