

**INCREASING CREATIVE FLUENCY IN ORGANIZATIONAL  
ENVIRONMENTS: A COMPARISON OF THE RELATIVE  
IMPACT BETWEEN ENVIRONMENTAL FACTORS  
BY ORGANIZATION TYPE**

A Dissertation

by

WILLIAM WURTZ

Submitted to the Office of Graduate Studies of  
Texas A&M University  
in partial fulfillment of the requirements for the degree of  
DOCTOR OF PHILOSOPHY

August 2008

Major Subject: Educational Psychology

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August 2008

Major Subject: Educational Psychology

**ABSTRACT**

Increasing Creative Fluency in Organizational Environments: A Comparison of the  
Relative Impact Between Environmental Factors

by Organization Type. (August 2008)

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Changes brought about primarily by accelerating information technology have elevated innovation to the forefront of organizations' strategic concerns as the only sustainable competitive advantage. Innovation in turn requires organizational environments where creativity is supported and fostered. The vital initial step in an effective change effort to bring about more creative organizational environments is to conduct an assessment. However, no new creativity assessment instrument has been developed in over two decades.

This study presents the findings from a new organizational creativity assessment instrument, supplemented with data from a qualitative data-collection process involving in-depth interviews with a few representative employees from each organization. The development of the instrument draws upon recent creativity literature, primarily theoretical and anecdotal, resulting in 28 questionnaire items. Each item represents a potential environmental influence of creativity in a particular organization. One subset is

physical or tangible environmental factors, such as the building where people work, as well as less tangible factors, such as “management response.”

The instrument was administered in four different organizations in four different industries in an effort to begin to determine the utility of the instrument (n = 81). The results from the different organizations, including straightforward statistical tests, facilitated comparisons of differences in the amount and type of creativity supports between organizations. The qualitative data provided a check of confirmatory detail to the quantitative results, as well as providing rich contextual detail.

A factor analysis was conducted on the overall results in order to determine if there was a possible underlying structure to the multitude of variables included in the survey instrument. The analysis revealed five factors, Creativity Management Process, Cultural Support Mechanisms, Organizational Inputs, Discussion Stimuli, and Organizational Helpfulness.

Overall, the major conclusion is that the instrument is a potentially useful tool warranting further development and refinement and, ultimately, a full test of its validity and reliability. Also, the qualitative data added valuable context to understanding an organization’s creativity culture, as well as providing confirmatory support for the survey findings. An additional finding is that physical aspects of the environment were not recognized as significant factors in influencing organizational creativity.

## **DEDICATION**

This dissertation is dedicated to my late father and mother, William Wurtz, Sr. and Lenora June Tefteller Wurtz. Though they are gone, I cannot stop thinking of them and the great gift they gave me to explore and develop my own creativity.

## ACKNOWLEDGEMENTS

While I alone am responsible for the following study, it could not have been attempted, much less completed, without the guidance and assistance of many people. At the top of the list is my dissertation committee, Joyce Juntune and William Nash (co-chairs), Rodney Hill, and Ben D. Welsh. Each of these individuals gave selflessly of their time and expertise to make me a better researcher and scholar.

These four are but a small sample of the outstanding teachers I have been privileged to learn from at Texas A&M University, the American Creativity Association, and elsewhere. They are the models for my life, since I am proud to call myself a teacher. Above all, they have taught me that one never learns so much as when one teaches others.

In addition, I want to thank the organizations and individuals who participated in the research. Due to the pledges of anonymity to both the organizations and individuals involved, specific recognition cannot be provided. Their time and attention was essential to this research project.

## DEFINITION OF TERMS

1. Creativity. An idea that is both novel and potentially useful in a particular context (Sternberg & Lubart, 1999).
2. Fluency. The number of ideas produced by an individual (person, work group, or organization) per unit of time.
3. Member Checks. One phase of the naturalistic inquiry process, considered most important to establishing the credibility of a qualitative research effort, where members of the setting being studied are provided an opportunity to indicate whether or not the reconstructions of the researcher are recognizable by them (Erlandson et al., 1993).
4. Non-Tangible Work Environment. Those aspects of an organizational milieu that involve factors relating to the firm's policies and practices, cultural norms, and interpersonal relations, such as reward systems, management style, methods used to resolve interpersonal conflict, and the influence these have on human behavior.
5. Organizational Fluency. The number of ideas produced by individuals associated with a specified organization or group per unit of time.
6. Peer Debriefing. This phase of the naturalistic inquiry process where a professional, who is not directly involved with the research project but who has some general understanding of the subject area involved, analyzes the researcher's notes and data, tests hypotheses and emerging designs, and listens to the researcher's concerns about the project. This type of review contributes to the credibility of qualitative research (Erlandson et al., 1993).

7. **Physical Work Environment.** The architecture and arrangement and use of space, particularly in organizational settings, with particular concern as to how these influence human behavior.
8. **Referential Adequacy.** Refers to an aspect of the naturalistic inquiry process of qualitative research where the credibility of the data is enhanced by the researcher collecting materials describing in rich detail the context in which the research is occurring. These materials may be collected by either obtrusive (e.g., video-taping or note-taking) or unobtrusive (e.g., collecting organizational newsletters or internal memoranda) means (Erlandson et al., 1993).
9. **Thick Description.** The result of the naturalistic inquiry process. The researcher specifies everything about the phenomenon being studied so that the reader has all the information needed to understand the situation (Erlandson et al., 1993).
10. **Triangulation.** Within the process of naturalistic inquiry, the use of multiple methods of data collection to ensure the credibility of all of the data (Erlandson et al., 1993).



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## CHAPTER I

### INTRODUCTION: THE IMPORTANCE OF THE RESEARCH

Creativity, along with its product, innovation, is fast becoming a subject of consuming interest to organizations everywhere. Indeed, according to one influential recent book, creativity has become the defining, even transforming, factor of our time:

Powering the great ongoing changes of our time is the rise of human creativity as the defining feature of economic life. Creativity has come to be valued ... because new technologies, new industries, new wealth and all other good economic things flow from it. And as a result, our lives and society have begun to resonate with a creative ... spirit ... It is our commitment to creativity in its varied dimensions that forms the underlying spirit of our age. (Florida, 2002, p. 21)

Interestingly, the thesis of this book is that certain cities in the United States have been and are likely to continue to be successful in attracting large numbers of highly creative people because of the kind of environment they provide. This trend makes them more competitive economically.

In support of this notion of creativity as a determining economic and cultural factor, a prominent foreign affairs columnist writes that creativity has already become a battleground in the global strategic struggle among nations, which is increasingly waged by marshalling economic power. The amount of that power, in turn, is governed by the amount of creativity a particular nation can promote in its businesses and throughout its society (Friedman, 2005). Further, a leading business magazine asserts that creativity is the “new core competence of business” (Nussbaum, 2005, first section, ¶3).

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The style of this dissertation follows that of the *Journal of Creative Behavior*.

Because of this growing realization, there is increasing interest among business and political leaders in how to foster the creativity of individuals, work groups, and entire organizations, both for-profit and non-profit. Surprisingly though, there is very little rigorous research about the effect of the organization's environment on creativity. This micro-level environment is generally assumed to be a powerful influence over worker performance. Indeed, during the 1980s and '90s, during the heyday of the quality movement, a popular saying was that "put a good worker in a bad system [synonymous with environment] and the system will win every time." Thus, it is imperative to begin exploring what effects the organizational environment has over worker and work group creativity.

### **Related Literature**

In 1950, J. P. Guilford gave his address as the new president of the American Psychological Association. Guilford used his remarks to lament the lack of research on creativity and to call for more investigations into it by members of the profession. Judged from the standpoint of numbers of research articles published, Guilford's efforts can be considered as a remarkable success, for today there is an abundance of creativity research. Indeed, the amount of creativity research now calls forth numerous summary articles on the state of the field (Albert & Runco, 1999; Mumford, 2003).

One common definition of creativity is that it is the ability to produce work that is both novel and (at least potentially) useful (Sternberg & Lubart, 1999). According to Brown (1989), creativity (and thus creativity research) can be subdivided into four components – (a) the creative process, (b) the creative product, (c) the creative person,

and (d) the creative situation – any of which is worthy of investigation. Yet as Mumford (2003) notes, it is the fields of creative thought (which includes process and product) and the creative personality that have drawn the most attention from researchers over time. It is only recently that research on the impact of situational influences on creativity has emerged as an arena of significant work. Mumford goes on to subdivide the situational category into a number of subordinate fields, including what he refers to as “institutional settings,” what will be called “organizational environments” here.

The growing interest in creativity and innovation can be attributed to a major shift in the nature of work. As described by Senge (1990) and others (Baird & Henderson, 2001), there is a massive transformation taking place that involves an increasing focus on the production of knowledge and learning, as distinct from the traditional emphasis on the manufacture of goods. This change has been brought about by the rapidly growing and accelerating flows of information (aided and abetted by information technologies) and “globalization” of world markets. The production of new knowledge is inherently a creative act.

The issue is not whether businesses and organizations need creativity. A creative idea, which in turn leads to a new innovative product or service, has always been an engine (if not *the* engine) of economic development. Everything from the cultivation of crops by our Stone Age ancestors, to the development of the steam engine, to the creation of the integrated circuit have been creative acts that have profoundly changed how humans earn their daily bread and organize their lives. What has changed is the scale of creativity’s impact. A knowledge-based economy establishes a situation where

more and more people need to use creativity to accomplish the work they are required to perform.

The issue, therefore, is how to increase the production of creative ideas by workers. Broadly, one can conceive of two (non-mutually exclusive) strategies for accomplishing this. One way is to develop individuals' capacity to generate more creative responses through training or some other developmental process. The other general approach is to change the organization's "environment" so that it is more stimulating and conducive to fostering creative responses, or at least does not inhibit creative responses.

Guilford (1950) introduced the term "fluency" to describe the number of ideas produced by an individual per unit of time. The assumption behind this concept is reflected in the remark often attributed to Nobel Laureate Linus Pauling: to get a good idea, a person needs to have lots of ideas. Torrance and Safter (1999) borrowed the fluency concept and made it part of his tests for creativity, which are among the best-known and widely used assessments of individuals in the world. As research expands to include more consideration on the organizational aspects of creativity, it seems appropriate to borrow and apply this term to this proposed research. Thus, "organizational fluency" will be defined as the number of ideas produced by individuals associated with a specified organization or group per unit of time.

The term "environment" and the state of the related research need to be carefully considered. According to a review of the scope of research on environmental psychology as it applies to the workplace:



Empirical research on offices and factories is best described as uneven. Extensive research exists on some topics, but practically none exists on many others. ... [Environmental psychology research appears to be] “dominated by isolated studies of specific problems, often with minimal ties to theory. ... studies [in industrial and organizational psychology] of the physical environment have been relatively infrequent since World War II. Environmental psychologists have only lately begun to study work environments. (Sundstrom, 1987, p. 736)

In addition, there is a need to clarify the use of the term “environment” when it comes to using it in organizational settings. There seem to be two general meanings in the literature about organizations. One approach is to define environment in purely or largely physical terms involving the architecture and use of space. The other use refers to more intangible aspects of the work environment that are influenced by a number of factors. The term “work climate” is generally synonymous with this definition (Amabile et al., 1996; Anderson & West, 1998). Each will be considered in turn.

First, though, let us consider the importance of the distinction between physical and non-tangible environmental factors. It lies with the practical concern of the practitioner (a company executive, manager, or performance improvement consultant) about which these variables can be manipulated and changed most readily and conveniently. Amabile (1990), in a review of research conducted with a colleague, found that a group of research and development scientists rated environmental factors as “much more salient” factors than personal characteristics in their experience of creative (versus uncreative) events. Amabile goes on to argue that major corporations are likely to be similar in hiring people for roles like research scientist, who generally possess roughly equivalent levels of the personal factors (intelligence, education, etc.) that lead

to high creativity. Thus, her research result probably reflects the fact that it is differences in organizational environment that account for the variance in creative output.

There is substantial literature on the impact of physical space and structures on human behavior and cognition. This includes studying how structures and space influence behavior in organizations and at work (Sundstrom, 1987). Yet no rigorous research can be found dealing with creativity in the workplace. The index in Sundstrom's *Handbook of Environmental Psychology* (1987) has no listings for creativity and only three for innovation, all dealing peripherally with the diffusion of results for energy management programs. Inquiries into electronic databases, using synonymous terms for creativity and environmental psychology, turn up nothing.

What could be found, and what is indicative of the state of research in the field, is the work of Palus and Horth (2002). The authors are associated with the highly-regarded Center for Creative Leadership, a management training and development firm. Using "site visits, interviews, surveys, and an annual conference" (p. xiv), the pair followed up on the experiences of approximately 200 individuals who had attended one of the Center's popular training programs.

The overall result of the authors' work was to derive six creativity-based competencies they assert are important for executives and managers to exercise for success. In a section entitled "Creating Spaces for Group Work," they take up the issue of the influence of physical space on what is being referred to in this paper as fluency. They assert that "[h]aving a dedicated, shared space is important for encouraging creativity in groups" (Palus & Horth, 2002, p. 131), and they go on to describe the "best

group workspaces” are those which incorporate several of the following features (pp. 134-136):

- “Low-tech and high-tech media,” including such things as corkboard walls for butcher-paper maps (low-tech) and computers and internet access for digital collaboration (high-tech).
- “Various art and lots of it.” This supposedly encourages novel associations.
- “Customizable arrangement and embellishment,” meaning furniture that can be easily moved (on wheels) to accommodate a group’s needs at any particular moment.
- “Coves and caves,” that is, the ready availability of both private spaces for workers to seek out when they need to do individual work (coves) and large, open spaces to facilitate group interaction (caves); ideally, these separate spaces should be conveniently located close together.
- “Shoes of our customers’ features.” This short-hand expression alludes to the phrase “walk in the shoes of our customers.” This is where an organization outfits the space, on an evolving basis, with the most recent state-of-the-art equipment, so that the workers experience what their most advanced customers feel. The presumption here seems to be that this is a means to ensure workers are somehow staying at the forefront of knowledge by following the example of industry leaders rather than laggards.
- “Corporate DNA.” This refers to having reminders throughout the space of the workers’ organization’s values and vision. This feature seems to be

somewhat similar to Robinson and Stern's alignment factor (see below) in that its purpose is to ally workers with, or remind them of, the organization's purpose. Corporate DNA comes in many forms, including printed documents (e.g., a framed copy of the organization's "guiding principles") hung on the walls of the group space. It can also be in the form of corporate memorabilia (such as a sample of the organization's first product). In a particularly elaborate form, the authors cite the case of a Norwegian ocean-shipping company whose headquarters resembles a sailing ship. Work spaces are designed to resemble parts of a ship like a deck or a crew's nest.

The work of Robinson and Stern (1998) is indicative of the other use of the term environment. In their book, *Corporate Creativity*, they take the view that the organizational environment is a powerful force for fostering or stifling creativity. The authors cast doubt on the effectiveness of methods (meaning mostly training) designed to increase creative fluency. Instead, they argue that the

Majority of creative acts are unplanned, and each begins with an awareness of an unexpected opportunity. By the time this opportunity is developed to the point where a target can be set and creativity methods brought to bear, much of the creative challenge is over. If creativity methods can help us to master anything, it is this final step. From the point of view of corporate creativity, they have low leverage precisely because they are designed to help a company end up where it is already planning to go. (Robinson & Stern, 1998, pp. 49-50)

The richer target of opportunity for increasing fluency in their view is the work environment (p. 29), understood in the non-physical sense. Specifically, Robinson and Stern (1998) cite and explore six elements of the environment that are regarded as the keys to fostering more fluency (p. 17):

1. Alignment. Active, consistent efforts by an organization to arrange employee interests and activities so that they agree on organizational goals. Management by Objectives, the granddaddy of all management systems, is an example of an alignment effort.
2. Self-initiated activities. This refers to setting up organizational systems which encourage and collect the ideas that workers are naturally prone to produce on their own.
3. Toleration of unofficial activities. Creative acts have traditionally, almost by definition, been outside of the scope of an employee's prescribed duties. Therefore, an organization must allow for some space or slack that enables an employee to pursue a creative idea, for example, in the form of non-sanctioned research experiments.
4. Serendipity. This refers to an organizational climate where accidents and other exceptions from the routine are viewed as naturally occurring experiments and explored as a source of new ideas. An example of this was the isolation of an enzyme that is helping to address waste management problems the discovery of which was prompted by a serendipitous accident. The accident was the complete disappearance of a dead chicken when it was sucked into a manure digester at a university's experimental farm. The other critical aspect of this factor is not just that the accident happened, but that workers were intrigued by it and took the time to investigate.
5. Diverse stimuli. Making novel associations has been known for quite some time as a key source of creative thinking. The notion here is for organizations to help employees in making more such associations through such actions as frequent and wide-spread job rotation and setting up means for employees to move outside of traditional organizational boundaries and interact with a broad array of different employees.
6. Intra-company communication. This is somewhat similar to diverse stimuli factor in that it aims at fostering more novel associations. It is different in the fact that there is the recognition that creative potential increases with the number of employees in the organization. However, there can be a paradoxical result. The potential cannot be realized because employees often do not know how to access the broad array of resources available in the company unless improved communications are put in place. Improved communications lets everyone know what is going on throughout the company. Improved communications also helps to create norms of behavior where employees are encouraged to promptly respond to requests for information from persons outside their units. This is in sharp contrast to the

typical bureaucratic norm of erecting barriers to information flows based on internal organizational boundaries.

A case study of generating greater organizational fluency is set out in Tanner (1997). Tanner was a respected technical executive at DuPont who was persuaded to undertake an effort to bolster the company's innovativeness in the mid-1980s. His efforts eventually led him to build the DuPont Center for Creativity & Innovation, as well as to become a thought leader in applied creativity as president of the American Creativity Association.

Looking back on his experience, Tanner cites six "dimensions" that made up the Center's approach to generating more creative fluency at DuPont. These are:

1. Learning and applying creativity techniques. This includes training in creative thinking methods for both individuals and groups.
2. Valuing diversity in thinking. Using different assessment instruments to assess individual thinking and social (or behavioral) styles, in order to better appreciate one's own preferences as well as those of others.
3. Engaging the organization. Launching pilot efforts to increase creativity and supporting those with measurements and other environmental supports.
4. Structuring for creativity and innovation. Establishing a corporate center for creativity and innovation. Using the center at DuPont as a model, such a center might train and make facilitators available to creative problem solving groups, sponsor creative problem solving workshops, provide initial limited funding to support promising ideas and related activities.

5. Recognizing emerging champions and supporters. Providing rewards and recognition to those engaged in creative activities in order to encourage more such behavior.
6. Taking ideas to market. Turning creative ideas into innovative products and then getting those products out into the marketplace.

In assessing Tanner's work, it is interesting to note two things. First, he can claim with some credence that his efforts were successful. Over a three-year period, DuPont saw an increase in "notices of invention" (a report from researchers to management about promising new ideas) rose from 40 annually to about 130, a 300% increase. Actual patent filings doubled in the same period from 16 to 32.

Second, and more germane to our interests, half of Tanner's factors (numbers 3, 4 and 5) fall under the rubric of what we are calling environmental factors, all of the non-tangible variety.

The conclusion one draws from the literature is that there appears to be support, of an informal and anecdotal nature, for the belief that organizational environments have a significant and meaningful effect on creative fluency. The challenge is to rigorously test this belief, and begin exploring and measuring some of its nuances, through research.

## **CHAPTER II**

### **STUDY PURPOSE AND METHODS**

This study investigated whether organizational environments make a difference in creative fluency. It explored this phenomenon in several ways. It attempted to determine whether environmental factors, as defined in the study, and considering physical and non-tangible factors together, influenced fluency, and in which direction (positive or negative). The study sought to determine, in terms of fluency amounts, the relative contributions of the various environmental factors, in organizational settings. Finally, the research attempted to measure whether and to what extent a type of organization (a form of environmental factor) influences the number of creative responses.

#### **Research Objectives and Questions**

The objective of this research was to investigate whether or not certain environmental factors in four different types of work organizations increase the fluency (that is, the number or amount of) creative responses. Specific objectives included:

- To investigate whether certain environmental factors have a positive effect on increasing creative responses.
- To analyze the amount of difference (if any) between the influence exerted by various factors.
- To analyze the amount of difference (if any) between the influence magnitude exerted by environmental factors by organization type.



The research questions that follow from these purposes are:

1. Do certain environmental factors influence organizational creative fluency?
2. Is there a significant difference between the amounts of fluency attributed to various environmental factors?
3. Is there a significant difference in fluency attributable to organizational type?

## **Method**

### *Subjects*

There are two of types of subjects included in this study. The first is organizational type. Four organizations in Texas were recruited for the study. The four represent very different sectors of the economy that vary considerably in output (product or service) produced and type of space utilized for operations. The four organizations included are a:

- Regional newspaper
- Diversified oil services company
- Real estate management company specializing in college student housing
- Community college

Descriptions of these organizations can be found in the next section of this study.

The other type of subjects were work groups within each organizational type. The number of respondents from these work groups varied in size from between 12-50 members. One condition for selection was that the potential respondent be involved in one of the core work processes of the organization. In other words, support staffs from

functions such as accounting or human resources were not included. All of the participants were volunteers who were given the opportunity to opt out of the study.

Relevant demographic and background data were collected through the survey instrument (described below in the subsection immediately following) from each participant, job tenure with the firm, job type, educational attainment, age range, gender, and ethnicity. This information for each organization's set of respondents, and for all respondents collectively, is set out in the next section.

### *Instruments*

Two instruments were utilized in the study. The first one was a survey. The survey was developed as part of the research project. A copy of the instrument can be found in Appendix A.

### **Survey**

The survey, or questionnaire, has three parts. The first part is a section devoted to the demographic items, described in the prior paragraph.

The next section contains the main survey questions (items). There are 28 pairs of items. The first 22 items deal with non-tangible or non-physical environmental factors, such as management responsiveness, rules and procedures, and communication norms and practices. These are the "soft" factors that presumably describe the organizational climate (e.g., responsiveness to creative ideas, or ease of information sharing). These factors are largely drawn from the previously cited work of Robinson and Stern (1998).

Items 23 through 28 are drawn from the six factors cited by Palus and Horth (2002). These are tangible features of the organizational environment found in organizations deemed to be highly creative and associated with promoting high levels of creativity. These include such things the actual facility and work spaces where the work occurs, the furniture and equipment used, and the influence of graphics and art objects as creative stimuli.

As previously noted, each item in the main portion of the survey is divided into two parts. The first part of each pair asks the respondent to rate the presence of a particular environmental factor within the organization on a Likert-type seven-point scale, such as the effectiveness of organizational rules and policies in supporting employees' creative efforts.

The second half of each pair asks the respondents to rate, again on a seven-point Likert scale, the factor in the first half as to its importance in encouraging organizational creativity. The intent of this two-part structure is to facilitate analysis in two ways: (a) identifying where there is congruence between particular factors and their perceived importance, indicated by a positive correlation between the two ratings and perhaps more importantly, (b) identifying where there is potential "gap" between the presence of a particular factor within the organization as it actually is, and intended to enable comparisons between the actual presence of a factor with employee perceptions of the factor's importance.

The third part of the survey is a section for written responses on three items. The first item asks each respondent to estimate the number of ideas he or she has come up with in the past six months. This is a basic measure of fluency.

The second item under this section asks the respondent to indicate if any of the ideas have been implemented, and if so, to estimate the number. Thus, this item provides data on the “success rate” in transforming a creative idea into a practical innovation.

The fluency and implementation data can be averaged by company and for the entire set of respondents. These averages, however rough and imprecise, provide insight into what respondents believe about both their own creative powers and the climate of organization in facilitating innovative transformation.

The final item gives respondents the opportunity to share their perspectives on what factors operating in the organization environment helped or hindered the idea of transformation process. The qualitative data supplements the information produced from the naturalistic inquiry process discussed next.

### **Naturalistic Inquiry**

The second instrument used was the human instrument in order to obtain for qualitative or naturalistic information (as described, for example, in Erlandson et al., 1993). The researcher, in the role of interviewer, met with three to four respondents from three of the four companies. (Permission to interview was not obtained from the oil services company.) The advantage in using the qualitative interview process is the opportunity to explore more in depth the interviewee’s experience of the environment, as

well as to clarify the responses provided. The qualitative data also provided a limited means of confirming findings from the survey.

A simple interviewing protocol was used. Each interviewee was first asked to describe his/her role and experience in the company, in part to generate the information and provide a context, in part to help put the person at ease. Next, each interviewee was asked to recount a recent (i.e., within the past six months) example of a work-related creative idea the individual had come up with and tried to implement. From there, similar to the item in the survey, the interviewee was encouraged to describe what factors in the organization helped or hindered the creative and innovation implementation efforts.

### **Procedures**

The instrument was administered to 81 people across the four companies during 2007. (The number of respondents by company will be given in the next section.) The administration time for the survey was estimated to be about 20 minutes per person.

The qualitative interviews typically occurred within two weeks of the survey administration. The key management person, within each company who authorized the research, chose the subjects. The guidance given to this person was to choose individuals considered creative within that work environment. The rationale for this guidance was that persons who had actually demonstrated significant creative achievement on the job could provide more information about how the organizational environment helped or hindered the innovation process than someone who had not.

When possible, the interviews were conducted at the respondent's job site. In a few cases, out of necessity (i.e., the person lived in another city, or schedules between the researcher and the person could not be coordinated for an on-site visit), the interviews were conducted by phone.

### **Analysis of the Data**

The analysis of the data begins with a demographic summary of the entire set of respondents set out in the next chapter. This information aids in understanding the similarities and differences among and between respondents. It also serves as a basis of comparison when looking at the respondents for each of the individual firms.

One of the major goals in analyzing the data collected from the survey was to determine if, out of the welter of items drawn from the literature, it was possible to identify a smaller number of underlying dimensions present through the statistical process known as factor analysis. Reducing the number and complexity of items into a few factors made the task of analysis much easier and contributed to theory building and interpretation. This approach was particularly applicable due to the large number of measures employed in the study. "Factor analysis is a technique used to identify factors that statistically explain the variation and covariation among measures. Generally, the number of factors is considerably smaller than the number of measures and, consequently, the factors succinctly represent a set of measures" (Green & Salkind, 2004, p. 312). In other words, factor analysis can help in identifying what may be variously described as an underlying structure in the data, or set of relationships, or subscales among the disparate measures.

By design, the survey contains one such dimension, or sub-scale. This is the set of items pertaining to the influence of the physical environment, Items 23 to 28. These items cover a range of tangible factors – from the facility (building) to the furniture, arts and graphics, meeting space, advanced equipment and products, and meeting rooms – within the organization, which may be potential stimuli to creative thinking and innovation.

Factor analysis can provide an indication to the relative influence of this sub-scale and others that may be revealed on the respondents' reactions. This form of analysis is applied to the entire data set.

This overall analysis is important to developing our understanding of the general dynamics of creative fluency and testing the instrument's power; it is also useful to analyze results by organization. This type of analysis provides insights about the differences between and similarities among organizations (and, by extension, industries) relative to the factors that help or hinder creative thinking and innovation. As crucial as the overall analysis of creative fluency factors is, being able to discriminate the factors contributing to a particular organization's or industry's creative climate may be even more important to practitioners seeking to bring about productive change.

Two different types of data are employed in the organization analysis. First, the information derived from the naturalistic inquiry methods is subjected to the techniques of triangulation, referential adequacy, peer debriefing, and member checks, resulting in a "thick description" of the phenomena (Erlandson et al., 1993). (These and related terms are defined in the Definitions of Terms.) In other words, this approach paints a vivid

picture of a particular organization's creative climate as seen from the perspective of a small number of its employees.

The initial conclusions drawn from this "portrait" of the organization are then compared with results from the survey for the firm. The survey information used for comparison purposes is both descriptive statistics along with some correlation coefficients. The comparison between the two datasets can be used to confirm or refute the conclusions based on the two instruments, survey and naturalistic inquiry.



## CHAPTER III

### ANALYSIS

#### Overall Demographics

To understand the make-up of the respondents' pool, in this section the demographics information for the group is reviewed. The group includes 81 respondents. A substantial majority, 60%, has been in their current job less than five years (Table 1). A large majority hold either a manager or staff professional level position (60% and 27% respectively, making up nearly 90% of the total) (Table 2).

Table 1

#### Overall Results – Work Length

| Years of Service | Frequency | Percent | Cumulative Percent |
|------------------|-----------|---------|--------------------|
| 0 to 4 years     | 50        | 61.7    | 61.7               |
| 5 to 9 years     | 10        | 12.3    | 74.1               |
| 10 to 14 years   | 5         | 6.2     | 80.2               |
| 15 to 19 years   | 10        | 12.3    | 92.6               |
| 20 to 24 years   | 1         | 1.2     | 93.8               |
| 25 or more years | 5         | 6.2     | 100.0              |
| Total            | 81        | 100.0   |                    |

Table 2

**Overall Results – Job Type**

| Job Type              | Frequency | Percent | Cumulative Percent |
|-----------------------|-----------|---------|--------------------|
| Production Worker     | 2         | 2.5     | 2.5                |
| Technician            | 1         | 1.2     | 3.7                |
| Staff Professional    | 22        | 27.2    | 30.9               |
| Manager or Supervisor | 49        | 60.5    | 91.4               |
| Executive             | 3         | 3.7     | 95.1               |
| Other                 | 4         | 4.9     | 100.0              |
| Total                 | 81        | 100.0   |                    |

The group is very well educated – almost half have a bachelor’s degree. Adding together both those who have a master’s and the few with a doctorate provides another 30% of the group (Table 3).

A substantial plurality of the group, over 45%, is young (in the 20- to 29-year age bracket). However, there is representation of people in their 30s, 40s and 50s, around 15% for each category (Table 4). The sexes are represented equally within the group, which is overwhelming white (Table 5).

Table 3

**Overall Results – Age Range**

| Age Range    | Frequency | Percent | Cumulative Percent |
|--------------|-----------|---------|--------------------|
| 20 to 29     | 38        | 47.5    | 47.5               |
| 30 to 39     | 13        | 16.3    | 63.8               |
| 40 to 49     | 14        | 17.5    | 81.3               |
| 50 to 59     | 11        | 13.8    | 95.0               |
| 60 and older | 4         | 5.0     | 100.0              |
| Total        | 80        | 100.0   |                    |

Table 4

**Overall Results – Gender**

| Gender | Frequency | Percent | Cumulative Percent |
|--------|-----------|---------|--------------------|
| Female | 42        | 51.9    | 51.9               |
| Male   | 39        | 48.1    | 100.0              |
| Total  | 81        | 100.0   |                    |

Table 5

**Overall Results – Ethnicity**

| Ethnicity                 | Frequency | Percent | Cumulative Percent |
|---------------------------|-----------|---------|--------------------|
| African American          | 6         | 7.4     | 7.4                |
| Asian or Pacific Islander | 4         | 4.9     | 12.3               |
| Caucasian                 | 65        | 80.2    | 92.6               |
| Hispanic                  | 3         | 3.7     | 96.3               |
| Native American           | 1         | 1.2     | 97.5               |
| Other                     | 2         | 2.5     | 100.0              |
| Total                     | 81        | 100.0   |                    |

**Overall Results – Top and Lower Quartiles**

Recall that there are two measures within each set of factors being studied, the actual level of the phenomenon within the organizations as perceived by the respondents, along with the respondents' assessment of the importance of each factor. Let us begin the analysis by examining the overall results for the actual level, displayed in Table 6.

It helps our understanding to extract from both ends of these results, the factors that most – and least – contributed to fostering organizational creativity overall. While all of the items are part of the original design, the goal is to determine which items seem to have the most and least impact. We will use a convention of looking at the factors that make up the top and bottom quartiles of the frequency distribution as the initial form of analysis.

Table 6

**Overall Descriptive Statistics**

|                              | N  | Mean | Standard Deviation |
|------------------------------|----|------|--------------------|
| Organizational Helpfulness   | 81 | 2.48 | 1.352              |
| Idea Origin Area             | 81 | 2.86 | 1.301              |
| Management Response          | 81 | 2.90 | 1.281              |
| Organizational Resources     | 81 | 3.12 | 1.536              |
| Organizational Knowledge     | 81 | 3.14 | 1.282              |
| Discuss Ideas                | 81 | 3.21 | 1.464              |
| Organization Response        | 81 | 3.22 | 1.440              |
| Rules Support                | 81 | 3.23 | 1.372              |
| Customer Meetings as Stimuli | 81 | 3.32 | 1.672              |
| Job Rotation                 | 81 | 3.40 | 1.814              |
| Company Publications         | 81 | 3.47 | 1.659              |
| Meeting Space                | 80 | 3.53 | 1.814              |
| Action Bias                  | 80 | 3.55 | 1.590              |
| Building Stimuli             | 81 | 3.60 | 1.514              |
| Moveable Furniture           | 79 | 3.62 | 1.749              |
| Communication Submission     | 81 | 3.72 | 1.748              |
| Many Involved in Creativity  | 80 | 3.73 | 1.340              |
| Symbols as Stimuli           | 80 | 3.75 | 1.539              |
| Meet and Share Ideas         | 81 | 3.79 | 1.715              |
| Freely Submit Ideas          | 79 | 3.81 | 1.424              |
| Unrelated Skills Development | 81 | 3.91 | 1.690              |
| Experiment                   | 81 | 3.91 | 1.362              |
| Track Ideas                  | 81 | 3.93 | 1.563              |
| Outfitting Rooms             | 81 | 4.02 | 1.673              |
| Art as Stimuli               | 80 | 4.04 | 1.513              |
| Accidents as Stimuli         | 81 | 4.09 | 1.407              |
| Reward Ideas                 | 81 | 4.19 | 1.810              |
| Cross Department Knowledge   | 81 | 4.41 | 1.672              |
| Valid N (listwise)           | 74 |      |                    |

Using a standard method for computing quartiles, we come up with the following formulas and results from Table 6, which is a sorted, even-numbered (28) series of observations:

$$1^{\text{st}} \text{ Quartile} = 0.25 \times (N+1) = .25 \times 29 = 7.25$$

$$2^{\text{nd}} \text{ Quartile} = [(28/2) + (28+1/2)] / 2 = [14 + (29/2)] / 2 = [14 + 14.5] / 2 = 28.5/2 = 14.25; \text{ this is also the median}$$

$$3^{\text{rd}} \text{ Quartile} = 0.75 \times (N+1) = .75 \times 29 = 21.75$$

$$4^{\text{th}} \text{ Quartile} = >21.75$$

Using the rounded result for the top quartile, here are the top seven items from the overall survey:

- Organization Helpfulness (Question 21)
- Idea Origin Area (Question 2)
- Management Response (Question 1)
- Organizational Resources (Question 22)
- Organizational Knowledge (Question 20)
- Discuss Ideas (Question 18)
- Organization Response (Question 4)

On the other hand, the bottom quartile includes the item from 22 on from Table 6 (listed with the lowest-scoring or “worst” item at the top):

- Cross-Department Knowledge (Question 19)
- Reward Ideas (Question 7)
- Accidents as Stimuli (Question 14)

- Art as Stimuli (Question 25)
- Outfitting Rooms (Question 27)
- Experiment (Question 11)

In many respects, the second, low-scoring list is perhaps the more informative and useful of the two. To begin with, the worst-scoring item, Cross-Department Knowledge, strongly suggests that communication patterns are extremely restricted in the respondents' organizations, that employees are hunkered down, noses to the grindstone, focused on their own narrowly defined tasks. Thus, employees in these organizations have little or no idea what their fellow employees in the separate department right across the cubicle wall are doing.

The costs of this mind-your-own-business norm may be huge. Work is a process. Organizations come into being to harness the advantages of the division of labor. The question, however, becomes how to monitor each work process in its totality in order to see new opportunities to improve the process (and ultimately the product), by eliminating or combining steps in the process, or coming up with "cheaper, faster, better" ways of accomplishing a work process step.

The monitoring of work processes has typically and traditionally been considered to be management's job. However, managers can only see and do so much. The assumption mentioned earlier, that a creative idea can come from anywhere, is one current in organizational thinking. It leads to the proposition that the most innovative and productive organizations should be both empowering workers and re-imagining management's job to be one of facilitating information flows. It stands to reason that the

wider and more varied the information flows, the greater the potential for encountering a creative stimulus. There is to be gained by enabling employees to understand more about the work process they are part of, bringing many minds to the task of process improvement.

This type of process improvement is a prime example of innovation on a small scale. While some of the specific small improvements/innovations may seem tiny, even trivial, the cumulative effects of such innovations can be powerful.

The notion of rewards is at the foundation of motivational theories in both academic and everyday psychology: a behavior that is rewarded is much more likely to be repeated. The fact that the respondents' believe creativity is not rewarded in their organizations is an indication that, from their perceptions and despite what management rhetoric may say, new ideas are not truly valued in their organizations.

Next, consider the similar items, Accidents as Stimuli and Experiments, the third and sixth factors on the list, respectively. This is evidence that the participating organizations are not open to the insights and learning that come from what was referred to earlier as serendipity. This suggests a high degree of organizational control over people's behavior and treating incidents outside expected limits as problems to be solved, or perhaps even swept underneath the proverbial rug.

Finally, we come to two other related items, Art as Stimuli and Outfitting Rooms, which are fourth and fifth on the list. These two are part of the physical environment set of factors. The art-as-stimuli item seeks to measure whether an



organization can use art, displayed throughout an organization's facility, in a deliberate way as a stimulus to creative thought.

The outfitting room item refers to where organizations furnish a room featuring the kind of equipment that the organization's customers use. This is a deliberate attempt to stimulate creativity by helping employees "walk in the shoes" of their customers. The presence of these two items on the bottom quartile list is an indication that employees in the represented organizations do not see their organizations manipulating the physical environment to foster more creativity.

Returning to the first list of factors ranked in the top quartile, it can be said that what the respondents have intuitively identified are items that individual contributors might naturally recognize as useful to them in coming up with ideas and pushing them through a traditional organizational system. For example, to take the top item, Organizational Helpfulness, implicitly recognizes that most innovations usually have a complicated genesis and broader impacts than just the immediate worker and her department. The item, as worded, implicitly recognizes that the information that sparks a creative idea can come from a coworker in a different department.

This is also recognized in the second item on the list, Idea Origin. In addition, the item embodies the notion that moving from the creative ideation stage to actual development and implementation of a full-blown innovation will almost always require additional information (not to mention aid, or at least a suspension of resistance) from coworkers located throughout the organization.

Along the same lines, the fifth item on the list, Organizational Knowledge, is a recognition that, for a creative idea to find expression as a practical innovation within a particular organizational setting, an employee with a creative idea must often be able to manipulate or the “work the system” beyond one’s own narrow role to effect a change. In order to do this, somehow the employee needs to learn, usually on an informal basis in a traditional organization, how to gain access to key decision makers, resources and information.

It is interesting to note the apparent contradiction between this item and the lowest-ranking item in the entire survey, Cross-Departmental Knowledge. As will be shown below, the resolution may come from the fact that most of the innovations that are identified through the qualitative interviews are very limited in scope. That is, their impact tends to be contained within one person’s role or within a particular work unit. Still, even these small, narrow innovations can only be accomplished with some broader organizational knowledge.

The third and seventh (and last) items on the list, Management Response and Organization Response, indicate that there must be some valuing of creativity within an organizational setting for it to survive, much less thrive. This means the supervisory hierarchy has to demonstrate, in observable ways, support and encouragement to employees to enable them to take an idea from the concept stage to full realization as an innovation. One of the most tangible ways to demonstrate this support is by providing resources – supplies, equipment, time, etc. – to employees with creative ideas, which is the fourth item on the list, right below Management Response.

The Organization Response is composed of three subsidiary factors: fairness, timeliness, and constructiveness. The intent of the item is to begin drawing a distinction between an individual response by concerned and caring managers and more systemic efforts by organizations to foster creativity and innovation. What this item captures, in particular, is that the people who come up with the idea must be given due recognition, followed by a prompt decision on whether to proceed or not with development of the idea.

Often the decision will be “no,” since most creative ideas are not turned into innovations. In these instances, what can be a very disappointing and disheartening moment can be transformed into a teaching moment by explaining the good business reasons that led to the decision. This can then set the stage for more, and more successful, creativity in the future by providing employees with a larger and fuller understanding of the organizational context in which innovation must occur.

The final factor to be discussed is the sixth item on the list, Discuss Ideas. The presence of this factor suggests that for any amount of creativity to occur within a particular organizational context, employees must experience some minimum amount of psychological safety. This safety enables them to share a creative idea with someone (usually a manager with the power to help implement the idea) and discuss it. The discussion can help more fully develop the idea. But regardless of how much additional development occurs, the essential act is to put the idea “on the table” for consideration by management and coworkers. Individuals, who believe their creative ideas will be

ignored – or worse, ridiculed or stolen – are not going to risk bringing a creative thought forward for others to consider.

Through this review of the top- and bottom-scoring items, we begin to see that the instrument is beginning to identify, with some exactness, factors at work within real organizational environments.

### **Actual and Ideal Factors Compared**

We move next to comparing creativity-related organizational factors as they actually are fostering creativity (in the perceptions of the respondents), versus the way they should be ideally. A paired samples analysis was undertaken.

Correlation coefficients were computed using the actual and importance scales for each of the 28 factors, as shown in Table 7. By convention for the behavioral sciences, results of .10, .30, and .50, regardless of sign, are considered to be small, medium, and large coefficients, respectively. For purposes of this research, in the early stage of evaluating this instrument, the interest was in large coefficients and, to a lesser extent, medium ones. This is because the larger the value, the greater the perceived convergence (if positive) or divergence (if negative) between the actual and the ideal.

A  $p$  value of less than .05 was set as the requirement for significance to control Type 1 error across the correlations.

Table 7

Overall Paired Samples Correlations ( $p < .05$ )

|         | Question Pairs   | N  | Correlation | Sig. |
|---------|--|----|-------------|------|
| Pair 1  | Management Response & Importance-Management Response                   | 80 | .250        | .025 |
| Pair 2  | Idea Origin Area & Importance-Idea Origin Area                         | 80 | .411        | .000 |
| Pair 3  | Rules Support & Importance-Rules Support                               | 80 | .222        | .048 |
| Pair 4  | Organization Response & Importance-Organization Response               | 80 | .158        | .163 |
| Pair 5  | Communication Submission & Importance-Communication Submission         | 81 | .237        | .033 |
| Pair 6  | Track Ideas & Importance-Track Ideas                                   | 80 | .196        | .082 |
| Pair 7  | Reward Ideas & Importance-Reward Ideas                                 | 81 | .167        | .137 |
| Pair 8  | Freely Submit Ideas & Importance-Freely Submit Ideas                   | 78 | .078        | .498 |
| Pair 9  | Cross Department Knowledge & Importance-Cross Department Knowledge     | 80 | .231        | .039 |
| Pair 10 | Company Publications & Importance-Company Publications                 | 80 | .320        | .004 |
| Pair 11 | Experiment & Importance-Experiment                                     | 80 | .444        | .000 |
| Pair 12 | Many Involved in Creativity & Importance-Many Involved in Creativity   | 80 | .314        | .005 |
| Pair 13 | Action Bias & Importance-Action Bias                                   | 80 | .217        | .053 |
| Pair 14 | Accidents as Stimuli & Importance-Accidents as Stimuli                 | 79 | .391        | .000 |
| Pair 15 | Job Rotation & Importance-Job Rotation                                 | 81 | .278        | .012 |
| Pair 16 | Unrelated Skills Development & Importance-Unrelated Skills Development | 81 | .332        | .002 |
| Pair 17 | Customer Meetings as Stimuli & Importance-Customer Meetings as Stimuli | 81 | .552        | .000 |
| Pair 18 | Discuss Ideas & Importance-Discuss Ideas                               | 80 | .405        | .000 |

Table 7 (continued)

|         | Question Pairs   | N  | Correlation | Sig. |
|---------|--|----|-------------|------|
| Pair 18 | Discuss Ideas & Importance-Discuss Ideas                           | 80 | .405        | .000 |
| Pair 19 | Meet and Share Ideas & Importance-Meet and Share Ideas             | 81 | .326        | .003 |
| Pair 20 | Organizational Knowledge & Importance-Organizational Knowledge     | 80 | .369        | .001 |
| Pair 21 | Organizational Helpfulness & Importance-Organizational Helpfulness | 79 | .344        | .002 |
| Pair 22 | Organizational Resources & Importance-Organizational Resources     | 80 | .319        | .004 |
| Pair 23 | Building Stimuli & Importance-Building Stimuli                     | 81 | .155        | .166 |
| Pair 24 | Moveable Furniture & Importance-Moveable Furniture                 | 79 | .299        | .007 |
| Pair 25 | Art as Stimuli & Importance-Art as Stimuli                         | 80 | .175        | .120 |
| Pair 26 | Meeting Space & Importance-Meeting Space                           | 79 | .277        | .013 |
| Pair 27 | Outfitting Rooms & Importance-Outfitting Rooms                     | 81 | .198        | .077 |
| Pair 28 | Symbols as Stimuli & Importance-Symbols as Stimuli                 | 79 | .251        | .026 |

As can be seen from Table 7, all of the correlations are positive. (The listing corresponds to the sequence of the items in the survey.) Only one reaches the threshold of a large coefficient, Customer Meetings as Stimuli. This result is significant. This result can be interpreted as meaning that respondents see their organizations as enabling these kinds of interactions between them and the organization's patrons, *and* that these meetings are important to fostering creativity.

Eleven factors reach the medium threshold and are significant:

- Idea Origin Area
- Company Publications
- Experiment
- Many Involved in Creativity
- Action Bias
- Accidents as Stimuli
- Unrelated Skills Development
- Discuss Ideas
- Meet and Share Ideas
- Organizational Knowledge
- Organizational Helpfulness
- Organizational Resources

The implication here is that the items reaching the large and medium threshold, and that are also significant, are factors that actually exist in these organizational environments, and again (and perhaps most importantly), are seen by the employee-respondents as being important to fostering creativity. In short, this is powerful evidence supporting the validity of these items.

It is important to note one set of factors that did not reach a large or medium level of correlation. Items 23 through 28, dealing with the physical factors making up the organizational environment, scored quite low as a group. (Half of the six results did meet the test for statistical significance.) This suggests that the respondents do not see the physical factors as meaningful contributors to fostering organizational creativity, nor are they deemed as potentially important.

### **Factor Analysis**

The first 28 measures were subjected to a factor analysis. Items 29 to 33, which deal with influences of physical structures on creativity, were designed, as noted earlier, to be a subscale and not included in the factor analysis. The procedure begins with an examination of initial eigenvalues of total variance explained, generated from the initial extraction of factors. As shown in Table 8, the eigenvalues indicate five potential factors indicated (eigenvalues  $> 1$ ).

In the second stage of the analysis, the factors are rotated to identify commonalities among the measures. This procedure generated the table shown in Table 9. A chi-square goodness-of-fit test showed that the results were significant.



Table 8

## Total Variance Explained

| Component | Initial Eigenvalues |               |              | Extraction Sums of Squared Loadings |               |              |
|-----------|---------------------|---------------|--------------|-------------------------------------|---------------|--------------|
|           | Total               | % of Variance | Cumulative % | Total                               | % of Variance | Cumulative % |
| 1         | 9.169               | 41.675        | 41.675       | 9.169                               | 41.675        | 41.675       |
| 2         | 1.676               | 7.618         | 49.293       | 1.676                               | 7.618         | 49.293       |
| 3         | 1.421               | 6.460         | 55.753       | 1.421                               | 6.460         | 55.753       |
| 4         | 1.119               | 5.088         | 60.841       | 1.119                               | 5.088         | 60.841       |
| 5         | 1.058               | 4.809         | 65.650       | 1.058                               | 4.809         | 65.650       |
| 6         | .951                | 4.321         | 69.971       |                                     |               |              |
| 7         | .912                | 4.147         | 74.118       |                                     |               |              |
| 8         | .793                | 3.603         | 77.721       |                                     |               |              |
| 9         | .670                | 3.048         | 80.769       |                                     |               |              |
| 10        | .540                | 2.456         | 83.225       |                                     |               |              |
| 11        | .534                | 2.428         | 85.653       |                                     |               |              |
| 12        | .497                | 2.260         | 87.913       |                                     |               |              |
| 13        | .436                | 1.983         | 89.896       |                                     |               |              |
| 14        | .392                | 1.784         | 91.679       |                                     |               |              |
| 15        | .371                | 1.686         | 93.365       |                                     |               |              |
| 16        | .328                | 1.490         | 94.855       |                                     |               |              |
| 17        | .282                | 1.280         | 96.135       |                                     |               |              |
| 18        | .212                | .965          | 97.100       |                                     |               |              |
| 19        | .206                | .936          | 98.037       |                                     |               |              |
| 20        | .160                | .729          | 98.766       |                                     |               |              |
| 21        | .147                | .668          | 99.433       |                                     |               |              |
| 22        | .125                | .567          | 100.000      |                                     |               |              |

Note. Extraction Method: Principal Component Analysis.

Table 9

Rotated Factor Matrix<sup>a</sup>

| Survey Questions             | Factor |      |      |       |       |
|------------------------------|--------|------|------|-------|-------|
|                              | 1      | 2    | 3    | 4     | 5     |
| Management Response          | .545   | .341 | .119 | .264  | .396  |
| Idea Origin Area             | .300   | .435 | .014 | .092  | .124  |
| Rules Support                | .777   | .154 | .079 | .351  | .116  |
| Organization Response        | .658   | .178 | .426 | -.051 | .160  |
| Communication Submission     | .603   | .072 | .559 | .188  | .119  |
| Track Ideas                  | .550   | .192 | .494 | .074  | .148  |
| Reward Ideas                 | .375   | .351 | .236 | .304  | .075  |
| Freely Submit Ideas          | .211   | .111 | .450 | .138  | -.014 |
| Cross Department Knowledge   | .567   | .411 | .221 | .012  | -.020 |
| Company Publications         | .512   | .508 | .159 | .139  | .009  |
| Experiment                   | .003   | .043 | .557 | .056  | .095  |
| Many Involved in Creativity  | .251   | .443 | .535 | .077  | .213  |
| Action Bias                  | .151   | .486 | .141 | .359  | .261  |
| Accidents as Stimuli         | .125   | .174 | .412 | .253  | -.053 |
| Job Rotation                 | .097   | .591 | .136 | .362  | .147  |
| Unrelated Skills Development | .169   | .687 | .196 | .167  | .155  |
| Customer Meetings as Stimuli | .123   | .217 | .159 | .742  | .069  |
| Discuss Ideas                | .216   | .402 | .351 | .586  | .152  |
| Meet and Share Ideas         | .169   | .595 | .379 | .140  | .092  |
| Organizational Knowledge     | .312   | .307 | .449 | .150  | .183  |
| Organizational Helpfulness   | .179   | .313 | .221 | .128  | .897  |
| Organizational Resources     | .353   | .247 | .567 | .111  | .311  |

Note. Extraction Method: Maximum Likelihood. Rotation Method: Varimax with Kaiser Normalization.

<sup>a</sup>Rotation converged in 9 iterations.

Through visual inspection, looking across the factors at the correlation results for each measure, a measure was grouped into one of the five factors on the basis of the highest correlation score. Thus, the relevant factor groupings listed in Table 10 were formed.

Table 10

Factor Groupings

| FACTOR 1<br>Creativity<br>Management<br>Process | FACTOR 2<br>Cultural Support<br>Mechanisms | FACTOR 3<br>Organizational<br>Inputs | FACTOR 4<br>Discussion Stimuli | FACTOR 5<br>Organizational<br>Helpfulness |
|---|--|--------------------------------------|--------------------------------|---|
| Management response                             | Idea origin area                           | Freely submit ideas                  | Customer meetings as stimuli   | Organizational helpfulness                |
| Rules support                                   | Action bias                                | Experiment                           | Discuss ideas                  |   |
| Organization response                           | Job rotation                               | Many involved in creativity          |                                |   |
| Communication submission                        | Unrelated skills development               | Accidents as stimuli                 |                                |   |
| Track Ideas                                     | Meet and share ideas                       | Organizational knowledge             |                                |   |
| Reward ideas                                    |  | Organizational resources             |                                |   |
| Cross-department knowledge                      |  |                                      |                                |   |
| Company publications                            |  |                                      |                                |   |

The five categories point to some logical and meaningful groupings among the measures.

An appropriate label for Factor 1 might be the “creativity management process.” The commonality among the six measures is establishing some sort of systematic way to

deal with ideas within the organization. This ranges from how ideas are encouraged (company publications), stimulated (cross-department knowledge), submitted for consideration (communication submission), responded to – favorably or unfavorably – by both management and the organization, and in the ways the organization’s policies and procedure formally facilitate or hinder each of these stages of the creativity process.

Factor 2 encompasses “organization cultural support mechanisms for creativity.” The measures under this heading represent the degree to which cultural norms that stimulate and sustain creativity development are present within a particular organization. With the possible exception of job rotation, all of the measures relate to informal aspects of the organization’s functioning.

These Factor 2 cultural norms address the following questions. Is it acceptable for any employee to submit or propose an idea for a new product or a better way to accomplish work, or are only certain employees from certain favored departments expected to come up with new and creative ideas? Does the organization exhibit a bias for action, particularly in considering new ideas and opportunities, or does it show symptoms of “paralysis by analysis”?

Are employees encouraged to rotate into other jobs, or is the organizational preference to narrowly slot people into a particular discipline (finance, engineering, sales, etc.) where change comes from advancement only, if at all. The former course stretches people by exposing them to learning and experiences much different from their own education and past work history. It provides opportunities to learn more about the company and other disciplines and, as a result, receive much more new creative stimuli.

Contrast this with people stuck in a narrow career field, who become habituated to the same set of problems and methods.

Much the same can be said of the next measure under this label, “unrelated skills development” (i.e., outside the employee’s current discipline). The questions here are, does the organization see the benefit of unrelated skills development? Does the organization actually give employees training in subjects outside current job responsibilities? Or is training tightly tied to the employee immediate job assignment? One way leads to a broadening perspective and many more opportunities for creative stimuli. The other does not.

The final measure under this factor is “meet and share ideas,” understood particularly in the sense of creating a free flow of information across organizational boundaries (e.g., departments). The question in this instance may be phrased as, do the cultural norms of an organization encourage and promote employee interaction for sharing ideas or not? The more employees get together to bat around ideas, the more likely it is that a creative spark will ignite a creative idea.

Factor 3 includes six measures that collectively might be termed “organizational inputs into the creative process.” What these measures have in common is that they all serve as organizational inputs into the creative process. To what extent are employees allowed, or not allowed, to freely submit ideas for consideration to and possible adoption by the appropriate organizational authorities? Are employees, by and large, encouraged (or at least allowed) to experiment with ideas on the job, or not? Are many people allowed to participate in idea generation and other creative activities, or just a few? Are

accidents and other deviations from the normal course of work activities seen as a potential opportunity for study and creative insight, or simply as errors that need to be prevented? Is the creative enterprise within the organization fostered by sharing of organizational knowledge – how to get things done in this specific work setting – or is such knowledge held close to the vest by key players in order to more firmly control operations? Is it relatively simple, or relatively hard, to gain access to organizational resources, broadly defined, to explore the potential of a creative idea and turn it into an innovation?

Factor 4 has two items – “customer meetings as stimuli,” and “discusses ideas” – or what might jointly be termed “discussion stimuli.” The underlying phenomenon in these two measures can be termed dialogic stimuli. What is at issue is whether or not the organization encourages free-wheeling and wide-ranging discussions, both internally and externally, as a way of making it more probable employees will encounter a notion that might be a creative stimulus to a significant new idea. The richer the dialogue, the more likely creative ideas will be generated.

The fifth and final dimension directly included in the factor analysis is one single measure. It is interesting that this measure – “organizational helpfulness” – constitutes its own factor. This seems to suggest that the sense that employees derive from the overall organizational climate as to its perceived helpfulness and encouragement of creativity – or its opposite – is vitally important.

Though it was not directly part of this analytical procedure – since it was already identified as a distinct dimension – it is important to review the results for the “physical

factors” (Items 23 to 28). Generally speaking, as will be seen throughout the study, there is relatively little support, from the standpoint of the respondents’ perceptions within these specific organizational environments, to the notions that physical spaces and objects play much of a role in stimulating creativity or deemed as potentially important in doing so.

### **Idea Generation Ratio and Score Ranges**

Among the final open-ended questions in the survey are two that attempt to gauge the amount of creativity and innovation within the organization. One question asks the respondents to indicate how many ideas they had come up with in the past six months to help their organizations. The follow-on item asks how many of these ideas were implemented. These two measures give some idea, however rough, of the relative openness to creativity and innovation overall and within the respective organizations, as perceived by the respondents. The cumulative results are shown in Table 11.

Table 11

Idea Generation and Implementation Means and Ratios

| Source             | N         | Idea Generation<br>Mean | Idea Implementation<br>Mean | Ratio       |
|--------------------|-----------|-------------------------|-----------------------------|-------------|
| Student Housing    | 35        | 9.54                    | 4.85                        | 1.98        |
| Community College  | 8         | 9.13                    | 1.80                        | 5.07        |
| <b>Overall</b>     | <b>70</b> | <b>7.88</b>             | <b>3.63</b>                 | <b>2.17</b> |
| Regional Newspaper | 10        | 7.88                    | 2.60                        | 3.03        |
| Energy Services    | 17        | 3.88                    | 2.41                        | 1.61        |

The table first lists the source/organization with the highest average (mean) score for idea generation, since the major focus of this study is organizational creativity. But close behind this interest is a concern for the ability of the organization to turn creative ideas into practical innovations.

To facilitate analysis, a simple ratio is computed, comparing the idea-generation mean to the mean of the number of ideas implemented, by organization and overall. The ratio is an approximate indicator of the relative efficiency, in the respondent's eyes, of the organization's capabilities in turning creative ideas into practical innovations. A creative idea that is not transformed into an innovation is just one more idea.

Note that the lower the ratio, the more "efficient" the organization is in making these idea-to-innovation transformations. For example, the ratio for Student Housing indicates that for every nearly two (1.98) ideas generated within this organization, respondents claim that one such idea is implemented (1.98:1).

This simple analysis is quite revealing. The student housing organization, comparatively speaking, excels at both generating ideas and converting ideas into innovations. The community college unit is nearly as good as student housing in generating ideas, but significantly underperforms the overall average in the creativity-to-innovation conversion process. The regional newspaper equals the overall average in idea generation, but lags somewhat in innovation implementation. Finally, the energy services is significantly below the overall average in idea generation, but has the best (lowest) ratio of ideas-to-innovation at 1.61:1.



Another simple way to measure the creative climate is to examine the spread between the high- and low-scoring items for each organization and overall. These results are displayed in Table 12. The first thing to notice is that the Student Housing organization appears to have a relatively more creative climate when compared to the other organizations. The top-rated actual item (Organizational Helpfulness, Question 21) is rated at 2.11, while the lowest-rated item (Accidents as Stimuli, Question 14) comes in at 3.84. In other words, the scores are skewed more positively, suggesting respondents see this organization as more creative when compared to the overall results and to other organizations.

Table 12

**Comparison of the Spread of High and Low Scores by Overall and Organization**

| Organization       | Highest Question                  | Score       | Lowest Question                   | Score       | Difference |
|--------------------|-----------------------------------|-------------|-----------------------------------|-------------|------------|
| Student Housing    | Organizational Helpfulness        | 2.11        | Accidents as Stimuli              | 3.84        | 1.73       |
| <b>Overall</b>     | <b>Organizational Helpfulness</b> | <b>2.49</b> | <b>Cross-department Knowledge</b> | <b>4.39</b> | <b>1.9</b> |
| Energy Services    | Organizational Helpfulness        | 2.57        | Cross-depart. Knowledge           | 5.29        | 2.72       |
| Regional Newspaper | Experiment                        | 2.69        | Company Publications              | 5.23        | 2.54       |
| Community College  | Organizational Helpfulness        | 3.00        | Reward Ideas                      | 5.70        | 2.70       |

It should also be noted that the difference between the highest and lowest score for the Student Housing organization is only 1.73, another indicator that this is a creative climate. Even the low score is relatively high as indicated by the small spread. As can be

seen for the other organizations, the highs are lower and the spreads between high and low are much greater.

Both perspectives – provided through creativity/innovation ratio and the high/low perspective – are useful, if simple and approximate ways of gauging the relative vibrancy of an organization’s creative climate. In the following sections, we will seek insights into these results by examining the organizational cultures through an analysis of survey results, supplemented by qualitative data, for each individual organization. We will consider them in the order set out in Table 11, on the basis of the highest idea generation.

### **Individual Organization Analysis**

#### *Student Housing*

The first organization considered is in the business of building, acquiring, and managing housing for students on or near college campuses in several states. Sometimes the company contracts with a university to run student-housing facilities. In other cases, it operates as a private leasing company focused on the student market.

Part of the philosophy of the company is that students require and deserve more than just a roof over their heads. The company offers “programming” around a “wellness” theme to enrich the college living experience of its student renters on all of its properties. Examples of programs include barbeques, lectures, movies, and a host of other fun, informational, or networking events.

The development and management of these programs is a principal responsibility of the on-site staff at each property. These staff members work under the direction of a

property manager. The property managers report into, and receive direction from, a housing director in the company's corporate headquarters, based in a major Texas city. The constant need for new, fresh programs drives a demand for staff creativity.

The demographics of the group surveyed (n = 36) show three-fourths of the respondents have the job title of manager, versus a quarter who consider themselves to be staff professionals (Table 13).

Table 13

**Student Housing Job Type**

| Job Type              | Frequency | Percent | Cumulative Percent |
|-----------------------|-----------|---------|--------------------|
| Staff Professional    | 6         | 16.7    | 16.7               |
| Manager or Supervisor | 28        | 77.8    | 94.4               |
| Other                 | 2         | 5.6     | 100.0              |
| Total                 | 36        | 100.0   |                    |

The respondents represent a youthful group with short work tenure. Over 83% of respondents are in the 20- to 29-year age range and over 90% have been on the job less than five years (Tables 14 and 15). This is not surprising given the nature of the business, catering to the needs of college students. Being able to relate to students is important for the success of the company, a factor that favors youthfulness among employees. In addition, many employees start as part-time employees while still in school. This experience has often led, for those in the respondent's pool, to a manager or staff professional job, the first "real" job for many of them coming before or shortly after graduation. The tendency among employees is to move on to other ventures as they

reach their late twenties and early thirties, and (perhaps) no longer relate as well to the most recent generation of college students.

Table 14

**Student Housing Age Range**

| Age Range | Frequency | Percent | Cumulative Percent |
|-----------|-----------|---------|--------------------|
| 20 to 29  | 30        | 83.3    | 83.3               |
| 3         | 5         | 13.9    | 97.2               |
| 4         | 1         | 2.8     | 100.0              |
| Total     | 36        | 100.0   |                    |

Table 15

**Student Housing Work Length**

| Work Length  | Frequency | Percent | Cumulative Percent |
|--------------|-----------|---------|--------------------|
| 0 to 4 years | 33        | 91.7    | 91.7               |
| 5 to 9 years | 3         | 8.3     | 100.0              |
| Total        | 36        | 100.0   |                    |

The respondents are a highly educated group. Nearly half of the respondents have a bachelor's degree; another 20% are one year shy of completing their degrees. Slightly fewer than 30% have a master's degree (Table 16).

Table 16

**Student Housing Educational Attainment**

| Education                                 | Frequency | Percent | Cumulative Percent |
|---|-----------|---------|--------------------|
| 13 years                                  | 1         | 2.8     | 2.8                |
| 14 years (Associate Degree/<br>Sophomore) | 1         | 2.8     | 5.6                |
| 15 years                                  | 7         | 19.4    | 25.0               |
| 16 years (Bachelor's Degree)              | 17        | 47.2    | 72.2               |
| Master's Degree                           | 10        | 27.8    | 100.0              |
| Total                                     | 36        | 100.0   |                    |

The group is also largely white and predominantly female, as shown in Tables 17 and 18.

Table 17

**Student Housing Ethnicity**

| Ethnicity                 | Frequency | Percent | Cumulative Percent |
|---------------------------|-----------|---------|--------------------|
| African American          | 5         | 13.9    | 13.9               |
| Asian or Pacific Islander | 2         | 5.6     | 19.4               |
| Caucasian                 | 28        | 77.8    | 97.2               |
| Hispanic                  | 1         | 2.8     | 100.0              |
| Total                     | 36        | 100.0   |                    |

Table 18

**Student Housing Gender**

| Gender | Frequency | Percent | Cumulative Percent |
|--------|-----------|---------|--------------------|
| Female | 25        | 69.4    | 69.4               |
| Male   | 11        | 30.6    | 100.0              |
| Total  | 36        | 100.0   |                    |

The qualitative interviews show that some of the employees do indeed see some part of their job is to be creative in developing new programming, though not necessarily the main or most important factor. One of them, an assistant manager of a facility serving a university in a northeastern state, gave an example of programmatic creativity: “One really creative program we came up with [was a] block party. We had a DJ, BBQ, t-shirts that we gave away, and a boxing ring.”

Apparently, for this assistant manager, creativity is reflected in a novel party theme and activities that express this theme. Here is another self-determined example of creativity from the same person: “One thing I really enjoy doing that involves some creativity is that I use Photoshop to make up flyers about the programs. However, the major thing I do is make sure things run smoothly.”

Yet even the quotidian tasks related to making sure things run smoothly can involve creativity. The assistant manager noted one instance of small-gauge creativity as developing and implementing an on-line call sheet, allowing facility residents to notify management of deficiencies in the facility.

A much different viewpoint of the state of creativity in this organization came from a facility manager of a complex located in the upper Midwest. She explained the situation thusly:

Ours has been quite a growth business. In about two years we have gone from 25 properties to 50. Nobody has much time for anything but the basics. There is just no time for idea generation, no time to look into many new possibilities.

In many of the roles we have there is no need or opportunity for creativity. The one where we do need to have creativity is residential life. This gets back to coming up with new programs.

The general manager has emphasized this [creativity in programming] much more than the person she replaced. It's a great idea, but the problem is finding the time.

The third interviewee's view of the organization is more like the second person's than the first. This interviewee is a manager of a facility near a university in a Rocky Mountain state. The interviewee's tone of voice and demeanor over the phone suggested he was bored or impatient (or both) with the interview. (While some of the other interviewees, through their statements and other actions, certainly indicated they were feeling time pressure, they simultaneously indicated appreciation someone was interested enough to listen to their stories.) This comparatively short interview revealed the interviewee's belief that his heavy workload responding to residents' demands largely limited the amount of time he had to devote to creative thinking about new resident programs.

Nevertheless, he did mention one program he had devised and conducted for his unit and which he considered creative: a western-themed barbeque. The event featured western-style line dancing, the site was decorated with cowboy artifacts (e.g., a saddle),

and residents were encouraged to wear western- or cowboy-like clothes (cowboy hats, western-style shirts, and boots, etc.).

These are somewhat surprising perspectives. The dichotomy between the one relatively satisfied and engaged employee versus the two much less satisfied employees is unexpected. An implicit assumption is that highly creative workplaces are high energy and satisfying places to work. Here the relentless drive to produce new programs to entertain fickle college students appears to be draining rather than renewing. It also suggests that management is sending a vary mixed message concerning creativity and the amount of the valuable resource of time being provided to achieve this outcome.

Let us turn to the survey results to see what these data show. From Table 19, the top quartile factors for Student Housing are:

- Organizational Helpfulness (Question 21)
- Company Publications (Question 10)
- Organizational Resources (Question 22)
- Management Response (Question 1)
- Organization Response (Question 4)
- Organization Knowledge (Question 20)
- Rules Support (Question 3)



Table 19

**Student Housing Descriptive Statistics**

|                              | N  | Mean | Standard Deviation |
|------------------------------|----|------|--------------------|
| Organizational Helpfulness   | 36 | 2.11 | 1.389              |
| Company Publications         | 36 | 2.28 | 1.233              |
| Organizational Resources     | 36 | 2.31 | 1.261              |
| Management Response          | 36 | 2.36 | 1.376              |
| Organization Response        | 36 | 2.39 | 1.358              |
| Organizational Knowledge     | 36 | 2.44 | 1.107              |
| Rules Support                | 36 | 2.47 | 1.158              |
| Idea Origin Area             | 36 | 2.50 | 1.207              |
| Discuss Ideas                | 36 | 2.56 | 1.206              |
| Meeting Space                | 36 | 2.69 | 1.636              |
| Job Rotation                 | 36 | 2.78 | 1.726              |
| Moveable Furniture           | 36 | 2.81 | 1.546              |
| Building Stimuli             | 36 | 2.83 | 1.134              |
| Customer Meetings as Stimuli | 36 | 2.89 | 1.469              |
| Communication Submission     | 36 | 2.97 | 1.594              |
| Track Ideas                  | 36 | 2.97 | 1.464              |
| Unrelated Skills Development | 36 | 3.08 | 1.663              |
| Meet and Share Ideas         | 36 | 3.11 | 1.635              |
| Action Bias                  | 36 | 3.11 | 1.563              |
| Many Involved in Creativity  | 35 | 3.26 | 1.336              |
| Outfitting Rooms             | 36 | 3.28 | 1.523              |
| Cross Department Knowledge   | 36 | 3.31 | 1.411              |
| Freely Submit Ideas          | 35 | 3.34 | 1.349              |
| Symbols as Stimuli           | 36 | 3.36 | 1.457              |
| Art as Stimuli               | 36 | 3.50 | 1.342              |
| Reward Ideas                 | 36 | 3.61 | 1.840              |
| Experiment                   | 36 | 3.81 | 1.283              |
| Accidents as Stimuli         | 36 | 3.86 | 1.291              |
| Valid N (listwise)           | 34 |      |                    |

Five of the items in this list correspond to items in the overall top quartile list. The only differences are Company Publications and Rules Support items are included for the Student Housing organization, in place of Idea Origin and Discuss Ideas items. These differences may be explained by the wide geographical dispersion of the group. Company publications (largely referring to a monthly newsletter and related published ideas from the main office) provide news about what other units around the country are doing in terms of programming. These are important sources of creative stimulus to the managers and staff.

Indeed, Company Publications may serve as a rough sort of substitute for both Idea Origin and Discuss Ideas. Since managers and staff at the far-flung units have little opportunity to interact with or learn from one another directly, the newsletter and other aids from the home make up for these gaps.

Rules Support may also be explained by the geographical dispersion. Rather than having to call the home office each time for guidance and approval, the managers rely on established and well-known policies and procedures to know how far they can go in implementing a new programming idea.

The bottom quartile, again listed with the lowest-scoring or “worst” item at the top, repeat four of the items from the overall list.

- Accidents as Stimuli
- Experiment
- Reward Ideas
- Art as Stimuli

- Symbols as Stimuli (Question 25)
- Freely Submit Ideas

In light of what is known about the Student Housing organization, the list makes logical sense and provides some key insights. Experimentation, whether accidental or deliberate, in the normal use of those terms, is not part of the creative process within the Student Housing organization. From the managers' point of view, their job is to develop new programs that entertain and engage their student populations. A particular program may be more or less successful, but failure (a necessary aspect of any sort of true experimentation) does not appear to be an option (that is, permitted or condoned) within this organizational culture.

In a similar fashion, the concept of rewarding creativity is not recognized by the organization, a likely sore point for the managers. The message to the managers from the organization seems to be that coming up with "creative" programming is simply part of their job. There should be no expectation for additional or special rewards for this sort of effort.

Given the isolation that managers experience in their far-flung locations, it is not surprising that the item, Freely Submit Ideas, is not seen as a practical possibility in these workplaces. The reality of the creative process for these workers is a relentless drive to develop new programmatic ideas on-site.

Two physical environment items, Art as Stimuli and Symbols as Stimuli, remain on the list, though the latter replaces Outfitting Rooms. (The Symbols as Stimuli item refers to the practice of placing organizational graphics and symbols, such as

representation of the company logo, by some innovation-minded organizations. The practice is based on the belief that these reminders of a company's mission and vision may be a spark to creative ideation.) It is more evidence of the weak perception respondents have of physical aspects of the organizational environment as creative stimuli.

Add all of these factors together, and the picture that emerges is one of unremitting demands for more and more novel "creative" programming. Given this, it becomes easier to understand the world-weary reactions of two of the three qualitative interviewees.

We next turn to examining the relationship between the actual amounts of each survey factor within the organization, as perceived by the respondents, compared to the importance (that should be) placed on them. In the case of the Student Housing organization (Table 20), there are a large number of large and significant ( $p < .05$ ) correlations, ten in fact:

- Idea Origin
- Rules Support
- Company Publications
- Many Involved in Creativity
- Accidents as Stimuli
- Job Rotation (Question 15)
- Customer Meetings as Stimuli (Question 17)
- Organizational Knowledge (Question 20)

- Organizational Resources
- Building Stimuli (Question 23)

Table 20

## Student Housing Paired Samples Correlations

|         | Question Pairs   | N  | Correlation | Sig. |
|---------|--|----|-------------|------|
| Pair 1  | Management Response & Importance-Management Response                 | 36 | .294        | .082 |
| Pair 2  | Idea Origin Area & Importance-Idea Origin Area                       | 36 | .523        | .001 |
| Pair 3  | Rules Support & Importance-Rules Support                             | 36 | .665        | .000 |
| Pair 4  | Organization Response & Importance-Organization Response             | 36 | .340        | .043 |
| Pair 5  | Communication Submission & Importance-Communication Submission       | 36 | .493        | .002 |
| Pair 6  | Track Ideas & Importance-Track Ideas                                 | 36 | .324        | .054 |
| Pair 7  | Reward Ideas & Importance-Reward Ideas                               | 36 | .333        | .047 |
| Pair 8  | Freely Submit Ideas & Importance-Freely Submit Ideas                 | 35 | .054        | .757 |
| Pair 9  | Cross Department Knowledge & Importance-Cross Department Knowledge   | 36 | .316        | .060 |
| Pair 10 | Company Publications & Importance-Company Publications               | 36 | .581        | .000 |
| Pair 11 | Experiment & Importance-Experiment                                   | 36 | .427        | .009 |
| Pair 12 | Many Involved in Creativity & Importance-Many Involved in Creativity | 35 | .501        | .002 |
| Pair 13 | Action Bias & Importance-Action Bias                                 | 36 | .470        | .004 |

Table 20 (continued)

|         | Question Pairs   | N  | Correlation | Sig. |
|---------|--|----|-------------|------|
| Pair 14 | Accidents as Stimuli & Importance-Accidents as Stimuli                 | 35 | .613        | .000 |
| Pair 15 | Job Rotation & Importance-Job Rotation                                 | 36 | .545        | .001 |
| Pair 16 | Unrelated Skills Development & Importance-Unrelated Skills Development | 36 | .400        | .016 |
| Pair 17 | Customer Meetings as Stimuli & Importance-Customer Meetings as Stimuli | 36 | .645        | .000 |
| Pair 18 | Discuss Ideas & Importance-Discuss Ideas                               | 36 | .431        | .009 |
| Pair 19 | Meet and Share Ideas & Importance-Meet and Share Ideas                 | 36 | .366        | .028 |
| Pair 20 | Organizational Knowledge & Importance-Organizational Knowledge         | 36 | .693        | .000 |
| Pair 21 | Organizational Helpfulness & Importance-Organizational Helpfulness     | 36 | .273        | .107 |
| Pair 22 | Organizational Resources & Importance-Organizational Resources         | 36 | .568        | .000 |
| Pair 23 | Building Stimuli & Importance-Building Stimuli                         | 36 | .501        | .002 |
| Pair 24 | Moveable Furniture & Importance-Moveable Furniture                     | 36 | .452        | .006 |
| Pair 25 | Art as Stimuli & Importance-Art as Stimuli                             | 36 | .464        | .004 |
| Pair 26 | Meeting Space & Importance-Meeting Space                               | 36 | .297        | .079 |
| Pair 27 | Outfitting Rooms & Importance-Outfitting Rooms                         | 36 | .237        | .164 |

What this great number of large correlations indicates is that there is a high degree of correspondence between the Student Housing organization respondents' importance ratings to those on the actual scale, regardless of which quartile they are placed. These results bolster the validity of the survey outcomes. (The large number of large correlations also makes it less necessary to analyze the medium correlations.)

Fitting all of the data, quantitative and qualitative, into the factor analytic framework developed earlier, suggests the following conclusions. First, the Student Housing organization has the rudiments of a creativity management process (Factor 1). This is mostly in the form of Management Response, Rules Support, and Company Publications. But the organization is quite deficient in the more systematic elements of a creativity management process, particularly Communication Submission, Track Ideas, and Reward Ideas, as well as the lack of mechanisms to facilitate Cross-department Knowledge and mitigate the sense of isolation the managers' experience. The image one is left with is of one very determined Director who is insistently driving the widely dispersed managers and staff to constantly come up with novel programming ideas.

If the management of the Student Housing organization wanted to use the survey and other findings as diagnostic tools, it would also have to be noted that the firm is seriously lacking in Factors 2, 3, and 4. These are what we have termed Cultural Support Mechanisms, Organizational Inputs, and Discussion Stimuli, respectively. A more deliberate and effective approach to creativity generation and innovation management would begin to introduce many of these factors into the organization. Much of the effort

should be aimed at somehow reducing the isolation of the managers and staff at different locations from one another.

The fifth factor, “organizational helpfulness,” is somewhat present according to the survey results. Based on very limited information, however, in this instance this seems to reflect that the managers of the outlying sites can call the home office (often meaning the same Director referred to several times) and get assistance.

The sixth factor, “the physical factors,” plays little role in the results.

### *Community College*

The second organization considered is a unit of an administration department of a multi-campus community college located in a major Texas metropolitan area. The predominant group within the department is an academic advising and counseling roles, with other people in the unit concerned with supervision of the enrollment process. The individual employees are assigned to and dispersed among the various campuses that make up the college.

As noted earlier, this set of respondents had the highest mean idea generation score of all of the organizations studied. It also had the lowest rate of idea implementation.

A plurality of those surveyed (nearly 46%) have relative short tenure with the organization, less than five years (Table 21). The bulk of the group are young (‘20s and ‘30s) professionals, serving mostly as noted earlier as academic advisors, and are well-educated, with nearly two-thirds holding master’s degrees, roughly split between the two sexes, and predominantly white (Tables 22 to 26).



Table 21

Community College Work Length

| Work Length    | Frequency | Percent | Cumulative Percent |
|----------------|-----------|---------|--------------------|
| 0 to 4 years   | 5         | 45.5    | 45.5               |
| 5 to 9 years   | 2         | 18.2    | 63.6               |
| 10 to 14 years | 1         | 9.1     | 72.7               |
| 15 to 19 years | 2         | 18.2    | 90.9               |
| 20 to 24 years | 1         | 9.1     | 100.0              |
| Total          | 11        | 100.0   |                    |

Table 22

Community College Job Type

| Job Type              | Frequency | Percent | Cumulative Percent |
|-----------------------|-----------|---------|--------------------|
| Staff Professional    | 6         | 54.5    | 54.5               |
| Manager or Supervisor | 3         | 27.3    | 81.8               |
| Executive             | 1         | 9.1     | 90.9               |
| Other                 | 1         | 9.1     | 100.0              |
| Total                 | 36        |         |                    |

Table 23

Community College Educational Attainment

| Education                    | Frequency | Percent | Cumulative Percent |
|------------------------------|-----------|---------|--------------------|
| 16 years (Bachelor's Degree) | 3         | 27.3    | 27.3               |
| Master's Degree              | 7         | 63.6    | 90.9               |
| Doctoral Degree              | 1         | 9.1     | 100.0              |
| Total                        | 11        | 100.0   |                    |

Table 24

Community College Age Range

| Age Range | Frequency | Percent | Cumulative Percent |
|-----------|-----------|---------|--------------------|
| 20 to 29  | 1         | 9.1     | 9.1                |
| 30 to 39  | 1         | 9.1     | 18.2               |
| 40 to 49  | 4         | 36.4    | 54.5               |
| 50 to 59  | 3         | 27.3    | 81.8               |
| 60 to 69  | 2         | 18.2    | 100.0              |
| Total     | 11        | 100.0   |                    |

Table 25

Community College Gender

| Gender | Frequency | Percent | Cumulative Percent |
|--------|-----------|---------|--------------------|
| Female | 6         | 46.2    | 46.2               |
| Male   | 7         | 53.8    | 100.0              |
| Total  | 13        | 100.0   |                    |

Table 26

Community College Ethnicity

| Ethnicity       | Frequency | Percent | Cumulative Percent |
|-----------------|-----------|---------|--------------------|
| Caucasian       | 11        | 84.6    | 84.6               |
| Native American | 1         | 7.7     | 92.3               |
| Other           | 1         | 7.7     | 100.0              |
| Total           | 13        | 100.0   |                    |

The qualitative interviews reveal that the individual counselors have considerable creative freedom on the job, but within a very narrow realm. This results in rather small-scale, even marginal innovations. For example, two of the counselors appear to have come up, more or less independently and simultaneously, with color-coding schemes for classifying student files. This enables both of them to quickly categorize and respond to student needs, as well as to analyze trends more effectively and efficiently simply by counting the number of files of a certain color.

Another counselor cited her ability to figure out ways to by-pass cumbersome college procedures as a prime example of her creative prowess. For example, near the time of the interview, she had helped a young student enroll in the college who lacked some of his needed grade records. Taking advantage of a quirk in the enrollment procedure, she instructed him on how to enter his state test scores on-line and gain automatic admission to school. None of the examples is exactly the counseling equivalent of a cure for cancer, but they do aid these employees in accomplishing their tasks.

Part of the organizational dynamic for the counselors is that their status as an independent contributor affords extremely limited opportunities for interaction and professional collaboration with colleagues. The counselors are isolated from one another by the geographical fact of being located on different campuses.

In addition, each campus plays a somewhat different role within the college system, which means each offers different programs. As a result, each campus attracts

different types of students with different needs and issues. This means the counselors have different priorities and agendas as they do their work.

Finally, there is the issue of supervision. The counselors' respective supervisors on each campus oversee the enrollment and student records functions. The supervisors have their own heavy workloads to contend with, and in some cases, their knowledge of the counselors' role is limited. However, the counselors described the supervisors as generally supportive of their efforts to try new ideas, though more in the sense of not obstructing their attempts than in actively pushing ideas through the organization.

The department has made some efforts to promote more collaboration. Each of the counselors interviewed spoke of a forum the department sponsors once or twice a year. All of the counselors are invited to attend the forum and share information and ideas.

The genesis of the color-coding scheme seems to have stemmed from the conference, though the paternity of the idea is unclear. But what remains most valued at the end of the day is counselor independence. As one of them put it, "I've gotten a few interesting tips, but you're not required to do anything. They are just suggestions, and you can take them or leave them."

The data from the survey also provide insights into the creative climate of this group (Table 27). The top-scoring items (the factors seen as most prevalent by the respondents in the organizational environment) are:

- Organizational Helpfulness
- Idea Origin Area

- Organizational Knowledge
- Organizational Resources
- Management Response
- Discuss Ideas
- Customer Meetings as Stimuli (Question 17)

Table 27

## Community College Descriptive Statistics

|                              | N  | Mean | Standard Deviation |
|------------------------------|----|------|--------------------|
| Organizational Helpfulness   | 10 | 3.00 | 1.333              |
| Idea Origin Area             | 10 | 3.20 | 1.619              |
| Organizational Knowledge     | 10 | 3.40 | .966               |
| Organizational Resources     | 10 | 3.60 | 1.350              |
| Management Response          | 10 | 3.80 | 1.033              |
| Discuss Ideas                | 10 | 3.80 | 1.549              |
| Customer Meetings as Stimuli | 10 | 3.90 | 1.524              |
| Action Bias                  | 10 | 4.10 | 1.912              |
| Rules Support                | 10 | 4.20 | 1.398              |
| Organization Response        | 10 | 4.30 | 1.059              |
| Experiment                   | 10 | 4.30 | 1.418              |
| Freely Submit Ideas          | 9  | 4.44 | 1.236              |
| Company Publications         | 10 | 4.50 | 1.434              |
| Many Involved in Creativity  | 10 | 4.50 | 1.269              |
| Unrelated Skills Development | 10 | 4.70 | 1.160              |
| Accidents as Stimuli         | 10 | 4.80 | 1.033              |
| Job Rotation                 | 10 | 4.80 | 1.398              |
| Track Ideas                  | 10 | 4.90 | 1.197              |
| Meet and Share Ideas         | 10 | 4.90 | 1.449              |
| Communication Submission     | 10 | 5.20 | 1.317              |
| Cross Department Knowledge   | 10 | 5.50 | 1.269              |
| Reward Ideas                 | 10 | 5.70 | .823               |
| Valid N (listwise)           | 9  |      |                    |

It is important to recall that the top mean score (for organizational helpfulness) was only 3.00, just one point above neutral. As noted earlier, this is an indication that the climate is not strongly defined by creativity. Of course, the other “top” scores reflect even less strength. Thus, for example, while the proposition that a creative idea can come from anywhere receives the second highest average score, the data from the qualitative interviews put this fact in sharp relief: Ideas are just suggestions, and a counselor can take them or leave them.

What can be said for Organizational Knowledge is that the limited perspective of the respondents – serving an individual campus in a very narrow capacity – simplifies what one needs to know to be effective.

In a similar vein, the weak but positive ratings of Organizational Resources, Management Response, and Discuss Ideas are, taken together, a gauge of the tepid organizational climate for creativity. For example, as one of the qualitative interviewees said, the counselors receive little in the way of organizational resources with which to do their jobs. This weakly positive signal seems to signify that the counselors view the resources they receive as adequate or sufficient, and not much more.

Finally, the inclusion of Customer Meetings is not much of a surprise; in this case, the students being counseled are considered to be the customer. Since this is what the counselors do on a daily basis, it would be unusual for this form of input not to have some significant effect.

The negative dimensions from the survey may better describe the creative climate of this organization. They are from “worst” at the top of the following list to “least worst”:

- Reward Ideas
- Cross-department Knowledge
- Communication Submission
- Meet and Share Ideas
- Track Ideas
- Job Rotation

These six items can be collapsed into two distinct themes. The first of these themes is the lack of a systematic approach to fostering creativity. This theme is shown by the low scores respondents give for the perceived lack of creativity-based rewards, no process for submitting ideas, the absence of an idea tracking mechanism, and the lack of job rotation.

The second theme can be described as communications barriers. This is shown by two of the items, the cross-departmental knowledge, and meet and share ideas dimensions. The respondents see little or no opportunity to gain or disclose creativity-stimulating facts beyond their own highly circumscribed roles.

Fitting this information and themes into the factor analytic framework, the Community College is relatively weak across all of the dimensions. Its strongest factor is Organizational Helpfulness, followed by Discussion Stimuli (the counseling sessions), but only relatively so. If this organization wanted to pursue a more deliberate strategy

toward improving creativity and innovation, it should do so across the board, by introducing a formal creativity management process, developing cultural support mechanisms, and injecting more creativity-related inputs into the organization. As with the previous organization, these efforts should focus on reducing the isolation of counselors from one another.

The paired correlations analysis (Table 28) is much less fruitful with this organization than with the overall results and other organizations. Only one of the Community College organization correlations reached statistical significance (Accidents as Stimuli at  $-.784, p = .007$ ), almost certainly because of the small sample size. In this instance, the negative correlation suggests a huge gap between the actual situation and the importance the respondents place on it as a factor in stimulating organizational creativity.

Table 28

Community College Paired Samples Correlations ( $p < .05$ )

|        | Question Pairs   | N  | Correlation | Sig. |
|--------|--|----|-------------|------|
| Pair 1 | Management Response & Importance-Management Response           | 10 | .056        | .879 |
| Pair 2 | Idea Origin Area & Importance-Idea Origin Area                 | 10 | .359        | .309 |
| Pair 3 | Rules Support & Importance-Rules Support                       | 10 | -.195       | .590 |
| Pair 4 | Organization Response & Importance-Organization Response       | 10 | -.327       | .356 |
| Pair 5 | Communication Submission & Importance-Communication Submission | 10 | .067        | .854 |
| Pair 6 | Track Ideas & Importance-Track Ideas                           | 10 | -.442       | .201 |



Table 28 (continued)

|         | Question Pairs   | N  | Correlation | Sig. |
|---------|--|----|-------------|------|
| Pair 7  | Reward Ideas & Importance-Reward Ideas                                 | 10 | .132        | .716 |
| Pair 8  | Freely Submit Ideas & Importance-Freely Submit Ideas                   | 9  | .107        | .785 |
| Pair 9  | Cross Department Knowledge & Importance-Cross Department Knowledge     | 10 | .048        | .895 |
| Pair 10 | Company Publications & Importance-Company Publications                 | 10 | -.084       | .817 |
| Pair 11 | Experiment & Importance-Experiment                                     | 10 | .362        | .304 |
| Pair 12 | Many Involved in Creativity & Importance-Many Involved in Creativity   | 10 | -.053       | .884 |
| Pair 13 | Action Bias & Importance-Action Bias                                   | 10 | -.346       | .327 |
| Pair 14 | Accidents as Stimuli & Importance-Accidents as Stimuli                 | 9  | -.786       | .012 |
| Pair 15 | Job Rotation & Importance-Job Rotation                                 | 10 | .159        | .660 |
| Pair 16 | Unrelated Skills Development & Importance-Unrelated Skills Development | 10 | .456        | .186 |
| Pair 17 | Customer Meetings as Stimuli & Importance-Customer Meetings as Stimuli | 10 | .023        | .950 |
| Pair 18 | Discuss Ideas & Importance-Discuss Ideas                               | 10 | .350        | .321 |
| Pair 19 | Meet and Share Ideas & Importance-Meet and Share Ideas                 | 10 | .080        | .826 |
| Pair 20 | Organizational Knowledge & Importance-Organizational Knowledge         | 10 | .020        | .956 |
| Pair 21 | Organizational Helpfulness & Importance-Organizational Helpfulness     | 10 | .547        | .102 |
| Pair 22 | Organizational Resources & Importance-Organizational Resources         | 10 | .577        | .081 |

### *Regional Newspaper*

The next organization considered is a regional newspaper. The paper serves a small metropolitan area in Texas with a population of approximately 190,000, the dominant industry of which is a major public university. The newspaper has approximately 100 employees.

A majority of the 13 respondents have worked at the paper for less than five years (Table 29). This pattern reflects the fact, mentioned by one of the qualitative interviewees, that people just out of college take a job with the paper. A first job here is a good training ground to qualify for work at a larger newspaper, or in a marketing/advertising department or company. Another contributing factor to the short tenure is the fact that there is little room for advancement in this small organization. Ambitious employees move on.

Table 29

#### Regional Newspaper Work Length

| Work Length    | Frequency | Percent | Cumulative Percent |
|----------------|-----------|---------|--------------------|
| 0 to 4 years   | 9         | 69.2    | 69.2               |
| 5 to 9 years   | 3         | 23.1    | 92.3               |
| 10 to 14 years | 1         | 7.7     | 100.0              |
| Total          | 13        | 100.0   |                    |

A majority of the respondents are in staff professional jobs, though the group has representatives of the paper's three major departments, the newsroom, advertising and marketing, and production (the printing plant), as reflected in Table 30.

Table 30

## Regional Newspaper Job Type

| Job Type              | Frequency | Percent | Cumulative Percent |
|-----------------------|-----------|---------|--------------------|
| Production Worker     | 2         | 15.4    | 15.4               |
| Technician            | 1         | 7.7     | 23.1               |
| Staff Professional    | 7         | 53.8    | 76.9               |
| Manager or Supervisor | 2         | 15.4    | 92.3               |
| Other                 | 1         | 7.7     | 100.0              |
| Total                 | 13        | 100.0   |                    |

Nearly 70% of the participants have a bachelor's degree (Table 31). This high figure may be a sign of the relative ease of obtaining a college education when there is convenient access to a major university.

Table 31

## Regional Newspaper Educational Attainment

| Education                                 | Frequency | Percent | Cumulative Percent |
|---|-----------|---------|--------------------|
| 14 years (Associate Degree/<br>Sophomore) | 3         | 23.1    | 23.1               |
| 16 years (Bachelor's Degree)              | 9         | 69.2    | 92.3               |
| Master's Degree                           | 1         | 7.7     | 100.0              |
| Total                                     | 13        | 100.0   |                    |

The group is youthful: 75% of the group is under 40 years of age, and half is under 30 (Table 32). The group is split more or less equally between the sexes and overwhelming white (Table 33 and 34).

Table 32

**Regional Newspaper Age Range**

| Age Range    | Frequency | Percent | Cumulative Percent |
|--------------|-----------|---------|--------------------|
| 20 to 29     | 7         | 53.8    | 53.8               |
| 30 to 39     | 3         | 23.1    | 76.9               |
| 40 to 49     | 1         | 7.7     | 84.6               |
| 50 to 59     | 1         | 7.7     | 92.3               |
| 60 and older | 1         | 7.7     | 100.0              |
| Total        | 13        | 100.0   |                    |

Table 33

**Regional Newspaper Gender**

| Gender | Frequency | Percent | Cumulative Percent |
|--------|-----------|---------|--------------------|
| Female | 6         | 46.2    | 46.2               |
| Male   | 7         | 53.8    | 100.0              |
| Total  | 13        | 100.0   |                    |

Table 34

**Regional Newspaper Ethnicity**

| Ethnicity       | Frequency | Percent | Cumulative Percent |
|-----------------|-----------|---------|--------------------|
| Caucasian       | 11        | 84.6    | 84.6               |
| Native American | 1         | 7.7     | 92.3               |
| Other           | 1         | 7.7     | 100.0              |
| Total           | 13        | 100.0   |                    |

As noted earlier, the number-of-ideas-produced figure is slightly higher than the overall average for all survey respondents and the third highest among the four

organizations under study. The ideas-implemented average is the second highest overall. However, the ratio of ideas generated to those implemented is second smallest.

Two reporters and a graphic artist were the interviewees for the qualitative portion of the data collection effort. Management chose these individuals based on the perception of them as exceptionally creative workers in their respective departments.

One theme emerging from the interviews is the impact of resources, or more accurately, the lack of resources, on idea generation and creativity. Each of the interviewees mentioned the workload had increased due to cutbacks in newspaper staff, requiring the survivors to do even more. For writers, this means doing fewer feature articles – a prime creative opportunity that provides substantial job satisfaction – and more basic reporting and news writing, just to get the paper published every day.

For example, one of the reporters spoke about a feature story she had done several months ago on the start of a new school year for the local public schools. This is one of the hardy perennials of the newspaper business, along with the annual shoppers rush the Friday after Thanksgiving, and similar recurring stories.

She recalled being initially at a loss about how to freshen up a story where there appeared to be no new angles. Yet, as she began to research and reflect on the topic, and discuss it with her supervisor and colleagues, new slants on this hoary chestnut of the news business began to emerge. For instance, she began to play with possible story ideas with comic twists, like following a school-age youngster and his mom confronting the overwhelming number of choices available in stores when purchasing school supplies, or the conflict between generations in terms of taste and styles when shopping for new

school clothes. The once-dreaded project became progressively more fun, interesting, and challenging to report and write, ultimately resulting in a feature story that earned the reporter a commendation from the newspaper's publisher ("the big boss").

The graphic artist experienced the resources problem in the form of greater controls, a common tactic employed by management to rein in expenses during lean times. Whereas before the cutbacks the artist had wide latitude to make decisions about his advertising clients' projects, clearing only the largest with his immediate supervisor, now he often had to run his more creative (and hence riskier ideas) through several decision-makers to get permission to try something new. As the artist put it, "It's just not as much fun coming to work anymore. I feel I've had a lot of my freedom taken away from me."

A second theme is the importance of immediate relationships in this workplace. Relationships both support and aid creative ideation. The two reporters mentioned their respective supervisors as helpful partners in the creative process. One of them cited her supervisor's open door policy as real and meaningful, and added the supervisor was someone the reporter could reliably turn to "to bounce ideas off of." In addition, each reporter mentioned one trusted colleague in the newsroom they could sit down with and engage in an informal brainstorming session to develop creative new story ideas (particularly for feature articles) or a creative lead.

For the graphic artist, the significant source of creative support resides mostly in his relationships with a few key newspaper sales staff and the clients he serves directly. His interactions with them enable him to see beyond the confines of the newspaper

office and understand how the competitive environment is changing. This propels him to do research on how his clients' competitors design messages and images to influence buyers and then find creative new ways to connect his clients with their potential customers.

The picture that emerges is of a "siloe" organization where creative energy is stifled by layers of management. Though people are not quite as isolated as in the other two organizations, the amount of interaction is still fairly restricted. Organizational boundaries and norms hem workers into interacting with just a few other people, generally from the same or similar function, at the same level of the hierarchy plus one level of management above, for creative stimulation. This must severely limit the organization's capabilities to foster creative solutions to its problems.

This blinkered perspective, aided and abetted by time pressures, also suggests that trust levels in the organization are adversely affected. This does not mean that there is active distrust between workers in different departments or units of the organization. Rather, there is low trust between workers, resulting in little or no communications among employees outside a very narrow band of confidants.

Moving to the quantitative analysis, the following factors are from the top quartile found in Table 35:

- Experiment (Question 11)
- Organizational Helpfulness
- Submit Ideas (Question 5)
- Organizational Response

- Idea Origin Area
- Management Response
- Organizational Resources

Table 35

## Regional Newspaper Descriptive Statistics

|                              | N  | Mean | Standard Deviation |
|------------------------------|----|------|--------------------|
| Experiment                   | 13 | 2.69 | .947               |
| Organizational Helpfulness   | 13 | 3.00 | 1.354              |
| Freely Submit Ideas          | 13 | 3.31 | 1.377              |
| Organization Response        | 13 | 3.38 | 1.044              |
| Idea Origin Area             | 13 | 3.38 | 1.121              |
| Management Response          | 13 | 3.46 | .967               |
| Organizational Resources     | 13 | 3.62 | 1.121              |
| Organizational Knowledge     | 13 | 3.69 | 1.437              |
| Symbols as Stimuli           | 13 | 3.77 | 1.235              |
| Discuss Ideas                | 13 | 3.85 | 1.214              |
| Communication Submission     | 13 | 3.92 | 1.656              |
| Many Involved in Creativity  | 13 | 3.92 | 1.320              |
| Accidents as Stimuli         | 13 | 3.92 | 1.441              |
| Customer Meetings as Stimuli | 13 | 3.92 | 1.847              |
| Meeting Space                | 13 | 4.00 | 1.732              |
| Rules Support                | 13 | 4.00 | 1.000              |
| Job Rotation                 | 13 | 4.23 | 1.878              |
| Building Stimuli             | 13 | 4.23 | 1.013              |
| Meet and Share Ideas         | 13 | 4.38 | 1.938              |
| Moveable Furniture           | 12 | 4.42 | 1.730              |
| Track Ideas                  | 13 | 4.54 | 1.391              |
| Action Bias                  | 13 | 4.62 | 1.325              |
| Art as Stimuli               | 13 | 4.62 | 1.387              |
| Reward Ideas                 | 13 | 4.69 | 1.843              |
| Unrelated Skills Development | 13 | 4.85 | 1.405              |
| Outfitting Rooms             | 13 | 4.85 | 1.345              |
| Cross Department Knowledge   | 13 | 5.08 | 1.382              |
| Company Publications         | 13 | 5.23 | .725               |
| Valid N (listwise)           | 12 |      |                    |



There is clearly validation in this listing for the qualitative interview themes. At an individual and interpersonal level (supervisor/employee or client/employee), there is indeed considerable freedom to experiment with ideas, support from colleagues in the same department, freedom to submit ideas up one level to an immediate supervisor, ideas seem to come from various places within the newspaper organization, and management (meaning the immediate supervisor) responds positively.

The one possibly anomalous item is Organizational Resources. One possible reason this shows up highly ranked in the survey, even though the interviewees indicated resources were tightly squeezed, may be that the qualitative interviewees are not representative of the larger sample on this issue. Another, more likely reason is, given the tough times in the newspaper business, employees feel their organization is doing the best it can to fund their legitimate work-related needs.

The creativity-enhancing factors the organization most lacks (or are least characteristic of it) are as follows (once again, in rank order, the lowest-ranked item listed first):

- Company Publications (Question 10)
- Cross-department Knowledge
- Unrelated Skill Development (Question 16)
- Rewards
- Bias for Action (Question 13)
- Track Ideas (Question 6)
- Meeting and Share Ideas (Question 19)

- Job Rotation (Question 15)

One is compelled first to note the irony of a newspaper failing to provide an internal communications vehicle, like a newsletter, for its employees, for whatever reason. Truly, in this instance, the cobbler's children have no shoes.

The other items listed (9, 16, 19, and 15) show communications among different departments are not encouraged and are possibly even actively discouraged. Most communication is up to a supervisor or with a nearby and trusted colleague. There is a conspicuous lack of wide and robust communications throughout the organization. The almost certain result is a corresponding reduction in creative stimuli.

What all of these speak to is to a lack of key systems and norms organization-wide. The employees are unaware of an idea tracking system or a reward system to manage and encourage the generation of ideas. The absence of norms encouraging job rotation, cross-functional skill development, and a bias toward taking action are more evidence of a conservative, narrowly focused organization. The nature of much of the work in the newspaper business – reporting and writing, researching, and graphic art – demands considerable creativity. What is lacking is an organizational approach to fostering creativity.

Turning to the correlations of factor and perceived importance, the results show (in Table 36) only one item reaches statistical significance, Customer Meetings as Creative Stimuli. (The lack of statistical significance is probably once again due to the small sample size.) The graphic artist mentioned this as important in his work. Similar to the community college counselors viewing their students as customers, perhaps reporters

see the people they interview as sources of creative stimuli. In any event, the coefficient for this item suggests a high degree of correspondence between the actual and ideal amounts of importance placed on these interactions in the regional newspaper organization.

Table 36

Regional Newspaper Paired Samples Correlations ( $p < .05$ )

|         | Question Paris   | N  | Correlation | Sig.  |
|---------|--|----|-------------|-------|
| Pair 1  | Management Response & Importance-Management Response                 | 12 | .542        | .069  |
| Pair 2  | Idea Origin Area & Importance-Idea Origin Area                       | 12 | .364        | .245  |
| Pair 3  | Rules Support & Importance-Rules Support                             | 13 | .000        | 1.000 |
| Pair 4  | Organization Response & Importance-Organization Response             | 12 | .369        | .237  |
| Pair 5  | Communication Submission & Importance-Communication Submission       | 13 | -.078       | .800  |
| Pair 6  | Track Ideas & Importance-Track Ideas                                 | 13 | .466        | .108  |
| Pair 7  | Reward Ideas & Importance-Reward Ideas                               | 13 | -.113       | .713  |
| Pair 8  | Freely Submit Ideas & Importance-Freely Submit Ideas                 | 13 | .527        | .064  |
| Pair 9  | Cross Department Knowledge & Importance-Cross Department Knowledge   | 13 | .355        | .234  |
| Pair 10 | Company Publications & Importance-Company Publications               | 13 | -.532       | .061  |
| Pair 11 | Experiment & Importance-Experiment                                   | 13 | .494        | .086  |
| Pair 12 | Many Involved in Creativity & Importance-Many Involved in Creativity | 13 | .392        | .186  |
| Pair 13 | Action Bias & Importance-Action Bias                                 | 13 | -.356       | .233  |

Table 36 (continued)

|         | Question Pairs   | N  | Correlation | Sig. |
|---------|--|----|-------------|------|
| Pair 14 | Accidents as Stimuli & Importance-Accidents as Stimuli                 | 13 | .509        | .075 |
| Pair 15 | Job Rotation & Importance-Job Rotation                                 | 13 | .159        | .605 |
| Pair 16 | Unrelated Skills Development & Importance-Unrelated Skills Development | 13 | .138        | .653 |
| Pair 17 | Customer Meetings as Stimuli & Importance-Customer Meetings as Stimuli | 13 | .678        | .011 |
| Pair 18 | Discuss Ideas & Importance-Discuss Ideas                               | 13 | .507        | .077 |
| Pair 19 | Meet and Share Ideas & Importance-Meet and Share Ideas                 | 13 | .134        | .663 |
| Pair 20 | Organizational Knowledge & Importance-Organizational Knowledge         | 13 | -.043       | .888 |
| Pair 21 | Organizational Helpfulness & Importance-Organizational Helpfulness     | 13 | -.061       | .844 |
| Pair 22 | Organizational Resources & Importance-Organizational Resources         | 13 | .064        | .836 |
| Pair 23 | Building Stimuli & Importance-Building Stimuli                         | 13 | -.205       | .502 |
| Pair 24 | Moveable Furniture & Importance-Moveable Furniture                     | 12 | .451        | .141 |
| Pair 25 | Art as Stimuli & Importance-Art as Stimuli                             | 13 | .151        | .623 |
| Pair 26 | Meeting Space & Importance-Meeting Space                               | 13 | .173        | .571 |
| Pair 27 | Outfitting Rooms & Importance-Outfitting Rooms                         | 13 | -.146       | .634 |
| Pair 28 | Symbols as Stimuli & Importance-Symbols as Stimuli                     | 13 | .116        | .707 |

Putting these data into the factor analytic framework, we see once again diagnostic possibilities leading to development actions. If the regional newspaper organization truly intends to become more creative and innovative, then much work needs to be devoted to tearing down the walls of the silos. This will involve actions under Factor 2, Cultural Support Mechanisms, and 3, Organizational Inputs, and even 4, Discussion Stimuli. For example, this might involve the company setting up and promoting various types of forums and experiences where employees from different departments get together to share ideas and work together. One desired outcome would be to legitimate the notion that a good idea can come from anywhere within the company, even from the floor of the printing press room.

To bring about a lasting change, the regional newspaper organization will also need to build some explicit management processes that promote creativity. A good place to start, for symbolic reasons, is to issue a company newsletter.

#### *Energy Services Company*

The last organization considered is a Fortune 100 multinational giant headquartered in a major Texas city. Its original and principal business is providing various technical and support services to oil and natural gas drillers. Now the firm is diversified into many other lines of enterprise as well. The company's revenues are in the billions, and it employs tens of thousands of employees.

For this study, permission was given to survey a group of 21 mid-managers but not to conduct qualitative interviews. The managers had been chosen to attend a leadership program, suggesting they had been identified and were being groomed for promotion up the corporate ladder. Thus, while the group may not be representative in the statistical sense of all employees, these individuals certainly seem to be good representatives of management thinking.

In terms of demographics, a large majority of managers have long tenures; over 70% have been with the company for ten or more years (Table 37). As noted earlier, a solid majority are managers, though two listed themselves as executives and three as staff professionals (Table 38). Just over 50% of the group has a bachelor's degree. But the group covers a broad spectrum; three of the group possess doctorates, and two are high school graduates (Table 39). The group is predominantly middle-aged, and overwhelming male and white (Tables 40-42).

Table 37

Energy Service Company Work Length

| Years of Service | Frequency | Percent | Cumulative Percent |
|------------------|-----------|---------|--------------------|
| 0 to 4 years     | 3         | 14.3    | 14.3               |
| 5 to 9 years     | 2         | 9.5     | 23.8               |
| 10 to 14 years   | 3         | 14.3    | 38.1               |
| 15 to 19 years   | 8         | 38.1    | 76.2               |
| 25 or more years | 5         | 23.8    | 100.0              |
| Total            | 21        | 100.0   |                    |

Table 38

Energy Service Company Job Type

| Job Type              | Frequency | Percent | Cumulative Percent |
|-----------------------|-----------|---------|--------------------|
| Staff Professional    | 3         | 14.3    | 14.3               |
| Manager or Supervisor | 16        | 76.2    | 90.5               |
| Executive             | 2         | 9.5     | 100.0              |
| Total                 | 21        | 100.0   |                    |

Table 39

Energy Service Company Educational Attainment

| Education                       | Frequency | Percent | Cumulative Percent |
|---------------------------------|-----------|---------|--------------------|
| High School Graduate (12 years) | 2         | 9.5     | 9.5                |
| 15 years                        | 1         | 4.8     | 14.3               |
| 16 years (Bachelor's Degree)    | 11        | 52.4    | 66.7               |
| Master's Degree                 | 4         | 19.0    | 85.7               |
| Doctoral degree                 | 3         | 14.3    | 100.0              |
| Total                           | 21        | 100.0   |                    |

Table 40

Energy Service Company Age Range

| Age Range | Frequency | Percent | Cumulative Percent |
|-----------|-----------|---------|--------------------|
| 30 - 39   | 4         | 20.0    | 20.0               |
| 40 - 49   | 8         | 40.0    | 60.0               |
| 50 - 59   | 7         | 35.0    | 95.0               |
| 60 - 69   | 1         | 5.0     | 100.0              |
| Total     | 20        | 100.0   |                    |

Table 41

Energy Service Company Gender

| Gender | Frequency | Percent | Cumulative Percent |
|--------|-----------|---------|--------------------|
| Female | 2         | 9.5     | 9.5                |
| Male   | 19        | 90.5    | 100.0              |
| Total  | 21        | 100.0   |                    |

Table 42

Energy Service Company Ethnicity

| Ethnicity                 | Frequency | Percent | Cumulative Percent |
|---------------------------|-----------|---------|--------------------|
| Asian or Pacific Islander | 1         | 4.8     | 4.8                |
| Caucasian                 | 17        | 81.0    | 85.7               |
| Hispanic                  | 2         | 9.5     | 95.2               |
| Other                     | 1         | 4.8     | 100.0              |
| Total                     | 21        | 100.0   |                    |

Recall that the company had the lowest idea generation average, but interestingly, the best innovation ratio (Table 11). In the comparison of factors (Table 12), the company had the second highest score for a factor, suggesting that the influence of this creativity-enhancing factor is widely felt in the organization. But it also has the second largest spread in scores from top to bottom, indicating that there is a wide disparity between the factors present in its environment.



While in this instance we lack the qualitative data, we can still draw some conclusions from the quantitative data to help us better understand the organization's culture as it relates to creativity. We begin again with the top quartile of items, from Table 43, which is composed of these factors:

- Organizational Helpfulness
- Idea Origin Area
- Management Response
- Action Bias (Question 13)
- Rules Support
- Customer Meetings as Stimuli
- Discuss Ideas

Organizational Helpfulness, Factor 5, pops up yet again, this time at the very top. One possibility to consider, given the reappearance of this factor over and over again, at or near the top, is that it may be a summary measure. In other words, since some at least minimal amount of creativity occurs in virtually every organization, this item embodies this fact. While the amount of idea generation in the Energy Services organization may be low, the respondents indicate that a high percent of those ideas are turned into practical innovations. This factor, along with Action Bias (the perceived tendency of an organization to try new things), may be reflected in these results.

Table 43

Energy Services Company Descriptive Statistics

|                              | N  | Mean | Standard Deviation |
|------------------------------|----|------|--------------------|
| Organizational Helpfulness   | 21 | 2.57 | 1.207              |
| Idea Origin Area             | 21 | 3.00 | 1.342              |
| Management Response          | 21 | 3.05 | 1.024              |
| Job Rotation                 | 21 | 3.33 | 1.653              |
| Action Bias                  | 20 | 3.40 | 1.353              |
| Rules Support                | 21 | 3.48 | 1.167              |
| Customer Meetings as Stimuli | 21 | 3.48 | 1.861              |
| Discuss Ideas                | 21 | 3.57 | 1.599              |
| Organizational Knowledge     | 21 | 3.86 | 1.062              |
| Organization Response        | 21 | 3.90 | 1.091              |
| Company Publications         | 21 | 3.95 | 1.322              |
| Organizational Resources     | 21 | 4.00 | 1.673              |
| Reward Ideas                 | 21 | 4.05 | 1.658              |
| Communication Submission     | 21 | 4.10 | 1.729              |
| Many Involved in Creativity  | 21 | 4.14 | 1.014              |
| Meet and Share Ideas         | 21 | 4.14 | 1.389              |
| Accidents as Stimuli         | 21 | 4.19 | 1.692              |
| Unrelated Skills Development | 21 | 4.43 | 1.535              |
| Track Ideas                  | 21 | 4.62 | 1.071              |
| Experiment                   | 21 | 4.62 | 1.203              |
| Freely Submit Ideas          | 21 | 4.67 | 1.238              |
| Cross Department Knowledge   | 21 | 5.29 | 1.347              |
| Valid N (listwise)           | 20 |      |                    |

Keeping in mind that this organization starts from a relatively low base of perceived creativity, there is some openness to ideas from many places within the organization. The leadership class, involving high potential candidates from a variety of business units and departments, is further evidence of this. Such classes are also an example of an important forum that the organization provides to promote the factor,

Discuss Ideas. Nor are the respondents limited to internal discussion; Customer Meetings as Stimuli shows that expressed needs gathered outside of the company have some influence as well.

In a huge, bureaucratic company like this, Management Response is crucial to whatever creative ideation and innovation pursuits there may be. So is Rules Support to make clear what is permitted and what is not.

The bottom quartile consists of these items (worst at the top):

- Cross-department Knowledge
- Freely Submit Ideas
- Outfitting Rooms
- Experiment
- Track Ideas
- Unrelated Skills Development

So, despite such forums as the class, there is relatively little opportunity within this company to understand what other departments are doing and to use these interactions as stimuli to creative thought. And while the company is making an investment in these managers' future, clearly the training is job-related. Unrelated Skills Development happens rarely, if at all.

Employees do not feel free to submit ideas, and even if they did, there is no way to track those ideas. Nor do employees feel free to experiment with ideas on the job. This suggests not only a lack of a systematic approach to creativity, but even a lack of valuing creative input.

Finally, the appearance on the list of Outfitting Rooms is additional evidence that the physical environment is not seen by respondents as a significant factor in influencing creativity.

Table 44 shows that there are six significant ( $p < .05$ ) correlations between factors and the perceived importance of the same factor within the Energy Service organization. (The larger sample size certainly helped here.) Three are strong correlations ( $> .500$ ): Organizational Helpfulness, Customer Meetings as Stimuli, and Meet and Share Ideas. Three are moderate strength ( $> .300$ ): Experiment, Accidents as Stimuli, and Discuss Ideas). This is confirmatory evidence that the actual and ideal ratings are roughly equal, or given about the same weight by the respondents.

Table 44

Energy Services Company Paired Samples Correlations ( $p < .05$ )

|        | Question Pairs   | N  | Correlation | Sig. |
|--------|--|----|-------------|------|
| Pair 1 | Management Response & Importance-Management Response               | 21 | -.155       | .502 |
| Pair 2 | Idea Origin Area & Importance-Idea Origin Area                     | 21 | .321        | .156 |
| Pair 3 | Rules Support & Importance-Rules Support                           | 20 | -.086       | .717 |
| Pair 4 | Organization Response & Importance-Organization Response           | 21 | -.119       | .606 |
| Pair 5 | Communication Submission & Importance-Communication Submission     | 21 | -.009       | .971 |
| Pair 6 | Track Ideas & Importance-Track Ideas                               | 20 | -.120       | .614 |
| Pair 7 | Reward Ideas & Importance-Reward Ideas                             | 21 | -.419       | .059 |
| Pair 8 | Freely Submit Ideas & Importance-Freely Submit Ideas               | 20 | -.140       | .555 |
| Pair 9 | Cross Department Knowledge & Importance-Cross Department Knowledge | 20 | .213        | .368 |

Table 44 (continued)

|         | Question Pairs   | N  | Correlation | Sig. |
|---------|--|----|-------------|------|
| Pair 10 | Company Publications & Importance-Company Publications                 | 20 | .079        | .742 |
| Pair 11 | Experiment & Importance-Experiment                                     | 20 | .495        | .027 |
| Pair 12 | Many Involved in Creativity & Importance-Many Involved in Creativity   | 21 | .134        | .561 |
| Pair 13 | Action Bias & Importance-Action Bias                                   | 20 | .249        | .290 |
| Pair 14 | Accidents as Stimuli & Importance-Accidents as Stimuli                 | 21 | .469        | .032 |
| Pair 15 | Job Rotation & Importance-Job Rotation                                 | 21 | -.318       | .160 |
| Pair 16 | Unrelated Skills Development & Importance-Unrelated Skills Development | 21 | .170        | .461 |
| Pair 17 | Customer Meetings as Stimuli & Importance-Customer Meetings as Stimuli | 21 | .576        | .006 |
| Pair 18 | Discuss Ideas & Importance-Discuss Ideas                               | 20 | .468        | .037 |
| Pair 19 | Meet and Share Ideas & Importance-Meet and Share Ideas                 | 21 | .525        | .014 |
| Pair 20 | Organizational Knowledge & Importance-Organizational Knowledge         | 20 | .376        | .102 |
| Pair 21 | Organizational Helpfulness & Importance-Organizational Helpfulness     | 19 | .606        | .006 |
| Pair 22 | Organizational Resources & Importance-Organizational Resources         | 20 | -.008       | .973 |
| Pair 23 | Building Stimuli & Importance-Building Stimuli                         | 21 | .060        | .795 |
| Pair 24 | Moveable Furniture & Importance-Moveable Furniture                     | 20 | .187        | .430 |
| Pair 25 | Art as Stimuli & Importance-Art as Stimuli                             | 20 | -.008       | .972 |
| Pair 26 | Meeting Space & Importance-Meeting Space                               | 19 | .446        | .056 |
| Pair 27 | Outfitting Rooms & Importance-Outfitting Rooms                         | 21 | .369        | .100 |
| Pair 28 | Symbols as Stimuli & Importance-Symbols as Stimuli                     | 19 | .226        | .352 |

One last time we turn to put the limited data into the factor analytic framework. While there is a general sense that Factor 5, Organizational Helpfulness, is at work, this is in a context of low ideation, but high conversion to innovation. Probably Factor 3, Organizational Inputs, is the area of most needed work. The fact that managers feel inhibited from both submitting ideas freely and experimenting is reflected in the low ideation count.

Perhaps the other area in need of work is Factor 1, Creativity Management Processes. There is a something of a foundation to build on; though not strong, there is evidence of Management Response and Rules Support. A true commitment to creativity would be shown in more systematic ways like idea submission and tracking processes.

## **CHAPTER IV**

### **DISCUSSION AND CONCLUSIONS**

Despite the limits of the study, these initial results suggest the methodology used here has considerable diagnostic and research potential. There is real synergy between using the Organization Creativity Questionnaire and the qualitative data to develop an effective picture of the organization, one that could lead to effective change strategies to promote more creativity and innovation by practitioners and managers. The ability to match much of the qualitative information provides important confirmation of the survey's effectiveness and power.

This conclusion was necessarily tempered by a host of factors. The limitations of the study included these:

1. Respondents were volunteers, and not necessarily representative of an organization's employee population. Thus, selection bias was present.
2. The fact that only four industry types were considered, while important and suggestive, did not represent the hundreds of different industry types that existed. Thus, the conclusions that were drawn were once again restricted.
3. The power of statistical findings were limited by the small sample size.

This last point is particularly evident in the instances where no statistically significant results were obtained. Because of this and the respondent selection procedures used, consideration was given to using nonparametric statistics. However, this was rejected because (a) it would have complicated comparisons with the overall

results, and (b) the longer term research need is to revise the instrument (discussed next) and carry out a full-fledged validity and reliability study.

The factor analysis of the survey shows how the survey can be revised and improved, by reorganizing and possibly consolidating some questions into the six factor framework. The analysis suggests a useful and potentially very powerful model of organizational creativity and innovation.

These results suggest that an overall factor may be Organizational Helpfulness, a general factor to which the other factors contribute. The first factor, the Creativity Management Process, includes eight dimensions that contribute to the deliberate fostering of creativity.

The Cultural Support Mechanism factor, the second of the factors, is less directly related to stimulating creativity, but does provide a general supporting platform that makes effective ideation and innovation likely.

The Discussion Stimulus factor highlights how important basic human discourse is to the creative process.

There was little supporting evidence for the sixth factor, the physical environment. This may result from the fact that it is difficult for many people to see the link between being in a space or viewing an object and coming up with an idea, particularly when compared to the “aha” sensation that occurs when engaged in dialogue with a co-worker or boss.



In addition, having been to and observed many of the sites where the respondents work, it may also be the case that these people have the misfortune to work in particularly dreary and uninspiring physical spaces.

Promoting a more creative society is a necessary task in today's fast-changing world. The methods discussed here show much promise in aiding in that transformation. They are certainly worthy of additional research.

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**APPENDIX A**  
**ORGANIZATION CREATIVITY QUESTIONNAIRE**

## ORGANIZATION CREATIVITY QUESTIONNAIRE

This questionnaire is designed to measure how well the organization you work for promotes and uses creativity. Creativity is defined here as a new idea that is both novel and useful. An idea's usefulness may be in developing a new or improved product or service, or it may be a means of solving a work problem or increasing work process efficiency. The results that come from creative ideas that have been implemented are usually referred to as "innovations".

The first section of the questionnaire is an opportunity for you to provide information about your job, experience and background; this information aids in analyzing results. The second section has a number of survey questions, grouped together in sets of two. For the first question (listed as "a") circle the number of the response that best matches your viewpoint. For the second question ("b") in the set, rate how important, in your opinion, the subject being raised by the question is to enhancing creativity in your organization. There are also lines provided after each set of items for you to add optional comments about your responses. Finally, in the third section, there are a few questions about creativity in your organization for which you need to write a short response.

**SECTION I – PLEASE TELL US A LITTLE BIT ABOUT YOU.** For each item, check the field that best applies. You may skip over items you prefer not to answer.

1. How long have you worked for this organization?
  - 0 to 4 years
  - 5 to 9 years
  - 10 to 14 years
  - 15 to 19 years
  - 20 to 24 years
  - 25 or more years
  
2. What type of job do you currently have with the organization?
  - Clerical/Administrative
  - Production Worker
  - Technician
  - Staff Professional
  - Manager or Supervisor
  - Executive
  - Other; specify: \_\_\_\_\_
  
3. What is your highest level of educational attainment?
  - Less than 12 years
  - 12 years (high school graduate)
  - 13 years
  - 14 years (Associate degree or college sophomore)
  - 15 years
  - 16 years (Bachelors degree)
  - Masters degree
  - Doctoral degree (Ph.D., J.D., or MD)
  
4. What age range are you?
  - 19 years old or less
  - 20 to 29
  - 30 to 39
  - 40 to 49
  - 50 to 59
  - 60 years old or older

5. What is your gender?  
 Female  
 Male
6. What is your ethnicity?  
 African-American (other than Hispanic)  
 Asian or Pacific Islander  
 Caucasian (other than Hispanic)  
 Hispanic  
 Native American or Native Alaskan  
 Other

SECTION II – THE SURVEY QUESTIONS

1. a) How confident or sure are you that your organization’s management will recognize and respond to a creative idea by any employee?
- |              |      |                  |         |                    |        |                |
|--------------|------|------------------|---------|--------------------|--------|----------------|
| Very<br>Sure | Sure | Somewhat<br>Sure | Neutral | Somewhat<br>Unsure | Unsure | Very<br>Unsure |
| 1            | 2    | 3                | 4       | 5                  | 6      | 7              |
- b) How important is management recognition of creative ideas from any employee to encouraging creativity in your organization?
- |                   |           |                       |         |                         |             |                     |
|-------------------|-----------|-----------------------|---------|-------------------------|-------------|---------------------|
| Very<br>Important | Important | Somewhat<br>Important | Neutral | Somewhat<br>Unimportant | Unimportant | Very<br>Unimportant |
| 1                 | 2         | 3                     | 4       | 5                       | 6           | 7                   |

COMMENTS:

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2. a) How likely is it that a creative idea will come from any part of your organization (rather than coming from just a few areas)?
- |                |        |                    |         |                      |          |                  |
|----------------|--------|--------------------|---------|----------------------|----------|------------------|
| Very<br>Likely | Likely | Somewhat<br>Likely | Neutral | Somewhat<br>Unlikely | Unlikely | Very<br>Unlikely |
| 1              | 2      | 3                  | 4       | 5                    | 6        | 7                |
- b) How important to encouraging creativity in your organization is it that creative ideas be accepted from any part of your organization?
- |                   |           |                       |         |                         |             |                     |
|-------------------|-----------|-----------------------|---------|-------------------------|-------------|---------------------|
| Very<br>Important | Important | Somewhat<br>Important | Neutral | Somewhat<br>Unimportant | Unimportant | Very<br>Unimportant |
| 1                 | 2         | 3                     | 4       | 5                       | 6           | 7                   |

COMMENTS:

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3. a) How effectively do this organization’s rules and policies support employees’ creative efforts?
- |                     |             |                         |         |                           |               |                       |
|---------------------|-------------|-------------------------|---------|---------------------------|---------------|-----------------------|
| Very<br>Effectively | Effectively | Somewhat<br>Effectively | Neutral | Somewhat<br>Ineffectively | Ineffectively | Very<br>Ineffectively |
| 1                   | 2           | 3                       | 4       | 5                         | 6             | 7                     |

b) How important is it for there to be creativity-supporting organizational rules and policies to encouraging creativity in your organization?

|                   |           |                       |         |                         |             |                     |
|-------------------|-----------|-----------------------|---------|-------------------------|-------------|---------------------|
| Very<br>Important | Important | Somewhat<br>Important | Neutral | Somewhat<br>Unimportant | Unimportant | Very<br>Unimportant |
| 1                 | 2         | 3                     | 4       | 5                       | 6           | 7                   |

COMMENTS:

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4. a) How effective is your organization in responding in a fair, timely and constructive manner to creative ideas submitted by employees?

|                   |           |                       |         |                         |             |                     |
|-------------------|-----------|-----------------------|---------|-------------------------|-------------|---------------------|
| Very<br>Effective | Effective | Somewhat<br>Effective | Neutral | Somewhat<br>Ineffective | Ineffective | Very<br>Ineffective |
| 1                 | 2         | 3                     | 4       | 5                       | 6           | 7                   |

b) How important is a fair, timely and constructive response to creative ideas submitted by employees for encouraging creativity in your organization?

|                   |           |                       |         |                         |             |                     |
|-------------------|-----------|-----------------------|---------|-------------------------|-------------|---------------------|
| Very<br>Important | Important | Somewhat<br>Important | Neutral | Somewhat<br>Unimportant | Unimportant | Very<br>Unimportant |
| 1                 | 2         | 3                     | 4       | 5                       | 6           | 7                   |

COMMENTS:

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5. a) How effectively does the organization communicate to employees on how to submit creative ideas for management consideration?

|                     |             |                         |         |                           |               |                       |
|---------------------|-------------|-------------------------|---------|---------------------------|---------------|-----------------------|
| Very<br>Effectively | Effectively | Somewhat<br>Effectively | Neutral | Somewhat<br>Ineffectively | Ineffectively | Very<br>Ineffectively |
| 1                   | 2           | 3                       | 4       | 5                         | 6             | 7                     |

b) How important is communication about the procedures for submitting creative ideas for management consideration to encouraging creativity in your organization?

|                   |           |                       |         |                         |             |                     |
|-------------------|-----------|-----------------------|---------|-------------------------|-------------|---------------------|
| Very<br>Important | Important | Somewhat<br>Important | Neutral | Somewhat<br>Unimportant | Unimportant | Very<br>Unimportant |
| 1                 | 2         | 3                     | 4       | 5                       | 6           | 7                   |

COMMENTS:

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6. a) How effectively does your organization keep track of proposed creative ideas?

|                     |             |                         |         |                           |               |                       |
|---------------------|-------------|-------------------------|---------|---------------------------|---------------|-----------------------|
| Very<br>Effectively | Effectively | Somewhat<br>Effectively | Neutral | Somewhat<br>Ineffectively | Ineffectively | Very<br>Ineffectively |
| 1                   | 2           | 3                       | 4       | 5                         | 6             | 7                     |

b) How important is a tracking mechanism for proposed creative ideas to encouraging creativity in your organization?

|                   |           |                       |         |                         |             |                     |
|-------------------|-----------|-----------------------|---------|-------------------------|-------------|---------------------|
| Very<br>Important | Important | Somewhat<br>Important | Neutral | Somewhat<br>Unimportant | Unimportant | Very<br>Unimportant |
| 1                 | 2         | 3                     | 4       | 5                       | 6           | 7                   |



COMMENTS:

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7. a) How effectively does your organization reward employees (through any combination of money incentives, pay raises, recognition, job promotions, or desirable work assignments) for their creative contributions?

|                          |                  |                              |              |                                |                    |                            |
|--------------------------|------------------|------------------------------|--------------|--------------------------------|--------------------|----------------------------|
| Very<br>Effectively<br>1 | Effectively<br>2 | Somewhat<br>Effectively<br>3 | Neutral<br>4 | Somewhat<br>Ineffectively<br>5 | Ineffectively<br>6 | Very<br>Ineffectively<br>7 |
|--------------------------|------------------|------------------------------|--------------|--------------------------------|--------------------|----------------------------|

b) How important are rewards to encouraging creativity in your organization?

|                        |                |                            |              |                              |                  |                          |
|------------------------|----------------|----------------------------|--------------|------------------------------|------------------|--------------------------|
| Very<br>Important<br>1 | Important<br>2 | Somewhat<br>Important<br>3 | Neutral<br>4 | Somewhat<br>Unimportant<br>5 | Unimportant<br>6 | Very<br>Unimportant<br>7 |
|------------------------|----------------|----------------------------|--------------|------------------------------|------------------|--------------------------|

COMMENTS:

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8. a) Looking over the past 12 months, how frequently do employees in the organization submit creative ideas that no one asked them to produce?

|                         |                 |                             |              |                               |                   |                           |
|-------------------------|-----------------|-----------------------------|--------------|-------------------------------|-------------------|---------------------------|
| Very<br>Frequently<br>1 | Frequently<br>2 | Somewhat<br>Frequently<br>3 | Neutral<br>4 | Somewhat<br>Infrequently<br>5 | Infrequently<br>6 | Very<br>Infrequently<br>7 |
|-------------------------|-----------------|-----------------------------|--------------|-------------------------------|-------------------|---------------------------|

b) How important is it that workers feel encouraged to propose creative ideas, without being asked, to encouraging creativity in your organization?

|                        |                |                            |              |                              |                  |                          |
|------------------------|----------------|----------------------------|--------------|------------------------------|------------------|--------------------------|
| Very<br>Important<br>1 | Important<br>2 | Somewhat<br>Important<br>3 | Neutral<br>4 | Somewhat<br>Unimportant<br>5 | Unimportant<br>6 | Very<br>Unimportant<br>7 |
|------------------------|----------------|----------------------------|--------------|------------------------------|------------------|--------------------------|

COMMENTS:

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9. a) How easy is it for an employee in one part of your organization to find out about a creative idea being considered in another part of the organization?

|                   |           |                       |              |                            |                |                        |
|-------------------|-----------|-----------------------|--------------|----------------------------|----------------|------------------------|
| Very<br>Easy<br>1 | Easy<br>2 | Somewhat<br>Easy<br>3 | Neutral<br>4 | Somewhat<br>Difficult<br>5 | Difficult<br>6 | Very<br>Difficult<br>7 |
|-------------------|-----------|-----------------------|--------------|----------------------------|----------------|------------------------|

b) How important is the ease in finding out about creative ideas being considered in other parts of the organization to encouraging creativity in your organization?

|                        |                |                            |              |                              |                  |                          |
|------------------------|----------------|----------------------------|--------------|------------------------------|------------------|--------------------------|
| Very<br>Important<br>1 | Important<br>2 | Somewhat<br>Important<br>3 | Neutral<br>4 | Somewhat<br>Unimportant<br>5 | Unimportant<br>6 | Very<br>Unimportant<br>7 |
|------------------------|----------------|----------------------------|--------------|------------------------------|------------------|--------------------------|

COMMENTS:

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10. a) How effective is management in using company newsletters, e-mail broadcasts, bulletin boards, company meetings, and other formal communications for publicizing employees' creative ideas throughout your organization?

|                |           |                    |         |                      |             |                  |
|----------------|-----------|--------------------|---------|----------------------|-------------|------------------|
| Very Effective | Effective | Somewhat Effective | Neutral | Somewhat Ineffective | Ineffective | Very Ineffective |
| 1              | 2         | 3                  | 4       | 5                    | 6           | 7                |

- b) How important is publicizing employees' creative efforts by formal communications to encouraging creativity in your organization?

|                |           |                    |         |                      |             |                  |
|----------------|-----------|--------------------|---------|----------------------|-------------|------------------|
| Very Important | Important | Somewhat Important | Neutral | Somewhat Unimportant | Unimportant | Very Unimportant |
| 1              | 2         | 3                  | 4       | 5                    | 6           | 7                |

COMMENTS:

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11. a) How willing is your organization to allow employees to experiment with creative ideas on their own without prior approval from a manager or supervisor?

|              |         |                  |         |                    |           |                |
|--------------|---------|------------------|---------|--------------------|-----------|----------------|
| Very Willing | Willing | Somewhat Willing | Neutral | Somewhat Unwilling | Unwilling | Very Unwilling |
| 1            | 2       | 3                | 4       | 5                  | 6         | 7              |

- b) How important is a willingness to allow unofficial creative activity by employees to encouraging creativity in your organization?

|                |           |                    |         |                      |             |                  |
|----------------|-----------|--------------------|---------|----------------------|-------------|------------------|
| Very Important | Important | Somewhat Important | Neutral | Somewhat Unimportant | Unimportant | Very Unimportant |
| 1              | 2         | 3                  | 4       | 5                    | 6           | 7                |

COMMENTS:

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12. a) How effective is your organization in enabling many people to become involved in considering the potential of an employee's creative idea (versus just one or a very few)?

|                |           |                    |         |                      |             |                  |
|----------------|-----------|--------------------|---------|----------------------|-------------|------------------|
| Very Effective | Effective | Somewhat Effective | Neutral | Somewhat Ineffective | Ineffective | Very Ineffective |
| 1              | 2         | 3                  | 4       | 5                    | 6           | 7                |

- b) How important is having multiple people have an opportunity to review creative proposals to encouraging creativity in your organization?

|                |           |                    |         |                      |             |                  |
|----------------|-----------|--------------------|---------|----------------------|-------------|------------------|
| Very Important | Important | Somewhat Important | Neutral | Somewhat Unimportant | Unimportant | Very Unimportant |
| 1              | 2         | 3                  | 4       | 5                    | 6           | 7                |

COMMENTS:

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13. a) How typical is it of your organization and its employees to have a "bias for action" (that is, a willingness to try new things versus "paralysis by analysis")?

|              |         |                  |         |                    |           |                |
|--------------|---------|------------------|---------|--------------------|-----------|----------------|
| Very Typical | Typical | Somewhat Typical | Neutral | Somewhat Untypical | Untypical | Very Untypical |
| 1            | 2       | 3                | 4       | 5                  | 6         | 7              |

- b) How important is it to encouraging creativity in your organization to have a "bias for action"?

|                |           |                    |         |                      |             |                  |
|----------------|-----------|--------------------|---------|----------------------|-------------|------------------|
| Very Important | Important | Somewhat Important | Neutral | Somewhat Unimportant | Unimportant | Very Unimportant |
| 1              | 2         | 3                  | 4       | 5                    | 6           | 7                |

COMMENTS:

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14. a) How typical is it of employees in your organization to view “accidents” or “exceptions” to standard operating procedures as potential opportunities to stimulate creative ideas?

|                      |              |                          |              |                            |                |                        |
|----------------------|--------------|--------------------------|--------------|----------------------------|----------------|------------------------|
| Very<br>Typical<br>1 | Typical<br>2 | Somewhat<br>Typical<br>3 | Neutral<br>4 | Somewhat<br>Untypical<br>5 | Untypical<br>6 | Very<br>Untypical<br>7 |
|----------------------|--------------|--------------------------|--------------|----------------------------|----------------|------------------------|

b) How important is it to encouraging creativity in your organization to view “exceptions” to standard operating procedures or “accidents” as potential opportunities to stimulate creative ideas?

|                        |                |                            |              |                              |                  |                          |
|------------------------|----------------|----------------------------|--------------|------------------------------|------------------|--------------------------|
| Very<br>Important<br>1 | Important<br>2 | Somewhat<br>Important<br>3 | Neutral<br>4 | Somewhat<br>Unimportant<br>5 | Unimportant<br>6 | Very<br>Unimportant<br>7 |
|------------------------|----------------|----------------------------|--------------|------------------------------|------------------|--------------------------|

COMMENTS:

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15. a) How typical is it of your organization to encourage employees to rotate into new jobs for which they are qualified?

|                      |              |                          |              |                            |                |                        |
|----------------------|--------------|--------------------------|--------------|----------------------------|----------------|------------------------|
| Very<br>Typical<br>1 | Typical<br>2 | Somewhat<br>Typical<br>3 | Neutral<br>4 | Somewhat<br>Untypical<br>5 | Untypical<br>6 | Very<br>Untypical<br>7 |
|----------------------|--------------|--------------------------|--------------|----------------------------|----------------|------------------------|

b) How important is it to encouraging creativity in your organization to encourage employees to rotate into new jobs for which they are qualified?

|                        |                |                            |              |                              |                  |                          |
|------------------------|----------------|----------------------------|--------------|------------------------------|------------------|--------------------------|
| Very<br>Important<br>1 | Important<br>2 | Somewhat<br>Important<br>3 | Neutral<br>4 | Somewhat<br>Unimportant<br>5 | Unimportant<br>6 | Very<br>Unimportant<br>7 |
|------------------------|----------------|----------------------------|--------------|------------------------------|------------------|--------------------------|

COMMENTS:

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16. a) How typical is it of your organization to support employees in developing skills unrelated to their present job?

|                      |              |                          |              |                            |                |                        |
|----------------------|--------------|--------------------------|--------------|----------------------------|----------------|------------------------|
| Very<br>Typical<br>1 | Typical<br>2 | Somewhat<br>Typical<br>3 | Neutral<br>4 | Somewhat<br>Untypical<br>5 | Untypical<br>6 | Very<br>Untypical<br>7 |
|----------------------|--------------|--------------------------|--------------|----------------------------|----------------|------------------------|

b) How important is it to encouraging creativity in your organization to support employees in developing skills unrelated to their present job?

|                        |                |                            |              |                              |                  |                          |
|------------------------|----------------|----------------------------|--------------|------------------------------|------------------|--------------------------|
| Very<br>Important<br>1 | Important<br>2 | Somewhat<br>Important<br>3 | Neutral<br>4 | Somewhat<br>Unimportant<br>5 | Unimportant<br>6 | Very<br>Unimportant<br>7 |
|------------------------|----------------|----------------------------|--------------|------------------------------|------------------|--------------------------|

COMMENTS:

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17. How much importance does your organization place on allowing all employees to meet customers and suppliers as a way of stimulating new ideas?

|                        |                |                            |              |                              |                  |                          |
|------------------------|----------------|----------------------------|--------------|------------------------------|------------------|--------------------------|
| Very<br>Important<br>1 | Important<br>2 | Somewhat<br>Important<br>3 | Neutral<br>4 | Somewhat<br>Unimportant<br>5 | Unimportant<br>6 | Very<br>Unimportant<br>7 |
|------------------------|----------------|----------------------------|--------------|------------------------------|------------------|--------------------------|

How important is it to encouraging creativity in your organization to allow employees to meet, or somehow communicate with, customers and suppliers as a way of getting new ideas?

|                        |                |                            |              |                              |                  |                          |
|------------------------|----------------|----------------------------|--------------|------------------------------|------------------|--------------------------|
| Very<br>Important<br>1 | Important<br>2 | Somewhat<br>Important<br>3 | Neutral<br>4 | Somewhat<br>Unimportant<br>5 | Unimportant<br>6 | Very<br>Unimportant<br>7 |
|------------------------|----------------|----------------------------|--------------|------------------------------|------------------|--------------------------|

COMMENTS:

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18. a) How much importance does your organization place on providing employees with opportunities (including sufficient time) to meet with managers and other employees to discuss new ideas?

|                        |                |                            |              |                              |                  |                          |
|------------------------|----------------|----------------------------|--------------|------------------------------|------------------|--------------------------|
| Very<br>Important<br>1 | Important<br>2 | Somewhat<br>Important<br>3 | Neutral<br>4 | Somewhat<br>Unimportant<br>5 | Unimportant<br>6 | Very<br>Unimportant<br>7 |
|------------------------|----------------|----------------------------|--------------|------------------------------|------------------|--------------------------|

b) How important is it to encouraging creativity in your organization to provide employees with opportunities (including sufficient time) to meet with managers and other employees to discuss new ideas?

|                        |                |                            |              |                              |                  |                          |
|------------------------|----------------|----------------------------|--------------|------------------------------|------------------|--------------------------|
| Very<br>Important<br>1 | Important<br>2 | Somewhat<br>Important<br>3 | Neutral<br>4 | Somewhat<br>Unimportant<br>5 | Unimportant<br>6 | Very<br>Unimportant<br>7 |
|------------------------|----------------|----------------------------|--------------|------------------------------|------------------|--------------------------|

COMMENTS:

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19. a) How easy is it in your organization for employees who do not normally work together to meet and share ideas?

|                   |           |                       |              |                            |                |                        |
|-------------------|-----------|-----------------------|--------------|----------------------------|----------------|------------------------|
| Very<br>Easy<br>1 | Easy<br>2 | Somewhat<br>Easy<br>3 | Neutral<br>4 | Somewhat<br>Difficult<br>5 | Difficult<br>6 | Very<br>Difficult<br>7 |
|-------------------|-----------|-----------------------|--------------|----------------------------|----------------|------------------------|

b) How important is it to encouraging creativity in your organization to enable employees who do not normally work together to meet and share ideas?

|                        |                |                            |              |                              |                  |                          |
|------------------------|----------------|----------------------------|--------------|------------------------------|------------------|--------------------------|
| Very<br>Important<br>1 | Important<br>2 | Somewhat<br>Important<br>3 | Neutral<br>4 | Somewhat<br>Unimportant<br>5 | Unimportant<br>6 | Very<br>Unimportant<br>7 |
|------------------------|----------------|----------------------------|--------------|------------------------------|------------------|--------------------------|

COMMENTS:

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20. a) How well do most employees understand how your organization works so that they are able to use its resources and expertise to try new ideas?

|                   |           |                       |              |                         |             |                     |
|-------------------|-----------|-----------------------|--------------|-------------------------|-------------|---------------------|
| Very<br>Well<br>1 | Well<br>2 | Somewhat<br>Well<br>3 | Neutral<br>4 | Somewhat<br>Poorly<br>5 | Poorly<br>6 | Very<br>Poorly<br>7 |
|-------------------|-----------|-----------------------|--------------|-------------------------|-------------|---------------------|

b) How important is it to encouraging creativity in your organization for employees to understand how the business works so that they are able to use its resources and expertise to try new ideas?

|                   |           |                       |         |                         |             |                     |
|-------------------|-----------|-----------------------|---------|-------------------------|-------------|---------------------|
| Very<br>Important | Important | Somewhat<br>Important | Neutral | Somewhat<br>Unimportant | Unimportant | Very<br>Unimportant |
| 1                 | 2         | 3                     | 4       | 5                       | 6           | 7                   |

COMMENTS:

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21. a) How helpful are employees in one part of your organization to those in a different part when they are asked for information?

|                 |         |                     |         |                       |           |                   |
|-----------------|---------|---------------------|---------|-----------------------|-----------|-------------------|
| Very<br>Helpful | Helpful | Somewhat<br>Helpful | Neutral | Somewhat<br>Unhelpful | Unhelpful | Very<br>Unhelpful |
| 1               | 2       | 3                   | 4       | 5                     | 6         | 7                 |

b) How important is it to encouraging creativity in your organization for employees in one part of the firm to be helpful to those in another part when they are asked for information?

|                   |           |                       |         |                         |             |                     |
|-------------------|-----------|-----------------------|---------|-------------------------|-------------|---------------------|
| Very<br>Important | Important | Somewhat<br>Important | Neutral | Somewhat<br>Unimportant | Unimportant | Very<br>Unimportant |
| 1                 | 2         | 3                     | 4       | 5                       | 6           | 7                   |

COMMENTS:

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22. a) How effective is your organization in providing appropriate resources (supplies, equipment and time) to allow employees to try creative ideas?

|                   |           |                       |         |                         |             |                     |
|-------------------|-----------|-----------------------|---------|-------------------------|-------------|---------------------|
| Very<br>Effective | Effective | Somewhat<br>Effective | Neutral | Somewhat<br>Ineffective | Ineffective | Very<br>Ineffective |
| 1                 | 2         | 3                     | 4       | 5                       | 6           | 7                   |

b) How important is it to encouraging creativity in your organization for the firm to provide appropriate resources (supplies, equipment and time) to allow employees to try creative ideas?

|                   |           |                       |         |                         |             |                     |
|-------------------|-----------|-----------------------|---------|-------------------------|-------------|---------------------|
| Very<br>Important | Important | Somewhat<br>Important | Neutral | Somewhat<br>Unimportant | Unimportant | Very<br>Unimportant |
| 1                 | 2         | 3                     | 4       | 5                       | 6           | 7                   |

COMMENTS:

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23. a) How effective is the building or facility in which you work in stimulating employees' creative ideas?

|                   |           |                       |         |                         |             |                     |
|-------------------|-----------|-----------------------|---------|-------------------------|-------------|---------------------|
| Very<br>Effective | Effective | Somewhat<br>Effective | Neutral | Somewhat<br>Ineffective | Ineffective | Very<br>Ineffective |
| 1                 | 2         | 3                     | 4       | 5                       | 6           | 7                   |

b) How important is it to encouraging creativity in your organization to work in a building or facility that aids in stimulating employees' creative ideas?

|                   |           |                       |         |                         |             |                     |
|-------------------|-----------|-----------------------|---------|-------------------------|-------------|---------------------|
| Very<br>Important | Important | Somewhat<br>Important | Neutral | Somewhat<br>Unimportant | Unimportant | Very<br>Unimportant |
| 1                 | 2         | 3                     | 4       | 5                       | 6           | 7                   |

COMMENTS:

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24. a) How effective is your organization in providing furniture that is easy to move and rearrange to suit the needs of its employees when they meet to generate ideas?

|                   |           |                       |         |                         |             |                     |
|-------------------|-----------|-----------------------|---------|-------------------------|-------------|---------------------|
| Very<br>Effective | Effective | Somewhat<br>Effective | Neutral | Somewhat<br>Ineffective | Ineffective | Very<br>Ineffective |
| 1                 | 2         | 3                     | 4       | 5                       | 6           | 7                   |

b) How important is it to encouraging creativity in your organization to provide furniture that is easy to move and rearrange to suit the needs of its employees when they meet to generate ideas?

|                   |           |                       |         |                         |             |                     |
|-------------------|-----------|-----------------------|---------|-------------------------|-------------|---------------------|
| Very<br>Important | Important | Somewhat<br>Important | Neutral | Somewhat<br>Unimportant | Unimportant | Very<br>Unimportant |
| 1                 | 2         | 3                     | 4       | 5                       | 6           | 7                   |

COMMENTS:

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25. a) How effective is this organization in placing pictures, graphics and objects throughout its facilities to stimulate idea generation?

|                   |           |                       |         |                         |             |                     |
|-------------------|-----------|-----------------------|---------|-------------------------|-------------|---------------------|
| Very<br>Effective | Effective | Somewhat<br>Effective | Neutral | Somewhat<br>Ineffective | Ineffective | Very<br>Ineffective |
| 1                 | 2         | 3                     | 4       | 5                       | 6           | 7                   |

b) How important is it to encouraging creativity in your organization to place pictures and graphics throughout its facilities to stimulate idea generation?

|                   |           |                       |         |                         |             |                     |
|-------------------|-----------|-----------------------|---------|-------------------------|-------------|---------------------|
| Very<br>Important | Important | Somewhat<br>Important | Neutral | Somewhat<br>Unimportant | Unimportant | Very<br>Unimportant |
| 1                 | 2         | 3                     | 4       | 5                       | 6           | 7                   |

COMMENTS:

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26. a) How effective is your organization in providing meeting space that provides both large, open spaces for meetings and private spaces for individual work as appropriate?

|                   |           |                       |         |                         |             |                     |
|-------------------|-----------|-----------------------|---------|-------------------------|-------------|---------------------|
| Very<br>Effective | Effective | Somewhat<br>Effective | Neutral | Somewhat<br>Ineffective | Ineffective | Very<br>Ineffective |
| 1                 | 2         | 3                     | 4       | 5                       | 6           | 7                   |

b) How important is it to encouraging creativity in your organization that there be meeting space that provides both large, open spaces for meetings and private spaces for individual work as appropriate?

|                   |           |                       |         |                         |             |                     |
|-------------------|-----------|-----------------------|---------|-------------------------|-------------|---------------------|
| Very<br>Important | Important | Somewhat<br>Important | Neutral | Somewhat<br>Unimportant | Unimportant | Very<br>Unimportant |
| 1                 | 2         | 3                     | 4       | 5                       | 6           | 7                   |

COMMENTS:

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27. a) How effective is your organization in outfitting its meeting rooms and spaces with examples of the most advanced equipment and products used by your most sophisticated customers as a way to help employees understand its customers better?

|                   |           |                       |         |                         |             |                     |
|-------------------|-----------|-----------------------|---------|-------------------------|-------------|---------------------|
| Very<br>Effective | Effective | Somewhat<br>Effective | Neutral | Somewhat<br>Ineffective | Ineffective | Very<br>Ineffective |
| 1                 | 2         | 3                     | 4       | 5                       | 6           | 7                   |

b) How important is it to encouraging creativity in your organization to outfit its meeting rooms with examples of the most advanced equipment and products used by your most sophisticated customers as a way to help employees understand its customers better?

|                   |           |                       |         |                         |             |                     |
|-------------------|-----------|-----------------------|---------|-------------------------|-------------|---------------------|
| Very<br>Important | Important | Somewhat<br>Important | Neutral | Somewhat<br>Unimportant | Unimportant | Very<br>Unimportant |
| 1                 | 2         | 3                     | 4       | 5                       | 6           | 7                   |

COMMENTS:

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28. a) How effective is your organization in outfitting its meeting spaces with symbols and memorabilia representing your organization's values and purpose as reminders to employees?

|                   |           |                       |         |                         |             |                     |
|-------------------|-----------|-----------------------|---------|-------------------------|-------------|---------------------|
| Very<br>Effective | Effective | Somewhat<br>Effective | Neutral | Somewhat<br>Ineffective | Ineffective | Very<br>Ineffective |
| 1                 | 2         | 3                     | 4       | 5                       | 6           | 7                   |

b) How important is it to encouraging creativity in your organization to outfit meeting spaces with symbols and memorabilia representing the organization's values and purpose as reminders to employees?

|                   |           |                       |         |                         |             |                     |
|-------------------|-----------|-----------------------|---------|-------------------------|-------------|---------------------|
| Very<br>Important | Important | Somewhat<br>Important | Neutral | Somewhat<br>Unimportant | Unimportant | Very<br>Unimportant |
| 1                 | 2         | 3                     | 4       | 5                       | 6           | 7                   |

COMMENTS:

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### SECTION III. WRITTEN-RESPONSE QUESTIONS.

1. In the past six months, how many ideas have you come up with that you believe would help your organization? Estimate if you have to.

2. Have any of these ideas been implemented? If so, how many?

3. What factors aided in getting your idea(s) implemented? What factors (if any) hindered implementation?

**THANK YOU FOR YOUR PARTICIPATION!**



## VITA

William (“Bud”) Wurtz is recognized internationally as a leader in organizational creativity and innovation, serving as the President of the American Creativity Association. He is the longest-serving president and the only person to hold this position twice.

Wurtz has extensive and diverse experience as a workplace learning and performance executive and senior practitioner in Fortune 500 companies in the high tech, telecom, energy, and agribusiness industries. He is currently affiliated with the Institute for Applied Creativity at Texas A&M University as Director of Corporate and Community Services.

Wurtz received his Bachelor of Arts degree in Political Science from the University of Kansas in 1972 and his Master of Arts in Political Science and Public Administration from Wichita State University in 1975. He has been inducted into Phi Kappa Phi honorary society in recognition of outstanding scholarship in pursuit of his doctorate at Texas A&M University, which he was awarded during the summer of 2008.

In addition to his expertise in organizational creativity and innovation, his research interests include Return-On-Investment evaluation research of workplace learning and performance projects. He has several nationally published studies in this area to his credit.

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