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Ananth Chiravuri
University of Wisconsin - Milwaukee

Paul Ambrose
University of Wisconsin - Milwaukee

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A Theoretical Examination of Organizational Downsizing and its Effects on IS Organizational Learning, Memory, and Innovation

Ananth Chiravuri and Paul Ambrose
School of Business Administration
University of Wisconsin – Milwaukee
ananthc2@uwm.edu   ambrosep@uwm.edu

Abstract

In this paper, we present the antecedents of organizational downsizing, and examine the effects of downsizing on information systems organizational learning, memory, and innovation. The current economic condition is forcing companies to downsize with perceived benefits being economic (such as reduction of costs, increased earnings) and even organizational (such as enabling faster decision making). Historically however, very few companies have actually realized benefits from downsizing. According to a study, only 37% of companies surveyed have realized long-term gains in shareholder value. Furthermore, the loss of key people in downsizing disrupts learning and knowledge structures of a firm. Additionally, but not frequently reported, downsizing also affects the knowledge structures of the IS organization within a firm hindering its ability to be a learning and innovative IS organization. In this paper, we present our research model to examine the organizational impacts of downsizing. Specifically, our model focuses on the effects of organizational downsizing on IS organizational learning, memory and innovation. We argue that the long-term affects of downsizing are anything but beneficial to the IS department.

Keywords: Downsizing, organizational learning, memory, innovation

Introduction

The current economic condition is forcing companies to downsize. According to AFL CIO, 1.1 million jobs were lost in 2001 before September 11 and since then nearly 1 million persons were laid off for the period September 12, 2001 – January 21, 2002. As shown in Table 1, almost all the major sectors have been affected, the biggest being manufacturing with nearly 426,000 persons laid off. A survey by American Management Association (2001) reports that 58% of 1,631 surveyed businesses said they eliminated jobs in the twelve months ending June 30, 2001. The share of firms actually "downsizing" – i.e., reporting a net workforce reduction in the period – rose to 36.3%, a dramatic rise from the previous year's 21.2%, while those reporting a net increase fell to 42.3% from last year's 53.0%. Among all companies, workforce growth averaged just 0.4% after last year's +5.9%, and billion-dollar firms shrank their staffs by an average 0.9%.

Companies may downsize for many reasons. Cascio (1993) points out companies attempt to downsize for perceived economic and organizational benefits. Perceived economic reasons include cutting costs to increase earnings and consequently stock price. Perceived organizational benefits include lower overheads, less bureaucracy, faster decision making, smoother communications, greater entrepreneurship and increases in productivity. However, downsizing does not always ensure realization of the perceived benefits. Findings from prior research strongly suggest that downsizing and layoffs are more harmful than beneficial (Cameron, Freeman and Mishra 1991; Cascio 1993; McKinley, Sanchez and Schick 1995; Fisher and White 2000). Annual surveys by American Management Association show that only 41% of downsizing companies have reported any productivity increases and only 37% have realized any long-term gains in shareholder value (Koretz 1998; Fisher and White 2000). Findings from another

survey by Wyatt Company indicated that only 22% of restructuring companies actually increased productivity to their satisfaction (McKinley et al. 1995). Cascio (1993) reports that only 46% of the companies successfully reduced expenses over time (in part because, four times out of five, managers ended up having to replace some of the people they had dismissed). Fewer than one in three said that profits increased as much as expected. Only 21% reported satisfactory improvements in shareholders' return on investment. There was usually a long slow slide in the stock price too. Clearly, the perceived economic benefits of downsizing are not materializing as expected.

Table 1. Organizational Layoffs By Sector For The Period
Sept 12, 2001 – Jan21, 2002 (Source: AFL-CIO)

Sector	Announced Layoffs
Transportation	139,215
Hospitality, Tourism, Entertainment	139,840
Communication and Utilities	132,096
Manufacturing	426,948
Retail Trade	45,706
Services	50,530
Finance, Insurance and Real Estate	67,735
Public Administration	48,343
Other	4,240
Totals	1,054,653

In addition, downsizing disrupts organizational learning. Downsizing, that has been argued to be a high-risk strategy in a learning organization (Fisher and White 2000), can happen in many ways. Brown and Diguid (1993) point out the reorganization of the workplace into canonical groups can disrupt highly functional non-canonical and therefore invisible communities. This is supported by a study by Keller (1989) who found that restructuring at General Motors destroyed informal networks that were critical to formal operational networks. Another study by Lei and Hitt (1995) attributes organizational learning damage due to outsourcing. Downsizing thus carries with it considerable risks – both economic and non-economic. The focus of this paper is on the non-economic or the organizational risks of downsizing on the information systems organization.

While studies have addressed the impact of downsizing on organizational learning (such as Fisher and White 2000), the effects of downsizing on IS organizational learning, memory and innovation have been less addressed. The IS organization within a firm is a knowledge intensive work group, and it is important that this work group be a learning and innovative organization to successfully support the organization with effective information systems solutions. We argue that organizational downsizing can specifically affect the IS organizational learning, memory and innovation, and present a theoretical framework that outlines this relationship. This research model would serve as our basic framework to later develop an empirical study to further our thesis. In what follows, we first discuss downsizing in section 2. Section 3 elaborates the salient aspects of organization learning, memory and innovation that are pertinent for this research. We then present the research model in Section 4 followed by the methodology in Section 5. Finally, we conclude with a discussion on the findings and its managerial implications.

Downsizing

Of late, downsizing has gained strategic legitimacy as a reorganization strategy and is no longer viewed negatively (McKinley et al., 1995). Organizations downsize deliberately to establish perceived strategic legitimacy, or are forced to downsize due to organizational decline. Though downsizing and layoffs appear synonymous, there is a difference. Organizational downsizing involves many alternatives beyond just laying off personnel or layoffs as elaborated below.

Strategic Legitimacy and Downsizing

According to Cascio (1993), organizational downsizing refers to the planned elimination of positions or jobs. Downsizing may occur by reducing work (not just employees) as well as by eliminating functions, hierarchical levels or units. Downsizing does not include the discharge of individuals for cause or individual departures via *normal* retirement or resignations. While organizations may get smaller through head count reduction strategies such as attrition, early retirements or outplacements,

downsizing may occur by reducing work not just personnel by eliminating functions, hierarchy levels or units. In addition, it may also occur by eliminating cost containment strategies that simplify processes such as paperwork, information systems or sign off policies. Stated otherwise, downsizing refers to intended reductions of personnel (Cameron et al. 1991).

Organizational downsizing also occurs due to technological downsizing. Technological downsizing can be defined as the migration of computer applications away from the mainframe to localized networks or other microcomputers (Beheshti and Bures 2000). This type of downsizing appears to be a major trend in information systems (Simpson 1995). While organizational and technological downsizing appear different, a study by Beheshti and Bures (2000) shows that the two cases are interrelated. Technological downsize paves the way for organizational downsizing.

Prior research has also examined the types of downsizing strategies. Cameron et al. (1991) identify three types of downsizing strategies: Workforce reduction, organization redesign and systemic. They define workforce reduction as a short-term implementation aimed at headcount reduction. Organization redesign is defined as a moderate term implementation aimed at organization change and finally systemic strategy is a long-term implementation aimed at culture change.

Additionally, studies have also examined why deliberate downsizing occurs. McKinley et al. (1995) explain this using institutional theory. Institutional theory relies on institutional rules to explain organizational form and process. They specify institutional rules as norms or expectations shared by members of a society or a particular industry. These rules specify an organization's structure and the legitimate managerial behaviors. According to the article, companies can downsize due to three institutional forces: constraining, cloning and learning (McKinley et al., 1995). Constraining forces are those that pressure the organizations to conform to institutional rules. An example of this would be corporations following downsizing to appear lean. Firms undertake actions as a means to conform to social constraints. Cloning forces are those that pressure organizations to mimic the actions of the most prestigious, visible members of their industry. Organizations mimic the behavior of other organizations in an environment of extreme uncertainty. Firms clone the actions to be part of the group. Neither constraining nor cloning forces are dependent on hard evidence of the benefits of downsizing. The authors indicate the wave of restructuring in the oil industry as an example of cloning forces. Learning forces emerge through the management practices taught in universities or professional associations throughout the corporate world. The article cites the promotion of downsizing in the curricula of U.S. business schools as an example.

These three related institutional forces – constraining, cloning and learning, constitute distinct causes of downsizing and are modeled as antecedents under 'Institution Factors' to downsizing in our framework.

Organization Decline and Downsizing

Organization decline is yet another common reason for downsizing. Organization decline can be defined as a decrease in an organization's resource base (Cameron, Kim, and Whetten 1987). Therefore, although there may be different causes of decline (e.g., declining industry, impoverished niche, outmoded strategies), the effect remains constant: organizations are substantially, materially impacted and may face short-term consequences, such as negative net cash flow, and long-term outcomes, such as bankruptcy or organizational death (Mone et al. 1998). Therefore, the most common response for most firms is to pursue downsizing as a strategy. Thus downsizing can emerge as a required strategy in response to organizational decline and we model this as our second antecedent for downsizing.

IS Organizational Learning, Organizational Memory and Innovation

In any given organization, there are three main variables that influence how knowledge is distributed and utilized: organizational learning, organizational memory and innovation. The direct effects of downsizing: organizational and technological, can be felt on the IS knowledge variables of a firm and these variables form the outcome variables in our model. We discuss each one of these in detail below.

Organizational Learning

The essence of organizational learning is greater than learning to do things right or do right things. It is about learning to do right things right. To achieve this, an organization relies on formal and informal networks or communities of practice. While there are economic reasons for downsizing, it would destroy these formal and informal networks and hence affect learning.

While the popularity of organizational learning has increased over the years, there is little consensus on what it means (Huber 1991; Kim 1993). Argyris and Schon (1978) classify learning as single loop and double loop learning. However, March (1991) characterizes learning as the exploitation of old certainties and the exploration of new possibilities.

While both types of learning are present, studies indicate single loop learning is the more likely behavior (Kiesler and Sproull 1982; Quinn 1980). We include organizational learning as one of the outcome indicators in knowledge structure because learning contributes to knowledge within a firm. Organizational learning generates new organization specific knowledge. Generally, organizational learning describes what happens to firms and their competitive potential because their members learn, and because those members interact with each other as well as with their firm's strategy, structure, culture and systems (Fiol and Lyles, 1985; Simon, 1969). The type of learning that is key in producing the unique knowledge capable of sustaining competitive advantage is 'experimental learning' (Huber, 1991).

Organizational Memory

Without organizational memory, firms would not learn to do the right things. Organizational memory serves as a repository for knowledge to guide present and future actions of a firm. Organizational memory is a combination of individual and collective memories. Downsizing affects organizational memory by removing personnel who serve as direct sources of knowledge as well as disrupts networks that act as indirect sources of knowledge.

As is the case in organizational learning, there is little consensus on what organizational memory means. While Argyris and Schon (1978) argue that organization memory is only a metaphor, Sandelands and Stablein (1987) raised the possibility that organizations are mental entities capable of thought. Additionally, Hall (1984) posited that an organizations memory is comprised of cause maps, architecture, strategic orientations and standard operating procedures. We include organizational memory as a second outcome indicator because learning agent's discoveries, inventions and evaluations must be embedded in organizational memory (Argyris and Schon 1978).

Innovation

Innovation is critical to a firm to respond to dynamic changes in the environment. Software Development has two types of innovation: process and product innovation. Both types require inputs from people, specifically 'champions'. IT champions are managers who actively and vigorously promote their personal vision for using information technology and often risk their reputations to ensure the innovation's success (Beath 1991). Previous studies on the role of 'champions' suggest that they are the most important antecedent for a successful implementation of a mission-critical information system (Lockett 1987; Reich and Benbasat 1990). We argue arbitrary downsizing may remove these champions of change and this will, in turn, affect innovation.

Firm innovation in the form of new products/processes has become increasingly important as a way for companies to achieve and maintain a competitive advantage (Franko 1989) and for value creation in many industries (Hitt and Hoskisson 1996). The technological revolution and greater competition in international markets have increased the competitive importance of innovation (Hitt, Keats, and DeMarie 1995). Therefore, to foster innovation, information and knowledge should be deliberately distributed. As discussed earlier, downsizing destroys informal relationships in an organization. When preexisting relationships among units are absent, knowledge is difficult to spread across different units within an organization (Szulanski 1996) and therefore we posit that downsizing will affect innovation. Another study by Fisher and White (2000) uses Weick's (1995) four level framework on organizational learning to explain the affects of downsizing in a learning organization. To illustrate this they present an example that shows that downsizing by 20% to 5% results in loss of up to 57.6% to 50% in learning capacity. Accordingly, the companies that rely on innovation get affected the most. The effects of downsizing on innovation are thus clear.

Research Model

To summarize, we note that the antecedents of downsizing are the institutional forces (constraining, cloning and learning) and organizational decline. Downsizing in turn affects the knowledge variables in the form of IS organizational learning, memory and innovation. While institutional and organizational factors affect organizational downsizing positively, there is a negative affect of downsizing on IS organizational learning, organizational memory and innovation. These relationships are captured in the research model (Shown in Figure 1).
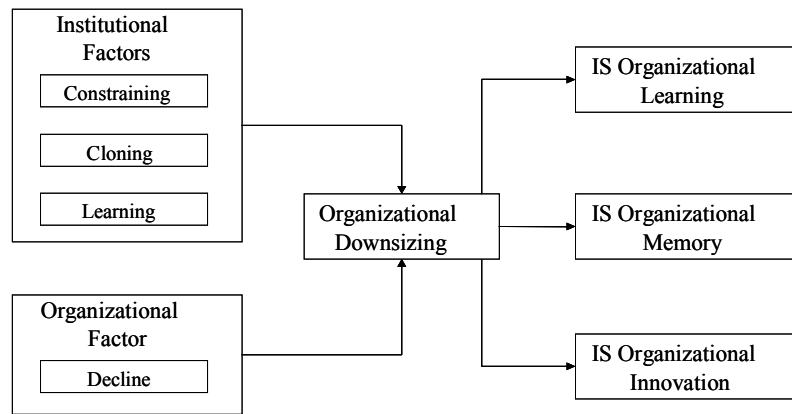
**Figure 1. Framework on the Effects of Downsizing on IS Organizational Learning,
Organizational Memory and Organizational Innovation**

Methodology

The unit of analysis for our study is the IS department within a firm. The Chief Information Officer (CIO) will be the key respondent for our research. We intend to collect data through a survey of our key respondents. To begin with, we will identify firms that have downsized in the last 12 months from publicly available sources (including the Internet) such as newspaper articles and other print media. This initial set of firms will then be filtered to include in our sample only those firms that have downsized the IS departments. We will send a questionnaire to the key respondent or the CIO within each firm of our sample set. The questionnaire will consist of items that will be used from previous studies wherever possible. Respondents will mark their agreement and disagreement with the statements on a 7-point scale with 1 being strongly disagree and 7 being strongly agree.

The independent variables in our study are the institutional and the organization decline factors. We model the institutional factors as a formative construct because an organization can downsize either because of one of the three dimensions: cloning, constraining and learning or because of a combination of two or more. We measure these using a questionnaire based on McKinley's (1995) guidelines. Similarly, we use guidelines given by Mone et al. (1998) to examine organizational decline as an antecedent to downsizing.

Following D'Aveni's (1989) approach, the dependent variable "downsizing", is measured with (1) the liquidations and disposals, the number of wholly owned subunits liquidated or disposed of and (2) exits, the number of four digit SIC codes dropped from a firm's portfolio.

The outcome variables are modeled as reflective constructs and are measured by modifying the existing scales from the literature. We adapt the questionnaire on learning orientation used by Baker and Sincula (1999) to measure organizational learning. Similarly, we adapt the questionnaire used by Moorman and Miner (1997) to measure organizational memory. Finally, we modify the questionnaire used by Kotabe (1990) to measure organizational innovation. These scales would be pre-tested to ensure that there is reliability and validity. Data will be analyzed using Structural Equation Modeling technique. We use this second generation technique to analyze our data because it allows us to test the whole model at once unlike first generation techniques like regression.

Discussion

Companies need to be cautious about downsizing. The perceived benefits do not materialize as assumed. Instead, the long-term effects that are damaging are overshadowed by short-term gains. Long-term losses include disruption in informal networks, decrease in tacit learning that affects competence formation and in turn affects the ability to produce effective IS solutions. While many factors go into building the competitive advantage of the organization, in today's economy effective solutions are necessary for good information systems. When considered in an IS context, downsizing not only contributes to the losses mentioned but also leads to a decrease in work force. The immediate effect can be seen in system development that relies on not only IS

professionals but more so on the domain experts. Presently, the shift from monolithic systems to distributed multi-tiered IS solutions require inputs from different domain experts in the organization. The loss of domain experts adversely affects IS projects by increasing the time to develop good systems. The moot question that companies must answer is whether they are downsizing the right way. Firms should focus on making staffing decisions wisely to only employ those necessary. Firms should also note that the cost of hiring external consultants is higher than internal staff. Additionally, the loss of tacit knowledge of an employee is something that a firm cannot easily replace. To conclude, firms should exercise downsizing options with caution.

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