Gauging the Readiness of an Institution of Higher Education to Implement Change in Its Distance Education Program in Ways that are Consistent With the Paradigm of Organizational Agility

A Thesis
Submitted to the Faculty
of
Drexel University
by
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in partial fulfillment of the requirements for the degree of
Doctor of Philosophy
May 2002
Dedication

This is work is dedicated to my husband Jan and my children Maria, Jonathan, Gina, Matthew, and Lisa--the six people who give true joy and meaning to my life.
Acknowledgments

I have been uniquely fortunate in having two incredible individuals serve as my co-chairs, Dr. Craig Bach and Dr. Galen Godbey. Their partnership and sharing of the chairship was the model of agility; each brought a unique perspective and complementary areas of expertise that proved to be invaluable to my work. I credit them for making this journey so rewarding and thank them for making it such an exciting passage. Their insight, reason, and guidance have made my dissertation process a remarkable experience; their kindness, ethics, and friendship have enriched me beyond words. They have truly touched my life beyond academics by modeling the very finest qualities of human nature.

Along with my co-chairs I have had an extremely supportive and available committee Dr. Jim Mc Dowelle, Dr. Sheila Vaidya, and Dr. Lois Draina. To Dr. Draina I owe particular thanks for her advisement, mentorship, and friendship throughout my graduate experiences; from master’s through doctoral work. She was my inspiration to begin, my support to continue, and my rock to persist along this very extended road.

I owe a special debt of gratitude to my expert panel Dr. Roger Nagel, Dr. George White, Dr. Ray Wells, and Dr. Steve Broskoske. They were most gracious and generous with their time and expertise. Their interest and participation was invaluable to my study.

The doctoral process is a family affair, and it takes an extraordinary family to persist. The very fact that I am writing this attests to my family’s persistence, but words fail to capture the love, humor, strength, and support that characterized that persistence. Over all else, I am grateful to my husband Jan and our five children Maria, Jonathan,
Gina, Matthew, and Lisa who are my center, and keep me focused on what really matters in life.

Finally, I would be remiss in failing to mention Dr. Frank Harvey who has been a dear friend and valued mentor throughout my doctoral work. Although he was unable to sit on my committee, his influence and mentorship are reflected in my work, and his patient guidance has played a major role in the maturation of my thinking.
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The democratization of finance, information, and technology has created a new global reality that affects every dimension of society and has transformed the competitive context. In this new reality, higher education is losing its monopoly as a credentialing agent, and is has become vulnerable to market forces from which it has been traditionally insulated. The majority of institutions of higher education have developed distance education programs to create market opportunities; however, in many cases these programs depend upon traditional organizational and communicative structures that are inconsistent with the new competitive environment. To implement change that will support competitive distance education programs will require the restructuring of many traditional organizational and communicative structures to make institutional responses faster, more flexible and customizing, and, where needed, collaborative.

Research suggests that it makes fiscal and organizational sense to determine the readiness of an organization to change prior to attempts to implement change. The purpose of this study is to design an evaluation tool that can be used by post-secondary institutions to gauge their readiness to implement agile change with respect to the design and implementation of their distance education programs by examining the cultural context of an institution vis-à-vis trust and readiness factors as they relate to the dimensions of organizational agility.
CHAPTER 1: INTRODUCTION

Prologue

The events of September 11, 2001 provide an unsettling context for this study. The terrorists' attacks on the World Trade Towers and the Pentagon clearly demonstrate the far-reaching effects of globalization, and delineate the forces that have made, not just super powers, but every nation a contender in the structure of international power. The changing landscape of world politics, coupled with unfettered, international egalitarian access to technology, finance, and information has created a single, intertwined, global community in which the underlying constant is change, and all assumptions are subject to question (Friedman, 2000). The financial, political, social, and personal repercussions of the September 11, 2001 events have underscored the pervasive interconnectedness of the world. In this context, it is difficult to imagine that any segment of society exists in isolation.

Background

Wolff (1969) observed that the most commonly held image of the American university is “the ivory tower, symbol of sanctuary within which the scholar quietly pursues his bookish calling” (p.3). The reality of higher education is quite different; yet, the myth of the insulated ivory tower persists among many members of the academy and the general public.

Most professors continue to pay verbal homage to the ideal of an ivory tower and, unfortunately, higher education faculties continue to enter public discussion about higher education (and even worse to organize themselves) as if the monastic ideals of medieval scholasticism can somehow insulate them from the continuing onslaught of a corporate reality. (Barrow, 2001, p. 2-3).
According to Barrow (2001), this corporate reality is driven by a corporate agenda that focuses on extending the predominate corporate principles to social, cultural, and governmental institutions to construct a “capitalist mode of production – that is, a capitalist society – as opposed to a capitalist economy operating within a larger social formation” (p.4). Barrow contends that external forces have reversed the privileged status of the university and prevent it, and its members, from functioning in isolation of the larger social and economic context.

Understanding the external forces that affect higher education today requires knowledge of the existing corporate, social, and global realities that have dramatically changed since the end of the Cold War. In the present post-Cold War economy, the mass-production-based economy has been replaced by a technology-driven, knowledge-based, customizing economy in the U.S., Western Europe, and parts of Asia. This fact is clearly articulated in a report that was issued by a Congressional task force that was commissioned to identify the requirements for United States industry to reclaim and maintain its competitive dominance in the world market (Goldman & Preiss, 1991a, 1991b). After a year of study, the group concluded that the emerging competitive environment represents a major shift in the manufacturing model (Goldman, Nagel, & Preiss, 1995; Goldman, & Priess, 1991a, 1991b; Preiss, Nagel, & Goldman, 1996). The task force found that changes in the emerging competitive environment were so profound that the fundamental concept of product has changed.
Table 1 Comparing Meaning of "Product"

<table>
<thead>
<tr>
<th>Products in a Mass-Production Environment</th>
<th>Products in the Emerging Competitive Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Standardized</td>
<td>▪ Individualized</td>
</tr>
<tr>
<td>▪ Long-lived</td>
<td>▪ Short-lived</td>
</tr>
<tr>
<td>▪ Information poor</td>
<td>▪ Information rich</td>
</tr>
<tr>
<td>▪ One-time transactions</td>
<td>▪ Niche-market goods exchanged on an ongoing basis</td>
</tr>
</tbody>
</table>

The members of the task force determined that rapid and persistent advances in, and affordable access to technology is increasing worldwide competition, and rendering obsolete mass production's focus on incremental improvement in unit cost-efficiency.

Preiss, Goldman, and Nagel (1996) offer several reasons for the increased pressure of worldwide competition:

▪ Technology has made customization of products an affordable and competitive reality.

▪ Technology and a changing international climate have led to more open competition.

▪ The standard of education in many countries, including “third world” countries, has advanced considerably.

▪ The cost of production technology has decreased remarkably even as their capabilities and ease of use have increased.

▪ Sophisticated design aids, usually computer programs, are now available [and extremely affordable] anywhere in the world.
Worldwide information networks make communication and information universally accessible. [e.g., A company in Sweden can access data on the buying habits and economic statistics for a neighborhood in Brooklyn as easily as a marketing company in New York.]

Clearly the speed and persistence of technological improvement and its widespread accessibility has created an environment in which change, rather than stability, has become the prevailing status quo.

Thus, the task force concluded that, in this radically changing environment, an entirely new business approach would be needed for the United States to reclaim and maintain its competitive presence. The approach they proposed was one of agility. An agile approach to doing business is marked by a “…deliberate, comprehensive response to the constantly changing requirements for competitive success in current and emerging markets” (Goldman, Nagel, & Preiss, 1995, p.42). It is “…dynamic, context-specific, aggressively change-embracing and growth oriented [approach]” (p. 42). It is important to note that an agile approach is a means to an end and not an end in and of itself; it is a change-embracing frame of reference. This is a radical departure from the mass-production-based model that extracted profit from stability, standardization, and economies of scale.

**The Impact of the New Technology-Based Environment on Higher Education**

The impact of technology is not limited to the business sector. The advances in information and communication technologies have significantly influenced the lives of individuals, as well as for-profit and non-profit institutions. Accessibility to, and affordability of technologies that allow almost instantaneous transmission of information,
and synchronous and asynchronous interactive communication across continents have caused a previously divided world to come together as a connected, accessible, and interrelated community (Friedman, 2000).

In the early 1990s, Drucker (1993) speculated that the emergence of a technologically driven, knowledge-based economy would radically change the social reality and challenge the tacit monopoly that academia holds as a credentialing agent. Drucker’s predictions were well founded (Kelly, 2001). Higher education is experiencing growing competitive encroachment from for-profit, degree-granting institutions, as well as for profit certification and training programs (e.g., Microsoft, Cisco, A+); a topic that is discussed regularly on the pages of the Chronicle of Higher Education. The new competitive arena in which higher education finds itself has also been the subject of numerous educational (e.g., Commission on Technology and Adult Learning, 2001; Kelly, 2001; Thompson, 2001) and business (e.g., Harris, 2001; PriceWaterhouseCoopers, 2000; Urdan, & Weggen, 2000) studies. Much of this discussion reflects a growing concern that the tendency toward the commercialization of education is eroding the integrity of the academic enterprise (e.g., Duderstadt, 1999a, 1999b; Sleeper, 2001; Wheeler, 2000; White, 2000). Wheeler (2001) claims that market forces are threatening to place colleges and universities in economic positions that will force the boards and the administrative leaders of institutions into decisions that place profitability over academic concerns; thus, significantly decreasing the quality of education. Further, the marketing of intellectual property is causing many faculty members to live the dual role of professor and entrepreneur; a situation that can lead to conflicts of interest and commitment.
One approach that higher education is using to create new markets is the adoption of distance education initiatives. In the United States, over 85 percent of colleges and universities have created significant online programs (Carnevale, 2000). Additionally, increased access to technology that facilitates distance learning has resulted in geographically distant colleges and universities competing for the same students. Unlike distance education of the past, which consisted of static materials that were either mailed to or picked up by the student, current computer-based distance learning programs have opened channels of easy, affordable, and accessible two-way interactive, audio, video, graphic, and text communication. Both the nature of distance education, and the type of student it supports are changing.

There has been considerable speculation (e.g., Broskoske, 2000; Drucker, 1993; Duderstadt 1997a; Kelly, 2001; Richter, & Godbey, 1995) regarding the efficacy of applying an agile approach to educational organization, practices, and programs. Richter and Godbey (1995) accurately predicted that the pressures of the agile competitive environment would force educational institutions to explore opportunities to operate more economically by engaging in cooperative ventures. Distance education alliances, partnerships, and collaborative endeavors between and among institutions of higher education, and between institutions of higher education and for-profit entities are proliferating (Van Der Werf, 2001). Currently, some colleges and universities are exploring the formation of “for profit” online identities that capitalize on their existing reputation while avoiding many constraints inherent in the traditional educational environment (e.g., Cornell University, Drexel University, University of Maryland, University of Pennsylvania,).
While it appears that some colleges and universities are consciously attempting to adopt agile practices, many are adopting agile practices without understanding the paradigm. Often higher education’s approaches to agile distance education programs are tactical, isolated responses rather than part of a comprehensive, strategic paradigm (Hicks, & Stanciu, 1999). Broskoske (2000) conducted an in-depth examination of five college and universities' distance education programs in which he analyzed the intent and structure of these distance education programs relative to agility. He found that there were vestiges of agility in many programs (e.g., inter-institutional collaboration, flexible scheduling and course offerings, pockets of departmental permeability), yet he determined that these occurrences were more a product of happenstance than strategic planning.

An agile approach to distance education significantly challenges many of the traditional organizational and communicative structures of colleges and universities (e.g., learning becomes more self-directed than teacher-directed, requiring a changed role for both student and instructor; scheduling and course offerings are flexible and driven by student needs rather than standard academic calendars; student services must alter types, times, and manner of supporting student needs). According to Weick (1976, 1982, 1995, 2001), education functions under a loosely coupled organizational structure. A loosely coupled structure is one in which the members are connected as common elements of the institution, yet retain considerable autonomy. Two characteristics of a loosely coupled system are that individual units within the system can achieve variability, and change in one of the units has minimal effect on the whole. Considering Goldman, Nagel, and Preiss’s (1995) description of institutional agility as a coordinated system of human
resources, organizational structure, and technology, it becomes apparent that significant change in the existing academic structures would be necessary to implement an agile approach to distance education. Further, agile systems are designed to thrive within and profit from a competitive environment that is subject to unrelenting, rapid and unpredictable change. Traditionally, higher education has been bound to tradition, and notably slow to change.

Conventional strategies for inducing change are heavily reliant on feedback (e.g., Block, 1981), and Weick (2001) contends that, for a variety of reasons, feedback in a loosely coupled structure is generally minimal, unavailable, meaningless, or discredited. As higher education faces a new competitive environment, it is hampered not only by ineffectual communicative structures inherent in a loosely coupled system, but also by a top-down organizational structure that Cohen and March (1990) have described as “organized anarchy”. Both render an institution less able to respond quickly and efficiently to external pressures.

Agile distance education programs also challenge many underlying assumptions that have long guided teaching practices (e.g., required seat hours, transmission approach to knowledge acquisition, standard lecture formats). Challenging fundamental practices and assumptions poses a significant problem in a loosely coupled system, which has low inter-unit dependence and significantly restricted inter-unit channels of information sharing. If assumptions, beliefs and values are not shared, particularly in times of change, a program is vulnerable to derailment. An article that appeared in the Chronicle of Higher Education (“Florida Gulf Coast”, 1998) demonstrates how contradictory assumptions,
values and beliefs between administrators, faculty, and staff can threaten the integrity of a program:

Florida Gulf Coast University considers distance education a central part of its mission. But a majority of its professors may still need some persuading. In a recent survey, 55 percent of the professors said they did not agree that the institution should offer more distance-learning courses. And 54 percent said they disagreed with the statement “At F.G.C.U., distance learning is an effective alternative to traditional instruction”.

This situation is particularly poignant since the University officials publicly claimed surprise at the survey’s findings because “…professors were told about the distance learning plans when they were recruited.”

An underlying assumption of my study is that if a college or university distance education program is to thrive in an agile competitive environment, communicative structures must change to support an open flow of communication that allows the clarification of assumptions, values, and beliefs among administrators, staff, and faculty about issues in the changing educational landscape.

Implementing and maintaining an agile distance-learning program requires that institutions continually monitor and address the effects of social, political, and technological change upon the program. Technology, a pivotal factor in the competitive environment, is subject to rapid and unrelenting change. Technological change affects a full spectrum of programmatic issues from pedagogical issues to identification of market share. In an incessantly changing and unpredictable environment, close and consistent communication among administrators and faculty is needed to assure common understandings of issues, threats, and opportunities that exist, so that appropriate systemic responses to change can occur.
Readiness for Institutional Change

While one may generalize about the institutional types and structures of traditional higher education, each institution possesses a unique character. Institutions vary in cultural context (e.g., sense of community, leadership, and organizational culture) (Wells, 1996), which significantly affects the change process (e.g., Pepper, 1995; Seiden, 2000; Weick, 2001). Research suggests that there are fiscal and organizational benefits to examining the cultural context to determine an organization’s readiness to change prior to the implementation of change (e.g., Moravec, 1995; Patton, 1997; Seiden, 2000).

When determining organizational readiness to change, it is important to clearly identify the end goals of change. The end goals of change must be clearly articulated to provide a measure against which the existing cultural context can be examined. This process helps to define major problems that are a threat to the proposed change (DeWine, 1994), and to identify both the forces that drive certain decisions to be made and the forces that act to prevent those same decisions from being made (Lewin, 1951).

Based on his research, Broskoske (2000) concluded that the following dimensions of agility are specific to interpersonal relationships within higher education: (a) trust; (b) free-flow of information; (c) collaboration; (d) value and respect in interpersonal relationships; (e) accountability; and (f) equitable reward systems. When applying the dimensions of agility to distance education programs, Broskoske concluded:

…the human factors (i.e., interpersonal dynamics, styles of management, styles of communication) were more significant to successful implementation of an agile distance learning program than were technology or budgetary issues. The study also found that beginning an agile distance learning program would have an impact on other aspects of the organization as a whole, which would form an entry point for applying agility institution-wide and for reforming the entire higher educational organization (p.158).
Agility dimensions may exist in varying degrees and in varying combinations depending upon the culture of the institution. The degree to which each is present in an organization is important in determining the disparity between the current organizational reality vis-à-vis the end goal. Yet, to date, there has been no research that has specifically considered these factors as a framework for determining an organization’s capacity to change.

A problem with using the dimensions of agility as a framework for assessing capacity for change is that while the agility literature discusses the specific dimensions in conceptual terms and gives many concrete examples of the concepts, sufficient operational definitions are lacking. For instance, the trust dimension of agility is defined as "... behav[ing] in a predictable fashion, and to do[ing] what you say you will do when you say you will do it" (Preiss, Goldman, & Nagel, 1996, p.169). Yet, while the independent dimension of trust is defined, the term trust is also used as a more inclusive concept that is distributed across the other dimensions of agility (Broskoske, 2000; Goldman, Nagel, & Preiss, 1995; Preiss, Goldman, & Nagel, 1996). The more inclusive use of the word trust relies on tacit understandings that extend beyond the original definition (e.g., honesty, ethical behavior, forthrightness, cooperation). This is particularly problematic since trust in the broader sense is considered to be an overriding requisite for the development of all other agility dimensions (Broskoske, 2000; Goldman, Nagel, & Preiss, 1995; Preiss, Goldman, & Nagel, 1996). Further, the meaning of trust varies across disciplines (i.e., psychology, business, sociology, economics), contexts (e.g.,
interpersonal, collective, organizational) (Currall, 1990), and cultures (Fukuyama, 1995), which leads to significant variation in individuals' assumptions, and perceptions of trust.

There appears to be financial and organizational merit in predicting the readiness of a college or university for agile change prior to implementing a new program, or changing an existing distance education program toward an agile model. However, it is currently not feasible to assess the readiness of an institution towards agile change in its distance education program, since the framework necessary for defining and measuring the pertinent dimensions of agility is absent. This suggests the need for research in this area.

**Study Focus**

The overall goal of this study was to provide a way for institutions of higher education to evaluate their current institutional culture vis-à-vis the dimensions of agility. It is anticipated that this information will be valuable in assisting institutional leaders in determining the unique needs of their institution and developing realistic goals and benchmarks for efficiently organizing their distance education program in a manner that is consistent with the tenets of organizational agility.

Based upon the review of the literature, high levels of interpersonal trust are essential to facilitating change within and across organizations. Therefore, this study examined the use of validated instruments that measure inter-organizational, and interpersonal trust as well as an instrument that measures both an institution's overall and specific programmatic readiness to implement change, to determine the instruments' usefulness in gauging the readiness of an institution to implement agile change in its distance education program.
Also, based on a review of the literature, agile institutions will survive and thrive in the emerging globalization of educational programs, processes, and markets. Thus, educational institutions need to diagnose and reflect upon their capacity for agility to facilitate a systematic and efficient approach to developing strategies and benchmarks for agile change. Findings from this study provide the foundation for the development of a comprehensive process for examining existing cultural characteristics that are critical to strategizing for and benchmarking of agile change.

**Research Questions**

This study addressed the following research questions:

1. How do the perceptions held by the administration, faculty, and staff of an institution of higher education relative to the presence of agility within the total institution compare with their perceptions of the presence of agility within the distance education program, when the dimensions of agility are defined as (a) free flow of information, (b) collaboration, (c) value and respect in interpersonal relationships, (d) accountability, and (e) equitable reward systems?

2. Is there a relationship between two trust surveys [i.e., *Organizational Trust Survey* (De Furia, 1997); *Organizational Trust Inventory-Short Form* (Cummings and Bromiley, 1996)] and Seiden's (2000) *Organizational Readiness for Evaluation Survey*?

3. Are the responses from the open-ended statements that explicitly relate to (a) free flow of information, (b) collaboration, (c) value and respect in interpersonal relationships, (d) accountability, and (e) equitable reward systems consistent with
the levels of organizational agility indicated in DeFuria, and Seiden's surveys, and Cummings and Bromiley's inventory?

4. Does the information gleaned from DeFuria, Cummings and Bromiley, and Seiden's instruments, and five open-ended statements that explicitly relate to (a) free flow of information, (b) collaboration, (c) value and respect in interpersonal relationships, (d) accountability, and (e) equitable reward systems present adequate data to construct a useful evaluation of an institution's readiness to implement agile change in their distance education program?

Limitations of the Study

1. This study focused on determining the readiness of a four-year institution of higher education to implement an agile distance-learning program. While it appears likely that this study may have implications for determining the readiness of an institution to implement other areas of change, these aspects will not be considered.

2. This study only considers a single, four-year, not-for-profit college.

3. The limited sample size limits the ability to generalize the results.

Definition of Terms

Agility: A comprehensive, systemic response by an organization to a new competitive environment that has been shaped by forces that have undermined the dominance of the mass-production paradigm. Organizational agility is characterized by a dynamic, context specific, change embracing, and growth oriented approach to business. Agile organizations engage in a proactive systematic coordination of human resources,
organizational structure, and technology to maximize their ability to thrive within and profit from a competitive environment characterized by continuous, rapid, and unpredictable change (Goldman et al., 1995).

**Agile competitive environment**: The prevailing competitive environment that is characterized by continual changes in markets, social institutions, technologies, and business practices (Goldman, 1994). This term will be used synonymously with “new competitive environment” and “open competitive environment”.

**Agile distance-learning program**: A distance education program that is structured according to the tenets of agility. It is designed and implemented as a comprehensive response to a new competitive environment that is characterized by a knowledge economy.

**Cold War System**: An internationally divided world system in which the United States and the U.S.S.R. were the dominant super-powers. Unique, national forms of life, politics, economics, and culture could be maintained behind barriers (e.g., Berlin Wall, Warsaw Pact, Iron Curtain, tariff or capital controls) and out of the reach of the rest of the world (Friedman, 2000).

**Dimensions of agility**: The dimensions of agility define the requisite characteristics of an agile organization. The dimensions of agility considered in this study are: (a) free-flow of information; (b) collaboration; (c) value and respect in interpersonal relationships within the organization; (d) accountability; and (e) equitable rewards. Trust is not used as a distinct dimension of agility as it is in the agility literature, but rather the listed dimensions of agility are considered within the context of measurable dimensions of trust.
Distance learning: Providing educational experiences via computer-mediated technologies including web-based, and two way interactive audio-video technologies. This term is used synonymously with “distance education.”

Mass production paradigm: The dominant organizational model in manufacturing in the industrialized world throughout the twentieth century, which defined a system for the creation, production, and distribution of goods and services. It also defined paradigms for society, and had significant influence on the American educational system (Richter & Godbey, 1995).

Post-Cold War system: The global economic system that resulted from the democratization of finance, technology, and information, which destroyed the barriers of the Cold War system. In the Post-Cold War system, nations have come together in a more economically integrated world (Friedman, 2000).

Trust dimensions of agility: The trust dimensions of agility are those that solely relate to measurable interpersonal trust factors. These include the following: (a) free-flow of information; (b) collaboration; value and respect in interpersonal relationships; (c) accountability; (d) system of equitable rewards; (e) [assumptive] trust.
CHAPTER 2: REVIEW OF THE LITERATURE

The following literature review draws from several bodies of literature that are not commonly thought of as being related. For this reason I am first providing a broad overview to help dispel any initial confusion that the reader might experience as a result of the inclusion of findings from seemingly divergent disciplines.

This study focuses on the importance of communicative processes and trust structures within institutions of higher education in organizational and cultural change associated with technologically mediated distance-learning programs. Social factors that influence a changing institutional reality are often not recognized or understood by those directly affected by the change process, thus making the implementation of an agile distance-learning program challenging at best. Therefore, examining administrator, faculty, and staff’s existing perceptions of institutional reality is of great significance. Critical to this study is the intersection of the changing social reality and the divergent perceptions of existing organizational reality that are present within various institutional cultures. This literature review addresses major outside forces that are driving the changing social reality, the impact of social and technological change on higher education, and the existing perceptions of higher education administrators, faculty and staff that are often in direct opposition to the emerging reality.

In this study, cultural groups are defined by a set of shared assumptions, beliefs and values between institutional members and/or institutional units relative to a given issue. The perspective from which an individual views an organization results in sets of beliefs, assumptions and values that the individual uses to define and make sense of the organizational reality. Individual perspectives serve to frame the world in ways that make
it understandable and predictable, and also function to block out competing visions (Pepper, 1995; Weick, 2001). The perspectives of individual organizational members form a dynamic interchange with the environment: an individual’s perspectives are altered by his or her experience with the environment, and the environment is altered by the interactions of the individual within that environment.

Personally held beliefs, assumptions, and values are the basis upon which an individual becomes aligned ideologically with, or alienated from, others within an organization (Reilly, & DiAngelo, 1990). This study assumes that organizations are composed of communities of individuals who, through their verbal and non-verbal language use, come to understand organizational reality in ways that align them with some, while making them distinctly different from others in the same organization (Pepper, 1995). Therefore, colleges and universities are viewed as communities of individuals (e.g., departments, disciplines, divisions, similar central roles) that hold various assumptions, beliefs, and values depending upon their particular perspective. Thus, each college and university is viewed as a composite of organizational cultures and subcultures that are at times in agreement and at times conflicting.

Pepper (1995) contends that communication is the dominant characteristic of conflict, since it serves as a vehicle to transmit and manage conflict. According to Folger, Poole, and Stutman (1993), “Conflict is the interaction of interdependent people who perceive incompatible goals and interference from each other in achieving those goals” (p. 4). Thus, the higher the degree of alignment between the beliefs, values, and assumptions of various institutional cultures and subcultures relative to a given change, the more easily change can be enacted. A major premise of this study is that insight
concerning an institution’s readiness to enact change can be gleaned from a careful examination of the related beliefs, values, and assumptions of the campus cultures affected by the change.

Higher education is entering a period of great change that is being driven by broad external economic, political, technological, and social changes (Dill, & Sporn, 1995; Odza, 2000; Slaughter & Leslie, 1997). These external forces of change are moving colleges and universities from autonomous entities solely designed to enhance the individual, to functioning as externally entwined organizations that also act as critical agents for social and economic reform (Dill & Sporn, 1995). The evolving relationship between university and society has become a point of common reference among public policy makers, university leaders, and academics; a situation that is not likely to be reversed (Goldstein, Maier, & Luger 1995). The following literature review, discusses the external forces of change, and the dilemmas they pose for higher education; further, it provides background for, and presents a cohesive picture of, the evolving educational reality vis-à-vis a global social context.

There is a growing consensus that the changing demands being placed upon colleges and universities will require major organizational adaptations if higher education is to sustain its essential contribution to society (e.g. Dill & Sporn, 1995; Parenti, 2000; Peterson, 1995; Slaughter, & Leslie, 1997). Yet, all of the external factors that affect colleges and universities do not smoothly interconnect, nor do they always make sense to those involved in the academy. Often, broad social, political and economic changes are not immediately discernable as being relevant, are not seen as being related to other factors of influence, and do not emerge concurrently (Rothblatt, 1995).
The need for organizational adaptation in higher education is multidimensional. It cannot be fully understood without examining the major emerging forces of a post-industrial society. Such an examination will provide a different contextual matrix for understanding how colleges and universities function in relation to the outside world. Thus, the following literature review includes discussion of national and international social, political, and economic changes as they influence higher education, and those in its employ.

Each of the following sections is intimately related. If one thinks of an imaginary circle drawn atop a tub of water, and visualizes the individual sections of the literature review as large rocks simultaneously dropped at equidistant points along the circle’s circumference, cohesive meaning emerges in the dynamic intersections of the ripples. Visualizing the nature of these intersecting areas may help one imagine the mass, momentum, and conflict of the collective social, political, and economic changes that are challenging traditional cultures in higher education.

The seven major sections address: agility, globalization, higher education in a knowledge economy, technologically mediated distance education; existing organization in higher education; and factors influencing institutional change. The first section of the review, *Examining Industry and Higher Education’s Responses to a Changing Global Economy*, examines the current postindustrial market as an external presence that is challenging the overarching direction and purpose of higher education. It reviews the agility research that defines the prevalent agile competitive environment and delineates strategies for thriving in the relentlessly changing postindustrial economy. The second section, *Globalization: Effects on Higher Education*, discusses the etiology of
globalization. It summarizes the significance of the world democratization of finance, technology, and information, and how each of these democratizations challenge traditional assumptions, beliefs, and values regarding the expectations of faculty, administrators, and higher education itself; the autonomy of colleges and universities; and the educational monopoly traditionally held by colleges and universities. The third section, *Higher Education in a Knowledge Economy*, reviews the changed demands on higher education brought about by a knowledge economy. It also examines three prominent external forces, demography, new competitive entities, and the changing relationship between higher education and government, with which higher education must now contend. The fourth section, *Changing Relationships Between Higher Education, Government, and Industry*, discusses global forces and outcomes as they relate to the growing interdependent relationships between education, government, and industry. The fifth section, *Technologically-Mediated Communications: The Movement Toward Distance Education*, explores distance education as a response to the altered societal context of a postindustrial economy, globalization, and the availability of sophisticated communications technologies. For a great many faculty members, distance education calls into question the core ideals of higher education, while for many administrators, it appears as a solution to many of their financial woes, or at least an important tool for public service and expanding markets.

External forces in turn affect the internal workings of higher education, and have great impact on both the culture and the organization of higher education. The sixth section, *Existing Organization in Higher Education*, examines the traditional organization of higher education. It highlights the loose communicative structures that
exist in academia, and lends insight into how traditional culture has buffered faculty from change. The final section, *Factors Influencing Institutional Change*, provides a background on cultural dimensions that have been found to be essential in many types of collaborative efforts (Bonacich, & Schneider, 1992; Murnighan, Kim, & Metzger, 1994; Tyler, & Degoe, 1995). Strategies for surviving in a knowledge economy stress adaptability to change, partnering and teamwork, which depend upon a culture of inter-organizational and intra-organizational trust. According to Fukuyama (1995), trust is an important and efficient lubricant of the social system. Trust, and the values it implies (e.g., loyalty, truth-telling, reliability, etc.), have a real economic value, but are not commodities for which trade on the open market is technically possible or even meaningful. As a rule, trust is evident when individuals within a community share a set of moral values in such a way as to create expectations of regular and honest behavior. The character of values themselves is of less importance than the fact that they are shared. Thus, the degree of trust that exists within and between organizational units, and how that trust interrelates with dimensions of agility and readiness for change may lend insight into appropriate measures to facilitate movement to an agile model of distance education.

**Examining Industry and Higher Education's Responses to a Changing Global Economy**

Business and industry are vulnerable to the relentlessly changing forces of a new competitive environment that is being driven by the rapid maturation and synthesis of information and communication technologies. Higher education shares that vulnerability. Many in the business and industry sectors have successfully altered their practices and organizational structures to meet the demands of the new environment; the same cannot
be said of higher education. The traditional organizational and communicative structures of colleges and universities appear to be extremely resistant to change. Further, there is only limited communication and articulation between industry and higher education.

The following section discusses the emergence of the new industrial order, and presents the concept of agility as a response to the resulting competitive environment. It is important to understand that the concept of agility is not a new approach to an old paradigm. Throughout the twentieth century many schools of management appeared (Appendix A) that offered a different "solution" or approach to the same problem; increasing profits by improving unit-cost efficiency. Manufacturing problems throughout most of the twentieth century were defined by a mass-production paradigm and solutions were bounded by the technological, financial, social, and political realities of the corresponding times. In the late twentieth century, rapid and sophisticated advances in technology altered the financial, social, and political context in a way negated approaches to profitability that rested solely on improved unit-cost efficiency. A globalized information-based economy ushered out a mass-production-based economy with unprecedented speed, and created an entirely new reality, which redefined problems that required new solutions. Thus, agility is a response to a new reality that at its core forces rethinking, restructuring, and redefining, not incremental improvement of old approaches.

In the following sections, the dimensions of agility are considered in the context of both industry and higher education, and are used to lay the framework for comparing the prevailing organizational structure of higher education to an agile organizational model.
**Background**

By the 1980s, the United States had clearly lost its competitive dominance in the global manufacturing arena. Concerned with the declining profitability of American manufacturing and the United States’ compromised market position, Congress charged the Department of Defense with the responsibility for investigating ways in which American industry could regain a global competitive presence. In 1991, a federally funded, industry-led task force was assembled in response to the Congressional request (Goldman, Nagel, & Preiss, 1995). The task force was composed of manufacturing executives from 13 companies, Rick Dove, an independent consultant from Paradigm Shift International, and Steven Goldman, Roger Nagel and Kenneth Preiss from Lehigh University’s Iacocca Institute.

Throughout 1991, the task force studied the issues facing U.S. manufacturing. The ensuing report, *21st Century Manufacturing Enterprise Strategy: An Industry-Led View* (Goldman & Preiss, 1991a, 1991b), concluded that a totally new system of competition was emerging as a result of the rapid maturation and synthesis of computer-based production, and information and communication technologies. The authors labeled this emerging environment a *new agile competitive environment*. The study further concluded that within this agile competitive environment, incremental improvement of U.S. manufacturing would fail to return the United States to a globally competitive position. The conclusions of the study were validated through reviews issued by executives from nearly 200 companies, government agencies, and public organizations.
Within an agile competitive system, human, physical, and intellectual capital is distributed within companies and among groups of companies that simultaneously cooperate and compete. According to Goldman, Nagel, and Preiss (1995), the emergence of the agile competitive environment is being driven by the increasing value customers place on the information and service-related components of physical products, not just the manufacturing aspect of the product itself. Information and service products should not be conceived as “one time purchases”, but rather as an opportunity to form an ongoing relationship between customer and vendor; the deeper the relationship, the greater the provider’s capacity to maximize both customization and profit. The cost of supporting the customer over time far outweighs the cost of the physical product. Thus, the study concluded that to incrementally improve manufacturing by improving the unit cost efficiency was equivalent to “…fighting a war that was already over” (Goldman, Nagel, & Preiss, 1995 p.xxii). The researchers recognized that the emerging agile competitive environment represented a major shift from an environment in which companies mass-produced products to one in which companies brokered information and services and customized products.

Prior to the dissemination of the reports that emerged from the 1991 study (Goldman & Preiss, 1991a, 1991b), which identified and synthesized changes in the manufacturing environment, industry generally failed to understand the depth and the breadth of its altered environmental reality. After the Goldman and Preiss reports were made public, change did not happen instantaneously or uniformly across industry; however, the report presented a new and validated perspective that helped industry make sense of existing and emerging problems.
The new competitive environment requires a drastically different type of workforce, and is heavily reliant on higher education for providing a ready supply of able workers. It is noteworthy that efforts to understand the comprehensive effects of the new economy on higher education were largely ignored, and there were only limited organized efforts to disseminate the Goldman and Preiss report (1991a, 1991b) to the higher education community.

**Agility Defined**

According to Goldman, Nagel and Preiss (1995), agility is an organization's comprehensive response to increasingly competitive and changing business environments. It is the ability of an enterprise to not just survive, but to *thrive* in an environment of unrelenting, rapid and unpredictable change. Agility, in short, is a fundamentally new way of approaching business.

**For a company**, to be agile is to be capable of operating profitably in a competitive environment of continually, and unpredictably, changing customer opportunities. An agile company requires agile employees (p. 3).

**For an individual**, to be agile is to be capable of contributing to the bottom line of a company that is constantly reorganizing its human and technical resources in response to unpredictably changing customer opportunity (p.4).

The agile individual must be prepared to flexibly apply skills and knowledge across tasks, synthesize and manipulate knowledge to creatively solve problems, and work as a cooperative and collaborative team member.

Worker requirements in an agile environment are far more complex than in a mass-production environment, which required workers to be competent in specific knowledge/skill domains, and prepared to perform narrow, discrete, standardized skills and tasks. Clearly, appropriate educational preparation for the two is also different. To
appropriately prepare individuals for an agile competitive environment, education must
prepare multidimensional thinkers rather than one-dimensional learners. To wit, Dove
(1999) expanded the definition of the agile individual to include the ability to manage and
apply knowledge effectively. He reiterates the need for a workforce capable of reasoning,
generalizing, and processing creatively: value is no longer found in the mere acquisition
of content; it lies in a person’s ability to find, process, and manipulate information. This
departs from industrial-model values, and is ideologically inconsistent with existing
communication, organizational, and pedagogical structures of higher education.

The agile competitive environment increasingly depends on higher education to
provide individuals adequately prepared to enter the workforce. Yet, there is no
centralized communication structure between industry, or other organizations that operate
on a global basis, and higher education that explicitly conveys expectations, nor is there a
consolidated awareness among all factions of higher education of the interrelationship
between industry change and education. Information dissemination within higher
education is fragmented and tends to happen in a “trickle-down” manner.

Dove further contends that knowledge management and ability to respond have a
synergistic relationship that better enables an organization to act in an agile manner.
Effective knowledge management allows an organization to gain a more comprehensive
view of a given situation, which enhances its position to recognize patterns and/or
problems, and thus, increases its ability to respond rapidly and effectively. The
relationship between knowledge management and ability to respond is being propelled by
the accelerated pace of new knowledge development, enhanced technologies, and market
competition. Dove maintains that the direction of and growth in the need for knowledge management and application has made agility a “fundamental existence necessity”. (p.1)

At its essence, agility is dynamic, context specific, aggressively change-embracing and growth oriented. An agile organization cannot have a fixed structure, but it does have a structure (Goldman et al., 1995). Within the agile structure, divisions are permeable and non-segregating in nature.

Hamel and Prahalad (1993) developed The Strategic Intent Model that reflects the core principles of agility. While this model was developed for industry, Broskoske (2000) applied the same principles to higher education.

**Table 2 Industry and Educational Application of Agility**

<table>
<thead>
<tr>
<th>Strategic Intent Model (SIM)</th>
<th>Broskoske’s Application to Higher Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Develop a clear vision of company principles and commitments that is communicated to all personnel</td>
<td>▪ Develop an open and honest flow of communication between and among faculty, staff and administration</td>
</tr>
<tr>
<td>▪ Set challenging goals that can only be met by leveraging current resources</td>
<td>▪ Set challenging goals that require boundary spanning cooperation within and without the institution</td>
</tr>
<tr>
<td>▪ Provide personnel with the needed physical and cognitive tools to meet their goals</td>
<td>▪ Invest in appropriate technology, ongoing employee training, support personnel, and development of employee relationships.</td>
</tr>
<tr>
<td>▪ Review progress and adjust goals as necessary rather than micromanaging</td>
<td>▪ Relax hierarchical and boundary rigidity, distribute authority, and increase communication flow</td>
</tr>
<tr>
<td>▪ Work to win universal buy-in, and responsibility for meeting corporate goals in part by meaningful inclusion of all personnel in the strategic planning process</td>
<td>▪ Engage all stakeholders in shared planning processes and develop responsibility/reward system</td>
</tr>
</tbody>
</table>
Agility as a Strategic Response

Goldman, et al. (1995) make an important distinction between tactical and strategic responses to marketplace pressures. They define tactical responses as those responses that are aimed at improving how companies do what they are already doing; in other words, responses that accept and reinforce the status quo. The problem with tactical responses is that they are not based in new goals that require fundamental changes in how the company operates. Tactical responses result from a failure to recognize the overriding need for a new operational paradigm. Solutions are drawn from an existing repertoire of responses that fit the existing organizational structure. When responses are tactical, the range of possible actions is limited by the existing organizational structure; the form of the organizational structure essentially dictates how it functions.

Strategic responses are those that confront a new competitive reality by challenging what companies ought to be doing, and taking no established practices for granted. The power of strategic responses is that they reflect a changed set of external conditions, and are embedded in an overarching organizational change that is directly connected to new strategic goals; thus, they are a coordinated and comprehensive approach to change. When responses are strategic, only the ingenuity and creativity of the employees limit the range of possible actions; function is the designing force of the organizational structure.

Recognizing the need for change is a prerequisite for strategic action. Yet, given the lack of an established interactive communication process between industry/organizations and higher education, colleges and universities often fail to recognize the need for change. Indeed, within the academy itself, a comprehensive
awareness of higher education’s role in the new market is relatively rare, which leaves many of the existing paradigms and structures unquestioned.

Christman, Frederick, and Himmelspach (1995) describe agility as a system that defines an organization’s overall philosophy of operations. To confuse agility with other management reforms is to misunderstand the essence of agility (Agility International, 2000). If a reform is simply an overlay to existing structure, then the efforts of that reform often become uncoordinated tactical responses. That is not to say that different management models are not a part of agility, but as “stand alone” models, they are not sufficient. In addressing the Total Quality Management (TQM) approach applied to education, Richter and Godbey (1995) explain that TQM is a prerequisite for functioning competitively in an agile environment, but institutions must be prepared to “change in other fundamental ways if they are to position themselves as effective competitors in the emerging world order of technology-mediated global partnerships” (p.401). The agility model widely incorporates various business reforms as components of a broader and more inclusive strategic business response that is grounded in a company-wide strategy of sustained competitiveness. Agility is an organizational strategy that requires systematic coordination of human resources, organizational structure and technology to gain competitive market advantage (Goldman et. al, 1995; Preiss, Goldman, & Nagel, 1996).

The foundation of agility is in relationships. Formalized relationships are the basis for developing networks, sharing, and the partnerships that are critical to the agile model. Richter and Godbey (1995) reinforce the need for routine inter-institutional partnering and information sharing, a pervasive ethic of mutual trust, and the routine
formation of virtual alliances in which competing organizations temporarily combine to function as a single enterprise to more effectively respond to market demands.

Table 3 lists the essential differences between agility (a strategic response) and three popular business reforms, International Standards for Quality Assurance (ISO 9000), Total Quality Management (TQM), and Business Process Reengineering (BPR) (tactical responses).

Table 3 Agility Compared to Other Reforms (Agility International, 1996)

<table>
<thead>
<tr>
<th></th>
<th>ISO 9000</th>
<th>TQM</th>
<th>BPR</th>
<th>Agility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>What</strong></td>
<td>Prescriptive standards for quality assurance</td>
<td>Philosophy and strategy for product and service quality</td>
<td>Strategy to re-organize work around processes not tasks</td>
<td>Enterprise-level direction, strategies and business models</td>
</tr>
<tr>
<td><strong>Why</strong></td>
<td>Assure predictable quality to enhance trade</td>
<td>Surpass customers’ expectations of quality</td>
<td>De-fragment and realign business processes</td>
<td>Sustain competitiveness in the face of change</td>
</tr>
<tr>
<td><strong>How</strong></td>
<td>Audit of processes</td>
<td>Adoption of continuous improvement practices</td>
<td>Interventions to redesign specific business processes</td>
<td>Adoption of Agile strategies &amp; best practices</td>
</tr>
<tr>
<td><strong>Metric</strong></td>
<td>ISO 9000 certification</td>
<td>Bladridge and other awards</td>
<td>Internal citation of benefit</td>
<td>Profit and imitation</td>
</tr>
<tr>
<td><strong>Benefit</strong></td>
<td>Customer confidence</td>
<td>Satisfied customers</td>
<td>Internal efficiency</td>
<td>Global competitiveness</td>
</tr>
</tbody>
</table>

Cardinal Principles of Agility

Goldman, Nagel, and Preiss (1995) identified four underlying tenets of agility that continue to be recognized (Agility International, 2000) and can be applied to higher education (Broskoske, 2000):
- Enrich the customer
- Cooperate to compete
- Organize to master change and uncertainty
- Leverage the impact of people and information

Table 4 Cardinal Principles of Agility Applied to Business and Education

<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrich the customer</td>
<td>Invest in developing ongoing relationships with students and alumni. Enrich students and alumni by reconsidering agendas and providing ongoing services</td>
</tr>
<tr>
<td>Cooperate to compete</td>
<td>Develop internal and external partners that leverage human, technological, and physical resources</td>
</tr>
<tr>
<td>Organize to master change and uncertainty</td>
<td>Alter rigid organizational and communication structures and develop equitable responsibility/reward systems</td>
</tr>
<tr>
<td>Leverage the impact of people and information</td>
<td>Create an environment that encourages boundary-spanning and faculty, administrators, and staff to “think like owners”</td>
</tr>
</tbody>
</table>

The four cardinal principles of agility are discussed individually in the following sub-sections.

*Enrich the customer:* Agile enterprises enrich the customer by becoming solutions providers. Solutions involve physical products, *and* information, *and* services (Goldman et. al. 1995). In an agile competitive environment, business accommodates the individual’s needs rather than the individual adapting to available standardized products.
According to Preiss, Goldman, and Nagel (1996), standardization, which is at the core of the mass production paradigm, implies that fairness is to treat people identically. Under this paradigm, products reflect a singular point of view to which customers accommodate; customers purchase standard products that come closest to meeting their needs. Standardization made sense in an environment of limited technology and economic scarcity. In a technologically advanced knowledge-based environment, it is possible to treat each person as an individual. This ability redefines society’s concept of fairness, since customization allows multiple perspectives to be recognized and accommodated by business. When business begins to consider a person’s individual point of view, a relationship begins to develop that was impossible in the mass production paradigm.

Scott (1995) notes that mass-production approaches in higher education resulted from the massification of higher education. Massification of higher education refers to the movement that made higher education broadly available to individuals who were not born into privileged wealth (Ashby, 1971). The move toward massification of higher education began with the GI Bill, which was enacted immediately following World War II. Beginning in the 1960s, higher education in the United States became viewed as part of a “wider package of civic rights and democratic entitlements” (Scott, 1999, p. 125), making a college education a social norm. To accommodate the drastically growing student population, higher education adopted a mass production model of work organization that was defined by Frederick W. Taylor in the late 1800s. This organizational model, also known as Taylorism, seeks to achieve high productivity through the division of labor that breaks jobs into narrow repetitive tasks and uses
standardization and automation to reduce costs. Taylorism influenced course delivery methods and academic organizational structures, which became the educational equivalent of mass production (e.g., Carnegie Units, course standardization, rigid schedules, inflexible curricula). Higher education set the agenda, and students had little choice but to adapt.

According to Scott (1999), systems of mass higher education must now try to balance more stable domestic democratic agendas with internationalism that is demanding a more customized approach to education and training. Internationalism and customization of education gives rise to many challenges, not the least of which is predicting skill levels of entering students. This may require entirely new agendas and services that redefine the association between institution and student in order to attract and maintain students, as well as establish lifelong relationships between the institution and alumni/alumnae.

The customer.supplier, student.institution relationship becomes critically important in an agile competitive environment: products are seen as platforms for building relationships. An ongoing interactive relationship presents an opportunity for businesses and education to provide information and services to the consumers that extend beyond the original purchase of the product. The monetary worth of products, information, and services is determined by the customer’s perception of their value: generally, the greater the degree of customization, the greater the value.

*Cooperate to compete:* The end goal in an agile company is to bring products to the market as rapidly and cost effectively as possible. In an agile company, cooperation among companies is the key to achieving a competitive advantage. Cooperation with
external sources is critical in an agile competitive environment, yet it is only possible if cooperation first exists within the organization.

Within the organization, cooperation is evidenced by teams that consist of people with appropriate knowledge and skills to solve problems, the permeability of departmental or divisional boundaries, cross-functional groups, and reorganization of the business processes. An important aspect of internal cooperation is the ability of cross-functional teams to be able to work together without being physically near each other. Without this ability, the teams will be unable to establish cooperative relationships externally. Before a company can engage in successful external partnerships, a general recognition of the importance of cooperative relationships must exist.

Once intra-organizational cooperation has been established the foundation is laid for inter-organizational cooperation. Agile competition requires that an organization be able to create or assemble new productive resources very quickly, frequently, and often concurrently because of the rapidly decreasing profitable life spans of individual products and services. Most of today’s most profitable products require access to a wider range of world-class competencies (e.g., research, prototyping, manufacturing, design, marketing, distribution, service) than any one organization can afford to maintain or identify in advance of unanticipated opportunities (Goldman et al., 1995). The cooperative dimension of agility underscores the necessity for forming win-win inter-organizational partnerships as a strategy for accomplishing goals that would be unachievable for a single organization.

Higher education is not exempt from the need to cooperate to compete. The growing presence of sophisticated communication technologies, the increasing presence
of for-profit competitors, and many cost-cutting trends in higher education, suggest that new approaches to corporate/university partnerships and inter-institutional consortia will be necessary for survival. The need for rapid response to market pressures, and the costs associated with continual change argue against self-contained approaches, institutional isolation, and current organizational structures in education.

**Organize to master change and uncertainty:** The key to mastering change and uncertainty lies in an enabling infrastructure that promotes interoperability, reconfigurability, and flexibility. In an agile enterprise, leaders recognize the importance of rapid response to environmental change. Decision-making moves away from being executive centered and toward a coordinated distributed model. Leaders seek to empower employees in a way that makes the employees become increasingly responsible and accountable for the success of the organization.

Delegating responsibility to a person demonstrates trust in that person. Trust, within an organization and between the organization and other partners and stakeholders, is critical to creating an environment that will support an agile enterprise (Preiss et al., 1996). Trust emerges as management works to forge a mutual dependency with the workforce and to encourage an entrepreneurial spirit.

In developing an agile organization, it is important to know if a trust gap exists. Within an organization, a trust gap can be defined as the difference between the number of people in the organization who can be trusted to carry out goals and objectives within a set of constraints, and the number of people who are trusted to do the same (Horton, & Reid, 1990; Preiss et al., 1996). According to Preiss et al. companies admit to an average
40% trust gap. Trust gaps can exist between management and employees, between team members, between and among whole teams.

The need for distributive responsibility and decision-making is a substantive business reality in an agile competitive environment. Yet, many employees may be reluctant to assume responsibility because they perceive that “doing what you are told to do” is less perilous than risking failure while learning how to achieve a set of goals and objectives within a set of constraints. To encourage employee acceptance of responsibility and willingness to take the risks that are necessary in an agile organization, it is critical to closely link trust and reward systems. Trust and reward must reflect not just success, but also prudent risk-taking. Reasonable failure must become accepted as part of the process.

*Leverage the impact of people and information:* People are critical resources of an organization; what they know, the skills that they possess, the initiative they display, and the information to which they have access. In an agile environment, management provides resources, rewards innovation, distributes authority, and promotes an entrepreneurial culture that leverages the impact of people and information on operations. Being able to leverage the impact of people and information requires sharing of information and knowledge, and a smooth flow of communication at all levels.

Agility is not an absolute value, but rather exists on a continuum within an organization. The dimensions of agility present a list of critical attributes that an organization can reference in determining benchmarks for organizational change that is consistent with the new competitive environment. The dimensions of agility (Broskoske, 2000; Goldman, Nagel, & Preiss, 1995; Preiss, Goldman, & Nagel, 1996) include the following:
- Trust
- Value/Respect
- Collaboration
- Accountability
- Free flow of information
- Flexibility
- Equitable system of rewards
- Rapid response to change
- Globalization

Existing organizational, communication, and reward structures in higher education are not compatible with agile change management. Typically in higher education, communication is guarded and exclusionary, reward systems are inequitable, and organization rigidity discourages individual initiative, risk-taking, and boundary-spanning endeavors. These are not conditions that encourage employees to think or act in an entrepreneurial manner.

Organizational Responses to an Agile Competitive Environment

Until recently, most manufacturing companies producing physical goods employed the Fordist organizational model. A Fordist model is characterized by the production of uniform products, economies of scale, division of labor, hierarchical management, and organization of people and processes into discrete, large units that are hierarchically managed within themselves (Bates, 1997). This model is not consonant with the new agile competitive environment.
Brown and Lauder (1996) suggest two economic responses to the new conditions of economic globalization: neo-Fordism (loosely equated with demand side approach), a more tactical approach to change, and post-Fordism (loosely equated with supply side approach) a strategic approach to change. Neo-Fordism places emphases on markets, labor market flexibility, efficiency, deregulation, privatization, and managerialism, while post-Fordism focuses on high-skills, valued –added innovative production and market flexibility through multiskilling (Currie, & Newson, 1998). According to Witherton and Gibbs (1997) within a neo-Fordism model, work is transformed within the Fordist paradigm, whereas a post-Fordism model fundamentally transforms work production. A comparison of post-Fordism and Agility reveals closely shared ideals (Table 5).
Table 5 Alternative Models of National Development (Brown, & Lauder, 1996, p.6)

<table>
<thead>
<tr>
<th>Fordism</th>
<th>Neo-Fordism</th>
<th>Post-Fordism</th>
<th>Agility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Protects national markets</td>
<td>Global competition through productivity gains, cost-cutting (overheads, wages)</td>
<td>Global competition through innovation, quality, value-added goods and services</td>
<td>Global competition through innovation, quality, value-added goods and services</td>
</tr>
<tr>
<td>Inward investment attracted by market flexibility (reduce the social cost of labor, trade union power)</td>
<td>Inward investment attracted by highly skilled labor force engaged in value-added production/services</td>
<td>Inward investment attracted by highly skilled labor force engaged in value-added production/services</td>
<td></td>
</tr>
<tr>
<td>Adversarial market orientation: remove impediments to market competition. Create “enterprise culture”. Privatization of the welfare state</td>
<td>Consensus-based objectives: corporatist “industrial policy” cooperation between government, employers, and trade unions</td>
<td>Consensus-based objectives: corporatist “industrial policy” cooperation between government, employers, and trade unions</td>
<td></td>
</tr>
<tr>
<td>Mass production of standardized products/low skill, low wage flexible production and sweatshops</td>
<td>Flexible production systems/small batch/niche markets; shift to high-wage, high-skilled jobs</td>
<td>Flexible production systems/small batch/niche markets; shift to high-wage, high-skilled jobs</td>
<td></td>
</tr>
<tr>
<td>Bureaucratic hierarchical organizations</td>
<td>Leaner organizations with emphasis on numerical flexibility</td>
<td>Leaner organizations with emphasis on functional flexibility</td>
<td>Leaner organizations with emphasis on functional flexibility</td>
</tr>
<tr>
<td>Fragmented and standardized work tasks</td>
<td>Leaner organizations with emphasis on functional flexibility</td>
<td>Flexible specialization/multi-skilled workers</td>
<td>Flexible specialization/multi-skilled workers</td>
</tr>
<tr>
<td>Fordism</td>
<td>Neo-Fordism</td>
<td>Post-Fordism</td>
<td>Agility</td>
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<td>---------------------------------------------</td>
<td>--------------------------------------------------</td>
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<td>----------------------------------------------</td>
</tr>
<tr>
<td>Mass standardized (male) employment</td>
<td>Fragmentation/polarization of labor force. Professional core and flexible workforce (i.e., part-time, temps, contract, portfolio careers)</td>
<td>Maintain good conditions for all employees. Non core workers receive training, fringe benefits, comparable wages, proper representation</td>
<td>Maintain good conditions for all employees. Non core workers receive training, fringe benefits, comparable wages, proper representation</td>
</tr>
<tr>
<td>Divisions between managers and workers/low trust relations/collective bargaining</td>
<td>Emphasis on “managers’ right to manage”. Industrial relations based on low-trust relations</td>
<td>Industrial relations based on high trust, high discretion, collective participation</td>
<td>Industrial relations based on high trust, high discretion, collective participation</td>
</tr>
<tr>
<td>Little “on-the-job” training for most workers</td>
<td>Training “demand” led/little use of industrial training policies</td>
<td>Training as a national investment/state acts as strategic trainer.</td>
<td>Training as a national investment/state acts as strategic trainer.</td>
</tr>
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</table>

An agile competitive environment clearly requires a workforce that has been educated in a manner that emphasizes higher order thinking, creativity, flexibility, and adaptability (Education Commission of the States, 1999a, 1999b). The global nature of the new competitive environment has placed increased demands on institutions of higher education to provide the intellectual capital necessary for the United States to maintain a competitive standing in the current economic arena. Thus, it is important to examine the multifaceted effects that the globalizing economy exerts on higher education in order to better understand higher education’s responses to globalizing pressures.
Globalization: Effects in Higher Education

Robertson (1992) defines globalization as “…a concept that refers to the compression of the world and the intensification of consciousness of the world as a whole” (p. 8). The first part of Robertson’s definition speaks to the process of instantaneous communication made possible by new technologies. The second half of his definition addresses an increasing awareness of distant identities and cultures that encourage people to think in more universal terms. Currie and Newson (1998) agree with Robertson, but extend the idea of globalization to include the international integration of communication and economies. In the extended sense, globalization refers to a set of simultaneous and converging social, political, and economic changes that are occurring in many industrially advanced Western societies. The effects of globalization touch every segment of society, including higher education.

According to Friedman (2000), globalization is the international system that has replaced the Cold War system. The Cold War system had a distinct power structure: the balance between the United States and the U.S.S.R. It was a clash between capitalism and Communism. Friedman contends that an understanding of the post-Cold War system requires an understanding of globalization.

As Friedman explains, the Cold War system was defined by the word division, and symbolized by a single object, the Berlin Wall. Globalization, on the other hand, is defined by integration and symbolized by the Web. He uses the analogy of sports to explain difference between the two systems:

If the Cold War were a sport, it would be sumo wrestling…two big fat guys in a ring, with all sorts of posturing an rituals and stomping of feet, but actually very little contact, until the end of the match when there is a brief moment of shoving
and the loser gets pushed out of the ring, but nobody gets killed. By contrast, if globalization were a sport, it would be the 100-meter dash, over and over and over. And no matter how many times you win, you have to race again the next day. And if you lose by just one-hundredth of a second it can be as if you lost by an hour (p.12).

In globalized economies, there are no enemies, only competitors, and difference is measured by speed.

Friedman explains that globalization as a system grew out the simultaneous democratizations of finance, technology and information that were incubated during the twenty years of the Cold War and emerged full-blown in the late 1980s. The democratization of finance altered the way in which people invest their money, the democratization of technology changed the way people communicate, and the democratization of information transformed the way people learn about the rest of the world. In the late 1980s, these democratizations came together to create a single, “fast” world. Their convergence produced a set of new efficiencies in the marketplace and constituted a fundamental discontinuity with anything that existed before. To understand this new world requires a completely different way of thinking.

Unfortunately, in both journalism and academe, there is a deeply ingrained tendency to think in terms of highly segmented, narrow areas of expertise which ignores the fact that the real world is not divided up into such neat little beats and that the boundaries between domestic, international, political and technological affairs are all collapsing (Friedman, 2000, p. 24).

According to Slaughter and Leslie (1997), globalization of the economy is destabilizing patterns of university professional work that have been developed over the past hundred years. Currie and Newson (1998) maintain that forces exerted on higher education by a global economy will increasingly influence the manner in which universities are governed and the daily lives of academics are conducted. Scott (1998)
contends that the global economy will drive higher education in the United States and many other countries to rapid change and restructuring that supports practices that are more commonly found in the corporate sector. The recent decision of the European Universities, under pressure from the European Union (European Union, 2001) to standardize higher education degrees on the American model to facilitate a more “uniform, transparent, and flexible transfer system for recognition of professional qualifications”, is an historic case in point. Clearly, colleges, universities, and their faculties are entering the twenty-first century facing unprecedented change (Breneman, 1993; Gumport & Pusser, 1995; Massy, 1994; Massy, & Zemsky, 1990; Rhoades, 1997)

The following two sub-sections will examine the political and economic context within which higher education now finds itself. The first section will discuss changes in the direction of higher education throughout the 20th Century, and the second section will examine the legislative changes during the second half of the century that have supported the practices that have essentially removed higher education from the ivory tower and firmly repositioned it in the global marketplace.

Changes in the Direction of Higher Education

During the Industrial Revolution, by virtue of their professional status, academics from numerous nations were able to position themselves between capital and labor; thus protecting themselves from harsh market realities (Abbott, 1988). Since professionals during this period did not directly participate in the business marketplace, they were able to negotiate a tacit social contract in which their vested interests in promoting the common good and commitment to the ideals of service and altruism were exchanged for monopolies of practice (Bledstein, 1976). Professional organizations and the law
protected the integrity of this implicit contract by controlling professionals’ actions and admission into the disciplines (Larson, 1977). People not professionally certified were legally prevented from practicing in the professions (Brint, 1994).

According to Slaughter and Leslie (1997), higher education faculty are “…paramount professionals because they have monopolies on advanced degrees and train and credential all other professionals” (p.5). In this respect, college and university faculty are unique. Further, they work for colleges and universities that have had a tradition of autonomy from both the market and the state.

In the first half of the twentieth century, the autonomy of the university and its faculty remained intact. In the 1930s, despite the hardships imposed by the Great Depression, most academics rejected government funding of research fearing that the university would become inalterably transformed and autonomy would be forever lost (Genuth, 1987).

In the second half of the twentieth century, faculty and institutions of higher education gradually became involved in the market (Slaughter & Rhodes, 1990; Brint, 1994). In the 1980s, the effects of economic globalization accelerated the involvement of faculty and institutions of higher education in the business sector. Increasing faculty participation outside the confines of the university began to erode the tacit social contract that higher education had with society.

Slaughter and Leslie (1997) contend that globalization in the 1980s was a turning point because the legislation enacted during this time forced a change in the type of work, rather than merely the degree of work that academics performed in the business sector. Slaughter and Leslie further maintain that the legislative actions that altered the funding
of higher education will most likely continue to erode higher education’s autonomy and monopoly of practice, since they undermine the tacit social understanding that higher education and its faculties hold an unchallenged commitment to the ideals of service and altruism.

Market Forces in Higher Education

The university was transformed and a new status quo was established as the autonomy of the academic enterprise became linked with government funding procedures (Etzkowitz & Webster, 1998). The idea of market forces in higher education was introduced in America in the early 1970s. During this time national policy groups (e.g., Committee for Economic Development), foundations (e.g., Carnegie Foundation for the Advancement of Teaching), and private and public higher education institutions worked in concert with the Nixon administration to make students “consumers” of education (Committee for Economic Development, 1993). Together, they positioned the student as a consumer in an educational market by developing higher tuition fees combined with higher aid that was given directly to the student. This system diminished the large block grants that were previously given to individual institutions. In effect, this made the grant money that the student received portable; the grant would follow the student to whichever institution he or she decided to attend. Thus, many institutions began to compete for the students and their grants (McPherson, & Schapiro, 1993). According to Kimberling (1995), this policy works as long as the grants and costs are equivalent, but by the mid 1980s funding for student assistance became static while tuition and fees rose precipitously. In response to the growing gap between college costs and federal aid grants, the federal legislation promoted student loan programs (Breneman, 1993).
Beginning in the 1980s, research policy in colleges and universities in the United States was formulated by executives of large corporations, heads of universities, and political leaders in an effort to enhance the position of the United States as a global competitor. These groups created a policy of competitiveness that emphasized the role of high-technology research that was beneficial to the national economic development. Concurrently, a strong congressional coalition emerged that was poised to change policies that were hindering these efforts (Slaughter, & Rhoades, 1990).

The laws that emerged were born of a concern, voiced throughout the 1960s and 1970s, that the federal government was unable to transfer its technologies. Technology transfer refers to the transfer of research results from universities to the commercial sector. This concept recognizes the value of university research as a vehicle for enhancing the economy by increasing the flow of knowledge to be used by industry.

At the beginning of the 1980s, there was no government-wide policy regarding ownership of inventions made under federal funding, which meant that few government-assisted inventions flowed into the private sector. The problem stemmed from restrictive government policies on licensing, and the unwillingness of the various government agencies to permit an invention to rest with the universities or other grantees/contractors that developed them (Council on Governmental Relations, 1993). The existing government policy made available to everyone, by non-exclusive license, inventions that were developed using federal monies. This policy failed to encourage product development since there was no financial benefit for the inventors in doing so. Thus the legislators and the administration decided the public would be best served by a policy that
would encourage universities and small businesses to participate in the development of inventions using federal funding.

The Bayh-Dole Act of 1980 was passed in response to the negative impact the existing policies had on technology development and transfer. It permitted both nonprofit organizations (e.g., universities) and for-profit grantees/contractors to retain title to the inventions that were developed with federal research and development monies. The Bayh-Dole Act codified an attempt to forge a national industrial policy in response to the competition the United States was experiencing as a result of foreign innovation (Odza, 2000). In a very real sense, the Bayh-Dole Act encouraged academic capitalism. This essentially altered the “nonprofit” nature of teaching and research in higher education, most especially at research universities. The architects of Bayh-Dole understood that subversion of the traditional academic ethic was necessary to make university-based researchers more amenable to serving corporate and the national interests (Parenti, 2000).

Many other laws that were subsequently enacted in the 1980s promoted competitiveness and encouraged deregulation, privatization, and commercialization of university services and activities (See Appendix B). By the late 1980s, the working relationship between academia and industry was recognized as an increasingly important factor in economic growth, a source of new products and companies, and flows of knowledge to existing companies (Etzkowitz, Webster, & Healey, 1998).

It is, however, important to note that as the importance of higher education’s role as a social and economic agent increased and the sphere of outside influences on higher education expanded dramatically, general communication about the changes was isolated
to those directly involved in entrepreneurial efforts. Most faculty were not involved in these efforts and thus remained unaware of the changes. For most, the organizational structure of higher education and traditional academic life did not change.

Jencks and Reisman (1968) contend that in the late nineteenth and early twentieth centuries, the first academic revolution occurred when the academic mission shifted from the conservation and transmission of knowledge to research. Webster and Etzkowitz (1998) suggest that current activities of academia, (i.e., the translation of research findings into intellectual property, marketable commodities, and economic development) constitutes a second revolution that is building upon the first.

…it is possible that we are witnessing today a new, “second” academic revolution whereby the institutional role and character of academia is changing as it adopts a more central economic role in society, both in conjunction with industry and on its own behalf through exploiting its knowledge base (Webster, & Etzkowitz, 1998, p. 67).

On a macro level, the forces of globalization have propelled higher education into the very market place from which it has traditionally been insulated. Economic forces and societal pressures that historically have been foreign to the culture of higher education are now a very real presence in the day-to-day decision making of colleges and universities. To understand the responses of colleges and universities to external pressures, first requires a closer examination of the predominant social and economic forces to which higher education is now susceptible.

**Higher Education in a Knowledge Economy**

The United States is rapidly evolving into a postindustrial knowledge-based society. This evolution has produced a radically new system for creating wealth that depends on the creation of knowledge (Duderstadt, 1999a). In a knowledge economy,
individual, corporate, and national competitiveness require new and more extensive skill sets than were demanded in an industrial economy (van Opstal, 1998). The need to compete in foreign markets with advanced technology has convinced U.S. business, economic, and political leaders of the growing national dependence on a highly educated workforce, and the critical role of U.S. postsecondary institutions in supplying the intellectual capital that the United States needs to maintain a competitive global economic position (Florida, 1999; U. S. Department of Education, 2000).

A knowledge economy requires colleges and universities to become responsive to emerging societal and market forces from which they historically have been insulated (De Alva, 1999; Duderstadt, 1997a; Levine, 2000). Among the most prominent forces postsecondary institutions must accommodate are: (a) changing demography; (b) the emergence of commercial sources of competition; and (c) the changing relationships between colleges, federal and state governments, and industry (Duderstadt, 1997b, 1999a; IDE, 2001; Levine, 2000). The following sub-sections will discuss each of these forces in detail.

**Changing Demography**

Contemporary demographic changes in the United States are characterized by factors such as longer average life spans, larger urban areas, a higher incidence of one-parent households, and a more diverse workforce (Coughlin, 1999; Fukuyama, 1995; Kovel-Jarboe, 1996; U. S. Census, 1998, 2000). Historically underrepresented, women, minorities, and immigrants accounted for approximately 85 percent of the growth in the labor force between 1990 and 1998 (Duderstadt, 1999a: Twenty-first Century Workforce Commission, 2000). Prevalent demographic shifts are increasing the demand for
services from colleges and universities, and predictions are that this demand will continue
to grow (Duderstadt, 1999a, 1999b).

Colleges and universities will have to continue to expand just to meet the needs of
a growing population that will produce a 30 percent increase in the number of college-
aged students over the next two decades (Coughlin, 1999; U.S. Government, 2000). Yet,
the eighteen to twenty-two year old full-time residential students from middle class and
affluent backgrounds, who have traditionally accounted for the majority of college
enrollments, no longer dominate the composition of today’s undergraduate student body
(Duderstat, 1999b; U.S. Department of Education, 2000): only 20 percent of the total
college population is full time, in residence and under the age of 22 (College Board,
2000). Adults make up almost half of the undergraduate students enrolled in colleges and
universities in the United States (Gose, 1999), and part-time students account for 45% of
all college enrollments (College Board, 2000). These adult students and part-time
students are from diverse socio-economic backgrounds, and many are already in the
workplace, have families, and are in schools to obtain the education and skills demanded
by their careers. As the need for lifelong learning increases, it is expected that the
number and diverse nature of non-traditional students will increase.

Demographic shifts have broad implications for administrators (e.g., admissions,
recruitment, financial aid, continuing education), faculty members (e.g., curriculum,
content, delivery, schedules), and staff (e.g., types and availability of student services,
student support). Yet, demographic factors are generally considered “administrative
concerns”. The rigid boundaries and minimal integration of administrative, staff, and
faculty responsibilities in higher education act as a barrier to relevant and accurate
information flow, which leads to a dearth of comprehensive perspectives being considered when institutional decisions are made.

**New Competitive Forces**

As the composition of the undergraduate student population shifts away from traditionally aged students and the need for ongoing and advanced education increases, institutions must become more flexible with their educational agendas (de Alva, 1999; Levine, 2000; Twenty-first Century Workforce Commission, 2000). Traditionally, colleges and universities have focused on a specified number of contact hours that a professor must have with students within which the professor is expected to transmit a prescribed scope of knowledge to the students. Students typically consume knowledge in required courses, accumulate credits, and translate credits to degrees (Pew, 1994). This process emphasizes a commonality among students and poses a prescriptive approach for degree attainment that is consistent with a mass production paradigm.

Changing student characteristics have altered both the attitudes and the needs of a large portion of the student population. According to Gumport, Iannozzi, Shaman, & Zemksy (1997), non-traditional students exhibit attitudes toward higher education that are very different from those of the traditional student. Non-traditional students tend to view higher education as a consumer relationship while traditional students views it as a rite of passage; non-traditional students consider themselves to be “workers” or “homemakers” first and “students” second or third while traditional students consider themselves only as students.

Many contend (e.g., Cameron, & Tschirhart, 1992; Clark, 1995; Dill, & Sporn, 1995; Stigler, 1993) that education is entering a new era of competitiveness that is being
driven by increasing student demands for marketable skills. According to Pew (1993a, 1993b), there is a marked trend in many colleges and universities to match student “educational consumption patterns” with the rapidly changing national job market. Guskin (1994) notes that this pattern turns institutional focus from faculty productivity to student productivity; from faculty disciplinary interest to student learning needs; and from faculty teaching styles to student learning styles. In this context, a priority is placed on the student as a customer. Guskin maintains, “Our [higher education’s] need is twofold; to reduce student costs and increase student learning” (1994, p.25).

Along with credentialing, students are seeking competencies, knowledge, and skills that lie outside the confines of a prescribed curriculum. Peterson (1995) contends that colleges and universities must accommodate both the degree seeking and non-degree seeking adult students’ continuing education and ongoing learning needs. Currently, over 10 million adults take part in college noncredit programs (College Board, 2000). Serving this student population requires faculty members who are competent as learning experts and can assess learning needs, design learning experiences, develop strategies for accessing material, utilize various delivery systems, serve as learning mentors, and assess learning that is specific to the unique needs of the nontraditional adult student (Peterson, 1995).

The physical stasis of traditional residential institutions presents a formidable barrier to an institution’s ability to respond to student needs that lie outside the existing institutional and academic structure. In a traditional residential institution, students are bound to adhere to organizational time structures (i.e., quarter, semester, trimesters), to course time structures (i.e., rigidly and limited scheduled times for course offerings), and
to physical structures (i.e., students must physically congregate in common locales).

While this rigidity accommodates a mass production paradigm, it does not offer the flexibility required by the emerging diverse student population that is demanding increased services from higher education. According to de Alva (1999) and Duderstadt (1997a, 1999a), to meet the needs of a knowledge economy, institutions must be able to provide a structure that:

- Allows students to complete or continue their education while working full-time,
- Focuses on student-centered and adaptive learning
- Provides a curriculum and faculty that are relevant to the workplace,
- Provides a time-efficient and cost effective education,
- Provides a high level of customer service

Changing student needs are driving the development of new educational structures. Levine (2000) noted that three types of colleges and universities are emerging:

(1) brick institutions (traditional residential institutions); (2) click institutions (commercial virtual institutions e.g., unext.com and Jones International University); and (3) brick and click institutions (institutions that are a combination of traditional and virtual). These changes have been enabled by the proliferation of, and affordable access to sophisticated telecommunications technologies. Telecommunications used to facilitate distance education remove geographical, time, and space barriers that have constrained traditional residential-based institutions and have hampered an institution’s ability to individualize educational agendas.

In response to the needs of a changing student population, education providers are becoming more numerous and more diverse. For-profit or proprietary providers of higher
education are emerging as competitors to traditional residential colleges and universities. The for-profit higher education industry is showing robust growth (Strosnider, 1998) and is positioning itself to take advantage of new openings, and weaknesses, in a changing higher education environment (Blumenstyk, 1999). Indications of a new, commercially-based educational enterprise can be seen in the rapid expansion of for-profit degree granting virtual universities (e.g., University of Phoenix, Walden University, Jones International University, and Harcourt Higher Education), and educational brokers (e.g., College Learning.Com, Universitas 21, Education Course Advisory Service Worldwide) (Carr, & Kiernan, 2000; Duderstadt, 1997b; Perley, & Tanguay, 1999).

Commercial for-profit universities pose a significant threat to traditional colleges and universities. According to a report issued by the Education Commission of the States (Kelly, 2001), for-profit, degree-granting institutions have grown and are continuing to grow and succeed despite the obstacles presented by state regulations, accrediting bodies, and entrenched institutions of higher education. From 1999 to 2000 the number of for-profit, degree granting two-year institutions rose 78%, and four-year institutions rose 266%. As of the year 2000, the nationwide for-profits held 28% of the two-year educational market share and 8% of the four-year share, and had a total enrollment of over 365,000 students.

For-profit organizations and new providers in higher education focus only on teaching and compete solely in the realm of instruction (Duderstadt, 1999a; Levine, 2000), while traditional higher education divides its focus among teaching, service, and research. Further, commercial universities do not dispute that they “cherry pick” the most profitable programs leaving higher-cost, lower demand programs to public institutions.
For-profits have the additional benefit of not having to contend with the political and governance structures, or many of the financial responsibilities that exist in traditional higher education. For-profit education providers, whose sole function is instructional, place added challenges to and pressures upon traditional institutions whose resources and energies are divided. The threat posed by for-profits clearly signals a changing environment in higher education. Yet, many in higher education believe that institutions can exist substantively unchanged. Given the hierarchical structure and the patterns of restricted communication flow that are characteristic of higher education, it is not surprising that many in higher education do not perceive the changing reality of their environment.

As traditional colleges and universities lose their monopoly on education, it is becoming evident that the most successful institutions will be those that are able to respond the most quickly and offer a high quality education to an international student body (Slaughter & Leslie, 1997). The vice provost for information systems and computing at the University of Pennsylvania likened the position in which traditional colleges and universities find themselves, vis-à-vis the growing number of for-profit and non-traditional educational providers, to the position in which the Post Office found itself when Federal Express and UPS began to challenge their long held monopoly on mail and package delivery (“Ivy League”, 1997).

Colleges and universities must undergo significant change to support the profound changes imposed by a knowledge economy (de Alva, 1999). A 1998 poll of the 50 state governors revealed that the three highest priorities in the transformation of postsecondary education are: (a) to encourage lifelong learning (97%); (b) to allow students to obtain
any time, any place education via technology (83%); and (c) to require colleges and universities to collaborate with business and industry in curriculum and program development (77%) (Educational Commission of the States, 1999a).

The Director of the State Higher Education Executive Officers contends that most schools are coming to realize that distance learning is going to be essential to future survival (American Federation of Teachers, 2000). Distance education is the vehicle that an institution needs to be able to capture new markets. Market and political forces are converging to generate a new design for colleges and universities. The primary questions this raises is which institutions will choose to participate, and what new type of educational provider is going to show up and compete for customers (Denning, 1996; Finneran, 1999).

Changing Relationship Between Higher Education, Government, and Industry

After World War II, the federal government began to play a greater role in supporting postsecondary education, initially by sponsoring research. Federal sponsorship of research increased every year from 1955 to 1968. Federal support of research stopped growing in the mid 1960s, and for a few years in the early 1970s monies actually decreased (Dickson, 1984). In the early 1970s, after the Mansfield Amendment sharply curtailed defense spending related to basic research, Nixon placed compensatory monies in the National Science Foundation (NSF) for the development of business-university partnerships. By the mid 1970s, a number of large contracts between research universities and corporations were signed and the federal government began to focus on corporations as funding sources for research (Slaughter, & Rhoades, 1990). Business leaders, however, consistently rejected business as a viable source of increased resources
to higher education maintaining that “…businesses, unlike foundations, are not created for the purpose of making contributions to education and other non-profit sectors of society” (Business-Higher Education Forum, 1984, p. 11). Business leaders were not, however, opposed to forming a mutually beneficial relationship with research universities, which was evidenced by the formation of the Business-Higher Education Forum.

The Business-Higher Education Forum was created for the express purpose of promoting discourse and acting on issues shared jointly by American business and the nation’s higher education institutions. The Forum’s major objective is to provide an opportunity for interchange among its members on matters pertaining to the respective interests and, hence, to the common aspirations and needs of the business and academic communities. (Business-Higher Education Forum, 1984 p. 5)

By the 1980’s, the United State’s declining position in global markets was becoming evident. No longer could the U. S. assume easy dominance over non-socialistic countries, or compete with lower labor costs of industrializing “third world” nations. The generally accepted solution was to place greater emphasis on high technology that would be closely controlled by stringent intellectual property laws (Brett, Gibson, & Smilor, 1991). A series of legislative acts was passed that focused primarily on technology research and supported a working relationship between industry and academia (See Appendix B). Concerns over the growing threat of international economic competition and the perceived decline in research and development capabilities of American industry superceded any misgivings Congress had previously held regarding private benefit from the expenditure of public funds (Bowie, 1994). The acts passed by Congress established a system to facilitate the transfer of technology to the private sector and universities, as well as state and local governments (See Appendix B).
With these changes in public policy, the government gave universities a clear economic incentive to partner with business (Bowie, 1994). The federal government has focused its research and development funding on the support of university-industry partnerships as well as legislation that facilitates technology transfer. Technology transfer legislation has promoted willing collaboration between universities and the private sector in the development of products and processes that have positive economic potential (Brett, Gibson, & Smilor, 1991). Changes in both the intellectual property laws and the culture surrounding the use of university-generated knowledge has resulted in higher education institutions directly profiting from faculty inventions and discoveries. Yet, those members of higher education who were not directly involved in related research efforts were either unaware of, or paid little or no heed to that which seemingly did not affect them.

Over the last 20 years, academic/industrial relations have ceased to be exclusive to an isolated academic sector and have spread throughout the U. S. academic system (Etzkowitz, 1994). Leading liberal arts universities became involved in practical affairs during the post-World War II era, and as funding sources became more uncertain their interest expanded to areas of local and national economy (Etzkowitz, Webster, & Healey, 1998). These changes imply a shift in the academic and public research culture toward a more entrepreneurial orientation (Etzkowitz, Webster, & Healey, 1998), a culture that is increasingly becoming international (Ogbimi, 1990). Academic-industrial relations have become a central theme of economic renewal (Brett, Gibson, & Smilor, 1991; Etzkowitz 1994; Etzkowitz, Webster, & Healey, 1998; Slaughter, & Rhoades, 1990), and hold out the hope for a sustained flow of resources to higher education; thus reducing higher
education’s dependence upon donors and the government (Etzkowitz, Webster, & Healey, 1998).

Intellectual boundaries between disciplines (i.e., science, business, psychology) and sectors (i.e., university, industry, and government) are becoming more permeable and less distinct. A complex system of users and producers of knowledge and information has emerged resulting in the growth of networking, cross-institutional linkage, and informal and formal collaboration. Increased involvement in strategic partnering among public and private agencies and individuals is needed to help both individuals and organizations cope with the increasing differentiation and complexity of today’s innovation systems (Etzkowitz, Webster, & Healey, 1998). With changes in public policy, the government gave universities a clear economic incentive to partner with business; an option that they have clearly exercised (Bowie, 1994; Etzkowitz, Webster, & Healey, 1998; Slaughter, & Rhoades, 1990).

**Technologically-Mediated Communications: The Movement Toward Distance Education**

Colleges and universities are being called upon to serve a profoundly and rapidly-changing society at a time when higher education, itself, is facing the uncertainties of spiraling costs, decreasing federal funding, growing academic capitalism, and encroaching competition. In response, a majority of colleges and universities are using the convergence of communication and computing technologies to implement distance education programs to reduce the cost of education (Sherron & Boettcher, 1997), increase enrollments of nontraditional students (National Center for Education Statistics, 2000),
and form revenue producing entities and partnerships (Brett, Gibson, & Smilor, 1991; White, 2000).

Distance education courses for academic credit have expanded dramatically (American Federation of Teachers, 2000). A survey conducted by the National Education Association (NEA) (2000) found that one in ten higher education NEA members teaches a distance education course, and 90% of NEA members teaching traditional courses reported that distance learning courses are offered or being considered by their institutions. Projections are that by the year 2002, 15% of the total postsecondary enrollment will be comprised of students enrolled in distance education (Web-Based Commission to the President, 2000) and 84% of all colleges and universities will offer computer-based distance education courses (National Center for Education Statistics, 1999).

The exponential growth and development in communication technologies has driven college and university involvement in distance education. Elite institutions (e.g., Cornell, Duke, Johns Hopkins, Rice, Stanford, Harvard, Yale) are currently involved in various distance education endeavors. It has become apparent that involvement in distance education is becoming a critical component in maintaining a competitive position in the knowledge industry. Even the wealthiest private universities are exhibiting signs of worry about market share and survival despite large endowments, and their power to select the best qualified students and charge high tuitions. Yale, Harvard, Stanford, Brown, and Columbia along with a long list of other prestigious colleges and universities are turning to distance learning as a form of education appropriate for continuing education, training and retraining, and place-and time bound students as well
as less financially fortunate learners (AFT, 2000). Many distinguished institutions (e.g., Columbia, Stanford, Carnegie Melon, Northwestern) are offering distance education courses for enrichment to qualified high school students or for credit to accepted freshmen before they come to the campus (e.g., Lehigh University).

The realities of a knowledge economy are forcing colleges and universities further out of the ivory tower and into the market place where protection and privilege is diminished, and the rules of survival have changed. There is little denying that higher education is big business. According to Urdan and Weggen (2000), the estimated education market in the United States in the year 2000 totaled $772 billion, which equaled approximately 9% of the Gross Domestic Product (GDP). Of the $772 billion spent on education, $268 billion was spent on postsecondary education, $66 billion was spent on corporate training, and $12 billion was spent on continuing education. Its huge market size makes the education and training industry second only to healthcare as the largest economic sector in the U.S.

As human capital becomes the primary source of economic value, the education and training industry will only continue to grow. Training and information rapidly become obsolete with the accelerating rate of technological change. According to PriceWaterhouseCoopers (2000), 70% of the Fortune 10000 companies cite lack of trained employees as their number-one barrier to sustaining growth. Corporations that offer ongoing education and training report a higher rate of employee retention and higher rate of skilled personnel (Urdan, & Weggen, 2000).

According to Urdan and Weggen (2000), the following trends are increasingly defining educational and training agendas:
- Rapid obsolescence of knowledge and training;
- Need for just-in-time training delivery;
- Search for cost effective ways to meet the learning needs of a globally distributed workforce;
- Demand for flexible access to lifelong learning.

Based on studies conducted by SRI Consulting and W.R. Hambrecht and Co., Urdan and Weggen (2000) contend that the following factors are driving the demand for e-learning:

- Internet access is becoming standard at both home and work;
- Advances in digital technologies enable the creation and delivery of interactive, media-rich content;
- Increasing bandwidth and better delivery platforms make e-learning more attractive;
- Emerging technology standards facilitate compatibility and usability;
- Growing selection of high-quality and e-learning solutions.

A new educational market is being created, and higher education is being forced to compete for the exponentially expanding non-traditional student market share. There is growing agreement that institutions of higher education must develop the capacity for change in order to survive in this rapidly changing economy; to rigidly defend the status quo or an idyllic vision of the past, places an institution at great risk in the context of today’s social and economic realities (Duderstadt, 1997a, 1999a, 1999b; Farrington, 1999).
Although there has been widespread adoption of new technologies for teaching, colleges and universities are still grappling with bringing about major changes in the way distance education programs are organized and delivered. According to Bates (1997), without systemic institutional changes, technology-based distance education will remain a marginal activity while at the same time leading to increased unit costs. There is a reciprocal relationship between distance education programs and the individual institution’s mission; distance education programs must be organized to support the existing mission of the institution, and the institution must be organized to support an appropriate distance education program.

After World War II, the introduction of the GI Bill initiated a system of mass higher education. Since that time, there has been a rapid increase in both the size and scale of the conventional American universities (Bates, 2000). This has caused colleges and universities to adopt many of the features of an industrial or Fordist model of organization (Champion, 1995; Champion & Renner, 1992; Renner, 1995; Rumble, 1995).
Table 6  Comparison of Organizational Characteristics Between Fordism and Higher Education

<table>
<thead>
<tr>
<th>Fordism Model</th>
<th>Traditional Model of Higher Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economies of scale</td>
<td>Large class sizes</td>
</tr>
<tr>
<td>Division of labor</td>
<td>Differentiation between: Professors &amp; Teaching Assistants Academics (Professors) &amp; Management (Deans, &amp; VPs) &amp; Administrative Staff</td>
</tr>
<tr>
<td>Hierarchical management</td>
<td>Hierarchical management with managerial control replacing collegial decision making (e.g. President→ Dean→ Department Heads)</td>
</tr>
<tr>
<td>Distinct Core Organizational Structures</td>
<td>Separate core organizational structures (Faculty &amp; Administration)</td>
</tr>
<tr>
<td>Standardization through bureaucratic procedures</td>
<td>Bureaucratic procedures to insure standardization (i.e., admission requirements, curriculum requirements, prerequisites etc.)</td>
</tr>
</tbody>
</table>

Education’s adoption of characteristics that are reflective of a society’s prevailing economic model is not unusual. Education, in a formal and deliberate sense, acts as a specialized social agency that cultivates socially preferred skills, knowledge, and values in the learner. For schools to survive, they must develop a program of instruction, curriculum, and methods that are consonant with current social values (Gutek, 1997). Throughout history, the formal education of a society has reflected the culture of the larger society in which it is embedded (Knoll, & Kelly, 1970). According to Gutek (1991), education is shaped by the forces present in the cultural context of the times and in turn helps to shape those very forces. He further contends that there is a direct connection between education and the “great transforming events and trends that have produced the world in which we live” (p.2).
The identified ends of instruction determine what is taught in schools; what knowledge is of most worth, and what is most valuable for the learner as a person and a member of society. Academic decisions are based on accepted cultural assumptions about the nature of the society, and what is most valued in the societal milieu. Table 7 lists approaches to distance education programs that reflect the values of three economic models; Fordist, Neo-Fordist, and Post-Fordist.

The manner in which an institution is organized should ensure that institutional goals and purposes are achieved in the most efficient and cost effective manner. The current structure of higher education includes decision-making processes and structures that are legacies of late medieval guilds, 19th century vertical bureaucracies, and early 20th century mass-production assumption. As such, they are largely unsuited to new forms of technological course delivery (Bates, 2000).

An underlying assumption of this study is that the organizational and communicative structures of higher education should reflect agile characteristics to ensure institutional consistency with the prevailing social context and global production paradigm, and to facilitate institutional responsiveness to the unpredictable and rapid change in what Vaill (1991, 1996) describes as a world of "permanent white water". The way in which teaching and learning are organized, staffed, and supported, and the ways in which colleges and universities make decisions, constitute an important “hidden agenda” for students. Students moving from antiquated organizational contexts to agile workplaces can suffer vocational culture shock. The following section will examine the existing organizational structure of higher education and how change is managed within that structure.
<table>
<thead>
<tr>
<th><strong>Fordism</strong></th>
<th><strong>Traditional Higher Education</strong></th>
<th><strong>Neo Fordism</strong></th>
<th><strong>Tactical Use of Distance Education</strong></th>
<th><strong>Post Fordism/ Agility</strong></th>
<th><strong>Strategic Use of Distance Education</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Protects national market.</td>
<td>Geographically protected boundaries for recruitment.</td>
<td>Global competition through productivity gains, cost-cutting (overheads, wages).</td>
<td>Global competition through increased student base &amp; decreased costs (i.e., <em>cost reduction</em>)*</td>
<td>Global competition through innovation, quality, value-added goods and services.</td>
<td>Global competition through innovation, quality, value-added services. (i.e. <em>cost effectiveness</em>)*</td>
</tr>
<tr>
<td>Adversarial market orientation: remove impediments to market competition. Create “enterprise culture”. Privatization of the welfare state.</td>
<td>Inward investment attracted by market flexibility (reduce the social cost of labor, trade union power)</td>
<td>Use technology to decrease labor costs or increase instructor/student ratio, thus increasing productivity and profit.</td>
<td>Inward investment attracted by highly skilled labor force engaged in value-added production/services.</td>
<td>Use technology to leverage human and social capital, increase value-added services.</td>
<td></td>
</tr>
<tr>
<td>Mass production of standardized products/low skill, high wage.</td>
<td>Inflexible class offerings. Synchronous meeting times and locations. Bound by educational</td>
<td>Mass production of standardized products/low skill, low wage flexible production and sweatshops.</td>
<td>Offers little or no flexibility in course offerings, but some flexibility in course scheduling. Bound</td>
<td>Flexible production system/small batch/niche markets; shift to high wage, high skilled jobs.</td>
<td>Offers tremendous flexibility in course offerings and scheduling. Rapid response to student</td>
</tr>
</tbody>
</table>

*Note: *cost reduction* and *cost effectiveness* are used interchangeably throughout the table to denote cost optimization strategies.*
<table>
<thead>
<tr>
<th><strong>Fordism</strong></th>
<th><strong>Traditional Higher Education</strong></th>
<th><strong>Neo Fordism</strong></th>
<th><strong>Tactical Use of Distance Education</strong></th>
<th><strong>Post Fordism/ Agility</strong></th>
<th><strong>Strategic Use of Distance Education</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>calendar (i.e., quarter, semester, trimester etc.). Educational agenda around institutional convenience and productivity.</td>
<td></td>
<td>by educational calendar.</td>
<td></td>
<td>and industry needs. Not necessarily bound by traditional educational calendar.</td>
</tr>
<tr>
<td>Mass standardized (male) employment.</td>
<td>Tenure tracked employment within predefined areas of focus.</td>
<td>Fragmentation/polarization of labor force. Professional core and flexible workforce (i.e., part-time temps, contract, portfolio careers).</td>
<td>Increased reliance on adjunct faculty to supplement technologically competent full-time faculty. Focus on institutional ownership of intellectual property</td>
<td>Maintain good conditions for all employees. Non-core workers receive training, fringe benefits, comparable wages, proper representation.</td>
<td>Uses strategies to promote inclusion. Makes appropriate adjustments in employment and promotion criteria. Encourages and supports entrepreneurial endeavors.</td>
</tr>
<tr>
<td>Division between managers and workers/low trust relations/ collective bargaining</td>
<td>Loose coupling with a top down management style. Unreliable or non-existent dispersal of information.</td>
<td>Emphasis on “managers right to manage”. Industrial relations based on low-trust relations.</td>
<td>Loose coupling with boundary spanners. Information guarded with uneven distribution.</td>
<td>Industrial relations based on high trust, high discretion, collective participation.</td>
<td>More tightly coupled structure. Open flow of information. Strong leadership characterized by clear but broad vision and objectives, playing an integrating role.</td>
</tr>
<tr>
<td>Fordism</td>
<td>Traditional Higher Education</td>
<td>Neo Fordism</td>
<td>Tactical Use of Distance Education</td>
<td>Post Fordism/ Agility</td>
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<td>------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Little “on-the-job” training for most workers</td>
<td>rigid credentials pre-obtained</td>
<td>Training “demand” led/little use of industrial training policies.</td>
<td>Training may or may not be supported, is seldom ongoing, and most skills are self-defined and self-acquired.</td>
<td>Training as a national investment/state acts as strategic trainer.</td>
</tr>
</tbody>
</table>

* Cost reduction and cost effectiveness are not to be used interchangeably. Cost effectiveness refers to the same dollar expenditure yielding increased learning effectiveness or more students being taught to the same standards for the same level of investment. Cost reduction strictly deals with decreasing costs through downsizing, or elimination of services (Bates, 1997).

** Higher education institutions can be characterized as “loosely coupled” which means that units do not have a direct effect on each other. The characterization of loose coupling implies that coupled events and units are responsive to each other, but that each maintains its own identity and separateness (Shoemaker, 1998).

*± Boundary spanners are individuals who represent their unit or group outside of the unit or group boundaries within the larger organization. Five important activities that boundary spanners perform are: (1) present unit information outside the unit and bring outside information back into the unit; (2) filter information outputs and inputs; (3) scan environment and make decisions about what information to share; (4) buffer unit from external threats; (5) represent the organization (Aldrich & Herker, 1997) Existing Organization in Higher Education (Aldrich & Herker, 1997).
Existing Organization in Higher Education

Miller (1978) describes a system as “… a set of interacting units with relationships among them” (p. 16). If units are to interact or have relationships, they must share needs and possess common or complementary properties. The interaction of units is constrained by, conditioned by, and dependent on the state of other units within the system (Weick, 2001). The communicative balancing of a system results from the interlocked behavior of the members of that system (Pepper, 1995).

Coupling in an organization refers to the degree to which interlocking behavior between members exists, and the extent to which transactions between internal systems or units of the organization share variables. An organizational system is said to be tightly coupled if systems or units in transaction share many variables, or if pressure of one part of the system causes significant strain on the other parts. The more independent individual units within a system are from each other, the more loosely coupled they are said to be (Lutz, 1982; Orton & Weick, 1990; Weick, 1976). In loosely coupled organizations, units are responsive to each other, but maintain their own identity and separateness. According to Weick (2001) a system is considered to be loosely coupled if “…A affects B (1) suddenly (rather than continuously), (2) occasionally (rather than constantly), (3) negligibly (rather than significantly), (4) indirectly (rather than directly), and (5) eventually (rather than immediately) (p.383).

Viewing the organization of higher education in the context of a system allows a perspective that is quite different than viewing higher education as a single homogenous
entity. According to Weick (1976), higher education is a loosely coupled structure. In higher education, units exhibit a low degree of interlocked behavior (e.g., administration, faculty, staff). Higher education’s organization is characterized by minimal direct supervision and evaluation of faculty, a wide variation of goals that are vaguely defined, and a lack of absolute standards (Weick, 2001). Activities between units in higher education may be infrequent, weak, unimportant, or lag in response time in part because they have little in common (Shoemaker, 1998). Glassman (1973) rates shared variables between organizational units in loosely coupled systems as having: (a) few common variables; and (b) weak or unimportant variables. Weingartner (1996) contends that the forces within higher education are centrifugal in nature, which has a decentralizing effect on the system, and that deliberate organizational art must be developed to create coherence in the system.

Birnbaum (1988) discusses the concept of loose coupling as it relates to the expansion, minimization, or severance of activities in one or another unit within the organization. Loosely coupled systems allow some units to persist while others change, thus freeing the entire organization from the need to constantly adapt to changes in the environment. Local adaptation by individual units allows the system to retain a greater number of variations and innovative solutions to problems than a standardized approach. The independence of the units within a loosely coupled system allows weaknesses or breakdowns in the system to be isolated, which minimizes negative effects on the system as a whole. Conversely, the independence of the units also makes the enactment of system-wide changes more difficult.
Roles in Higher Education

Weingartner (1996) reinforces the idea of loose coupling in his descriptions of the organizational framework in higher education. He described the institutional organization of higher education as being divided along three planes: (a) faculty; (b) staff; and (c) administrators.

Faculty is composed of professionals from diverse disciplines who import into their institutions the methods, practices, and goals of their individual disciplines. The standards, aims, restraints, and culture of the individual professions are most often imposed by individual professional organizations and/or accrediting bodies that lie outside institutions of higher education. The centrality of professional organizations to their members results in a high degree of faculty autonomy within the college or university. The faculty’s central roles are significantly under their own control, and they retain a high level of autonomy within their own departments. Weingartner compared the role of faculty to that of an independent contractor, and collegiality in interfaculty relationships as a relationship of neighbors.

Weingartner (1996) described the role of staff as that of assistants. The function of staff is to assist faculty and students, directly or indirectly, to carry out their goals. The staff’s standing in an institution of higher education is more aligned with that of professionals in the employ of General Motors than with a faculty that sets its own goals. The classification of staff covers a diverse range of jobs from dining hall personnel to student services. One important way in which staff in higher education differs from corporate workers is that they assist in carrying out a variety of institutional goals that are
not easily quantified. Thus, neither the productivity nor the efficiency of staff operations is easily measured.

In an academic setting, staff members are responsible for carrying out many of the day-to-day functions of the institution. Consequently, the staff is generally in closer contact with the faculty than are their superiors, yet, there are few true interdependencies between the staff and faculty.

Weingartner (1996) described the position of administrators as being discrete from faculty and staff. Administrators do not share the mission of teaching or research with the faculty, nor do they share the responsibility of assisting faculty and students in the attainment of their goals. The administrators’ job is managing.

There are two distinct categories of administrators. The first category of administrators manages the day-to-day workings of the institution. The role of the day-to-day administrators can be seen using the office of the registrar as an example; the registrar acts as an administrator by managing the department engaged in the operations of the office. The registrar supervises and manages the staff personnel in the registrar’s office who perform the actual duties necessary for the functioning of the office such as enrolling students and maintaining student records. Central duties at this level of administration are decision making, determining what to do and when and how to carry it out, and overseeing that the determinations are carried out. Within this level of administration the organizational structure tends to be tightly coupled; there is generally a hierarchy of direct supervision, frequent communication, and accountability.
The other category of administrators, who are often considered to be “high-level” administrators, includes a very different set of individuals such as the president, vice presidents, provosts, deans, heads, and directors. According to Weingartner, “[high-level] academic administrators do not manage units composed of faculty or students, however much they may at times dream of doing so” (p. xvi). Yet, decision-making is at the heart of what they do. The scope of high-level academic administrators’ decision-making includes many or all campus decisions. The type of decisions they make range from highly specific to highly general, narrow to broad focus, discrete events to institution-wide policy, concern with the means for institutional goal-attainment to a modification and scrutiny of the goals themselves. According to Weingartner, at this level, administrators are not simply called upon to make decisions, but to elicit decisions from others, and to collaborate with other campus constituencies in the decision-making process. Their goal is to make good decisions in an appropriate way.

There are many ways in which top-level administrators can work with faculty members, and Weingartner noted that the approach or style used differs according to the culture of the institution. This category of administrators works with faculty in a much more loosely coupled structure than do the administrators who manage the day-to-day business of the institution, which gives rise to a high degree of faculty and administrative autonomy. High-level administrators and faculty are much less interdependent, and thus constitute two spheres of relative autonomy. Weingartner contends that the health of an educational institution in which low levels of interdependence exists between units can be determined by examining existing spheres of autonomy. If the spheres of existing
autonomy are relatively large, with faculty and administrators making many decisions by themselves, and complaints about the actions of one party are few, then the framework of the institution is likely to be effective. However, where there are large spheres of autonomy and high levels of conflict, the effectiveness of the institution is likely to be low.

**Factors Influencing Institutional Change**

This section will examine factors that affect the change process. It is organized into three major sub-sections that consider: (a) cultural and organizational factors; (b) the implications of employing instruments that measure readiness to change, and (c) the major role of trust in organizational change.

**Cultural and Organizational Factors**

According to Pepper (1995), change in a system imposes a state of uncertainty. In times of uncertainty, decisions must be made. A decision is the outcome of reasoning that evolves from problem solving and conflict management. Decisions become a problem when the decision must be made in the face of a disagreement about alternatives. In turn, the problem becomes a conflict when the disagreement is between interdependent individuals or organizational units who must choose between incompatible alternatives.

In a loosely coupled system, weak ties between units often cause individuals within different units to develop a myopic view of reality, which frequently leads to erroneous presumptions about other units. Shoemaker (1998) maintains that many inaccurate presumptions are a product of the inherent differences between units in terms of goals, roles, objectives, workload, and power. For instance, faculty members usually
have lifelong career goals, whereas administrators often have one to five year goals; both faculty and administrators have professional status, but the faculty is guided more by personal discretion and tradition; faculty objectives are aligned with their career goals and, as such, are based on an extended timeline, whereas administrators’ objectives are much more immediate and tied to yearly goals for marketing, enrollment, and income as positioned against cost; faculty work long hours and are subject to intermittent times of high pressure, yet have long vacations, while administrators experience a more generalized year-round pressure and have limited time off.

When viewing each other, faculty and administrators often see a picture that is skewed by their own perspective, which frequently leads them to hold inaccurate perceptions about the other group. Commonly, conflicting perceptions among individuals and between institutional units are the source of resistance to change. Kotter (1985) called these conflicting perceptions “structural conflicts”; a byproduct of an organizational structure that is composed of inherently conflicting units. Shoemaker (1998) noted that in a general way, both administrators and faculty perceive the other as having more power than they hold themselves. Birnbaum (1988) observed that administrators, except at the highest levels (e.g., president, vice presidents, provost, deans etc.), are generally perceived to have lower status than faculty.

Presumption of logic is the way in which individuals attempt to bridge weak connections among events, and compensate for weak communicative structures. Presumptions of logic present a barrier to the open communication and conflict resolution that are necessary to enact change. When engaging in presumptions of logic, people do
not actually see causal relationships: they infer them. The inference of relationships helps
the person to make sense of the situation (Weick, 2001). Weick, Gilfillan, and Keith
(1973) call this relationship the logic of confidence, which they contend acts in much the
same way as a self-fulfilling prophecy: presumptions fill gaps that exist in a loosely
coupled system and often create reality. Change requires that presumptions be
articulated, and the ties constructed from presumptions be carefully examined.

Attitudes play a critical role in the implementation of change. According to
Morrish (1976) an attitude of resistance is a natural reaction that enables people to
maintain stability in times of great change. Senge (1990) wrote:

Resistance to change is neither capricious nor mysterious. It almost always arises
from threats to traditional norms and ways of doing things….Rather than pushing
harder to overcome resistance to change, artful leaders discern the source of the
resistance. They focus directly on the implicit norms and power relationships
within which norms are embedded (p. 88).

The inherent structural and communication conflicts that exist in higher education
make it difficult to expose sources of resistance, which increases the difficulties of
change. Further, strategies for inducing change are highly dependent on feedback (Block,
1981), which in a loosely coupled organization is generally minimal, unavailable,
meaningless, or discredited (Weick, 2001).

Measuring Readiness for Change

Models of organizational readiness to change and instruments that measure
organizational readiness to change provide salient areas of focus for an institution prior to
implementing change. Determining readiness for change “…support[s] change in
organizations by getting people engaged in reality testing, that is, helping them think
empirically, with attention to specificity and clarity, and teaching them method and utility of data-based decision-making” (Patton, 1997, p.3).

Davis and Salasin (1983) developed a model (AVICTORY) to evaluate the likelihood of change in organizational settings, which is based on eight factors believed to be related to organizational readiness to change: ability, values, ideas, circumstances and timing, obligation, resistances, and yield.

Table 8 Description of the AVICTORY Factors (Seiden, 2000, p.2)

<table>
<thead>
<tr>
<th>Factors</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability</td>
<td>The capacity or resources needed to carry out change, such as staff, funds, space, and level of employee ability.</td>
</tr>
<tr>
<td>Values</td>
<td>The existing beliefs and characteristics of the program organization and its members.</td>
</tr>
<tr>
<td>Ideas</td>
<td>The pieces of information needed to solve the program issues.</td>
</tr>
<tr>
<td>Circumstances and Timing</td>
<td>Together are the prevailing environmental factors at the point of inquiry that may affect the probability of utilization or “adoption”.</td>
</tr>
<tr>
<td>Obligation</td>
<td>The perception of necessity to resolve a problem.</td>
</tr>
<tr>
<td>Resistances</td>
<td>The fears and concerns that the process will end in a negative outcome; resistance is tempered by personal involvement and knowledge related to the change.</td>
</tr>
<tr>
<td>Yield</td>
<td>In contrast to resistance, represents the perceived rewards and benefits of change.</td>
</tr>
</tbody>
</table>

Davis and Salasin’s work provides a model for organizational readiness, but does not measure readiness to change. While an extensive review of the literature produced
several unvalidated instruments that claim to measure the readiness for organizational change, the search did not produce a validated instrument that specifically measures the readiness for organizational change. However, Mayer (1976) translated the Davis and Salasin model into an instrument that focuses on readiness for evaluation. Mayer equates evaluation to change.

It is a common observation that organizations differ in how resistant or responsive they are to change, in their attitudes toward evaluation, in the resources they’re willing to commit to an evaluative study, and in other factors thought important to the change process. If organizations differ in these important respects then perhaps…we could learn in advance just where a particular organization stood, and in what areas it could work to help itself bring about acceptable and accepted change (Mayer, 1976, p. 1).

Studer (1978), who conducted a validity study of Mayer’s instrument, maintains that the term “readiness for change” may be used interchangeably with an organization’s willingness to undertake an evaluation effort. There is a considerable body of literature that associates evaluation readiness with readiness for change (e.g., Preskill, 1991; Preskill, & Caracelli, 1997; Weiss, 1997; Wholey, 1979, 1983).

Seiden (2000) extended the works of Davis and Salasin, and Mayer, and produced a validated assessment instrument to diagnose the organizational context prior to engaging in an evaluation. Seiden’s instrument (2000), The Organizational Readiness for Evaluation Survey Instrument (ORE), identifies and measures organizational and program factors that predict readiness for change. Characteristics of the measurable factors include:

- Freedom to experiment
- Risk taking behaviors
Readiness for evaluation/change instruments require that the organizational units that are affected by change be involved from the inception to the end of the process (Patton, 1997), and in doing so, promote close, forthright communication by openly establishing the existing assumptions, values, and beliefs of those involved in the change process (Seiden, 2000). Examining the readiness of an institution for change facilitates awareness among institutional members of the need for change and the individual roles that are important in effecting change. According to Moravec (1995), this process helps to reduce levels of resistance and build organizational commitment to change.

Trust as a Factor of Change

Interpersonal cooperative behavior within an organization is a critical determinant in organizational change. According to Golembiewski and McConkie (1975), no single variable affects interpersonal behavior more profoundly than trust. This section examines trust by first considering the meaning of trust, next discussing the context of trust, and finally examining trust enhancing behaviors and the significance of measuring trust.

Trust is a term that is often used throughout the literature with great variation in
its definition. Gabarro (1978) describes trust as the perception of one member of an organization that another member or group of members is dependable and consistent in thought, judgment and character. Burt and Knez (1996) define trust as “…committing to an exchange before you know how the other person will reciprocate” (p. 69). Preiss, Goldman, & Nagel (1996) maintain that trusting relationships depend upon trustworthy behavior: “To be trustworthy is to behave in a predictable fashion, and to do what you say you will do when you say you will do it” (p.169). According to Albrecht and Bach (1997), trust is rooted in judgments about the stability of another’s character (e.g., integrity, morality, motives, intentions, consistency of attitudes and behavior, openness, and discreteness), level of consistent competence (e.g., skills, knowledge, and experience), and reliable pattern of judgment (e.g., the ability to make good decisions in work and behavior). Kramer, Hanna, Su, & Wei (2001) maintain that trust is embedded in accepted norms and values. Fukuyama (1995) contends that, “Trust arises when a community shares a set of moral values in such a way as to create expectations of regular and honest behavior” (p.69). Thus, trust is not an absolute value, but rather a cultural variable that is contingent upon a set of shared assumptions, beliefs, and expectations.

Independent of the context, all individuals engaging in trust behavior face a situation of vulnerability (Zand, 1972), risk (Currall, 1990), and expectations of the other person’s trustworthy motivation, and competence (Pearce, 1974). This provides a situation of both opportunity and liability. Opportunities arise from the perceived gains of trusting and liability from the costs associated with misplaced trust. From this
perspective, trust involves a more or less conscious decision to expose oneself to risk in pursuit of palpable advantage.

Trust is relevant when considering change in higher education since trusting relationships are imperative for the long-term effectiveness of any organization (Culbert, & McDonough, 1985). Intra-institutional trust is a necessary component in the facilitation of individual (Boyle, & Bonacich, 1970) and collective cooperation (Blake, & Mouton, 1985; Dawes, 1980; Edney, 1980; Kramer, & Brewer, 1984). Further, the lack of trust exacerbates communication problems that are inherent in the loosely coupled organizational structure of higher education, since distrust, itself, poses a significant obstacle to accurate communication (Mellinger, 1956).

A considerable body of research centers on organizational social networks and communicative processes in the emergence and maintenance of institutional trust (e.g., Burt & Knez, 1996; Granovetter, 1985; Powell, 1990; Putnam, 1993). Trust is essential to effective collaborative efforts that require individuals to share relevant and useful information with others in the group (Bonacich, & Schneider, 1992), demonstrate responsible restraint when using valuable but limited resources (Tyler, & Degoe, 1995), and contribute a fair share of time and attention toward the group goals (Murnighan, Kim, & Metzger, 1994).

A significant body of empirical data suggests that development of trust is a history-dependent process (Lindskold, 1978; Rotter, 1980). In a trust situation between two individuals, the history of the relationship influences decisions for both parties regarding what constitutes a reasonable level of expectation, and the prediction of
perceived benefits and risks. Based on prior exchanges and transactions, each person can judge the relative trustworthiness of the other using information from a relatively fixed or bounded history. In a group situation, the relevant history of the others is often incomplete or missing, which complicates an individual’s decision to trust (Kramer et al., 2001).

In a group context, each group member must decide whether to engage in trusting behavior toward the collective as a whole. Kelley (1979) contends that the decision of an individual to trust or distrust in a collective context is based on the salient characteristics of the situation, and the processes by which an individual subjectively interprets an objective reality.

Three specific areas that influence an individual’s subjective interpretation of an objective reality, (a) expectation and risk calculation; (b) factors involved in willingness to engage in trusting behavior; (c) rationales for engaging in trusting behaviors, are discussed below.

Expectation and risk calculation in collective trust situations is a complex process. The subjective interpretation of an objective reality may be based on cognitive transformations, and/or motivational transformations. Transformations are the alterations an individual makes to an objective reality when he or she views and interprets (i.e., transforms) it through a subjective lens. Both cognitive and motivational transformations influence individuals’ expectations and calculations of the benefits and risks that are likely to result from their decision to trust (Kramer et al., 2001).
Cognitive transformations are associated with the effects of categorization on social perception and judgment. (Brewer, 1979) demonstrated that individuals tend to perceive members of their own social group in relatively positive terms, viewing in-group members as more cooperative, more honest, and trustworthier than members of other groups. Tajfel (1969) established that social categorization magnifies perceived similarity among members in the same social category. Presumptions that others in the group perceive a given trust dilemma in like terms and will act in a similar fashion result in an enhanced sense of in-group similarity. Perceived similarity tends to reduce the perceived risk of being the only person thinking and acting in collective terms (Kramer et al., 2001). Brewer (1981) stated:

Common membership in a salient social category can serve as a rule for defining the boundaries of low-risk interpersonal trust that bypasses the need for personal knowledge and the costs of negotiating reciprocity with individual others. As a consequence of shifting from the personal level to the social group level of identity, the individual can adopt a sort of “depersonalized trust” based on category membership alone. (p.356)

Common membership has particular significance in higher education, which has discretely defined units (i.e., faculty, staff, administration) and relatively fixed boundaries. Kramer et al. (2001) argue that the willingness of individuals to engage in collective trust behavior is associated with the relevance and strength of their association with the group. Turner (1987) noted that identification with a group tends to shift an individual’s perception of self from that of a unique identity to that of an “interchangeable exemplar of some social category” (p.253).
Motivational transformations address intangible reasons that may prompt an individual to engage in collective trust behavior. Behavior in interdependent situations affects both materially tangible outcomes and a variety of less tangible outcomes. Interdependence dilemmas provide a setting in which an individual may publicly display valued interpersonal orientations and behavioral tendencies (Kelley, 1979), signal socially important values to others within the group (Goffman, 1959), affirm the value that others associate with membership in the group (Lind, & Tyler, 1988), and express to other group members the importance they attach to preservation of the collective trust (Kramer et al., 2001). Therefore, an examination of the decision to trust in collective contexts requires an account of both the obvious material benefits as well as the less obvious motives of such behavior.

Engagement in collective trust behaviors involves several factors. Kramer et al. (2001) postulated that individuals’ willingness to expose themselves to the risk involved in trust behavior is based on these three distinct types of expectations (a) reciprocity; (b) perception of efficacy; and (c) hedonic reinforcement. Each of these expectations is considered in the following discussion.

Expectations of reciprocity reflect an individual’s belief that fellow group members will reciprocate trust (Brann, & Foddy, 1988; Messick, Wilke, Brewer, Kramer, Zemke, & Lui, 1983). However, believing that one’s own actions will be reciprocated does not provide sufficient justification to trust in collective contexts. Gambetta (1988) contends that it is equally important for an individual to believe that others trust him or her. According to Kramer et al. (2001), reciprocal expectations make up a “fragile
cognitive chain linking perceptions of own and others’ actions, a chain that may tip the collective towards trust” (p. 184).

Perceptions of efficacy reflect an individual’s beliefs regarding the anticipated effects one’s actions will have on the outcome of the situation, and on the other members of the group (Kaufman, & Kerr, 1993; Kerr, 1992). The anticipated effects of one’s action on the situation can be characterized as a form of causal efficacy (e.g., a presumption that refraining from driving my car unnecessarily during an oil shortage will help alleviate the effects of the shortage rather than be an inconsequential act). If one does not anticipate that his or her actions will affect the ultimate outcome of the situation, that individual is less likely to engage in collective trust behavior.

Hedonic expectations relate to the pleasurable benefits from engaging in acts of collective trust and are purely related to personal satisfaction. The underlying motivation of hedonic expectations in a collective trust situation may be rooted in either an underlying pro-social, principled concern for the group, or an overriding need to avoid unpleasant feelings of guilt and fear (Kramer et al, 2001).

According to March (1994), the decision to trust in collective contexts is about identity and image. Generally, individuals care about their standing in social groups, and place high value how the decision to trust may enhance their image within the group (Lind & Tyler, 1988; Tyler, 1993; Tyler & Degoey, 1995). An individual’s prospect of enhanced social standing and elevated image within the group constrains more self-serving impulses. Batson (1994) contends that for some individuals the decision to trust
is based on an individual’s feeling of responsibility to protect cherished group norms and values.

Kramer et al. (2001) suggest that there are several distinct rationales for engaging in collective trust behaviors which they categorize as (a) reciprocity-based trust; (b) elicitative trust; (c) compensatory trust; and (d) noncontingent or moralistic trust. The following will provide overview of each rationale in sequence.

Reciprocity based trust is the simple logic that one engages in trust behavior because he or she assumes that the other party is likely to do the same. Basing trust on this premise is a type of calculative trust (Williamson, 1993).

Elicitative trust is based on an individual’s belief that by engaging in acts of trust, he or she will be able to induce others to do the same. Trusting actions based on this rationale are linked to the individual’s perception of personal efficacy. Elicitative trust is used as a rationale for trusting in situations where initial expectations of reciprocity are low but perceptions of personal influence are high.

Compensatory trust is predicated on the individual recognizing that, while it is not likely that all of the group members will engage in the required behavior, the solution to many collective action problems requires only a critical mass of cooperative members. Kramer et al. (2001) contend that this is a pragmatic approach to trust and is based on a sense of self-interest. Individuals do not forsake their own self-interests but rather act on the perception that a tight coupling exists between their interests and the interests of the group. Boulding (1988) addressed this when he stated:

A very important dynamic in the building up of community is what I have called the “sacrifice trap.” Once people are coerced, or even better, persuaded, into
making sacrifices, their identity becomes bound up with the community organization for which the sacrifices were made. Admitting to one’s self that one’s sacrifices were in vain is a deep threat to identity and is always sharply resisted. (p.288)

Moralistic trust is a rationale that is motivated by an individual’s personal value system. It is based on a sense of moral rightness and is not contingent upon others’ behaviors. Moralistic trust is not based on calculations of risk and benefits, but rather on general ethical convictions and intrinsic values.

Kahn and Kramer (1990) contend that the emergence and maintenance of trust in group situations is positively linked to reinforcing cycles of action-reaction among interdependent participants. Kramer et al. (2001) conclude that because reciprocal actions of trust tend to breed trust, and distrust tend to breed distrust, trust or distrust becomes institutionalized over time. Zand (1981) noted that: low trust drives out high trust; building trust is a slow process; and trust can be destroyed by a single event as well as by a win/lose mentality. He contended that trust is as much a communication issue as it is an attitudinal issue, since it takes effective communication to be able to clearly signal intentions and expectations. The individual and group can signal trusting intentions through both verbal and non-verbal communicative processes and behaviors. Specific trust-enhancing behaviors are considered in the following sub-section.

**Trust Enhancing Behaviors and the Significance of Their Measurement.**

Trusting environments evidence the following behaviors: (a) open flow of relevant information; (b) reduction of controls; (c) allowance for mutual influence; (d) communication that promotes clarification and expectations; (e) fulfillment of
expectations (De Furia, 1996; Napier, & Gershenfeld, 1999). The following discussion will first consider each behavior individually, and then address the importance of measuring trust behaviors.

Open flow of relevant information is a primary trust-enhancing behavior. Sharing information refers to communication behaviors in which individuals or groups of individuals transmit relevant and useful information to each other. Pearce (1974) reported that sharing pertinent information increases the vulnerability of the individual or group sharing the information by increasing the recipient’s power to act on the knowledge. The power of the recipient arises from the potential to use the acquired information to exploit, manipulate, or embarrass the individual who shared the information (Pearce, 1974).

Sharing information that is useful and relevant increases the perception that the sharing individual or group is trustworthy. Conversely, sharing confusing, irrelevant, or purposefully distorted information diminishes the perception that the individual or group is trustworthy (Zand, 1981). Swinth (1967) noted that trust does not occur with unilateral sharing. Mutual information sharing distributes power, which subsequently limits the risk of all participating parties ( Creed, & Miles, 1996). Organizations that support an organizational culture in which an individual can win only at the expense of others effectively blocks the sharing of relevant information and encourages distrust among organizational groups and group members (De Furia, 1997).

Reducing controls is another important trust enhancing behavior. Power rests with an individual or a group that has sanctioned authority. The power structure between
two individuals or groups changes as control changes. Reducing control refers to behaviors that reduce the process, procedures, activity, or concerns involving: (a) establishing of performance criteria; (b) performance monitoring; (c) determining the conditions under which performance is achieved; or (d) setting both positive and negative consequences of performance (De Furia, 1997).

Mutual influence is limited to situations that involve decisions that affect all parties involved. When all involved parties have approximately an equal number of opportunities to either convince the other party or make the decision for both parties they are said to have mutual influence.

Clarifying mutual expectations involves a communication process that involves explicit sharing of information about mutual performance expectations. According to De Furia (1996), the act of clarifying mutual expectations is critical in the early stages of trust building, especially with individuals who have a low propensity to trust.

Behaviors that fulfill behavioral expectations are said to meet expectations. Meeting expectations is closely related to the confidence one individual has that the other can be relied upon (Griffin, 1967), and the consistency, reliability, and predictability of the trusted person to perform in an expected manner (Butler, & Cantrell, 1984; Jenning, 1971).
Table 9  Trust Enhancing/Reducing Behaviors (adapted from De Furia, 1997)

<table>
<thead>
<tr>
<th>Trust Enhancing Behaviors</th>
<th>Trust Reducing Behaviors</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Sharing relevant and useful information</td>
<td>▪ Distorting, withholding, or concealing real motives</td>
</tr>
<tr>
<td>▪ Reducing controls</td>
<td>▪ Falsifying relevant information</td>
</tr>
<tr>
<td>▪ Allowing for mutual influence</td>
<td>▪ Attempting to control or dominate</td>
</tr>
<tr>
<td>▪ Clarifying mutual expectations</td>
<td>▪ Attempting to evade responsibility for behavior.</td>
</tr>
<tr>
<td>▪ Meeting expectations</td>
<td>▪ Obscuring, distorting, or avoiding discussion of mutual expectations</td>
</tr>
<tr>
<td></td>
<td>▪ Not meeting the trusting individual’s expectations of performance or behavior</td>
</tr>
</tbody>
</table>

Trust or lack of trust is a condition that significantly affects a wide range of organizational relationships. Trust has been conceptualized as both a behavior and a belief (Shoda, Mischel, & Wright, 1994), and has been viewed from a number of perspectives including interpersonal, intergroup, organizational, and societal (Cummings, & Bromily, 1996). Currall (1990) noted that trust takes on different dimensions depending upon the discipline (e.g., psychology, sociology, economics), which results in sparse definitional overlap. In a survey of empirical studies, Lewis and Weigert (1985) concluded that much of the empirical work on trust fails to use common working definitions of trust.

If one is to consider trust as a factor in change, the dimensions of trust must be delineated, and the context defined. An extensive search of the organizational literature produced several nonvalidated instruments to measure interpersonal trust in an
organizational context, but only three validated instruments: Currall’s *Survey of Interpersonal Trust in Work Relationships* (1990), Cummings and Bromiley’s *Organizational Trust Inventory* (OTI) (1996), and DeFuria’s *Interpersonal Trust Surveys* (1997). Interestingly, despite previous research findings to the contrary, there is considerable similarity and definitional overlap between the measured dimensions of these three instruments.

Table 10  Critical Measures of Trust Compared (Cummings, & Bromily, 1996; Currall, 1990; DeFuria, 1997)

<table>
<thead>
<tr>
<th>Currall</th>
<th>Cummings &amp; Bromiley</th>
<th>DeFuria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open and accurate communication</td>
<td>Honesty in communications</td>
<td>Sharing of relevant information</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Clarifying of mutual expectations</td>
</tr>
<tr>
<td>Level of surveillance</td>
<td></td>
<td>Levels of control</td>
</tr>
<tr>
<td>Willingness to enter into informal agreements</td>
<td>Restraint in advantage-taking of another person/group</td>
<td>Existence of unwritten, mutual influence</td>
</tr>
<tr>
<td>Reliance on person/group to accomplish task</td>
<td>Good faith efforts to meet commitments</td>
<td>Meeting expectations</td>
</tr>
</tbody>
</table>

As is true with the measurement of readiness for change, specific dimensions of trust offer critical areas of focus for institutional assessment prior to and during the process of change.

**Agility, Trust, and Readiness for Change**

Trust is an overriding tenet of agility. It is continually mentioned in discussions of agility, and Broskoske (2000) explicates the distributed effects of trust throughout his
discussion on the dimensions of agility. While the literature gives many concrete examples of trust in agile environments, it does delineate specific, measurable trust behaviors.

On closer examination, when the dimensions of trust that are defined by Curral (1990), Cummings and Bromiley (1996), and DeFuria (1997) are compared to the dimensions of agility, we find considerable overlap.

<table>
<thead>
<tr>
<th>Table 11 The Dimensions of Agility and Trust Compared</th>
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<tbody>
<tr>
<td><strong>Dimensions of Agility</strong></td>
</tr>
<tr>
<td>(Cummings &amp; Bromiley, 1996; Currall, 1990; &amp; De Furia, 1997)</td>
</tr>
<tr>
<td>Trust</td>
</tr>
<tr>
<td>Freeflow of Information</td>
</tr>
<tr>
<td>Collaboration</td>
</tr>
<tr>
<td>Value and respect in interpersonal relationships</td>
</tr>
<tr>
<td>Accountability</td>
</tr>
<tr>
<td>Equity rewards</td>
</tr>
<tr>
<td>Flexibility</td>
</tr>
<tr>
<td>Rapid Response to change</td>
</tr>
<tr>
<td>Globalization</td>
</tr>
</tbody>
</table>
From this comparison, it appears that dimensions of agility can be divided into two categories: (a) trust elements that appear to be directly related to measurable interpersonal trust factors, and (b) structure elements that focus on the structural organization of an institution.

A comparison of the measurable factors of readiness for change as delineated by Seiden (2000) and the dimensions of agility suggests that Seiden’s measurable factors can also be sub-categorized into comparable trust and structural elements.

Table 12 Dimensions of Trust and Readiness Compared.

<table>
<thead>
<tr>
<th></th>
<th>Dimensions of Agility</th>
<th>Dimensions of Readiness (Seiden, 2000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trust</td>
<td>▪ Trust</td>
<td>▪ Sharing relevant information</td>
</tr>
<tr>
<td></td>
<td>▪ Freeflow of Information</td>
<td>▪ Collaboration</td>
</tr>
<tr>
<td></td>
<td>▪ Collaboration</td>
<td>▪ Distributed decision-making</td>
</tr>
<tr>
<td></td>
<td>▪ Value and respect in interpersonal relationships</td>
<td>▪ Freedom to experiment</td>
</tr>
<tr>
<td></td>
<td>▪ Accountability</td>
<td>▪ Risk-taking behavior</td>
</tr>
<tr>
<td></td>
<td>▪ Equitable rewards</td>
<td>▪ Reliance on others</td>
</tr>
<tr>
<td></td>
<td>▪ Rapid Response to change</td>
<td>▪ Rewards system</td>
</tr>
<tr>
<td></td>
<td>▪ Globalization</td>
<td>▫ Low degree of bureaucracy</td>
</tr>
<tr>
<td></td>
<td>▪ Flexibility</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Comfortable challenging the status quo</td>
<td></td>
</tr>
<tr>
<td></td>
<td>▪ Openness to change</td>
<td></td>
</tr>
</tbody>
</table>
Agility, Trust, and Readiness for Change in Higher Education

Agility presents a framework that is compatible with the new competitive environment, yet requires significant change from traditional ways of approaching both business and education. It appears that many of the underlying tenets of agility are consistent with the dimensions of interpersonal trust and readiness for change.

Both agility and readiness for change stress the need for open and honest communication. Research has demonstrated that social networks and communicative processes play a critical role in the development and maintenance of interpersonal trust (e.g., Burt & Knez, 1996; Granovetter, 1985; Powell, 1990; Putnam, 1993). Open and honest communication, the sharing of relevant information, and the clarifying of mutual expectations are necessary for the formation and maintenance of trust (Cummings, & Bromiley, 1996; Currall, 1990; De Furia, 1997). The loose coupling and hierarchical structure of higher education pose significant barriers to open communicative processes.

At the core, agility requires collaboration and a pervasive attitude of value and respect between and among individuals and groups within an organization. Interpersonal cooperative behavior and respect have been shown to be critical determinants in organizational change (Golembiewski, & McConkie, 1975; Seiden, 2000). Trust has also been shown to be a critical element in the development of cooperative interpersonal behavior (Bonacich, & Schneider, 1992; Golembiewski, & McConkie, 1975; Tyler, & Degoe, 1995; Murnighan, Kim, & Metzger, 1994). The emergence and maintenance of
trust in group situations is highly dependent on cooperative action and interaction among interdependent participants (Kahn, & Kramer, 1990). The willingness to interact without formal negotiations, refraining from taking advantage of another individual or group, and evidence of underlying mutual influence are all characteristics of trust. The loosely coupled organizational structure of higher education along with its formal boundaries and division of duties between units serve to strengthen the independence of institutional units rather than foster cooperation and interdependent action; thus deterring the need for cooperation, the emergence of trust, and attitudes amenable to systemic change.

Low levels of surveillance/ supervision are characteristic of agile, as well as change-ready, trusting environments; interestingly, they are also characteristic of a loosely coupled organizational structure. There is, however, a difference, and the difference lies in the overall environmental context. In agile, change-ready, and trusting environments, low levels of surveillance and supervision are the outgrowth of collaboration, interdependent communication and interpersonal dependencies, and high levels of interpersonal reliability. In loosely coupled organizations (i.e., higher education), low levels of surveillance and supervisions are outgrowths of autonomy and independence.

Summary

The post-Cold War system has created a set of global realities that are discontinuous with much that has gone before; an increasingly integrated world, one that requires new ways of thinking and working. The economy has shifted from mass-production to customization; from low-information to high-information content. In this new economy, knowledge is a core economic resource. In the current knowledge-based
economy, colleges and universities can no longer assume privileged status or a monopolistic hold on education. Knowledge has become big business, and corporate education and training, and for-profit, degree-granting institutions pose a significant long-term threat to traditional higher education.

A majority of colleges and universities have initiated computer-based distance education courses and programs in response to external social factors and outside competition. These programs are generally an overlay to existing higher educational structures and approaches; thus, distance education in higher education tends to be a variation in delivery mode, rather than an inherently different way of approaching business.

For-profit institutions are business-based, and function outside many of the constraints that exist in higher education. Much of the for-profits’ success has been credited to their adoption of agile approaches that focus on rapid response to market demands, and fluid adaptability to a constantly changing environment. Conversely, the approaches of higher education are diametrically opposed to agility; they are structured for constancy and assume market dominance. Many fear that if higher education fails to begin operating in a manner that is consistent with an agile competitive environment, colleges and universities will lose significant portions of their market share to corporate universities and for-profit institutions. This vitiated economic position could erode the integrity and quality of the academic enterprise.

A cultural approach to organization defines organizational structure as the communicative relationships established by the membership. Education is characterized
by a loosely coupled structure in which communication and feedback loops are notably poor. The low degree of interlocked behavior between the units of a loosely coupled system often result in widely varying perspectives of the organizational reality. High variation among institutional members’ assumptions, beliefs, and values often result in lower levels of intra-organizational trust and higher levels of resistance to change.

Agile distance education programs require a fundamentally new way of approaching education and, thus, call into question many of the core tenets of traditional higher education (Broskoske, 2000). While this magnitude of change is daunting, the situation in higher education is further complicated by organizational and communicative structures that restrict information flow, isolate internal units, and have left many in the educational community unaware of the tremendous impact outside forces have on the institutional reality. There also exists considerable disparity among higher education members’ perceptions of distance education as well as broad variation in their assumptions, beliefs, and values regarding appropriate implementation of distance education programs (e.g., “Florida Gulf Coast”, 1998).

Considerable research has addressed the cultural aspects of organizational change, readiness to change, and interpersonal trust. Close examination of the literature reveals that each of these areas closely interrelates with the trust dimensions of agility. While there has been extensive research in each area, to date, there has been no examination of their interrelationship with agile practices in higher education.

Traditional colleges and universities instituting agile distance education programs will require substantive change in many of their existing organizational practices and
structures (Broskoske, 2000, Richter & Godbey, 1995). The literature suggests that it makes fiscal and organizational sense to determine the readiness of an organization to change prior to attempts to implement change. If agile distance education practices are the goal, then the interrelationship among trust, readiness to change, and the trust dimensions of agility may offer valuable insight into problematic issues prior to program implementation. Identification and analysis of institutional factors that directly relate to the changes required by an agile distance learning program, prior to the implementation of the program, may prove to be a determining step in its ultimate success or failure.
CHAPTER 3: METHOD

The purpose of this study was to design an evaluation tool to be used by post-secondary institutions to gauge their readiness to implement agile change with respect to the design and implementation of their distance education programs. Specifically, this study addressed the following research questions:

1. How do the perceptions held by the administration, faculty, and staff of an institution of higher education relative to the presence of agility within the total institution compare with their perceptions of the presence of agility within the distance education program, when the dimensions of agility are defined as (a) free flow of information, (b) collaboration, (c) value and respect in interpersonal relationships, (d) accountability, and (e) equitable reward systems?

2. Is there a relationship between two trust surveys [i.e., Organizational Trust Survey (De Furia, 1997); Organizational Trust Inventory-Short Form (Cummings and Bromiley, 1996)] and Seiden's (2000) Organizational Readiness for Evaluation Survey?

3. Are the responses from the open-ended statements that explicitly relate to (a) free flow of information, (b) collaboration, (c) value and respect in interpersonal relationships, (d) accountability, and (e) equitable reward systems consistent with the levels of organizational agility indicated in DeFuria, and Seiden's surveys, and Cummings and Bromiley's inventory?
4. Does the information gleaned from DeFuria, Cummings and Bromiley, and Seiden's instruments, and five open-ended statements that explicitly relate to (a) free flow of information, (b) collaboration, (c) value and respect in interpersonal relationships, (d) accountability, and (e) equitable reward systems present adequate data to construct a useful evaluation of an institution's readiness to implement agile change in their distance education program?

**Qualitative Tradition of Inquiry**

This study used a case study approach within the qualitative design. The criterion standard was consistent with the paradigm of organizational agility. This study attempted to provide the first step in developing a comprehensive process for examining those characteristics of an organization’s culture that are critical to planning for, and benchmarking of agile change.

The intent and purpose of this study are consistent with case study research. Case study research is commonly used in education to identify and explain specific issues and problems of practice (Merriam, 1998). It is the preferred strategy when explanatory questions are being posed, when the investigator has little control over events, and when the focus is on a contemporary phenomenon within some real-life context (Yin, 1994). This approach is consistent with a deliberate inclusion of contextual conditions.

Guba and Lincoln (1981) maintain that a case study is the best approach for reporting evaluations because it provides for thick descriptions, is grounded in theory, is holistic and reflects real-life situations, and can communicate tacit knowledge. Above all, this type of case study considers "…information to produce judgment. Judging is the
final and ultimate act of evaluation" (p.375). Kenny and Grotelueschen (1980) contend that the case study is appropriate when the objective of the study is to develop a better understanding of the dynamics of a program, and when it is" important to be responsive, and to convey a holistic and dynamically rich account of an educational program" (p.5). Case studies have an important place in evaluation research (Guba, & Lincoln, 1981; Patton, 1980, 1990; Yin 1993). According to Yin (1994), the most important application of the case study in evaluative research is to provide explanations that link program implementation with program effects.

**Site and Participant Selection**

**Site Selection**

The site used for this study was a small sized, four year, liberal arts, Catholic college in Northeastern Pennsylvania. This site was chosen because (1) it has an established distance-learning program; (2) anecdotal evidence suggests that there is a good relationship between and among the faculty, staff, and administrators; (3) the size of the institution (2,200 full-time students) lends itself to conducting a manageable in-depth study; and (4) the researcher had convenient access to the institution.

**Participants**

Letters requesting participation (See Appendix D) were sent via campus mail to all 310 members of the institution’s faculty, academic-side staff, and administration. Of the 310 requests a total of 62 individuals chose to respond. The demographic information collected indicated that of the 62 respondents, 25 were administrators, 29 were faculty
members, 8 were staff members, 34 were male, and 28 were female. The respondents had served the college for an average of 9.98 years.

**Data Collection and Analysis for Each Research Question**

**Instruments**

This study employed three validated quantitative measures: (1) Seiden's (2000) *Organizational Readiness for Evaluation Survey*, (2) DeFuria's (1997) *Organizational Trust Survey*, and (3) Cummings and Bromiley (1996) *Organizational Trust Inventory-Short Form*. The study also included the use of open-ended statements that required a short written response from participants (See Appendix C). The data collection procedures for each of the four research questions are described in the following sections.

**Data Collection Procedures.**

*Phase 1:* On March 18, 2002 the researcher sent an initial letter requesting participation in the study to all 310 members of the administration, faculty, and academic-side staff of the institution requesting volunteers for the study. A follow-up letter was sent to all 310 employees on April 2, 2002. (See Appendix D). In addition to a description of the study, participants were informed that (a) participation was strictly voluntary; (b) the decision to participate or not participate would not affect the individual's relations with the college; (c) all responses would be kept strictly confidential; (d) all data would be reported in aggregate only, and the reported data will not include any information that would make it possible to identify individual responses; and (e) the participant could choose to discontinue his or her participation at any time.
Phase 2: All surveys (i.e., *Organizational Readiness for Evaluation Survey, Organizational Trust Survey*, and *Organization Trust Inventory-Short Form*) reside on a secure server, which allowed participants to answer all surveys from their own computer, or any computer of their choosing. To facilitate this type of data collection the researcher designed an online data collection tool that:

- Required user validation
- Eliminated the possibility of duplicate entries by the same participant
- Provided the researcher with participant survey completion information
- Provided the researcher with demographic information (i.e., organizational unit of employment, gender, whether or not the participant served in a supervisory capacity, and the number of years of service to the institution).

Once the participants accessed the site using a validation number, and established a username and password, they were allowed into the survey areas. All data provided by the respondents was automatically transferred to a common database where it could be sorted by survey response and demographic information. No personal identifiers were attached to any respondent’s information, and only the researcher had access to the data, thus insuring complete confidentiality.

Phase 3. The participants completed online, Seiden’s Organizational Readiness for Evaluation Survey, DeFuria's Organizational Trust Survey, Cummings and Bromiley's Organizational Trust Inventory-Short Form, and five open-ended statements.
Procedural Protocol

The specific instructions for procedures were sent to each participant with the letter of request for participation, which appears in Appendix D.
In order to establish the validity of each instrument’s relationship to the dimensions of agility, the researcher sought the guidance of an expert panel. The panel consisted of:

Dr. Roger Nagel, deputy director of the Iacocca Institute, creator of the 21st Century Manufacturing Enterprise Strategy for the United States, and internationally recognized expert on competitiveness and agility.

Dr. George White, associate professor and coordinator of the Educational Leadership Program at Lehigh University, director of the Agile Learning Community Initiative, and author and consultant on issues associated with organizational development and change in education.

Dr. Galen Godbey an author on agile change in education, and executive director of CAPE (Community of Agile Partners in Education).

Dr. Ray Wells, consultant to industry and education on agile change processes.

Dr. Stephen Broskoske, assistant professor of education College Misericordia, author of a prescriptive model of agile distance education for higher education, and lecturer on agility in higher education and K-12.

**Expert Panel Process**

To establish content validity, on January 22, 2002, the researcher sent materials to each member of the expert panel requesting that they categorize each statement of the *Organizational Trust Survey, Organizational Readiness for Evaluation Survey,* and
Organizational *Trust Inventory* by the dimensions of agility under study as well as additional dimensions that are not currently under study.

A conference call, attended by all experts on the panel, was held on February 20, 2002 during which panel members discussed their categorizations. After the audio conference, all panel members faxed the researcher copies of their final categorizations. The researcher then compiled the results and sent them back to the expert panel for review. The panel was asked to review the compilation of data, and reconsider any items that did not receive either three or more endorsements for a specific category.

The researcher contacted each member of the panel and spoke with them individually. After discussion with each panel member, the researcher eliminated any statement that did not receive three or more endorsements for inclusion into an agility category. She then related the individual statement categorizations made by the expert panel to the original factors delineated in each survey. This iteration of the data was then sent to the panel and the panel members came to consensus regarding the categorization of factors across the dimensions of agility. The panel concluded that each of the three surveys was highly related to the dimensions of agility. Table 13 lists the panel’s determinations of the relationship between individual survey factors and the dimension(s) of agility under study.
### Table 13 Factor Descriptions for OTS, OTI-SF and ORES

<table>
<thead>
<tr>
<th>Factors</th>
<th>Description</th>
<th>Dimensions of Agility</th>
</tr>
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</table>
| Learning Orientation & Leadership Support ORES | Measures the degree to which: (a) organizational members freely experiment with and are open to new ideas and concepts and to taking risk and making changes; (b) learning is encouraged and rewarded by administration; (c) value that is placed on teamwork and on incorporating multiple viewpoints into the decision-making process; and (c) changes are made based on new information. | ▪ Free-flow of information  
▪ Collaboration  
▪ Value and Respect  
▪ Accountability  
▪ Equitable Reward system |
| Collaborative Communication ORES     | Measures the degree to which: (a) information is distributed through a variety of channels in the organization; (b) how easily data can be retrieved when it is needed; and (c) organizational members work together on teams and share knowledge.                                                                                           | ▪ Free-flow of Information  
▪ Collaboration |
| Resistance to Change ORES            | Measures the degree of bureaucracy within the organization.                                                                                                                                                                                                                                                                             | ▪ Free-flow of information  
▪ Collaboration  
▪ Value and Respect |
| “Healthy Program” ORES               | Measures the degree to which employees report that they work well together, and the degree to which employees fear evaluation of the program.                                                                                                                                                                                                  | ▪ Collaboration  
▪ Accountability |
<table>
<thead>
<tr>
<th>Factors</th>
<th>Description</th>
<th>Dimensions of Agility</th>
</tr>
</thead>
</table>
| **Feared Negative Consequences** | Measures the degree to which employees feel that evaluation of the program may have new information to lend to the program, and do not fear job loss if there are negative findings. | ▪ Value and Respect  
▪ Free Flow of Information                                                                                      |
| **ORES**                      |                                                                                                                                                                                                             |                                                                                                        |
| **Expected Yield**            | Measures the employees understanding of the benefits of evaluation of clients and for boosting the reputation of the program.                                                                                | ▪ Not agility related                                                                                   |
| **ORES**                      |                                                                                                                                                                                                             |                                                                                                        |
| **Ability**                   | Measures the degree to which the employees report a degree of expertise and knowledge of evaluation and find the arguments for evaluation to be clear.                                                          | ▪ Free Flow of Information  
▪ Value and Respect                                                                                          |
| **ORES**                      |                                                                                                                                                                                                             |                                                                                                        |
| **Current Use of Data**       | Measures the ongoing manner in which program data is gathered, and is made available to other members of the institution and reported back to key stakeholders.                                                  | ▪ Free flow of Information  
▪ Value and Respect  
▪ Accountability                                                                                                 |
| **ORES**                      |                                                                                                                                                                                                             |                                                                                                        |
| **Sharing Information**       | Measures the degree to which organizational members share useful and relevant information.                                                                                                                | ▪ Free-flow of information  
▪ Collaboration                                                                                                 |
<p>| <strong>OTS</strong>                       |                                                                                                                                                                                                             |                                                                                                        |</p>
<table>
<thead>
<tr>
<th>Factors</th>
<th>Description</th>
<th>Dimensions of Agility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reducing Controls OTS</strong></td>
<td>Measures the behaviors of reducing the processes, procedures, or activities with which one individual or group (1) establishes the performance criteria or rules for others, (2) monitors the performance of another person or group, (3) adjusts the conditions under which performance is achieved, or (4) adjusts the consequences of performance.</td>
<td>- Value and respect</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Accountability</td>
</tr>
<tr>
<td><strong>Allowing for Mutual Influence OTS</strong></td>
<td>Measures decision behavior in which a decision is made that affects both parties. Mutual influence means that both parties have approximately equal numbers of occurrences of convincing the other party, or making the decision for both parties.</td>
<td>- Collaboration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Value and Respect</td>
</tr>
<tr>
<td><strong>Clarifying Mutual Expectations OTS</strong></td>
<td>Measures behaviors wherein one person clarifies what is expected of both parties in the relationship. It involves sharing information about mutual performance expectations (i.e., “If you do this then I will do that” or “If you behave in this manner, then I will reciprocate in a like manner.”).</td>
<td>- Value and respect</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Accountability</td>
</tr>
<tr>
<td><strong>Meeting Mutual Expectations OTS</strong></td>
<td>Measures behaviors in which one individual fulfills the behavioral expectations of another person.</td>
<td>- Value and respect</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Accountability</td>
</tr>
</tbody>
</table>
Factors | Description | Dimensions of Agility
---|---|---
**Keeps Commitments OTI-SF** | Measures the degree to which a party is perceived as doing what they say they will do. | ▪ Value and Respect

**Negotiates Honestly OTI-SF** | Measures the degree of openness and forthrightness and truthfulness that precedes commitments. | ▪ Free Flow of Information
▪ Respect and Value

**Avoids taking excessive advantage of situations OTI-SF** | Measures the degree of perceived fairness demonstrated by an individual or group when that individual or group is given the chance to capitalize on a situation that negatively affects the other party. | ▪ Respect & Value
▪ Equitable Rewards

**Analysis of Survey Data**

Each survey used a Likert-like scale, however, each used a different scoring range.

The *Organizational Readiness for Evaluation Survey* used a scale that ranged from 1 to 5, the *Organizational Trust Survey* used a scale that ranged from 1 to 9, and the *Organizational Trust Inventory-Short Form* used a scale that ranged from 1-7.

Descriptive statistics was used in describing the data sets. Scores were calculated as percentile scores which were used to describe and compare the various data sets (Glass and Hopkins, 1996).
Analysis by Research Question

Question 1

How do the perceptions held by the administration, faculty, and staff of an institution of higher education relative to the presence of agility within the total institution compare with their perceptions of the presence of agility within the distance education program, when the dimensions of agility are defined as (a) free flow of information, (b) collaboration, (c) value and respect in interpersonal relationships, (d) accountability, and (e) equitable reward systems?

The focus of analysis for this question was on the participants’ responses to Seiden’s Organizational Readiness for Evaluation Survey. Two levels of analysis were performed:

Level 1: Using Seiden’s Organizational Readiness for Evaluation Survey (ORES), participant's aggregate perceptions were categorized by: (a) total organization, and (b) individual organizational unit (i.e., administration, faculty, staff). A comparison of aggregate percent of possible total scores independent of agility dimensions was performed between the ORES organization factors that focus on the characteristics of the total organization (i.e., (1) learning orientation and leadership support, (2) collaborative communication, and (3) tolerance of change) and the ORES programmatic factors that focus on the distance-learning program (i.e., (1) program health, (2) absence of fear, (3) expected yield; (4) ability, and (5) current use of data).
Level 2: Using Seiden’s ORES, participant's aggregate perceptions were categorized by total organization and individual organizational unit (i.e., administration, faculty, staff). Based on the determinations of an expert panel, the programmatic and organization factors were distributed across five established trust dimensions of agility: (1) free flow of information; (2) collaboration; (3) respect/value; (4) accountability; (5) equitable rewards. The data from program factors were then compared to the data from organization factors that shared corresponding dimensions of agility. The relationship between organization and programmatic factors across the dimensions of agility is of particular concern, since it may provide insight into the extent to which agility factors on the programmatic factors are isolated or systemic.

Scoring information: Seiden’s instrument is scored using percent of total possible score (i.e., percentile) for each factor. A score at the 50th percentile is considered neutral, below the 50th percentile is increasingly negative and above the 50th percentile increasingly positive.
Seiden's description of each factor is found in Appendix C.

*Level 1 analysis:* When considering the percentile scores for all of the ORES organization factors and all of the ORES program factors independent of the dimensions of agility, the data indicated that the organization factors were perceived to be stronger than the program factors among (a) the total organization; (b) administration, and (c) faculty. When considering the data from these groupings, it appears that the institution is not well prepared for organizational change and the distance-learning program is slightly less prepared for change. Data provided by the staff, indicated a higher aggregate score for program factors than for the organization factors, which suggests that the staff perceive the distance-learning program to be slightly more ready for change than the total organization. A summary of the data findings is contained in the table below.
Table 14 Percentile Scores Independent of Agility Dimensions

<table>
<thead>
<tr>
<th>Organizational Unit</th>
<th>All Organization Factors</th>
<th>All Program Factors</th>
<th>Difference Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Organization</td>
<td>64.60</td>
<td>61.57</td>
<td>3.03</td>
</tr>
<tr>
<td>Administration</td>
<td>65.95</td>
<td>62.30</td>
<td>3.65</td>
</tr>
<tr>
<td>Faculty</td>
<td>64.05</td>
<td>60.47</td>
<td>3.58</td>
</tr>
<tr>
<td>Staff</td>
<td>61.86</td>
<td>63.09</td>
<td>-1.23</td>
</tr>
</tbody>
</table>

**Level 2 analysis:** As shown in the tables below, the level 2 analysis suggests that the distance-learning program is perceived as being slightly less agile than the institution as a whole. Analysis of the aggregate average of percent of possible total scores of the ORES organization factors and the ORES program factors compared by like dimensions of agility demonstrate that the staff perceive a closer relationship between organization agility and program agility than do the administration and faculty. Yet, all organizational units perceive the organizational agility level to be relatively low.

The largest difference between organization factors related to agility and program factors related to agility was in the accountability dimension of agility. While this was true across all groups, the difference between accountability in the organization versus accountability in the distance-learning program as perceived by staff members was approximately 56% less than by the administration and faculty combined.

Noting the difference in staff perceptions, the researcher looked at the data provided by the open-ended statements. In reviewing the responses to the open-ended
statement the researcher found that only two of the 25 administrators (approximately 8%) and two of the 29 faculty members (approximately 7%) indicated that they knew anything about the distance-learning program. Of the 2 administrators who expressed knowledge about the distance-learning program, both had positive comments, and of the 2 faculty members who indicated that they had knowledge about the distance-learning program, only one had positive comments. Four of the eight staff participants (50%) indicated knowledge about the distance-learning program, and all four made positive comments.

It is important to note that approximately 87% of the total number of participants (n=62) indicated that they did not possess sufficient knowledge to be able to respond to the open ended statements. While the data suggest that the level of agility in the distance education program is generally perceived by administration and faculty to be just slightly lower than that of the total organization, the overwhelming inability expressed by participants to respond to the open ended statements suggests that levels of agility within the distance-learning program are localized rather than systemic.

It is also important to note that only 12.9% of the total respondents were staff members, while 40.3% of the respondents were administrators and 46.7% of the respondents were faculty. It would be important to investigate the reason for such a low staff response rate to the study.
### Table 15 ORES Average Percentiles for Total Organization Distributed Across Dimensions of Agility

<table>
<thead>
<tr>
<th>Dimensions of Agility</th>
<th>Average Percentile Organization Factors</th>
<th>Average Percentile Program Factors</th>
<th>Difference Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Flow of Information</td>
<td>64.601</td>
<td>59.506</td>
<td>5.095</td>
</tr>
<tr>
<td>Collaboration</td>
<td>64.601</td>
<td>60.978</td>
<td>3.623</td>
</tr>
<tr>
<td>Value and Respect in Interpersonal Relationships</td>
<td>63.332</td>
<td>60.978</td>
<td>2.354</td>
</tr>
<tr>
<td>Accountability</td>
<td>73.314</td>
<td>61.637</td>
<td>11.677</td>
</tr>
<tr>
<td>Equitable Rewards</td>
<td>73.314</td>
<td>No corresponding factors</td>
<td></td>
</tr>
</tbody>
</table>

### Table 16 ORES Average Percentiles for Administration Distributed Across Dimensions of Agility

<table>
<thead>
<tr>
<th>Dimensions of Agility</th>
<th>Average Percentile Organization Factors</th>
<th>Average of Program Factors</th>
<th>Difference Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Flow of Information</td>
<td>65.947</td>
<td>59.697</td>
<td>6.25</td>
</tr>
<tr>
<td>Collaboration</td>
<td>65.947</td>
<td>61.400</td>
<td>4.547</td>
</tr>
<tr>
<td>Value and Respect in Interpersonal Relationships</td>
<td>64.820</td>
<td>61.400</td>
<td>3.42</td>
</tr>
<tr>
<td>Accountability</td>
<td>76.04</td>
<td>62.285</td>
<td>13.755</td>
</tr>
<tr>
<td>Equitable Rewards</td>
<td>73.314</td>
<td>No corresponding factors</td>
<td></td>
</tr>
</tbody>
</table>
### Table 17 ORES Average Percentiles for Faculty Distributed Across Dimensions of Agility

<table>
<thead>
<tr>
<th>Dimensions of Agility</th>
<th>Average Percentile Organization Factors</th>
<th>Average of Program Factors</th>
<th>Difference Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Flow of Information</td>
<td>64.050</td>
<td>58.860</td>
<td>5.19</td>
</tr>
<tr>
<td>Collaboration</td>
<td>64.050</td>
<td>60.0</td>
<td>4.05</td>
</tr>
<tr>
<td>Value and Respect in Interpersonal Relationships</td>
<td>62.337</td>
<td>60.0</td>
<td>2.337</td>
</tr>
<tr>
<td>Accountability</td>
<td>71.625</td>
<td>60.1755</td>
<td>11.4495</td>
</tr>
<tr>
<td>Equitable Rewards</td>
<td>71.625</td>
<td>No corresponding factors</td>
<td></td>
</tr>
</tbody>
</table>

### Table 18 ORES Average Percentiles for Staff Distributed Across Dimensions of Agility

<table>
<thead>
<tr>
<th>Dimensions of Agility</th>
<th>Average Percentile Organization Factors</th>
<th>Average Percentile Program Factors</th>
<th>Difference Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Flow of Information</td>
<td>61.854</td>
<td>61.760</td>
<td>.094</td>
</tr>
<tr>
<td>Collaboration</td>
<td>61.855</td>
<td>62.667</td>
<td>-.812</td>
</tr>
<tr>
<td>Value and Respect in Interpersonal Relationships</td>
<td>61.449</td>
<td>62.667</td>
<td>-1.212</td>
</tr>
<tr>
<td>Accountability</td>
<td>69.565</td>
<td>64.115</td>
<td>5.45</td>
</tr>
<tr>
<td>Equitable Rewards</td>
<td>69.565</td>
<td>No corresponding factors</td>
<td></td>
</tr>
</tbody>
</table>

### Question 2

Is there a relationship between two trust surveys, specifically DeFuria's (1997) *Organizational Trust Survey* and Cummings and Bromiley's (1996) *Organizational Trust*
The focus of analysis was on comparing the results of DeFuria's *Organizational Trust Survey*, and Cummings and Bromiley's *Organizational Trust Inventory* to the results of Seiden's *Organizational Readiness for Evaluation Survey*. Research suggests that effective and sustained organizational change is highly dependent upon the presence of organizational and interpersonal trust within the institution (Bies and Tripp, 1996; Bromiley and Cummings, 1995; DeFuria, 1997). DeFuria, and Cummings and Bromiley's instruments measure various interpersonal and institutional trust factors. Seiden’s instrument was originally designed to measure the readiness of an institution for change.

The expert panel determined that factors from all three instruments were consistent with various dimensions of agility (see Table 19). The purpose of this analysis was to determine if the measurements across instruments were similar.
Table 19 Expert Panel's Categorization of Instrument Factors Across the Dimensions of Agility

<table>
<thead>
<tr>
<th>Agility</th>
<th>OTS</th>
<th>OTI-SF</th>
<th>ORES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Free Flow of Information</strong></td>
<td>• Sharing information</td>
<td>• Negotiates honestly</td>
<td>• Learning/Leadership p</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Collaborative communication</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Resistance to change</td>
</tr>
<tr>
<td><strong>Collaboration</strong></td>
<td>• Sharing information</td>
<td></td>
<td>• Learning/Leadership p</td>
</tr>
<tr>
<td></td>
<td>• Allowing mutual influence</td>
<td></td>
<td>• Collaborative communication</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Resistance to change</td>
</tr>
<tr>
<td><strong>Value and Respect of Individuals</strong></td>
<td>• Reducing controls</td>
<td>• Keeps commitments</td>
<td>• Learning/Leadership p</td>
</tr>
<tr>
<td></td>
<td>• Allowing mutual influence</td>
<td>• Negotiates honestly</td>
<td>• Resistance to change</td>
</tr>
<tr>
<td></td>
<td>• Clarifying mutual expectations</td>
<td>• Avoids taking excess advantage</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Meeting mutual expectations</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Accountability</strong></td>
<td>• Reducing Controls</td>
<td></td>
<td>• Learning/Leadership p</td>
</tr>
<tr>
<td></td>
<td>• Clarifying mutual expectations</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Meeting mutual expectations</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Cummings and Bromiley's instrument addresses two particular dimensions of agility (i.e., respect/value, and equitable rewards). The inclusion of this instrument serves two purposes: (1) adds trustworthiness to the respect/value dimension, and (2) provides needed data for the equitable rewards dimension of agility, which is not measured in either DeFuria nor Seiden’s instrument.

These data from the Organizational Trust Survey and The Organizational Trust Inventory-Short Form were then compared to comparable items of the Organizational Readiness for Evaluation Survey. The external expert panel made the determination of comparable items which added trustworthiness to the study as well as provided data that may prove useful at a later time for micro-analyzing various units and subunits within the organization for behaviors that are consistent with the agility paradigm.

This question was analyzed on two different levels:

**Level 1:** Participant's aggregate perceptions were categorized by total organization, and individual organizational unit (i.e., administration, faculty, staff). A comparison of aggregate percentiles independent of agility dimensions was performed among the total organization scores of the Organizational Trust Survey (i.e., employing scores for the five observed factors: (1) sharing information, (2) reducing controls, (3) allowing mutual influence, (4) clarifying mutual expectations, and (5) meeting

<table>
<thead>
<tr>
<th>Agility</th>
<th>OTS</th>
<th>OTI-SF</th>
<th>ORES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equitable Rewards</td>
<td></td>
<td>▪ Avoids taking excess advantage</td>
<td></td>
</tr>
</tbody>
</table>
expectations), *The Organizational Trust Inventory-Short Form* (employing factors: (1) keeps commitments, (2) negotiates honestly, and (3) avoids taking excess advantage), and *The Organizational Readiness for Evaluation Survey* (i.e., employing the three organization factors: (1) learning orientation and leadership support, (2) collaborative communication, and (3) resistance to change).

**Level 2:** A Pearson correlation was performed to determine if a correlation existed among the three surveys.

**Level 1 analysis:** On the total organization level percentile scores were consistent across instruments with a 2.5 difference between the highest and the lowest score. (see Table 20)

<table>
<thead>
<tr>
<th></th>
<th>OTS</th>
<th>OTI-SF</th>
<th>ORES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score</td>
<td>62.05</td>
<td>61.93</td>
<td>64.60</td>
</tr>
</tbody>
</table>

Analyses of scores by individual organizational unit were also consistent across instruments with an average 4.2-point difference between the highest and the lowest score (see Tables 21, 22 and 23). The scores between the *Organizational Trust Survey* and the *Organizational Readiness for Evaluation Survey* were the most closely related with a 1.56 average score difference between the highest and the lowest score.
Table 21 Comparisons of Percentile Scores for Administrator’s Perceptions of Total Organization

<table>
<thead>
<tr>
<th>OTS</th>
<th>OTI-SF</th>
<th>ORES</th>
</tr>
</thead>
<tbody>
<tr>
<td>67.66</td>
<td>62.16</td>
<td>65.95</td>
</tr>
</tbody>
</table>

Table 22 Comparisons of Percentile Scores of Faculty’s Perceptions for Total Organization

<table>
<thead>
<tr>
<th>OTS</th>
<th>OTI-SF</th>
<th>ORES</th>
</tr>
</thead>
<tbody>
<tr>
<td>65.98</td>
<td>62.80</td>
<td>64.05</td>
</tr>
</tbody>
</table>

Table 23 Comparisons of Percentile Scores of Staff’s Perceptions for Total Organization

<table>
<thead>
<tr>
<th>OTS</th>
<th>OTI-SF</th>
<th>ORES</th>
</tr>
</thead>
<tbody>
<tr>
<td>62.92</td>
<td>59.06</td>
<td>61.86</td>
</tr>
</tbody>
</table>

Level 2 analysis: Results of the Pearson indicated that the surveys were not correlated since the $p > .05$. Data from the Pearson Correlation ($r$) are found in the Table 24. These data support the contention that each instrument measures different attributes of agility factors.
Table 24 Results of Pearson Correlation

<table>
<thead>
<tr>
<th></th>
<th>OTI-SF</th>
<th>OTS</th>
<th>ORES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OTI-SF</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pearson Correlation Sig. (2 tailed)</td>
<td>1</td>
<td>- .122</td>
<td>.162</td>
</tr>
<tr>
<td></td>
<td></td>
<td>.466</td>
<td>.331</td>
</tr>
<tr>
<td><strong>OTS</strong></td>
<td>-.122</td>
<td>1</td>
<td>.221</td>
</tr>
<tr>
<td>Pearson Correlation Sig. (2 tailed)</td>
<td>.446</td>
<td>.182</td>
<td>.182</td>
</tr>
<tr>
<td><strong>ORES</strong></td>
<td>.162</td>
<td>.221</td>
<td>1</td>
</tr>
<tr>
<td>Pearson Correlation Sig. (2 tailed)</td>
<td>.331</td>
<td>.182</td>
<td></td>
</tr>
</tbody>
</table>

Further, if one ignores the p value, and looks only at Best and Kahn’s (1989) criterion for evaluating the magnitude of a correlation which is shown in Table 25, the r value is in the negligible range for all correlations except between the OTS and the ORES whose r value is in the extreme low end of the low range.

Table 25 Interpretation of Pearson’s Correlation

<table>
<thead>
<tr>
<th>Strength</th>
<th>r Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>High to Very High</td>
<td></td>
</tr>
<tr>
<td>Substantial</td>
<td>0.6 ≤</td>
</tr>
<tr>
<td>Moderate</td>
<td>0.4 ≤</td>
</tr>
<tr>
<td>Low</td>
<td>0.2 ≤</td>
</tr>
<tr>
<td>Negligible</td>
<td></td>
</tr>
</tbody>
</table>
Question 3.

Are the responses from the open-ended statements that explicitly relate to (a) free flow of information, (b) collaboration, (c) value and respect in interpersonal relationships, (d) accountability, and (e) equitable reward systems consistent with the levels organizational of agility indicated in DeFuria, and Seiden's surveys, and Cummings and Bromiley's inventory?

The open-ended statements were constructed as statements that explicitly addressed agility dimensions relative to the existing distance-learning program. The open-ended statements were utilized to triangulate the data and increase the trustworthiness of the findings. These statements were analyzed on two levels:

**Level 1:** The statements were categorized by the dimensions of agility. The statements were then codified within the following response categories: (a) yes, which indicated agreement with the statement, (b) no, which indicated disagreement with the statement, or (c) don’t know, which indicated lack of sufficient information to answer the question.

**Level 2:** Statements were analyzed qualitatively for language use or inclusions that conveyed any additional information.

**Level 1 analysis:** After statements tallies were compiled in response categories by dimension of agility, individual category percentages of total responses were calculated. The findings are listed in the Table 25.

It appears from the open-ended responses, that the distance-education program remains out of the mainstream of the campus organization. This suggests that the
distance education program has not been strategically implemented as part of a systemic approach to the overall educational plan. Approximately 64% of the statements noted that the respondents did not possess enough information about the distance education program to respond. These data are consistent with the data collected from DeFuria, and Seiden's surveys, and Cummings and Bromiley's inventory, relative to the low level of agility within the organization.

It became apparent to the researcher, that this instrument would have proved more valuable if initial respondent information would have included whether the individual was involved in the distance-learning endeavor and, if so, in what capacity. This information would allow the researcher to isolate answers from those directly involved with the distance learning program and would provide greater insight into the degree of localized evidence of agility within the existing program. These values could be helpful in conducting a gap analysis between the distance-learning program and institution-wide levels of agility.

Table 26 Categorization of Responses to Open-Ended Statements

<table>
<thead>
<tr>
<th>Agility Dimension</th>
<th>Yes</th>
<th>No</th>
<th>Don’t Know</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free Flow of Information</td>
<td>23%</td>
<td>20%</td>
<td>57%</td>
</tr>
<tr>
<td>Collaboration</td>
<td>34%</td>
<td>14%</td>
<td>52%</td>
</tr>
<tr>
<td>Value &amp; Respect</td>
<td>34%</td>
<td>0%</td>
<td>66%</td>
</tr>
<tr>
<td>Accountability</td>
<td>26%</td>
<td>0%</td>
<td>74%</td>
</tr>
<tr>
<td>Equitable Rewards</td>
<td>20%</td>
<td>9%</td>
<td>71%</td>
</tr>
</tbody>
</table>
**Level 2 analysis:** With few exceptions statements by staff and faculty were answered directly with little additional information included. Over half of the administrators elaborated their responses to include additional information. Administrator’s responses conveyed a tone of support and trust in those involved in the distance-learning program even if the respondent stated that lacked direct knowledge about the particular statement. These statements either explicitly or implicitly stated that the distance-learning faculty and staff are “well respected”, “trusted”, “competent’, “open”, and “helpful”. The conclusions drawn in these statements were that there is no reason to question people who are “competent and honest”.

A qualitative analysis of the statements indicated a higher level of trust held by the administration for faculty and staff involved in the distance learning than was demonstrated by the data from the OTS, the ORES, and the OTI-SF.

Since faculty and staff did not provide additional information in their statements it is impossible to know if the perceptions of the administration have been adequately conveyed to the faculty and staff.

**Question 4.**

Does the information gleaned from DeFuria, Cummings and Bromiley, and Seiden's instruments, and open-ended statements that explicitly relate to (a) free flow of information, (b) collaboration, (c) value and respect in interpersonal relationships, (d) accountability, and (e) equitable reward systems provide adequate data to construct a useful evaluation of an institution's readiness to implement agile change in their distance education program?
It is an assumption of this study that the higher the levels of interpersonal and organizational trust the better poised an institution is for implementing agile change in their distance education program. The focus of analysis is on the consistency of data among the three survey instruments (e.g., Organizational Readiness for Evaluation Survey, Organizational Trust Survey, and Organizational Trust Inventory-Short Form) and the understandings that emerge from responses to the open-ended statements.

It appears that the three instruments, the Organizational Readiness for Evaluation Survey, Organizational Trust Survey, and Organizational Trust Inventory-Short Form, and the open-ended statements do provide enough information to construct an instrument that would be useful in gauging the readiness of institution to implement agile change in their distance education program. The data demonstrated consistency in scoring across the organizational levels of the Organizational Readiness for Evaluation Survey, Organizational Trust Survey, and Organizational Trust Inventory-Short Form. The results from the Pearson’s correlation suggest that each instrument measures different attributes of common agility factors. The demographic information allows the data to be sorted and examined from total organization to individual sub-organizational units. Thus, the data provided appears to be sufficient to construct a reliable instrument that will: (a) provide insight into the existing levels of both trust and agility within the total organization and between and within organizational units; (b) isolate agility areas of strength and weakness within the institution; (c) provide information for formulating a comprehensive plan for strategic implementation of a distance-education program; and
(d) provide information necessary for developing benchmarks for the implementation of an agile distance learning program, and program evaluation standards.

![Diagram](image)

**Figure 2** Interrelationship of Instruments
CHAPTER 5: DISCUSSION AND RECOMMENDATIONS

Higher education must redefine and reorganize itself in ways that are consistent with the emergent globalization system. It is becoming increasingly apparent that both profit-seeking companies and non-profit institutions must continue to become more geographically distributed, multi-organizational, collaborative, technologically-mediated, team-based, culturally diverse, and international if they are to survive in this relentlessly changing system (Godbey, 2002). While these organizational characteristics are pervasive in the business sector, they are slow to be recognized in education.

This study investigated the existing structure of an institution of higher education through the lens of five trust related dimensions of agility, in an effort to understand the institution’s readiness to implement change in ways that are consistent with the changing globalization system within which it is immersed. The nature of this change requires a significant shift in paradigms.

Kuhn (1996) contended that paradigm shifts come only with the recognition that any iteration of a current paradigm is unable to address an existing problem. A permeating educational mindset, rooted in a mass-production paradigm with a focus on unit-cost efficiency, has played a significant role in preventing colleges and universities from recognizing the qualitative difference in the problems they currently face. The pervasive beliefs and organizational structure of higher education keeps institutions seeking incremental change within the parameters of a traditional paradigm, rather than
systemic change, which requires an entirely new way of thinking. In effect most colleges and universities are attempting to clear a twenty-foot chasm in two ten-foot jumps.

Trust is an underlying tenet of agile systemic change. High levels of trust are needed for effective and sustained change to occur within an organization (DeFuria, 1997, Zand, 1972). Particular dimensions of trust are consistent with the type of organizational structure that is required in a post-industrial marketplace, and conversely, characteristics of low trust are associated with traditional bureaucratic organizational structures. Thus, examination of existing institutional trust becomes pivotal in determining readiness for agile change.

Distance learning programs offer both context and opportunity in studying and implementing agile institutional change. The manner in which distance education programs are situated, implemented, and integrated within an institution offers a wealth of information relative to the organizational view of addressing change. With increased frequency, distant-learning programs are being used to answer problems associated with a globalization system (e.g., changes in student demographics, technologically expanding markets, the reality of new sources of competition); therefore, much can be gleaned by determining whether the programs are being assimilated into the existing organizational structure (i.e., used as instruments of incremental change), or driving systemic change. Broskoske (2000) determined that distant-learning programs often present a point of entry for agile systemic approaches in higher education. Thus, distant education programs may offer researcher and consultants a visible focus for, and measurable indicator of systemic change.
When examining the distance education program at the institution under study, the researcher found that Seiden’s *Organizational Readiness for Evaluation Survey* provided a picture of an institution that has assimilated its distance-learning program into the existing organizational structure. The institution’s faculty and administrators scored slightly lower on the *ORES* distance-learning program factors than on the organizational factors, while staff members scored slightly higher on the ORES distant-learning program factors than on the organizational factors. For all groups, both organization and program factors consistently indicated a relatively low level of readiness for change.

No appreciable difference was discerned in the organizational structure that either supported or resulted from the implementation of the distance-learning program. The open ended statements indicated isolated departmental functioning and scarce evidence of boundary spanning. One respondent explicitly stated that since each department was “self-contained”, no one outside of those directly involved with distance learning would be able to address questions regarding the program. This was also evidenced in the results of DeFuria’s *Organizational Trust Survey*, which indicated that the lowest levels of trust existed between organizational units, and in Cummings and Bromiley’s *Organizational Trust Inventory-Short Form*, which indicated particularly high levels of perceived advantage-taking behavior among all groups by other organizational units. Trust instruments indicated that trust decreased as interpersonal distance between organizational units increased. Thus, it appears that the distance-learning program is consistent with existing organizational structure and functions as a “silohed” or relatively isolated entity.
The expert panel validated the relationship among the surveys employed and five dimensions of agility; specifically, (a) free flow of information, (b) collaboration, (c) value and respect in interpersonal relationships, and (d) equitable rewards. The panel found these dimensions to be distributed across the instruments used in this study. Consistency in scoring suggested that the surveys are related, however, the Pearson $r$ indicated a low level of correlation between instruments. The low Pearson’s $r$ supported the researcher and expert panel’s contention that each survey measured different attributes of common agility factors.

The instruments used provided sufficient information to construct several levels of analysis that would be helpful in (a) determining an institution’s readiness for agile change, and (b) planning, developing, and benchmarking agile change that is specific to the cultural context of the individual institution. On a macro-level, Seiden’s Organizational Readiness for Evaluation Survey (a) presents a clear indication of organizational consistency between the distance-learning program and the overall organizational structure, and (b) an overall picture of readiness for change. Likewise, DeFuria’s Organizational Trust Survey, and Cummings and Bromiley’s Organizational Trust Inventory-Short Form present a clear picture of the general nature of trust within the institution. Individually, Seiden and DeFuria’s surveys contain factors that address unique trust related variables. Both instruments provide information and structure for several levels of analysis specific to trust issues within and between organizational units. By collecting additional demographic information from the respondents (i.e., gender,
supervisory status, organizational unit, years of service to the institution), the researcher was able to extend the specificity and the interrelationship of all instrument factors.

In retrospect it would have been helpful to establish whether a respondent was directly involved with the distance-learning program. Staff appeared to be more knowledgeable about the distance-learning program than either faculty or administrators. Subsequent conversations with the institution indicated that the distance-learning program is considered a function of the Information Technology Department. Information about the respondent’s direct association with the distance-learning program would provide important data regarding the degree of boundary spanning among institutional units.

Significantly fewer staff members responded to the survey, than members of the faculty and administration. This in itself raises questions regarding the institutional perception of staff’s role in the implementation of instructionally-based endeavors, and the relative strength of organizational coupling between and among organizational units. Both issues are crucial in building a strategic approach to distance learning. Successful systemic integration of technologically mediated communications and instruction depend heavily on staff involvement.

**Suggestions for Future Research**

The following is a list of suggestions for future research regarding gauging the readiness for agile change in distance learning programs.

1. Replication of this study with other college and university populations to establish the generalizability across institutional types and cultures.
2. Validate the dimensions of agility across instruments through a factor analysis. A factor analytic approach is needed to statistically determine the validity of the dimensions of agility underlying the test items.

3. Conduct a Kuder-Richardson test. The Kuder-Richardson test is a method used to determine the extent to which all the items on a given test are measuring the same skill. This test would be used to validate the internal consistency reliability of the dimensions of agility that have been categorized by the expert panel.

Conclusion

In the eight months since the attacks on the World Trade Towers and the Pentagon, there has been a palpable change in the national cognizance regarding the implications of what Friedman (2000) refers to as the “globalization system”; a system that has become interlocked through the democratization of finance, information, and technology. The attacks of September 11, 2001 marked a watershed in national awakening. On that day, the Middle East came to us in a way that destroyed any belief that people and events half a world away have nothing to do with us.

Times have changed. The venerable American traditions of isolationism and cultural xenophobia have become untenable. In the early 1990s, a state college in Virginia turned down a grant to found a center for Middle Eastern studies (Miller, 2002). Over the last year, print and broadcast media have become public education centers for helping the nation understand not only the Middle Eastern culture but also the rest of a very relevant world. Higher education must recognize its role as a major player in the globalizing
system. The need for producing global-ready graduates is no longer an abstract talking point, but a recognized reality.

It is now a truism that American college graduates will live and work in a world where national boarders are permeable: information and ideas flow at lightening speed; and communities and workplaces reflect a growing diversity of cultures, languages, attitudes, and values. Nor is it a new idea that an undergraduate education—and especially a liberal education—must produce graduates who will be productive contributors to civic life both locally and globally and who understand that the fates of nations, individuals, and the planet are inextricably linked (Green, 2002, p. 13).

According to Godbey (2002), it is critical that we factor globalization into judging performance of higher education. Godbey suggests that gauging the global index of educational institutions includes evaluating the institution’s global resources and quotients, as well as the “global consistency” of its graduates. The educational enterprise must recognize that it can no longer afford to exist as scattered stand-alone institutions “…the dynamics of a globalizing world create an unprecedented logic for inter-sectoral conversation, commitments, and collaboration…” (Godbey, 2002). Our educational institutions, like the rest of the global marketplace, must be fast, flexible, collaborative, and customizing if they are to survive; and this they cannot do in isolation.
LIST OF REFERENCES


Griffin, K. (1967). The contribution of studies of source credibility to a theory of interpersonal trust in the communication process. Psychological Bulletin, 68 104-120.


## Table A1 School of Thought by Decade: Responses to a Mass Production-Based Paradigm

<table>
<thead>
<tr>
<th>School of Thought</th>
<th>Components of Theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scientific management (1910s-)</td>
<td>Described management as a science with employers having specific but different responsibilities; encouraged the scientific selection, training, and development of workers and the equal division of work between workers and management</td>
</tr>
<tr>
<td>Classical school (1910s-)</td>
<td>Listed the duties of a manager as planning, organizing, commanding employees, coordinating activities, and controlling performance; basic principles called for specialization of work, unity of command, scalar chain of command, and coordination of activities</td>
</tr>
<tr>
<td>Human relations (1920s-)</td>
<td>Focused on the importance of the attitudes and feelings of workers; informal roles and norms influenced performance</td>
</tr>
<tr>
<td>Classical school revisited (1930s)</td>
<td>Re-emphasized the classical principles</td>
</tr>
<tr>
<td>Group dynamics (1940s)</td>
<td>Encouraged individual participation in decision-making; noted the impact of work group on performance</td>
</tr>
<tr>
<td>Bureaucracy (1940s)</td>
<td>Emphasized order, system, rationality, uniformity, and consistency in management; lead to equitable treatment for all employees by management</td>
</tr>
<tr>
<td>Leadership (1950s)</td>
<td>Stressed the importance of groups having both social task leaders; differentiated between Theory X and Y management</td>
</tr>
<tr>
<td>Decision theory (1960s)</td>
<td>Suggested that individuals &quot;satisfice&quot; (good enough...as opposed to maximizing) when they make decisions</td>
</tr>
<tr>
<td>School of Thought</td>
<td>Components of Theory</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>---------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Sociotechnical school</td>
<td>Called for considering technology and work groups when understanding a work system</td>
</tr>
<tr>
<td>(1960s)</td>
<td></td>
</tr>
<tr>
<td>Envir. and tech. system(1960s)</td>
<td>Described the existence of mechanistic and organic structures and stated their effectiveness with specific types of environmental conditions and technological types</td>
</tr>
<tr>
<td>Systems theory (1970s):</td>
<td>Represented organizations as open systems with inputs, transformations, outputs, and feedback; systems strive for equilibrium and experience equifinality</td>
</tr>
<tr>
<td>Contingency theory (1980s)</td>
<td>Emphasized the fit between organization processes and characteristics of the situation; called for fitting the organization's structure to various contingencies</td>
</tr>
</tbody>
</table>

* Theory prior to 1900: Emphasized the division of labor and the importance of machinery to facilitate labor
APPENDIX B
TECHNOLOGY TRANSFER LEGISLATION

Table B1 Technology Transfer Legislation History

<table>
<thead>
<tr>
<th>Legislative Act</th>
<th>Highlights of Legislation</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Wydler Technology Innovation Act of 1980</td>
<td>▪ Focused on dissemination of information</td>
</tr>
<tr>
<td></td>
<td>▪ Required Federal Laboratories to take an active role in technical cooperation</td>
</tr>
<tr>
<td></td>
<td>▪ Established Offices of Research and Technology Application at major federal laboratories.</td>
</tr>
<tr>
<td></td>
<td>▪ Established the Center for the Utilizations of Federal Technology.</td>
</tr>
<tr>
<td>▪ Bayh-Dole Act of 1980</td>
<td>▪ Permitted universities, not-for profits, and small businesses to obtain title to inventions developed with governmental support</td>
</tr>
<tr>
<td></td>
<td>▪ Provided intellectual property rights protection of invention descriptions from dissemination and Freedom of Information Act</td>
</tr>
<tr>
<td></td>
<td>▪ Allowed government-owned contractor operated, laboratories (GOCO) to grant exclusive licenses to patents.</td>
</tr>
<tr>
<td>▪ Small Business Innovation Development Act of 1982</td>
<td>▪ Required agencies to provide special funds for small business R&amp;D connected to the agencies’ missions</td>
</tr>
<tr>
<td></td>
<td>▪ Established the Small Business Innovation Research Program (SBIR)</td>
</tr>
<tr>
<td>▪ Cooperative Research Act of 1984</td>
<td>▪ Eliminated treble damage aspect of antitrust concerns of companies wishing to pool research resources and engage in joint precompetitive R&amp;D.</td>
</tr>
<tr>
<td>Legislative Act</td>
<td>Highlights of Legislation</td>
</tr>
<tr>
<td>-----------------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Trademark Clarification Act of 1984</td>
<td>Permitted decisions to be made at the laboratory level in government-owned contractor operated (GOCO) laboratories as to the awarding licenses for patents.</td>
</tr>
<tr>
<td></td>
<td>Permitted contractors to receive patent royalties for use in R&amp;D, awards, or for education.</td>
</tr>
<tr>
<td></td>
<td>Permitted private companies, regardless of size, to obtain exclusive licenses.</td>
</tr>
<tr>
<td></td>
<td>Permitted laboratories run by universities and non-profit institutions to retain title to inventions within limitations.</td>
</tr>
<tr>
<td>Japanese Technical Literature Act of 1986</td>
<td>Improved the availability of Japanese science and engineering literature in the U. S.</td>
</tr>
<tr>
<td>Legislative Act</td>
<td>Highlights of Legislation</td>
</tr>
<tr>
<td>---------------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Federal Technology Transfer Act of 1986</td>
<td>▪ Made technology transfer a responsibility of all federal laboratory scientists and engineers.</td>
</tr>
<tr>
<td></td>
<td>▪ Mandated that technology transfer responsibility be considered in employee performance evaluations.</td>
</tr>
<tr>
<td></td>
<td>▪ Established principle of royalty sharing for federal inventors (15% minimum) and set up a reward system for other innovators.</td>
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<tr>
<td></td>
<td>▪ Legislated a charter for Federal Laboratory Consortium for Technology Transfer and provided a funding mechanism for that organization to carry out its work.</td>
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<tr>
<td></td>
<td>▪ Provided specific requirements, incentives and authorities for the Federal Laboratories.</td>
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<tr>
<td></td>
<td>▪ Empowered each agency to give the director of GOCO laboratories authority to enter into cooperative R&amp;D agreements and negotiate licensing agreements with streamlined headquarters review.</td>
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<tr>
<td>Legislative Act</td>
<td>Highlights of Legislation</td>
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</tr>
<tr>
<td></td>
<td>▪ Allowed laboratories to make advance agreements with large and small companies on title and license to inventions resulting from Cooperative R&amp;D Agreements (CRDAs) with government laboratories.</td>
</tr>
<tr>
<td></td>
<td>▪ Allowed Directors of GOGO laboratories to negotiate licensing agreements for inventions made at their laboratories.</td>
</tr>
<tr>
<td></td>
<td>▪ Provided for exchanging GOGO laboratory personnel, services, and equipment with their research partners.</td>
</tr>
<tr>
<td></td>
<td>▪ Made it possible to grant and waive rights to GOGO laboratory inventions and intellectual property.</td>
</tr>
<tr>
<td></td>
<td>▪ Allowed current and former federal employees to participate in commercial development, to the extent there is no conflict of interest.</td>
</tr>
<tr>
<td>Omnibus Trade and Competitiveness Act of 1988</td>
<td>▪ Placed emphasis on the need for public/private cooperation on assuring full use of results and resources.</td>
</tr>
<tr>
<td></td>
<td>▪ Established centers for transferring manufacturing technology.</td>
</tr>
<tr>
<td></td>
<td>▪ Established Industrial Extension Services within states and an information clearinghouse on successful state and local technology programs.</td>
</tr>
<tr>
<td>Legislative Act</td>
<td>Highlights of Legislation</td>
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<td></td>
<td>▪ Changed the name of the National Bureau of Standards to the National Institute of Standards and Technology and broadened its technology transfer role.</td>
</tr>
<tr>
<td></td>
<td>▪ Extended royalty payment requirements to non-government employees of federal laboratories.</td>
</tr>
<tr>
<td></td>
<td>▪ Authorized Training Technology Transfer centers administered by the Department of Education.</td>
</tr>
<tr>
<td>National Institute of Standards and Technology Authorization Act for FY 1989</td>
<td>▪ Established a Technology Administration within the Department of Commerce.</td>
</tr>
<tr>
<td></td>
<td>▪ Permitted contractual consideration for rights to intellectual property other than patents in cooperative research and development agreements.</td>
</tr>
<tr>
<td></td>
<td>▪ Included software development contributors eligible for awards.</td>
</tr>
<tr>
<td></td>
<td>▪ Clarified the rights of guest worker inventors regarding royalties.</td>
</tr>
<tr>
<td>National Competitiveness Technology Transfer Act of 1989 (included as Section 3131 et seq. of DoD Authorization Act for Fy 1990)</td>
<td>▪ Granted GOCO federal laboratories opportunities to enter into CRDAs and other activities with universities and private industry, under essentially the same ways as highlighted under the Federal Technology Transfer Act of 1986.</td>
</tr>
<tr>
<td></td>
<td>▪ Allowed information and innovations, brought into, and created through cooperative agreements to be protected from disclosure.</td>
</tr>
<tr>
<td></td>
<td>▪ Provided a technology transfer mission for the nuclear weapons laboratories.</td>
</tr>
<tr>
<td>Legislative Act</td>
<td>Highlights of Legislation</td>
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<td>-----------------------------------------------------</td>
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</tbody>
</table>
| Small Business Technology Transfer (STTR) Program 1992 | - Established a 3 year pilot program - Small Business Technology Transfer (STTR), at DoD, DoE, HHS, NASA, and NSF.  
- Directed the Small Business Administration (SBA) to oversee and coordinate the implementation of the STTR Program.  
- Designed the STTR similar to the Small Business Innovation Research SBIR program.  
- Required each of the five agencies to fund cooperative R&D projects involving a small company and a researcher at a university, federally-funded research and development center, or nonprofit research center. |
| National Department of Defense Authorization Act for 1993 | - Facilitated and encouraged technology transfer to small businesses. Established the DoD Office of Technology Transition  
- Extended the streamlining of small business technology transfer procedures for non-federal laboratory contractors.  
- Directed DoE to issue guidelines to facilitate technology transfer to small businesses.  
- Extended the potential for CRADAs to some DoD-funded Federally Funded Research and Development Centers (FFRDCs) not owned by the govern |
<table>
<thead>
<tr>
<th>Legislative Act</th>
<th>Highlights of Legislation</th>
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</table>
- Extended the streamlining of small business technology transfer procedures for non-federal laboratory contractors.  
- Directed DoE to issue guidelines to facilitate technology transfer to small businesses.  
- Extended the potential for CRADAs to some DoD-funded Federally Funded Research and Development Centers (FFRDCs) not owned by the government. |
| National Technology Transfer and Advancement Act of 1995 [also known as the "Morella Act"] | - Extended the Stevenson-Wydler Technology Innovation Act of 1980 with respect to inventions made under cooperative research and development agreements. |
| Technology Transfer Commercialization Act of 1999 | - Modifies existing law to permit licensing of any technology, not just patentable technologies as in the past. Agencies will now be allowed to license software.  
- Ensures that inventions made by nonprofit organizations and small business firms are used in a manner to promote free competition and enterprise without unduly encumbering future research and discovery.  
- Allows laboratory directors to pay royalties to an inventor or co-inventor. |
<table>
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<tr>
<th>Legislative Act</th>
<th>Highlights of Legislation</th>
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<td></td>
<td>• Requires the U.S. Department of Energy to appoint technology partnership ombudsmen to hear and help resolve complaints from outside organizations regarding the policies and actions of each such laboratory or facility with respect to technology partnerships (including CRADAs), patents, and technology licensing.</td>
</tr>
</tbody>
</table>
APPENDIX C

INSTRUMENTS

The Organizational Trust Survey (OTS)

The flexibility of the OTS allows the information that it generates to be analyzed for a number of different purposes. The OTS allows organizations to measure the trust-related behaviors of various categories of people within the organization - administrators, supervisors, and coworkers – in relation to how employees' trust related expectations are being met. It also measures trust-related behaviors between organizational units (i.e., administration, faculty, staff) and the perceived impacts of organizational policies and values on trust-related behaviors. The OTS can be used at any organizational level; it can be used to assess trust within the entire organization or a part of the organization.

The OTS has two purposes: one is to help in the assessment of organizational trust; the other is to provide information that can be used to facilitate a change in the behavioral norms of the organization's managers and other employees. To this end, the analysis procedures provide information on the degree to which organizational members, taken as a whole, use or violate the five generic trust-enhancing behaviors (i.e., sharing information, reducing controls, allowing mutual influence, clarifying mutual expectations, and meeting expectations). IT also provides specific feedback on the degree to which trust-related behaviors are evident at the following levels of the organization: administration, supervisors, coworkers, and organizational units.
Organizational Readiness for Evaluation Survey (ORES)

Organization Factors

*Learning Orientation:* learning orientation is defined as the degree to which an organizational setting is characteristic of a learning organization. While the tolerance of change factor is primarily concerned with the forces that impede or resist change, learning orientation encompasses the learning organization characteristics that promote and support change. Organizations that score high on this factor demonstrate a learning mindset, in which staff freely experiment with and are open to new ideas and concepts and to taking risks and making changes. Mistakes are viewed as opportunities for learning. Learning and innovation are encouraged and rewarded as well as modeled, by management. Changes are made based on new information in a continuous improvement culture.

*Leadership Support:* institutions that are characterized by leadership that is supportive of evaluation, learning, and change within the organization. This scale looks at leadership characteristics of organization members that are likely to impact use, including organizational role and experience. The preferred leadership style is not top-down, but involves staff at all levels, such that support for change comes from above and within the organization.

*Collaborative Work Culture:* A collaborative work culture means that staff work together on teams and in other ways that encourage the sharing of knowledge and experience. Evaluation-ready organizations tend to collaborate across units and departments and are familiar with teamwork and team structures. Reward systems are
established that recognize team as well as individual learning and performance, such as via team-based evaluation and reward systems. A non-competitive environment that provides some incentive for collaboration promotes the sharing of information, knowledge, and experience and the flow of ideas within the organization.

This scale also explores the degree to which the organization’s problem-solving style is collaborative and decision-making approach is participatory. Less hierarchical decision-making structures are more often associated with evaluation use.

*Communication:* This scale is used to investigate how and with whom information is shared. Organizations that are ready for evaluation, as defined by the ORE instrument, distribute information widely through a variety of channels in the organization. The culture supports using information for learning and not for personal power. There is a system in place to ensure that those who need information can retrieve and make use of it quickly and easily, whenever it is needed. In order for an organization to benefit from an effective information system, employees must also be aware of where data are available. In sum, the communication systems of these organizations are well established and far-reaching.

*Tolerance of Change:* This factor assesses an organization’s experience with and openness to change. It is used to investigate the level of resistance to change present in the organization under consideration. High scores on this scale indicate a lower perceived degree of bureaucracy, a flexible organizational strategy, and an adaptable organizational structure; there is demonstrated open-mindedness and little resistance to change, all key variables in evaluation use. Such organizations manage with little red
tape and are comfortable challenging the status quo. There is willingness, as well as the support, to try new things. However, these organizations operate in an environment that strikes a balance between turbulence and stability. Just as too much permanency is a hindrance, so is an overabundance of chaos.

High-scoring organizations have had a positive history or past experience with change, with smooth transitions, adequate preparation, and easy adjustments. These evaluation-ready organizations are flexible and adaptable to changing conditions, both internal and external to the organization.
Organizational Trust Inventory—Short Form

The Organizational Trust Inventory is based on a multidimensional definition of trust. The definition includes three dimensions: (a) belief that an individual or group makes good-faith efforts to behave in accordance with any commitments both explicit and implicit, (b) belief that an individual or group is honest in whatever negotiations (more generally, any interactions) preceded such commitments, and (c) belief that an individual or group does not take excessive advantage of another even when the opportunity is available.
Questions Generating Open Ended Statements

[These questions directly relate to the Distance Learning Program]

1. Do you feel that there is adequate sharing of information between and among the parties involved in the Distance Learning Program? Please explain.

2. Do you feel that there is a spirit of collaboration among the people involved in the distance learning initiative? Please explain.

3. Do you feel that the faculty and staff's concerns and perspectives are valued and respected by the administration when decisions are made regarding the distance learning program? Please explain.

4. Do you feel that there is an organized system of accountability within the distance education program that facilitates the implementation of the program? Please explain.

5. Do you feel that there is equitable compensation for those involved in the distance education program? Please explain.
October 10, 2001

(President)
xxxx College
xxxxxxxxxx St.
xxxxxxxxxx, PA 18711

Dear (President):

This letter seeks your support for the participation of xxx College faculty and staff in the doctoral work of Christina Charnitski. As part of her doctoral research in Educational Leadership Development and Learning Technologies at Drexel University, Mrs. Charnitski is developing a procedural action plan that can be used by post-secondary institutions to gauge their readiness to implement change in their distance education programs in ways that are consistent with the paradigm of organizational agility. Administrators, faculty, and academic-side staff would be asked to complete three online surveys, and participate in one group interview with Mrs. Charnitski. Each participant will spend approximately 2 hours on this study.

Mrs. Charnitski has considerable experience in technology and its use in education. She has served as a faculty member in higher education for ten years, has been involved in K-12 and higher education technology training since 1989, and has extensive experience with both Web-based and videoconference-based teaching. Dr. Craig Bach, Assistant Professor in Educational Leadership at Drexel University, and I are co-chairing Chris’ dissertation work, which we believe is consistent with CAPE’s mission, and which has the capacity to improve distance-learning in higher education.

Mrs. Charnitski's committee has recommended that she complete the campus interviews and her survey collection by the last week of January, 2002. I would appreciate it greatly if your administrative assistant would assist in arranging these interviews. Mrs. Charnitski will contact you well ahead of her visit to make all the necessary arrangements. Should you have any questions beforehand, please feel free to contact her by phone at (570) 587-0005, or by e-mail at cwcharni@epix.net.
Thank you for your consideration: I am confident that this study will yield some interesting and useful information about xxxxx College as well as providing the benefits noted above.

Sincerely,

Galen C. Godbey
Executive Director, CAPE

Cc: Dr. Craig Bach
    Mrs. Christina Charnitski
March 18, 2002

(xxx) College has agreed to participate in a research study that is being conducted as part of a doctoral dissertation. As a member of (xxx) College faculty, staff, or administration, you are being invited to participate in this research study.

The purpose of the study is to develop a tool that will help institutions of higher education assess several cultural elements that research has demonstrated to be indicators of an institution’s capacity for change. It is anticipated that the successful development of this tool will aid institutions in developing strategic plans that will be consonant with the institutional climate and accepted by those who will be in the position of carrying out planned agile change.

Your participation in this study will require approximately 45 minutes of your time. The study consists of 3 surveys and 5 short answer questions that are to be completed online. You will be able to complete the surveys and questions at your convenience, 24 hours a day, from Wednesday March 20 until Wednesday April 3, from any computer that has online access.

The surveys reside on a secured server that is configured to assure complete confidentiality. As responses are submitted, all identifying data is stripped from the surveys, and the data is automatically compiled in a common database. The data will be reported in aggregate form only, and the reported data will not include any information that will make it possible to identify individual responses.

Your decision to participate is strictly voluntary, and in no way affects your relationship with xxxxx College. You may also choose to discontinue your participation at any time.

If you choose to participate, please access the following site:

http://newmedia.misericordia.edu/ccsurvey/useragreement.asp

The first time you go to the site select Create Account. This will take you to a page that asks for an access key. Your Key Info is 6746459. This will allow you to create a demographic profile and an account. Once this is completed you will be prompted to go to the survey. At this point you must log on using the e-mail address and password that you used to create your account.

You will be taken to a survey by selecting the individual survey by name. The surveys will be listed on a pull down menu like the one below. Please complete ALL surveys listed. The order in which you complete them is not important.
This site has a save feature which will allow you to save uncompleted surveys and/or questions and return to the site at your leisure. When returning go to the original address:

http://newmedia.misericordia.edu/ccsurvey/useragreement.asp

On return visits, you must enter the e-mail address and password that you used to create your account to reenter the site.

Thank you for your time, and I hope that you will consider participating in this study.

Craig Bach, Ph.D. (Principle Investigator)
April 2, 2002

This letter is a follow-up reminder to the letter that you received dated March 18th that requested your participation in the research study that is being conducted as part of a doctoral dissertation at Drexel University. To achieve balance in the study, we are hoping to collect the perceptions of a wide range of College administrators, faculty, and staff members. Each individual’s input is very valuable to the study’s outcome. If you have not already answered the surveys and questions, I would ask that you please consider participating.

The purpose of this study is to develop a tool that will help institutions of higher education assess several cultural elements that research has demonstrated to be indicators of an institution’s capacity for change. It is anticipated that the successful development of this tool will aid institutions in developing strategic plans that will be consonant with the institutional climate and accepted by those who will be in the position of carrying out planned agile change.

Time logs show that it has taken participants on the average of 20 minutes to complete the 3 online surveys and 5 short answer questions. In hopes of increasing participation, we have extended access to the surveys until Wednesday April 10. You will be able to complete the surveys and questions at your convenience, 24 hours a day, from any computer that has online access at the following site.

http://newmedia.misericordia.edu/ccsurvey/useragreement.asp

The first time you go to the site select Create Account. This will take you to a page that asks for an access key. Your Key Info is 6746459. This will allow you to create a demographic profile and an account. Once this is completed you will be prompted to go to the survey. At this point you must log on using the e-mail address and password that you used to create your account.

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This site has a save feature which will allow you to save uncompleted surveys and/or questions and return to the site at your leisure. When returning go to the original address:

http://newmedia.misericordia.edu/ccsurvey/useragreement.asp

Thank you for your time, and I hope that you will consider participating in this study.

Craig Bach, Ph.D. (Principle Investigator)
Expert Panel

Christina W. Charnitski
701 Haven Lane
Clarks Summit, PA  18411

January 22, 2002

Name
Address
City, State, Zip

Dear Dr.:

Dr. Godbey has informed me that that you have agreed to participate as an expert panel member in the coding process of my study. Thank you for graciously contributing your experience in organizational agility to this process. The purpose of gathering this panel is to correlate statements from three previously validated instruments to the dimensions of agility that are addressed in my study. Included is a packet with all of the necessary forms.

The three instruments that you are being asked to categorize are:

- Form S-1 Organizational Readiness for Evaluation Survey (ORES),
- Form T-1A (statements) Organizational Trust Survey (OTS),
- Form T-1B (aggregate categories) Organizational Trust Survey (OTS)
- Forms T-2 Organizational Trust Inventory—Short Form (OTI-SF).

Your responses will be recorded on Form R-1 Response Form. There are two Response Forms included in your packet; one to be used for your initial responses and the second to be used when the panel convenes via audio-conference. At the completion of the process I would ask that you FAX both forms back to me at 1-800-681-7509. The Response Form is organized in the following manner:

- The horizontal header identifies the individual instrument (i.e., ORES, OTS (statements), OTS (aggregate) and OTI-SF)
- The vertical header identifies the 9 dimensions of agility against which each statement is compared (i.e., free flow of information,
collaboration, respect and value, accountability, equitable rewards, openness to change; flexibility; speed of response; and customization.

- The vertical header also contains two other rows that are labeled
  - Agility Related, which indicates that the statement is related to agility, but not to one of the dimensions of agility that are specifically being examined in this study
  - Not Agility Related, which indicates that the statement is not directly related to organizational agility.

**Form R-1 Response Form** is completed by reading each statement of each instrument identified in the horizontal header (i.e., ORES, OTS, and OTI-SF) and writing the statement number or the aggregate letters ([Form T-1B](#) e.g., OBSI, DBSI, etc) in the space next to the dimension(s) of agility (i.e., free-flow of information, collaboration, respect/value, accountability, equitable rewards, openness to change, flexibility, speed of response, customization), Agility Related, or Not Agility Related identified on the vertical header.

In cases where you consider a statement relevant to more than one dimension of agility, that statement number should be entered into **all** relevant areas.

After the coding is completed all panel members will discuss their coding during an audio conference. The final coding scheme will be arrived at by consensus of the panel members. Please check your schedule and let me know what days and times during the week of February 18th, you would be available for approximately 45 minutes to 1 hour to participate in the audio conference.

If you have any questions during this process, please call me at (570) 587-0005, or (570) 674-6459, or e-mail me at cwcharni@epix.net.

Again, thank you for agreeing to participate on this panel.

Sincerely,
Christina W. Charnitski  
701 Haven Lane  
Clarks Summit, PA  18411  

March 7, 2002  

Name  
Address  
City, State, Zip  

Dear Dr.,  

Before I say anything else, I want to thank you so much for the time you have been willing to give to this study. I know how busy you are, and, quite frankly, I am amazed at the generosity and the graciousness with which you have extended your involvement. Please know how grateful I am for your invaluable participation in this study.  

Enclosed is the refined data from the panel members’ categorization of the questions. In the packet you will find three types of documents:  

1. A listing of the statements that are suggested for inclusion based on the criteria that 3 or more members voted for that particular statement or grouping of statements to be included in the given category.  

2. A listing of statements that you voted for, but received less than 3 total votes. You are asked to review your statements and consider one of two options: (a) present the statement to the group for reconsideration, or (b) eliminate the statement for consideration for final inclusion.  

3. A listing of the original statements for reference.  

4. Two documents that were derived from the additional category (L) that are statements that are “Negative to Agility”. You are asked to review the new category for any additional or questionable inclusions.  

Again many thanks!!  

Sincerely,
Dear Dr. 

April 15, 2002

After compiling the panel’s categorizations of the survey questions, I matched the questions and categorizations to validated factors within each instrument.

Below is a table of the validated factors that are measured by the Organizational Trust Survey, the Organizational Readiness for Evaluation Survey, and the Organizational Trust Inventory that closely match the data provided by the panel.

Please review the dimensions of agility that are assigned to each factor and make any adjustments that you feel appropriate.

**Agility Factors that are being considered in this study:**

- Free Flow of Information
- Collaboration
- Value and respect in interpersonal relationships
- Accountability
- Equitable reward systems

<table>
<thead>
<tr>
<th>Factor</th>
<th>Description</th>
<th>Agility Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Orientation &amp; Leadership Support</td>
<td>Measures the degree to which: (a) organizational members freely experiment with and are open to new ideas and concepts and to taking risk and making changes; (b) learning is encouraged and rewarded by administration; (c) value that is placed on teamwork and on incorporating multiple viewpoints into the decision-making process; and (c) changes are made based on new information.</td>
<td>▪ Free-flow of information ▪ Collaboration ▪ Value and Respect ▪ Equitable Reward system</td>
</tr>
<tr>
<td>Factor</td>
<td>Description</td>
<td>Agility Dimensions</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
<td>-------------------------------------------</td>
</tr>
</tbody>
</table>
| Collaborative Communication   | Measures the degree to which: (a) information is distributed through a variety of channels in the organization; (b) how easily data can be retrieved when it is needed; and (c) organizational members work together on teams and share knowledge.                                                                                                                   | ▪ Free-flow of Information  
▪ Collaboration                          |
| Resistance to Change          | Measures the degree of bureaucracy within the organization.                                                                                                                                                                                                                                                                             | ▪ Free-flow of information  
▪ Collaboration  
▪ Value and Respect        |
| Sharing Information           | Measures the degree to which organizational members share useful and relevant information.                                                                                                                                                                                                                                              | ▪ Free-flow of information  
▪ Collaboration                          |
| Reducing Controls             | Measures the behaviors of reducing the processes, procedures, or activities with which one individual or group (1) establishes the performance criteria or rules for others, (2) monitors the performance of another person or group, (3) adjusts the conditions under which performance is achieved, or (4) adjusts the consequences of performance. | ▪ Value and respect  
▪ Accountability  
▪ Equitable rewards        |
| Allowing for Mutual Influence | Measures decision behavior in which a decision is made that affects both parties. Mutual influence means that both parties have approximately equal numbers of occurrences of convincing the other party, or making the decision for both parties.                                                                                                           | ▪ Collaboration  
▪ Value and Respect                          |
| Clarifying Mutual Expectations| Measures behaviors wherein one person clarifies what is expected of both parties in the relationship. It involves sharing information about mutual performance expectations (i.e., “If you do this then I will do that” or “If you behave in this manner, then I will reciprocate in a like manner.”).                                                                                       | ▪ Value and respect  
▪ Accountability                          |
<table>
<thead>
<tr>
<th>Factor</th>
<th>Description</th>
<th>Agility Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeting Mutual Expectations</td>
<td>Measures behaviors in which one individual fulfills the behavioral expectations of another person.</td>
<td>▪ Value and respect</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Accountability</td>
</tr>
<tr>
<td>Keeps Commitments</td>
<td>Measures the degree to which a party is perceived as doing what they say they will do.</td>
<td>▪ Accountability</td>
</tr>
<tr>
<td>Negotiates Honestly</td>
<td>Measures the degree of openness and forthrightness and truthfulness that precedes commitments.</td>
<td>▪ Collaboration</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Accountability</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Respect and Value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ Equitable Rewards</td>
</tr>
<tr>
<td>Avoids taking excessive</td>
<td>Measures the degree of perceived fairness demonstrated by an individual or group when that individual or group is given the chance to capitalize on a situation that negatively affects the other party.</td>
<td>▪ Respect &amp; Value</td>
</tr>
<tr>
<td>advantage of situations</td>
<td></td>
<td>▪ Equitable Rewards</td>
</tr>
</tbody>
</table>

Please e-mail me any changes that you may feel appropriate. After hearing from all of the panel members, I will send you the finalized report if consensus is reached, or contact you to set up a final audio conference.

Again, I sincerely thank you for all of your time and effort.

Sincerely,

VITA
Christina Wotell Charnitski  
Date of Birth September 16, 1949  
Place of Birth Detroit Michigan  
Citizenship: United States of America  

**Education**

<table>
<thead>
<tr>
<th>Years Attended</th>
<th>Institution</th>
<th>Degree Awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>1967-1970</td>
<td>Ohio State University</td>
<td>No degree awarded</td>
</tr>
<tr>
<td></td>
<td>Columbus, Ohio</td>
<td></td>
</tr>
<tr>
<td>1971-1973</td>
<td>Camden College</td>
<td>AS Science</td>
</tr>
<tr>
<td></td>
<td>Blackwood, NJ</td>
<td>Dental Hygiene Certificate</td>
</tr>
<tr>
<td>1978-1979</td>
<td>College Misericordia</td>
<td>Bachelor of Science general</td>
</tr>
<tr>
<td></td>
<td>Dallas, PA</td>
<td>studies with a concentration in science</td>
</tr>
<tr>
<td>1990-1993/1994</td>
<td>Marywood College</td>
<td>Master of Arts in Teaching with</td>
</tr>
<tr>
<td></td>
<td>Scranton, PA</td>
<td>(Elementary Certification)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Master of Science in Reading</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Education (K-12 Certification)</td>
</tr>
<tr>
<td>1993-1994</td>
<td>College Misericordia</td>
<td>Master of Science in Education</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(Specialization in Instructional Technology)</td>
</tr>
<tr>
<td>1995-1999</td>
<td>Lehigh University</td>
<td>Doctoral Candidate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Master of Science in Educational Technology (Program</td>
</tr>
<tr>
<td></td>
<td></td>
<td>concentration in the application</td>
</tr>
<tr>
<td></td>
<td></td>
<td>interactive multimedia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>technologies to instructional</td>
</tr>
<tr>
<td></td>
<td></td>
<td>design, education, and training</td>
</tr>
<tr>
<td>1999-2000</td>
<td>Drexel University</td>
<td>Ph.D. Educational Leadership</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Development, and Learning Technologies</td>
</tr>
</tbody>
</table>