

**Research Support
School of Business Administration**

April 1993

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Culture and Effectiveness**

Working Paper #728

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April 1993

We gratefully acknowledge the comments and suggestions made by Jane Dutton, Thomas D'Aunno, Karl Weick, and other members of the Michigan Organization Studies Seminar on previous drafts of this paper. We also wish to thank the three anonymous Organization Science reviewers for their many helpful suggestions.

(Forthcoming, Organization Science)

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Abstract

This paper develops a model of organizational culture and effectiveness based on four traits of organizational cultures; involvement, consistency, adaptability, and mission. These traits are examined through two linked studies: In the first, qualitative case studies of five firms are used to identify the traits and the nature of their linkage to effectiveness: In the second, a quantitative study provides an exploratory analysis of CEO perceptions of these four traits and their relation to subjective and objective measures of effectiveness in a sample of 764 organizations. The results show support for the predictive value of the traits, and help to illustrate the complementarity of qualitative and quantitative methods for studying organizational cultures.

Two of the traits, involvement and adaptability, are indicators of flexibility, openness, and responsiveness, and were strong predictors of growth. The other two traits, consistency and mission, are indicators of integration, direction, and vision, and were better predictors of profitability. Each of the four traits were also significant predictors of other effectiveness criteria such as quality, employee satisfaction, and overall performance. The results also showed that the four traits were strong predictors of subjectively-rated effectiveness criteria for the total sample of firms, but were strong predictors of objective criteria such as return-on-assets and sales growth only for larger firms.

This paper suggests that culture can be studied as an integral part of the adaptation process of organizations and that specific culture traits may be useful predictors of performance and effectiveness. The paper also illustrates how qualitative case studies and inductive theory building can be combined with quantitative comparisons and theory-testing to make progress on specific aspects of organizational culture research.

The relationship between the culture and functioning of social organizations has been a recurring theme in the social sciences for over 50 years. Sociologists, social anthropologists, and social psychologists presented culture and ideology as integral features of the functioning of a society (Weber 1930; Mead 1934; Radcliffe-Brown 1952). Each of these authors focused on culture as a critical aspect of the adaptation of social organizations, and viewed culture as a system of "socially transmitted behavior patterns that serve to relate human communities to their ecological settings" (Keesing 1974). This perspective has also been reflected in the work of ethnographers such as Whyte (1949) and Rohlen (1974), and by psychologists such as Schein (1985; 1990) and Hofstede (Hofstede 1980, 1991, Hofstede et al. 1990).

Organizational researchers have also addressed the relationship between culture and functioning (Wilkins and Ouchi 1983, Barney 1986, Barley et al. 1988, Saffold 1988, Ott 1989), but have seldom developed explicit theories of organizational culture and effectiveness or presented supporting evidence (Siehl and Martin 1990). Progress has been made in related research areas such as socialization (Van Maanen and Schein 1979, Chatman 1991), and change (Schein 1985, Kotter and Heskett 1992) but with few exceptions (e.g. O'Reilly 1989) little attention has been given to the issue of organizational culture and effectiveness.

The purpose of this paper is to develop and test a model of the cultural traits that appear to characterize effective organizations. Our intention is to develop an explicit theory about culture and effectiveness that can extend the implicit, but often unelaborated themes that appear in many culture studies. This is accomplished by presenting two linked studies: The first uses qualitative studies of five organizations to develop hypotheses about four cultural traits and their linkage to effectiveness. The second study then presents a quantitative test of these four hypotheses by comparing CEO perceptions of culture with subjective and objective measures of effectiveness in 764 organizations.

STUDYING ORGANIZATIONAL CULTURE AND EFFECTIVENESS

The topic of culture and effectiveness is of central importance in organizational studies, but progress in the development of theory and research has been slowed by a formidable set of research problems. For example, an integrative theory must encompass a broad range of phenomena extending from core assumptions to visible artifacts, and from social structures to individual meaning. Such a theory must also address culture as a symbolic representation of past attempts at adaptation and survival as well as a set of limiting or enabling conditions for future adaptation. Several attempts at integration have been presented (Allaire and Firsirotu 1984, Ott 1989, Schein 1985, 1990) but there is still limited consensus regarding a general theory of organizational culture, and healthy skepticism about whether culture can ever be "measured" in a way that allows one organization to be compared with another.

The concept of effectiveness also presents a challenging set of problems. The multidimensional nature of the concept requires that effectiveness be defined by a complex of stakeholders, who may hold differing, incompatible, and changing criteria (Cameron and Whetten 1983, Lewin and Minton 1986). In recognition of these difficulties, some researchers have even called for a moratorium on empirical research on effectiveness, suggesting that inquiries be limited to single outcome studies (Goodman et al. 1983). Joining the two concepts of culture and effectiveness thus defines a research question which is important, but often problematic.

The dearth of empirical research on culture and effectiveness can also be traced to the origins of culture research within organizational studies. The development of the culture perspective and the critique of the positivist approach to social science (Geertz 1973, Pettigrew 1979, Weick 1979, Martin et al. 1983, Frost et al. 1985) are closely linked. Most culture researchers advocate a phenomenological approach, emphasizing the qualitative understanding of meaning and interpretation. Several have argued that culture should not be studied as a "variable" with "outcomes" (Trice and Beyer 1984, Meek 1988, Sackmann 1991, Siehl and Martin 1990), and have thus discouraged the integration of culture research with other constructs

of organization theory (including effectiveness) which are primarily discussed in terms of variables, dimensions, causes, or effects. Thus, the literature carries a message about epistemology as well as substance.

The culture perspective is also intertwined with the popular literature on organizations that appeared during the 1980s (Ouchi 1981, Deal and Kennedy 1982, Peters and Waterman 1982, Kanter 1983, Kilman et al. 1985, Tichy 1987, Schein 1985, 1990). This literature, while perhaps loosely connected with the epistemological critique of positivism, was directly linked to a far more immediate concern: the rising tide of international competition. In contrast to the minor role that effectiveness has played in the scholarly literature, here the functional linkage between culture and effectiveness was a central issue. Unfortunately, the evidence presented was often no more than selective anecdotes and normative assertions regarding the value of culture. Thus, the popular literature, like the scholarly literature, has contributed little comparative evidence regarding culture and effectiveness.

Several authors have attempted to integrate the functionalist and phenomenological perspectives. On a theoretical level, the crux of the issue has been the tension between the functionalist perspective emphasizing the predictable impacts of purposive, intentional forms of social organization, and a phenomenological perspective emphasizing the emergent and epiphenomenal nature of those same organizations. Giddens (1979) and Riley (1983), for example, have argued that researchers must seek a concurrent understanding of the impact of social structure on individuals as well as the part that individuals play in creating those structures. Each organizational actor must be understood as both a subject and an agent of the system at the same time (Mead 1934). To wit;

Structures are both the medium and the outcome of interaction. They are the medium, because structures provide the rules and resources individuals must draw upon to interact meaningfully. They are its outcome, because rules and resources exist only through being applied and acknowledged in interaction -- they have no reality independent of the social practices they constitute. (Riley 1983: 415)

On an empirical level, there is also increasing attention to the integration of approaches. Jermier et al. (1991), Hofstede et al. (1990), Siehl and Martin (1988), and Denison (1990) each

present empirical research that incorporates qualitative and quantitative data, and acknowledges the importance of both the functionalist and phenomenological perspectives.

Other researchers have recently presented empirical culture studies which have relied upon quantitative survey data to characterize and compare organizational cultures. (Rousseau and Cooke 1988, Hofstede et al. 1990, Chatman 1991, O'Reilly et al. 1991, Jermier et al. 1991, Kotter and Heskett 1992). This research has characterized organizational cultures in terms of underlying traits and value dimensions, and has typically acknowledged that culture is being treated as a variable for a specific research purpose. These studies illustrate the range of approaches that have been taken by culture researchers. They also reflect the approach taken in this study; a combination of qualitative and quantitative methods and an attempt to gain the insights of both the contextualized meaning of specific settings and the generality offered by comparison across multiple organizations.

CULTURE AND EFFECTIVENESS: EMPIRICAL RESEARCH

The empirical literature on organizational culture and effectiveness can be traced back to early studies of culture and adaptation (Weber 1930, Buckley 1967), and to the work of classic organizational theorists such as Likert (1961), Burns and Stalker (1961), or Lawrence and Lorsch (1967). More recently Wilkins and Ouchi (1983) discussed the concept of a "clan" organization and explored the hypothetical conditions under which clans would be a more efficient organizational form. The evidence presented by Peters and Waterman (1982) identified cultural characteristics of successful companies and built a "theory" of excellence that has caused much debate (Carroll 1983, Van de Ven 1983, Aupperle et al. 1986). Kanter (1983), in a study of organizational change, showed how companies with progressive human resource practices outperformed those with less progressive practices. Denison (1984), using survey-based culture measures, showed that perceived involvement and participation on the part of organizational members predicted both current and future financial performance. In addition, Gordon (1985)

has shown that high and low performing companies in the banking and utilities industries had different culture profiles.

Kravetz (1988) amplified Kanter's earlier findings by showing that management practices fostering participation, autonomy, and creativity were closely correlated with objective indicators of organizational performance. Hansen and Wernerfelt (1989) contrasted the effects of internal organization and market position on performance. Their study showed that internal organizational factors were stronger predictors than market position and that the two predictors were largely unrelated. A French study of managerial values and practices also identified a set of cultural values and practices associated with the growth patterns of five single business firms (Calori and Sarnin 1991). Finally, Kotter and Heskett (1992) presented an analysis of the relationship between strong cultures, adaptive cultures, and effectiveness.

In addition some theoretical development has also occurred. Barney (1986) and Camerer and Vepsalainen (1988) discussed culture from an economic perspective and defined conditions under which culture might influence efficiency or effectiveness. Saffold (1988) has critiqued the literature on cultural strength and normative integration, and urged the development of a more sophisticated theory of culture and performance. Gordon and DiTomaso (1992) provide further empirical support for the impact of cultural strength and value consensus on performance in a recent study of the insurance industry.

This collection of empirical and conceptual studies has established a modest precedent for the comparative study of culture and effectiveness. The emerging paradigm generally relies upon the identification of a limited set of underlying values and traits (often identified through inductive analysis), which are then measured through survey responses. The culture measures are compared, in most cases, to measures of business performance, defined in financial terms.

While this approach has provided a way to begin to address the underlying research question, it has several limitations. These limitations suggest a general strategy for research on culture and effectiveness that has influenced this paper: First, building a more general theory of

the cultural traits and values associated with effectiveness; and second, beginning to test the impacts that these traits have on multiple dimensions of effectiveness.

STUDY #1: BUILDING A GROUNDED THEORY

The first study begins by defining a set of five firms selected to facilitate theory-building. Brief case descriptions of the firms are presented followed by an analysis of the cultural dynamics that appear to be most closely related to effectiveness. The cases were selected based on a prior study by the first author showing a close relationship between the level of involvement and performance (Denison 1984). The focus on this single dimension of culture, however, raised a broader question: What other characteristics of organizational cultures may be related to effectiveness? What are the processes by which these traits are linked to effectiveness? What other aspects of effectiveness may be influenced by cultural traits?

To address these questions, the findings of this earlier study were used to select the set of firms shown in Figure 1 for case studies. Neither the survey instrument (Taylor and Bowers, 1972) nor the traits operationalized were ideal for culture research. Nonetheless, this data source was attractive because it was one of few databases that offered any possibility of comparing culture and effectiveness. The survey data were collected from 34 organizations at one point in time between 1968 and 1980 and matched with performance data for the five years following the survey date. The index scores for each organization were derived by aggregating individual responses to the organizational level. The measure of performance shown in Figure 1 is return on assets, expressed as the percentile ranking of each firm within its respective industry. The overall correlation between involvement and industry-adjusted performance for the data reported in Figure 1 is .42.

[insert Figure 1 about here]

This scatterplot of involvement and performance was used to define an "interesting" set of cases to study. Three of the cases, falling along the diagonal, appear to confirm the

involvement-performance results, pointing to a high involvement-high performance organization (Medtronic), a moderate involvement-moderate performance organization (People Express), and a low involvement-low performance organization (Detroit Edison). The remaining two cases, in contrast, both seem to disconfirm the general finding: Procter & Gamble appears as a high involvement, medium performance firm; while Texas Commerce Bancshares appears as a high performance, low involvement firm.

As a set, these cases serve two purposes. First, they allow for a qualitative examination of the hypothesis that involvement is a cultural trait that has an impact on effectiveness. The diagonal cases support that notion and can be used to examine the underlying processes by which involvement is linked to performance. The off-diagonal cases appear to contradict the involvement hypothesis, and thus are particularly likely to reveal additional cultural traits that may be linked to effectiveness. Both diagonal and off-diagonal cases can be useful in developing a more general theory. Finally, these cases can be used to explore the multidimensional nature of effectiveness and to attempt to link specific cultural traits to specific dimensions of effectiveness. Thus, as Eisenhardt (1989) has advocated, our case studies began with a point of view and were selected in a specific manner designed to facilitate further theory-building.

Case Study Methods

Each case study began with publicly available sources such as annual reports, 10Ks, the popular press, and business histories written on three of the five firms. These preliminary sources of background data were analyzed before we began negotiating access. The second step was to interview knowledgeable outsiders, such as researchers, journalists, consultants, and past employees, who provided insights about the firm and suggestions for gaining access. When direct access was slow in coming, this stage continued for several months and may have involved interviews with 30-40 individuals. When direct access came more quickly, this stage overlapped with interviews of the current members of the organization.

Primary data for the case studies came from direct interviews, conducted by the first author, with a sample of organizational members. A minimum of twenty-five to thirty individuals were interviewed in each firm, and in some cases as many as one hundred. Direct on-site contact with the organizations varied from a minimum of one week to several months. Contact with three organizations continued over several years, and in two of these organizations the first author served as a consultant to sustain research access over this time period. Individuals interviewed in each firm represented a cross-section of the organization, including members from different hierarchical and functional groups. The CEO or President was interviewed in four of the five organizations, along with other top executives. Particular attention was given to interviewing both new and old members of each firm and to identifying "storytellers" or "historians" who had particular insights or perspectives.

Successive interviews developed and tested an emerging picture of the organization's culture. The questions were informal, but in all cases focused on the interviewee's identity and career history; the core values of the organization and its "uniqueness;" the power and prestige of different sub-groups; the impact of the organization's history on its culture, and the interviewee's perception of the linkage between the culture of the organization and its effectiveness over time.

A specific set of questions guided the interviews, but the interviewer resisted the approach of asking the same questions each time and summarizing the interviews by counting and aggregating responses. Instead, each successive interview was used to expand understanding of the organization. For example, after the first set of 5-10 interviews, clear areas of overlap and redundancy (or sometimes conflict and inconsistency) began to emerge. At this point, the results were summarized and served as a basis for the development of a new set of questions intended to develop an understanding of the organization that was both broader and deeper. This process of summarization and refocus often happened 4-5 times during a case study. This approach also resulted in some "topic-specific snowball sampling." That is, one interviewee would recommend that another individual be interviewed, or that relevant organizational records, reports, or

memoranda be reviewed in order to clarify the issues that we had raised. Whenever feasible, these recommendations were followed.

The first part of each interview was non-directive. After a brief introduction to the project, questions were asked to allow the interviewee to project their own experience and perceptions of the organizational culture. Later in the interview, the questions became somewhat more directive, to help clarify the emerging picture of the culture and integrate the interviewee's perceptions into that emerging picture. This usually took the form of asking the interviewee to comment on the observations and perceptions that other organizational members had expressed and on the interviewer's own observations. This approach was particularly useful in elaborating inconsistencies that arose or addressing specific issues of redundancy or agreement.

When possible, interviews were recorded, and later reviewed and re-analyzed. Extensive notes were taken during each interview, and again when the tapes were reviewed. Transcriptions were done to capture direct quotes and other specific data. The identification of integrative themes within each case and comparisons between cases often required further analysis of the tapes and transcriptions. Through this on-going iterative process, the summary themes emerged. Draft reports of each of the cases also received extensive review and comment by members of each of the organizations.

More extensive discussions of each of these case studies have been presented by Denison (1990). The summaries presented below give a brief description of each organization's culture, with a primary focus on each firm's core values and their expression through structure and action. The case summaries describe each organization by presenting an historical background, an overview of the business, and a description of critical events and quotes that provide insight into the organization's culture. Conclusions about the connection between culture and effectiveness at the end of each case reflect the perspective of organizational actors as well as the researcher's perspectives. The goal of these case studies was to identify a broad set of traits that can enable a fuller understanding of the impact that culture has on effectiveness.

The Case Studies

Medtronic. Since its founding in the early 1960s, Medtronic has been the premier firm in the cardiac pacemaker industry. The firm has grown steadily to a size of 5000 employees and \$650 million in annual sales in 1990. Building on their perennial dominance of the pacemaker industry, they now have a diversified line of products in the bio-electronic health care area.

Medtronic has been driven from the very beginning by an explicit humanistic vision that goes beyond a solely economic rationale for the existence of the organization. In the early days, the main structure was a value-based consensus about applying technical knowledge to the needs of patients, surgeons, and cardiologists. The Medtronic culture was described by several organizational members as a "scientific-technical club" which was dedicated to preserving human life. Others commented that in these early days, "Medtronic didn't *have* a mission, it *was* a mission." This informal structure was sustained by constant contact and risk sharing in the operating room, led by the inventor and CEO, Earl Bakken, who was also the company's most compelling salesman. Bakken also made a practice (which continued at least through the time of our study) of having lunch with *each* new employee to convey the corporate mission.

This value-based system worked very well for 10-15 years in an industry that had little competition and offered steady and predictable growth. By the mid-1970s, however, when the organization had grown to 2000 employees and \$150M in sales, the company had several serious product problems and became the focus of increasing regulatory attention on the pacemaker industry. At the same time, a new CEO succeeded the founder and began to create explicit bureaucratic control systems designed to regulate the organization. The culture, which had always been seen as an implicit humanistic consensus central to the organization's success, came to be seen as insular, overly concerned with its own internal processes, and (at times) in shock over the discovery of its own fallibility when product problems emerged.

These changes also coincided with the onset of new methods of payment in the health care industry, creating price-based competition for the first time. During this period, organizational members often contrasted the "old culture" characterized by a humanistic paternalism, a strong sense of entitlement and commitment, and a clear sense of purpose, with the "new culture" and its emphasis on cost control, bureaucracy and accountability. This period saw heightened conflict within the organization and coincided with several interruptions in their otherwise steady growth in sales and profits.

Another change of leadership in 1985 helped to reintegrate the business goals and the mission. Rather than being viewed as contradictory logics, the new CEO emphasized these as complementary values that served to integrate the organization. In fact, the new leadership of the organization appears to have used a heightened sense of the implications of the mission as a means to raise expectations and commitment among organizational members. This reconvergence of the business goals and mission has coincided with the introduction of a new and successful product, and with restored growth and profitability. In addition, these positive changes coincided with a fundamental change in the industry: all major competitors have now been acquired by major corporations, leaving Medtronic as the only independent firm.

The Medtronic case provides some support for the idea that involvement is a cultural trait that is related to effectiveness. The voluntarism, commitment, and identification with the humanistic mission were seen by the organization's members (and the researchers) as having a positive effect on the organization's functioning, particularly in the early stages. It is equally clear, however, that at several points during the organization's life cycle, involvement coupled with success has led to a sense of entitlement and a preoccupation with internal processes rather than external adaptation. As one employee put it, "we spent most of our time *meeting and*

eating." Thus, the case illustrates that involvement can lapse into insularity and have a limited, or even negative impact on effectiveness.

Another interesting element of the Medtronic culture is its fundamental humanistic mission. This trait of the culture sensitized us to what might be called the "teleological nature of cultures." Purpose and destiny were strongly prescribed in non-economic terms that went far beyond Medtronic's goals as a business. Unity of purpose had a powerful positive effect by creating meaningful work for individuals and a mission and sense of direction for the organization as a whole.

Medtronic also provides an interesting example of the ebb and flow of cultural strength and its relationship to effectiveness. Out of the early stages of the company's history grew an agreed upon set of systems, behaviors, and meanings. Nonetheless, a primary task of the CEO who succeeded the founder in 1976 was to establish an organizational system that was capable of coordinating a larger firm and to counter the perception that the firm was "under-managed." In so doing, "bureaucracy" was placed at odds with "the mission," and, in the words of organizational members, a conflict between "old and new sub-cultures." This introduced conflict, inconsistency, and lack of integration. Interestingly enough, the most recent CEO, since 1985, has attempted to reintegrate the mission and the business and appears to have recreated a high level of consistency.

Finally, the Medtronic case provides a caveat regarding the attribution of an organization's effectiveness to its culture. Medtronic, after all, is a company that first created, and then dominated an industry through incremental technological innovation. While it is plausible that the culture influenced this success, it is also clear that the opposite is clear: the success has influenced the culture. One interpretation of the divergence and re-convergence that occurred between the business goals and the mission, for example, is that when the product technology was successful, the business goals and mission appeared consistent; when the technology was unsuccessful, however, the mission and business goals appeared to diverge.

People Express Airlines. This innovative, low-fare airline was formed in 1981, shortly after the deregulation of the industry, and grew to nearly \$1 billion in sales in 1986 before its collapse and acquisition by Texas Air Corporation in 1987. Ironically, the airline had been created in 1980 by a group of executives and managers from Texas Air who left the airline led by Donald Burr, founder of People Express, and former Texas Air President.

The story of the People Express culture is quite well known. The plan was to create a highly egalitarian organizational culture and apply many innovative human resource practices. The new members of the organization were trained and socialized in teams, and work was designed to be done by teams. "Cross-utilization," or the rotation of teams and individuals through different jobs on a regular basis, created variety and challenge in an industry with many repetitive jobs. The system was also based on "self-management," or the responsible autonomy of each employee as a manager of the firm's resources. All employees held the title of manager, owned stock, and shared in profits. After 1985, when a formal hierarchy began to emerge from this essentially flat organization, employees even began to *elect* their own supervisors and team leaders.

People Express was also based on a mission extending far beyond the realm of economics. The organization was designed to "unleash the power of the individual" and create "flying that was cheaper than driving," bringing air travel to the masses as never before. The airline's "precepts" also included the idea that the organization should serve as a *role model* for industry and the world. By doing so they would demonstrate the compatibility of the growth and achievement of individuals with the creation of an effective organization.

Other aspects of the People Express culture are not as well known. Rather than being a homogeneous culture, for example, pilots and flight attendants formed sub-cultures that had very different reactions to the managerial ideology. Among the strongest examples of these differences was the pilots' tendency to refer to the organizational ideology as "kool-aid" (a sardonic reference to the mass suicide of the followers of Rev. Jim Jones in Guyana in 1978), and to contrast the People Express system with "a real airline." Pilots were generally older, with much more airline and military experience, and were more likely to reject the collective values of the organization in favor of their own individual interests, and more likely to rebel against the "cult of charisma" that formed around Don Burr. Flight attendants, in contrast, were both male and female and had little airline experience, and in most cases no military experience. As a group, they tended to support the organizational ideology more than the pilots. While significant socialization to the organizational ideology occurred, these were nonetheless strong occupational sub-cultures.

The People Express system worked very well for three to four years. By 1985, the airline had grown to a size of 2500 employees and \$500M in annual sales based on this ideology and culture. After 1985, however, the system began to show signs of strain and increasing competition placed limits on the amount of time and organizational slack that the airline could devote to making its unique system work. For example, since all managers were promoted from within, the internal labor market could not produce experienced managers at the rate that they were needed. The final blow came when major airlines such as United and American introduced variable pricing reservations systems that allowed them to match People's low price on some seats (with restrictions), while maximizing revenues by selling other seats on the same flight at much higher prices.

In the beginning, People Express created a powerful cultural system based on shared values transmitted through extensive socialization. The PEX culture was strong and pervasive, and held a powerful vision for the future. Involvement and empowerment were critically important to the implicit coordination and fierce commitment that characterized the start-up. The expectations for involvement were extremely high, and this seems to be the best explanation of the fact that People Express appears in Figure 1 as a medium involvement firm. Even though "actual" involvement might seem very high, it did not always meet the expectations that the organization's members held.

Trying to explain the ineffectiveness of the People Express culture also provides several insights. One interpretation is that the leaders and members of the organization placed more emphasis on their social technology and internal integration than on external adaptation. Symptoms of their internal focus include the conflicts they experienced between their structural evolution and remaining true to the organizational ideology. The limits of implicit coordination had been reached, but the evolution of more complex coordinating structures seemed to be impeded by the organizational ideology. Other examples of their relative neglect of external adaptation include the assumption that they would be able to absorb and integrate newly acquired Frontier Airlines, and their difficulty in responding to the development of variable pricing reservations systems by their major competitors. Their organizational innovations did not, in themselves, seem to fail, but they did direct the attention of leaders and members of the organization away from changes that were taking place in the business environment.

Detroit Edison. With its origins in the consolidation of the utility industry in the early decades of this century, Edison's history began with 50 years of steady growth; a predictable doubling in size every ten years. The company grew rapidly along with the region's economy and became one of the nation's leading utilities.

During this long growth period, the company was almost entirely controlled by engineers who saw the mission of a public utility as the continuous building of "bigger and better power

plants." The organization was a "family" with a highly stable work force in which line workers often socialized with the Chairman and top executives. Although present-day workers still reflect some of the "rough and ready" posture of an era when they moved from town to town stringing up power lines in a rapid expansion of the system, today they are far more likely to hold their jobs because of the security they offer. Nonetheless, when the power goes out, a sense of those traditional values still emerges.

Edison is an organization with well defined authority. As several members of the organization said, "in this organization, everyone knows who they report to and what their job is." The organization was often described as functioning "like a machine," and was staffed by a very stable population of employees, promoted from within the organization in almost all cases. Historically, the organization has also been very male, and until the early 1960s there was a rule that female employees who got married had to quit their jobs.

The changes of the 1970s created turbulence within the organization. The energy crisis created a decline in sales and a decline in the growth of the region they served. Nuclear power brought a new regulatory presence and an increasing dependence on the expertise of outside contractors. A court ruling on affirmative action required that Edison adopt a strict quota system of hiring and promoting minorities until the proportion of minority employees in the company more closely matched the proportion of minorities in the population that the company served. This forced integration of Edison's work force was regarded by management as something that was "done to" the organization, rather than a positive, proactive step on their part. The lack of ownership of this issue and the advent of integration itself unfortunately undermined the sense of "family" that had been a part of the Edison culture for decades.

Edison was hit by all of these changes at once, with several results: First the mission of the company gradually changed from "building bigger and better power plants" to "creating safe and efficient options for consumers." Second, adaptation to these changes required that the organization be led by a combination of engineers and politicians (who held radically different definitions of "reality") and that the debate between these two sub-cultures be carried out within the organization. Third, many employees within the organization resisted the changes, preferring instead to go back to a simpler era.

This set of circumstances makes Edison an interesting study of what happens when an organization's mission and identity are altered by changes in their environment. Traditionally, the Edison culture has valued authority, predictability, technical skill, and the management of stable expansion. Involvement, to the degree that it exists, is of secondary importance to stability and consistency. Redirecting the organization to respond to politically defined stakeholders has been traumatic, because it has meant a fundamental re-examination of the basic mission, and a shift from an internal to an external locus of control.

Procter & Gamble. This 150 year-old consumer products giant is well-known as an innovator in such areas as brand management, profit sharing, advertising and promotion, and innovative work design. Concentrating first on soap and then for decades on a range of "high quality consumer products found within every home," the corporation is now a \$20 billion company with 73,000 employees worldwide. The strong, methodical culture is seen by many current and past employees as a key factor in their steady doubling in size every decade. While P&G has been quite profitable, performance is remarkable not so much for its level, but for its predictability.

At the core of the P&G culture is a highly rational, objective view of the world. Research, on both markets and products, is central to all decisions. When making or discussing a proposal, one must always "know the numbers." A central goal has always been to develop a technically superior product that will win in a blind taste test. A classic example of this logic is

Olestra, a new synthetic cooking oil and food ingredient free of fats, calories, and cholesterol. It grew out of years of basic research, and the product will not only be sold directly to consumers, but also will serve as a technically superior base for other P&G food products.

Heavy attention is paid to socialization by P&G. New employees in the brand management organization, for example, are socialized as a cohort, and many see this peer competition and cooperation as the real source of learning and motivation for new members. New assignments, which usually included a period of structured training, are alternated on a regular basis in short cycles of 6-24 months. P&G careers, in general, are like a tournament in which the members continually move up or out. Requirements for performance and conformity to the P&G way lead many new recruits to leave the organization after a few years. Ironically, P&G often trains the key employees of many of their competitors, although some in the organization will claim that they "never lost an employee that they wanted to keep."

Strong emphasis is also placed on written communication. Lessons on writing a memo in the proper P&G form are of central importance in a new recruit's socialization. This system results in efficient communication in a common "language," and the creation of a written corporate record of all significant events. The system is intended to be independent of any one person, and everything important can always be quickly reconstructed from the records. This is one of many systems used to reinforce the idea that work at P&G is the product of the organization, and not of any one individual.

In manufacturing plants P&G is highly innovative, if largely secretive, in their design of organizations. Principles of sociotechnical design are used to build progressive, high commitment systems that place a high level of autonomy and responsibility on workers. They were among the first American corporations to see these innovations as a source of competitive advantage, and to see them as an outgrowth of their organization's traditional assumption that the interests of the individual and the organization overlap. This assumption led to the use of innovative practices such as profit sharing as early as 1887.

A qualitative examination of P&G's culture supports the idea that it is a high involvement organization, but the context in which involvement occurs is far more structured than in the Medtronic and People Express examples. Involvement seems to reflect the high overlap of interest between the individual and the organization more than voluntarism and autonomy. Furthermore, this involvement takes place within a structured competition created by the organization, in a context with a high degree of normative integration, commitment, and a common language and symbolic system.

P&G is a classic example of a "strong culture" system. As many past and current members of the organization have noted, this characteristic of the culture has both positive and negative impacts on effectiveness; P&G is an organization that seldom makes big mistakes, but is often beaten to the punch by smaller, faster companies. Their historical limitation has been a difficulty in moving quickly primarily because of their commitment to research, objectivity, and methodical review. Their key capabilities are often described as "science, not art." The P&G system is also generally seen as being very well suited to the consumer goods mass market where objectivity and a methodical approach pay off, but slow and ponderous in fast moving markets that are driven primarily by taste and fashion. Recent acquisitions and expansions into food, health, and beauty products may test the adaptability of P&G culture. As one past employee put it, "the question is, does the 'corporate gene pool' have the variety necessary for future adaptation?"

Texas Commerce Bancshares. With its origins in the financing of the Houston cotton trade in early 20th century, Texas Commerce Bancshares was formed by the merger of two historic Houston banking institutions that led the Houston region through the Great Depression.

The bank was transformed in the 1960s by a new emphasis on marketing and managing by the numbers, and has become an elite, aggressive, and conservative middle market regional bank. It has been one of the premier Texas banks through both boom and bust, often outperforming the larger money-center banks. More recently, in 1986 TCB was one of the first Texas banks to take advantage of the change in U.S. interstate banking laws and merge with Chemical Bank of New York.

The bank has been led for the past 25 years by Ben Love, a charismatic and demanding CEO who was equally skilled at devising internal controls, motivating managers and executives, and selling and marketing. Love placed ultimate priority on "the numbers" (shared throughout the organization in a monthly "blue book"), and has stated that "organizing human resources in pursuit of statistical objectives is uppermost in my philosophy of management." Love's smooth but forceful style was also a primary source of motivation and often was exhibited in public settings such as loan committee meetings and officers' meetings. Numerous stories describe his unrelenting style, formidable wit and memory, and the dire consequences of presenting a proposal without knowing it inside out.

The culture of the bank reflects an interesting paradox: Leadership comes from the top down and respect for that authority is high. It is virtually impossible to talk about the culture of the bank without the discussion focusing on Ben Love. Yet at the same time, the structure of the bank is relatively flat (Love once had 70 direct reports) and much of the work is done in large committees. Loan committees, for example, often had 5-10 regular members, 5-10 who might be presenting loans, and perhaps 10-15 observers in an outer ring around the conference table. Until recently, approval of any loan over \$50,000 required unanimous approval of the loan committee -- a single dissenting vote could veto the proposal. These large committees provided a broad forum which served as a way to socialize new members, communicate the organization's culture, and disseminate best practices.

The Texas Commerce culture is also influenced by the strong regional culture of Texas. Rugged individualism, patriotism, and respect for authority run deep and tend to be projected onto Love as the symbolic leader. A 6' 6" patrician figure, Love is an authentic "Texan hero" to which many of the organization's strengths are attributed. Perhaps the best statement of Love's influence on the organization and the reaction of organizational members to that influence came from one newly appointed loan officer who said, "I'm proud to walk in Ben Love's shadow."

TCB's top down style, uniformity of practices, and strict financial controls and objectives are all examples of a high level of normative integration and consistency. The culture is pervasive and ensures that all members of the organization learn the "TCB way" and conform to it. At the same time, the system is also oriented toward individual achievement and the accomplishment of objective goals. The strength of this culture and the ability of the holding company to transmit it to newly acquired member banks appears to have been instrumental in the organization's success.

The more difficult question to answer about Texas Commerce is how adaptable the system can be. Their recent merger with Chemical Bank of New York implies that TCB must quickly reach beyond the middle market into consumer and investment banking by extending an organizational system and underlying set of assumptions that have been highly adapted to that one market. The strong culture of the bank seems to complicate that problem by instilling a belief in the existing system that may limit its future ability to adapt.

Developing Hypotheses

The case studies on the diagonal in Figure 1 provided a starting point for developing hypotheses about culture and effectiveness. These three case studies generally seemed to support the idea that organizations with higher levels of involvement were more effective. During the time period reflected in Figure 1, for example, involvement in Medtronic was very high and was seen by organizational members as highly instrumental to the company's objectives. High involvement fostered a strong sense of psychological ownership and commitment to the organization and its goals. Detroit Edison also fits the involvement-performance pattern, but in the opposite way. Their low involvement bureaucracy seemed to be an obstacle in the organization's struggle to respond to fundamental environmental change. The stable internal core prescribed by their history limited Edison's ability to adapt.

The third case on the diagonal, People Express Airlines, is more complicated to interpret. It appears in Figure 1 as a moderate involvement, moderate performance firm, but in the case studies it appears to have exceptionally high involvement and was effective as a start-up organization. The best explanation for these somewhat inconsistent findings may be twofold: First, "actual" involvement or involvement compared to other firms may have been very high, but not nearly as high as *expectations* regarding involvement. Thus, the questionnaire responses, in comparison to baseline expectations, were only average. Second, the performance measures of profitability, also average, show that People Express, when the data were collected, was a break-even firm in a break-even industry. The organization's primary achievement, growth and innovation, were not reflected in Figure 1. The People Express case study may thus provide some support for the hypothesis that involvement is linked to growth, rather than return on assets as suggested by Figure 1.

Procter & Gamble, an "off-diagonal" firm, provides a different example of involvement. The P & G case portrays an organization with a high level of involvement, primarily because of autonomy and a high overlap between individual and organizational goals. Involvement in P&G, however, takes place within a highly structured setting, which is far less voluntary than

our earlier examples. As a result, there seemed to be less "ownership" of the system than in Medtronic or People Express, even though most organizational members were highly involved in a system perceived as a positive integration of individual and organizational interests. Interestingly enough, the case also shows that P&G was not highly profitable, but its stable rate of growth over time was impressive. P&G thus appears to support the idea that involvement may have greater impact on other aspects of effectiveness, such as long term growth.

Thus, our first hypothesis suggests that high levels of involvement and participation create a sense of ownership and responsibility. Out of this ownership grows a greater commitment to the organization and a growing capacity to operate under conditions of autonomy. Increasing the input of organizational members is also seen as increasing the quality of decisions and their implementation. This theme is a classic in organizational theory, reflected in the work of McGregor (1960) and Likert (1961, 1967), as well as Argyris (1964), Ouchi (1981), Peters and Waterman (1982), Lawler (1986), and Walton (1986). Thus, our first hypothesis:

H1: Involvement is a cultural trait which will be positively related to effectiveness.

While P&G can be used to illustrate involvement, it also illustrates a different cultural trait, normative integration, that may be related to effectiveness. This trait is also apparent in the other off-diagonal firm, Texas Commerce Bancshares. Effectiveness in these firms appears to spring from normative integration or consistency -- the collective definition of behaviors, systems, and meanings in an integrated way that requires individual conformity rather than voluntary participation. Texas Commerce Bancshares, for example, developed an internally consistent system that served to define markets, identify lending opportunities, and approve and monitor loans. The system was integrated around a small number of key values; TCB as an elite middle market bank, well defined areas of personal responsibility, individual rewards, and management by the numbers.

This trait of consistency also appears in the other organizations. For example, a high level of shared meaning, and a strong sense of the "Medtronic" or the "TCB" way was typically a

central source of integration, coordination, and control. Each organization had a developed mind-set and set of organizational systems that could be projected on ambiguous situations. The root of this trait is the concept of normative integration or the pervasiveness of a consensual system of behavioral control. This characteristic has been popularly recognized as a "strong" culture.

This trait also helps in understanding sub-cultures. For example, in Medtronic the "old" culture centered around the concept of the organization as a humanistic mission, which eroded as the firm became more explicitly managed as a business organization. A "new", bureaucratic sub-culture and complementary set of control systems began to serve as the focus of integration. Only recently has the inconsistency between these competing sub-cultures begun to reach some resolution. People Express and Detroit Edison also provide useful examples of the tensions between strong sub-cultures and overall integration. In People Express, pilots and customer service managers held different ideologies and were often in conflict. In Detroit Edison, "engineers" and "politicians" struggled over which version of "reality" they should respond to. The culture of these firms showed the tension of differences and the need for integration.

The concept of consistency also helps to address the critique of "unitary" organizational cultures that has appeared in the literature (Martin et al. 1983; Allaire and Firsirotu 1984; Rose 1988). Sub-cultures co-exist in all organizations and an "organizational" culture may exist only in the form of a set of assumptions, beliefs, and practices regarding the integration of the sub-parts into a whole. Sources of integration range from a limited set of rules about when and how to agree and disagree, to a "unitary" culture with high conformity and little or no dissent. Nonetheless, in each of these cases, the consistency and integration of the system is a salient trait of the organization's culture.

The culture literature often tends to equate involvement and consistency, and does not emphasize that they are different routes to gaining the commitment of organizational members. Equating democratic decision-processes and high levels of voluntary participation with "Disney-like" systems of socialization designed to forge a collective mind-set overlooks a fundamental

distinction. In high involvement systems, the social definition of reality is created by individuals in an inductive manner -- each individual's stamp appears on at least some corner of social reality -- and while the process may be instigated by a leader, it is not prescribed in detail. In contrast, in the highly consistent cultures, such as TCB or P&G, social reality comes "pre-defined." The existing managers, executives, and high-status individuals are the agents of socialization, and newer lower-status individuals are the subjects. The contrast between "agents" and "subjects" is high in these "strong culture" organizations. In a high involvement organization, this contrast between agents and subjects is generally much lower.

Thus, the concept underlying the second hypothesis is that an implicit control system, based upon internalized values, can be a more effective means of achieving coordination and integration than external control systems relying on explicit rules and regulations (Pascale 1985, Weick 1987, Saffold 1988, O'Reilly 1989). The basis for an implicit control system is a normative system of regulation that can be projected by organization members on ambiguous or ill-defined situations. Interesting enough, normative integration appears to lie at the root of both the spontaneous emergence of value-based cultures such as Medtronic or People Express exhibited in their early stages and the inbred bureaucratic cultures shared by Detroit Edison and to a lesser degree, by Procter & Gamble and Texas Commerce Bancshares. Thus, our second hypothesis:

H2: Consistency, or the degree of normative integration, is a cultural trait that will be positively related to effectiveness.

The next step in the theory building process grew from the observation that both involvement and consistency take as their primary focus the internal integration of the organization. Thus, these two concepts alone could not capture organizational members' frequent statements (and our frequent observations) about the linkages between their organizations and their environments. As cultural ecologists (Steward 1955, Bennett 1976, Rappaport 1979), and organizational scholars (Schein 1990) have noted, culture is one of the primary means by which social organizations are linked to their environments.

The concept of consistency, in particular, made this point apparent because of its close relationship to change and adaptation. The positive influence of consistency is that it provides integration and coordination. The negative aspect, however, is that highly consistent cultures are often the most resistant to change and adaptation. All of the cases showed this to some degree.

One of the best positive examples of adaptability comes from the early stages of Medtronic's history when they worked closely with cardiologists, sharing the risk of each new implant by being in the operating room and interacting directly with patients and surgeons during operations. The organization rapidly reacted to the needs of the physicians and patients, and did so in a way that was totally compatible with the organization's underlying character. Another example of more limited adaptability comes from P&G's ability to apply the logic of brand management to new product settings without making fundamental changes in the character of the system. A third example, Detroit Edison, illustrates how widespread changes in the business environment can outstrip an organization's capacity to adapt, and amplify the uncertainty over the underlying character of the firm. Finally, People Express had great difficulty overcoming the basic assumptions of an entrepreneurial culture as it grew larger.

The psychiatric term alloplastic -- the capacity to change in response to external conditions without abandoning one's underlying character -- has been used to describe this phenomenon at the organizational level (Nicholls 1985). Adaptability, in principle, could also refer to the capacity to redefine underlying character in response to large scale change, but there were no examples of this in the five organizations studied. Detroit Edison, for example, experienced fundamental change in its environment, but its traditional underlying character remained quite stable.

Thus, the adaptability hypothesis asserts that an effective organization must develop norms and beliefs that support its capacity to receive and interpret signals from its environment and translate these into internal cognitive, behavioral, and structural changes (Starbuck 1971, Kanter 1983). Cases in which the foundations of normative integration become detached from the external environment often develop into insular bureaucracies, and are unlikely to be

adaptable. Calori and Sarnin (1991), for example, found that companies which valued adaptation were likely to hold ambitious objectives, give priority to the satisfaction of clients, and be willing to try new ideas. These values and practices were closely related to the growth of the firms they studied. Kotter and Heskett (1992) also found a close relationship between adaptability and firm performance. Thus, our third hypothesis:

H3: Adaptability, or the capacity for internal change in response to external conditions, is a cultural trait that will be positively related to effectiveness.

Our final hypothesis came from the observation that several of the organizations were effective because they pursued a mission combining economic and non-economic objectives, which provided meaning and direction to organizational members. The mission hypothesis contrasts with the adaptability hypothesis, in that it emphasizes the stability of an organization's central purpose and de-emphasizes its capacity for situational adaptability and change.

The importance of mission to culture and effectiveness was also supported by the observation that the most critical crises in each organization came when the basic mission was questioned or altered. Each of the organizations provided a compelling example of the close relationship between the overall purpose and direction of the firm, and the meaning held by each of the organizational members. This loss of meaning and direction seemed to coincide with significant losses of momentum and effectiveness.

Several examples help to illustrate. Medtronic, for example, began with an implicit humanistic mission that served as a powerful integrating force. After about 15 years of success, product problems, competition, and the leadership transition from the original founder to "professional" management all combined to bring great pressure on the firm to behave as a "business" organization, rather than a humanistic mission. Conflict emerged between the old "humanistic culture" and the new "business culture" and seemed to threaten the integrity of the organization as a whole.

As another example, in Detroit Edison the mission changed in the 1970s from "building bigger and better power plants" to "providing the public with safe, efficient energy choices."

This fundamental realignment has taken years to translate throughout the organization as responsiveness to external stakeholders gradually replaces a technical concern with producing electrical power.

Relatively few authors have written directly on this topic (Selznick 1957, Torbert 1987, Bourgeois and Eisenhardt 1988, Robbins and Duncan 1988, Hamel and Prahalad 1989, Westley and Mintzberg 1989, Westley 1992), but most have agreed that a sense of mission provides two major influences on an organization's functioning: First, a mission provides purpose and meaning, and a host of non-economic reasons why the organization's work is important. Second, a sense of mission defines the appropriate course of action for the organization and its members. Both of these factors reflect and exemplify the key values of the organization. Thus, our fourth and final hypothesis:

H4: Sense of mission or long-term vision is a cultural trait that will be positively related to effectiveness.

A Framework for Integrating the Hypotheses

Figure 2 organizes these four traits into a framework designed to acknowledge two contrasts: the contrast between internal integration and external adaptation, and the contrast between change and stability. For example, involvement and consistency have as their focus the dynamics of internal integration, while mission and adaptability address the dynamics of external adaptation. This focus is consistent with Schein's (1990: 111) observation that culture is developed as an organization learns to cope with the dual problems of external adaptation and internal integration. In addition, involvement and adaptability describe traits related to an organization's capacity to change, while consistency and mission are more likely to contribute to the organization's capacity to remain stable and predictable over time.

[insert Figure 2 about here]

A second reason for integrating these four traits into a framework is to qualify the apparent linear form of the four basic hypotheses. Taking each hypothesis independently

neglects important data revealed by the case studies. For example, Medtronic showed clearly how involvement, over time, evolved into insularity and entitlement. Detroit Edison showed how internal consistency could be an obstacle to adaptation, or to a redefinition of their underlying mission. These examples acknowledge that there may be many contradictions among the individual hypotheses. Well integrated systems are often the most difficult to change, and highly adaptable systems may be less likely to achieve the high rates of efficiency or common purpose associated with consistency and integration. In a similar sense, mission and involvement may be contradictory: the meaning and direction established through an organizational mission may limit the involvement of some members. As many organizations have discovered, declaring a new organizational mission does not necessarily imply the support and commitment of organizational members, and, high involvement among an organization's members does not necessarily imply a clear sense of direction.

One way to acknowledge these observations would be to pose each of the four hypotheses in a curvilinear form. This approach, however, would introduce the intractable problem of "how much is too much" to each of the hypotheses. The alternative, and the approach taken here, is to argue that each trait is "balanced" by the others. Thus, the excessive involvement that led to insularity and entitlement in Medtronic is not acknowledged by a curvilinear involvement hypothesis; but rather as an absence of one of the other traits such as mission or adaptability. Detroit Edison was limited, not by the fact that it had too much consistency but rather because it had too little adaptability and involvement. While we are not able to provide a direct test of all of these ideas in the current study, representing them in the same framework recognizes the inherent interdependence and contradiction of these traits.

As such, this framework bears similarity to other authors attempts to present general theories of functioning and effectiveness (Parsons 1951, Katz and Kahn 1966, 1978), as well as more recent authors such as Mitroff (1984), Lewin and Minton (1986), and Quinn (1988) who have recently argued for the importance of understanding the paradoxes and contradictions that are an integral part of organizational life. As Quinn (1988) has noted, it is the balancing of

competing demands that distinguishes excellent managers and organizations from their more mediocre counterparts. This theory suggests a similar logic for understanding organizational culture.

STUDY #2: AN EXPLORATORY TEST OF THE MODEL

The second study conducts an exploratory test of the four hypotheses, examining the linkage between these four cultural traits and effectiveness. Survey measures of the traits were obtained from top executives in 764 organizations and compared these traits to a set of effectiveness measures including subjective and objective measures of profitability, quality, sales growth, satisfaction, and overall effectiveness. Compared to Study #1, this research design takes an opposite set of risks: richness of detail is traded off for the scope of generalization. If the measures are too superficial, only represent a top management viewpoint, or ignore the importance of contextualized meaning, then it is highly unlikely that the measures will be related to effectiveness. If the measures do show an interpretable relationship to effectiveness, however, it signals a fundamental relationship strong enough that the impacts can be discerned through these limited measures.

From the hypotheses described above, questionnaire items were developed for each of the four traits. Next, we identified a population of firms in the industrial midwest and drew a probability sample of firms from the files of the state employment security commission (Birley 1984, Denison and Hart 1987). The sample was drawn by SIC code from five major industries: 1) manufacturing, 2) business services, 3) finance, insurance, and real estate, 4) retail, and 5) wholesale. The probability of selecting an individual firm was proportional to its size, such that larger firms were much more likely to be selected than smaller firms.

After verifying the names and addresses of all firms in the sample, a survey questionnaire, follow-up letter, second survey, and follow-up postcard were mailed out, at one week intervals. Surveys were addressed to the chief executive officer or top executive in each organization, and the respondents typically the president, CEO, COO, or CFO. After these four mailings,

telephone calls were made to non-respondents. All data collection was completed in 1989. From 3,625 surveys sent out, 764 completed surveys were returned for an overall response rate of just over 21 percent. Since our intention was to conduct an exploratory test with data from a large number of firms, this response rate was judged to be adequate. Furthermore, as Henderson (1990) has shown, a response rate of 20-30% is fairly typical for a mail-out survey to a large sample of firms.

Response bias by industry sector and firm size was minimal. Responses were quite constant across categories, generally varying no more than 2-3% from the overall response rate. There are two exceptions to this pattern: The very smallest category of firms in the sample, those with 1-5 employees, had only a 16% response rate. In addition, wholesale firms also had a low response rate, with only 12% of the surveys returned. Manufacturing firms and medium-to-large firms had the highest response rates.

Measurement

Factor analysis and multidimensional scaling were used to assess the validity of the questionnaire items developed to measure the four cultural traits. Figure 3 presents a multidimensional scaling analysis (Takane et al. 1977) of eight items that shows good convergent and discriminant validity for the four traits, presented in two dimensions as suggested by the theoretical model. Table 1 presents the correlation matrix of the items along with alpha coefficients for the four indexes. A complete listing of the items is included in the appendix.

[insert Figure 3 about here]

[insert Table 1 about here]

The analyses presented here examine the relationship between the four culture measures and the effectiveness of the organizations. The effectiveness measures fall in three categories: 1)

a set of five questionnaire items asking respondents to compare their own firm's performance to the performance of similar firms on the dimensions of profitability, quality, sales growth, employee satisfaction, and overall performance; 2) return on assets (ROA) for the most recent year (1989) as well as the average for the preceding three years (1987-1989); 3) reported sales growth for the most recent year (1989) and the average growth for the preceding three years (1987-1989).

Results

Table 2 presents the correlations between the culture indexes and the subjective effectiveness items. These results are predominantly positive, with 15 of 20 correlations significant at the .001 level, and many falling in the .25 -.35 range. The culture measures prove to be weak predictors of sales growth and profits, but stronger predictors of quality, employee satisfaction, and overall performance. Measurement error could potentially inflate these correlations, but it is somewhat more difficult to attribute all results to measurement error when the correlations vary in magnitude from .01 to .35.

[insert Table 2 about here]

After reviewing these initial results, we began checking to see how robust they were with respect to potential confounding effects such as industry, size, age, stage of development, and so on. In addition to checking for any bias resulting from the position of the respondent, we also analyzed the data for top executive respondents (80% of the sample) separately from the rest of the sample. None of these tests, however, had any significant impact on the results presented in Table 2.

Table 3 a presents the results for the first of the two objective measures of performance, return on assets (ROA). The table presents correlations between the cultural traits and 1989 ROA, and for average ROA for the last three years. The correlations are presented for the entire sample, and for a subsample of larger firms with top executive respondents.

[insert Table 3 about here]

The correlations for the total sample are positive, but quite weak. None of the correlations with 1989 ROA are significant at the .05 level, and only two of the four correlations with 3-Year Average ROA reach that level of significance. More importantly, the overall magnitude of the correlations is quite small, with the largest correlation reaching .14.

A quite different picture appeared, however, when we examined only those organizations with greater than 100 employees that have a top executive as respondent. For this subsample, all of the correlations are greater than .20 and range from .22 to .55. Half of the correlations are significant at the .05 level; 2 of the eight correlations are significant at the .01. Strong correlations with all four traits are observed, and from these data it appears that mission is the strongest predictor of performance.

The analyses in Table 3 rely on a much smaller number of cases than do the analyses presented in Table 2. Only about one-third of the firms reported enough useable financial data to compute ROA for three years, leaving only 220 firms total for the ROA analyses. Since only about 15% of the firms in the sample have greater than 100 employees, and only about 80% of the firms in the sample had the CEO or CFO as respondent, this left only 24 cases for the ROA subsample analyses.

The second objective performance measure, sales growth, offers slightly more data, since nearly 50% of the firms reported enough sales data to compute average sales growth for three years. Table 3b presents the correlations between the four culture measures and sales growth. The results present a similar picture to that presented in Table 3a. The results for the total sample are quite modest, both in size and in significance, but the results for the subsample of larger firms with top executive respondents shows much stronger results. Overall, the four culture traits seem to be slightly stronger predictors of ROA than of Sales Growth .

The results for the objective data support the idea that different cultural traits are related to different criteria of effectiveness (Pennings 1976). The data for the sample of large firms

shows that profitability criteria are best predicted by the stability traits, mission and consistency, while the sales growth criteria are best predicted by the flexibility traits, involvement and adaptability. The analysis of the subjective effectiveness data presented in Table 2 also shows a similar pattern.

Comparing the results for the subjective and objective performance criteria also reveals an interesting finding: the correlation between the four traits and the objective criteria are size dependent, but the correlations between the four traits and subjective criteria are not. These differences suggest at least two alternative interpretations, 1) that culture and effectiveness are more closely linked in larger firms, (perhaps because the coordinating effects of culture are more important in larger and more complex systems) or 2) that the subjective measures of effectiveness are better suited for the comparison of a disparate set of firms than are the objective measures of effectiveness.

Parallel regression analyses of these data presented a similar picture when the four traits are used as predictors of each of the effectiveness measures. The culture traits are strongest as predictors of objective ROA among large firms. Combining the four traits as predictors of ROA in this sample resulted in a multiple R^2 of .33.

DISCUSSION

This research has shown how an inductive, theory-building approach to organizational culture and effectiveness can be coupled with deductive, quantitative research to provide an emergent theory and an exploratory test of the theory. The convergence of these two logics creates a broader understanding than either could alone.

The results of these two studies suggest that culture may indeed have an impact on effectiveness. Each of the four cultural traits showed significant positive association with a wide range of both subjective and objective measures of organizational effectiveness, as well as interpretable linkages between specific traits and specific criteria of effectiveness. These

findings help support one of the basic premises of many culture researchers: That the cultures of organizations have an important influence on effectiveness.

But these conclusions would be premature without careful consideration of several limitations present in this study. First, as a cross-sectional study, there are a familiar set of limitations on inferring causality. The case studies develop plausible explanations for the linkage of culture and performance in the five firms, but provide little basis for inference. The quantitative study generates results that are consistent with the hypotheses, but those results are also consistent with the hypothesis that effectiveness determines the cultural traits, or that the two are simply coincident in time. Clearly, the ideal research design would not only incorporate in-depth measures of cultural traits, but would examine those with appropriate lag time, and a broad range of effectiveness measures. Although such research is time-consuming and difficult, future studies of organizational culture and effectiveness must develop research designs that incorporate *both* breadth and depth over time.

A second limitation of this study is our reliance on cultural "traits" as a key concept in our analysis. To address a specific comparative research problem we have taken a narrow view of the relevant cultural content of each of the firms. To argue that the four traits in fact *are* culture would be inappropriate. Instead, the four traits are summary characteristics of an organization's culture and the processes by which culture may have an impact on effectiveness. Without this focus on the comparative analysis of effectiveness, a far broader model of culture would be required.

Yet the reliance of this study on the concept of trait reflects a strategy that is becoming more widespread among culture researchers (Hofstede et al. 1990, O'Reilly et al. 1991, Chatman 1991, Gordon and DiTomaso 1992, Kotter and Heskett 1992, Denison 1993). This approach appears to represent an interesting compromise between the phenomenological and functionalist perspectives on culture. The use of a concept such as "trait" implicitly makes the assumption that comparison and generalization are warranted. The alternative assumption, that the linkage between values and behavior or between meaning and practice is contextually defined, makes

comparative analysis difficult, if not impossible. In the extreme, organization itself is epiphenomenal. Thus, the choice of the concepts used to describe culture is a critical one.

At the crux of this issue of comparison and generalization is the linkage between meaning and practice. This issue appears several times in the case studies; most notably in the People Express case. A comparison between the survey data and the case clearly illustrates how survey measures of traits are "expectation dependent" and how the meaning given to a particular practice is contextually defined. This example is highlighted to urge caution on a literal and unquestioning reliance on the survey measures. Ironically, however, the "innovative" nature of the People Express organization is dependent on a rather constant relationship between meaning and practice at the industry level. People Express practices were perceived as innovative because they disconfirmed the dominant link between meaning and practice at the industry level.

A related issue concerns our reliance on CEO perceptions of firm's cultural traits in the quantitative study. The second study took the risk that CEO perceptions of firm culture might have such low validity that they would be insignificant as predictors of effectiveness. Fortunately, this was not the case. The observed association between the four cultural traits and the objective measures of performance, for example, would be unlikely if the underlying culture measures had not achieved at least some level of validity. Thus, trading the depth and detail of qualitative research for breadth in the second part of this study met with some degree of success. Nonetheless, the depth of these perceptual measures and their reliance on a single respondent has obvious limitations. Now that this study has suggested that the four cultural traits may have an important link to effectiveness, future quantitative research must concentrate on in-depth measures from a broad range of organizational members to provide a richer test of the model.

Conceptualizing and measuring organizational effectiveness has also posed a host of difficult issues in this study. Not only is cultural meaning contextualized, but so is effectiveness. Their interaction presents nearly endless complexities. Nonetheless, this study does propose a viable approach for future research: A focus on multiple single measures grounded in a stakeholder model of effectiveness. This approach provides a recognition of the

multidimensional and equivocal nature of effectiveness, but as this study has shown, also allows for some interesting results: This research provides evidence that the stability traits of mission and consistency are useful predictors of profitability, while the flexibility traits of involvement and adaptability are more potent predictors of growth. These results suggest that future research might fruitfully focus on linking specific cultural traits to related criteria of effectiveness.

Finally, in our attempt to identify some core traits in a theory of organization culture and effectiveness, we have generally paid only limited attention to the broader cultural contexts within which the organizations themselves exist. Societies, industries, occupations, regulatory environments, and history, to name only a few, generate cultural contexts that influence organizations and their effectiveness. Further progress toward a general theory of organizational culture and effectiveness will clearly require that these factors as well be incorporated.

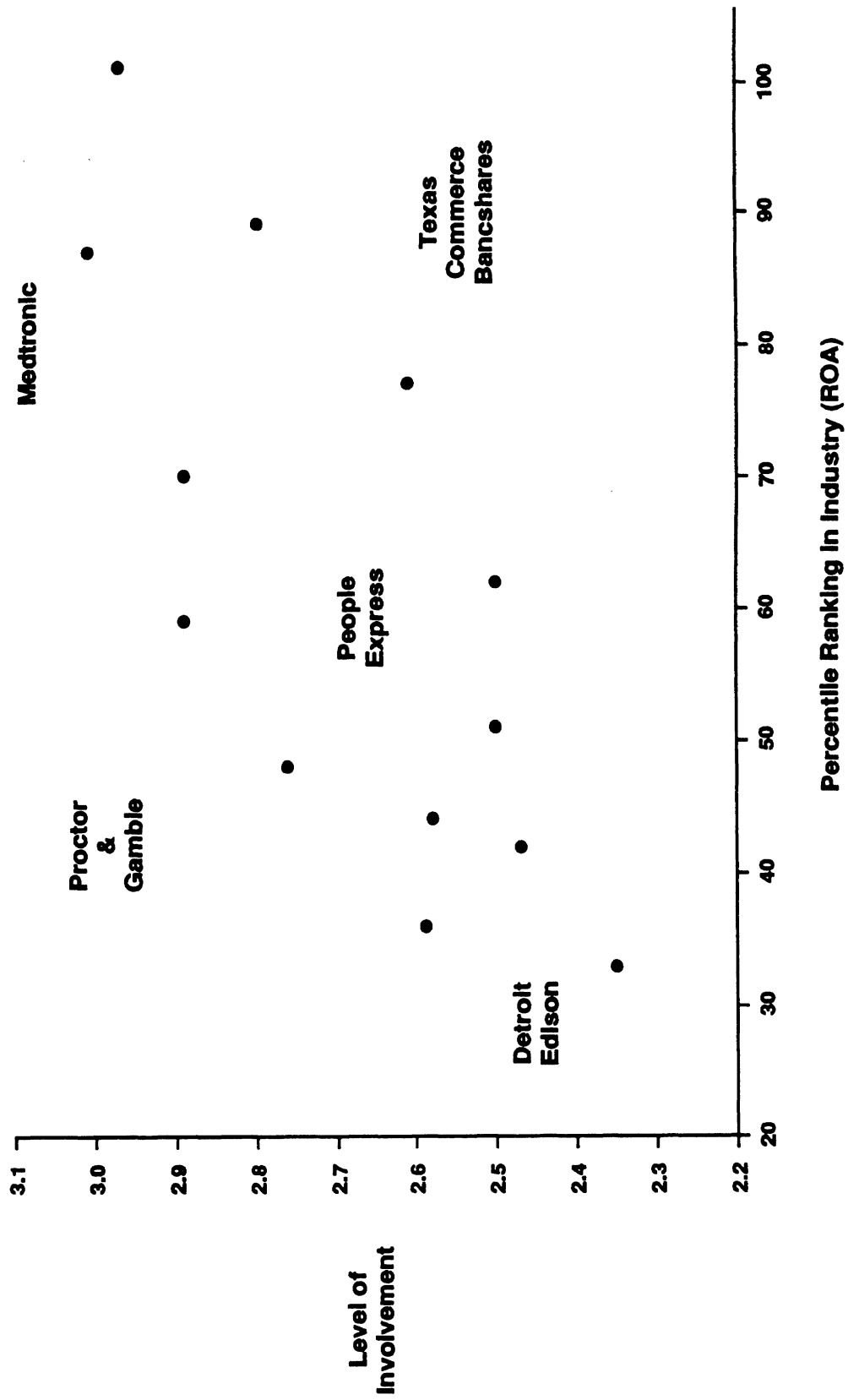


Figure 1. Selection of case studies.

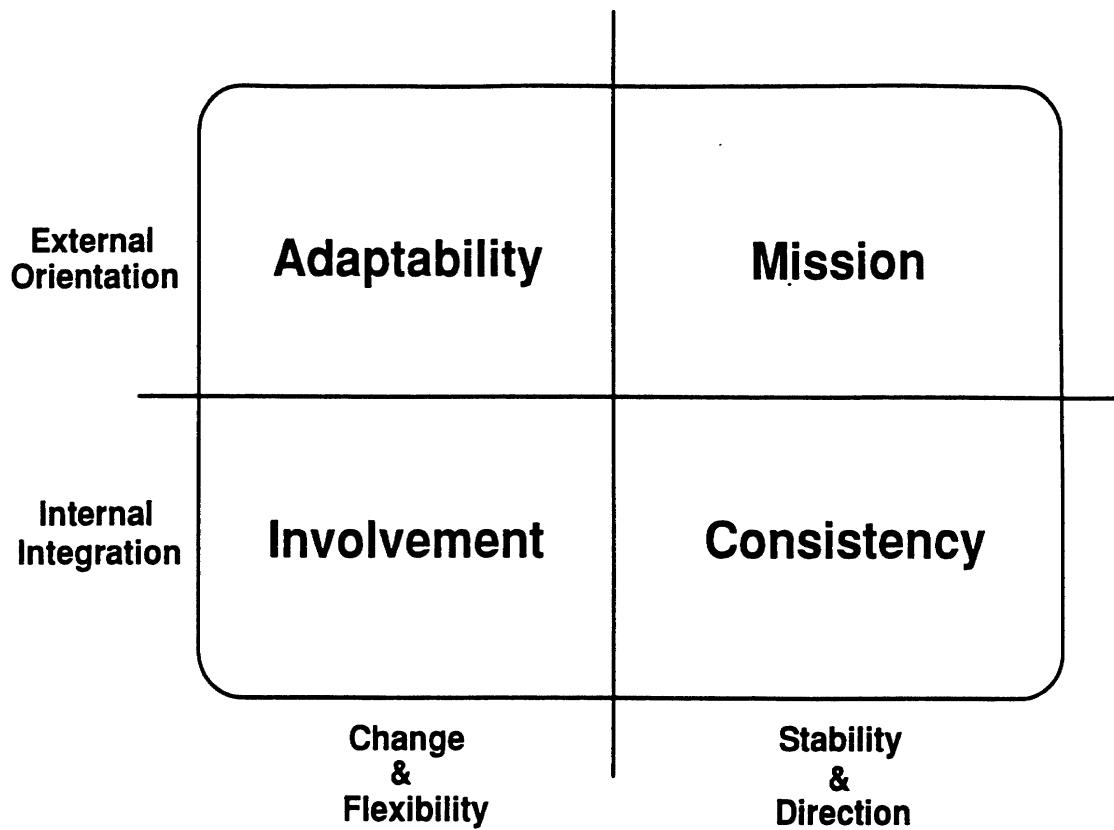


Figure 2. Theoretical model of culture traits.

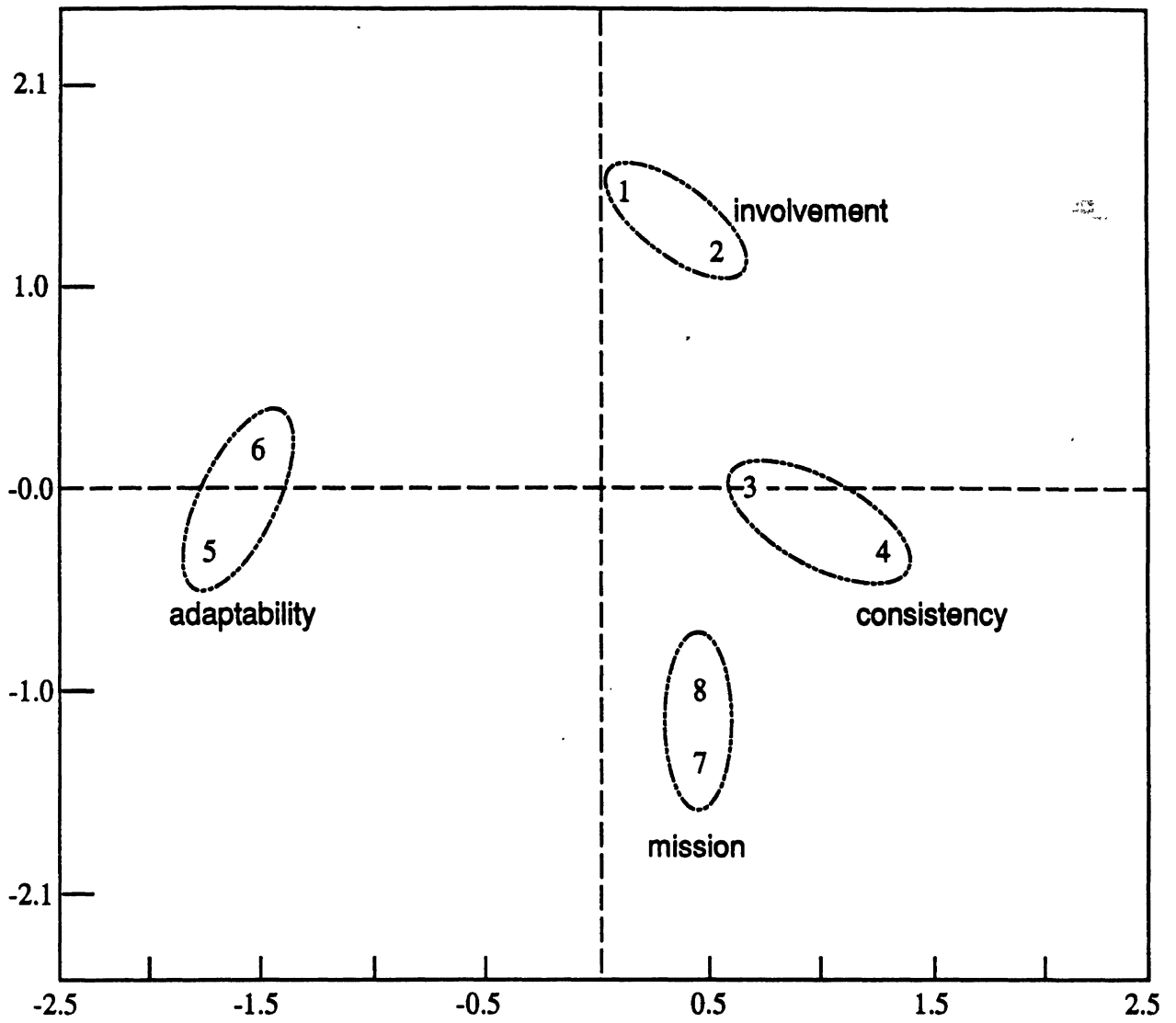


Figure 3. Multidimensional scaling analysis of culture items.

Table 1
Correlation Matrix of Survey Items
(N=667)

Index	Item	1	2	3	4	5	6	7	8
Involvement (.76)	1. Input								
	2. Collaboration	.62							
Consistency (.79)	3. Agreement	.35	.42						
	4. Predictability	.28	.37	.65					
Adaptability (.63)	5. Change	.24	.25	.26	.24				
	6. Responsiveness	.29	.30	.33	.20	.46			
Mission (.81)	7. Direction	.22	.26	.40	.36	.32	.27		
	8. Vision	.28	.26	.40	.35	.25	.30	.68	

Table 2
Correlations Between Culture Traits and Subjective Effectiveness Measures
(N=674)

	Sales Growth	Profits	Quality	Employee Satisfaction	Overall Performance
Involvement	.04	.01	.26***	.32***	.16***
Consistency	.03	.13***	.29***	.33***	.29***
Adaptability	.08**	.06	.20***	.21***	.18***
Mission	.22***	.10***	.18***	.27***	.35***

* $p \leq .05$

** $p \leq .01$

*** $p \leq .001$

Table 3a
Correlations Between Culture Traits and Return on Assets

	<u>Total Sample (N=220)</u>		<u>Sub-Sample (N=24)</u>	
	<u>ROA 1989</u>	<u>ROA 3-Year Average</u>	<u>ROA 1989</u>	<u>ROA 3-Year Average</u>
Involvement	.00	.09*	.35**	.23
Consistency	.11*	.14**	.36**	.31*
Adaptability	.07	.12**	.25	.22
Mission	.11*	.10*	.46***	.55***

Table 3b

	<u>Total Sample (N=409)</u>		<u>Sub-Sample (N=50)</u>	
	<u>Sales Growth: 1989</u>	<u>Sales Growth: 3-Year Average</u>	<u>Sales Growth: 1989</u>	<u>Sales Growth: 3-Year Average</u>
Involvement	.07*	.05	.25**	.25**
Consistency	.05	.02	.18*	.18*
Adaptability	.08**	.08**	.25**	.24**
Mission	.08**	.08**	.22*	.22*

* p ≤ .10
 ** p ≤ .05
 *** p ≤ .01

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Appendix:
Survey Items

Involvement Index

1. Most people in this company have input into the decisions that affect them.
2. Cooperation and collaboration across functional roles is actively encouraged.

Consistency Index

3. There is a high level of agreement about the way that we do things in this company.
4. Our approach to doing business is very consistent and predictable.

Adaptability Index

5. Customers comments and recommendations often lead to changes in this organization.
6. This organization is very responsive and changes easily.

Mission Index

7. This company has a long term purpose and direction
8. There is a shared vision of the what this organization will be like in the future.

